

# Place attachment and determinants of living arrangement in the family house in Ibadan, Nigeria

Adesina A. Akinjokun<sup>1,2</sup>, Mahmud Bin Mohd Jusan<sup>1,3</sup>

& Raja Nafida Binti Raja Shahminan<sup>3</sup>

<sup>1</sup>Department of Architecture, Faculty of Built Environment, Universiti Teknologi Malaysia (UTM), Johor, Malaysia

<sup>2</sup>Department of Architecture, Faculty of Environmental Design and Management, Obafemi Awolowo University, Ile-Ife, Nigeria.

<sup>3</sup>Centre for the Study of Built Environment in the Malay World (KALAM), Institute for Smart Infrastructure and Innovative Construction (ISIIC), Universiti Teknologi Malaysia.

email: sina3x3a@gmail.com; aaakinjokun2@live.utm.my

## Abstract

**Context/Background:** There is a dearth of study in identifying the determinants of choice of living arrangement in sub-Saharan Africa and what influences individual's decision about this. Therefore, this study examined the physical aspects and demographic characteristics that may be significant predictors of attachment to a particularly form of living arrangement in the form of "family house" otherwise called *agbo'le*.

**Data source and Methods:** The analysis was based on quantitative data from 413 household heads in a traditional neighborhood characterized mainly by *agbo'les* in Ibadan, Nigeria. Descriptive statistics, chi-square, regression analysis and correlation were used to analyse the data.

**Results:** The results showed that demographic factors including education attained, occupation and nature of work were significant predictors of place attachment rather than the physical structure.

**Conclusion:** The study concluded that the relevance of *agbo'le* to the lives of the residents and hence its future potentials are more influenced by characteristics of individual residents.

**Keywords:** *agbo'le*; family house; place attachment; urban housing; Nigeria.

## Introduction

Studies across the world have been able to identify the linkages between living arrangement and health outcome (Weissman & Russell, 2018; Kimuna, 2005; Hays, 2002). Other studies have been able to link living arrangement to behaviour, including high risk behaviour (Agrawal, 2005). In Africa, living arrangement may have significant influence on social orientation, economic opportunities and other demographic variables (Gabrielli *et al.*, 2018). However, there is a dearth of study in identifying what influences the choice of living arrangement, particularly among traditional non-migrants. This study is particularly focused on a form of traditional arrangement among the Ibadan people in South Western Nigerian popularly referred to as *agbo'le*.

Literarily, *agbo'le* is a nomenclature attributed to a form of flock of houses otherwise known as the "family house" or "compound house" in West Africa (Abdul, 2014; Afram & Korboe 2009; Amole *et al.*, 1993). It evolved in the pre-colonial era out of the culture of the Yoruba people as a form of self-provision housing occupied in multi-habitation by

Individual households constituting the Yoruba extended family, descended from a common progenitor called "Baba Nla" (Yetunderonke, 2015; Amole *et al.*, 1993). It is a conglomerate of independent or conjoined individual dwelling units with a square enclosing an open space or courtyard in the middle. The individual household dwellings comprise two or more rooms—polygynous or monogamous— and a common wall brings together adjacent units. Traditionally, its design has no provisions for dwelling amenities. Where these are available, they are shared by members of the extended family.

However, since the mid-1900s, changes in people's lifestyle occasioned by modernisation, globalization, and technological progress in the Nigerian society have resulted in the adoption of modern approaches to address housing design issues. Despite this, the patronage of *agbo'le* has continued among the traditional Ibadan people. Most of these houses are in the context of very challenging environment which are prone to diseases (Adeboyejo & Onyeonoru, 2005). Yet, people are still attached to

this and have shown much preference for it. This raises some interesting issues on what are the main attractions and determinants for *agbo'le*? In other words, the relationship between residents in this context and their home environments represents an important research theme, especially with respect to bonds which people display with respect to places; especially place attachment. Over the years place attachment, reflected as emotional bond between people and their physical environment has been found to inform the way people value their environment and influence their actions (Chen *et al.*, 2014, Manzo & Devine-Wright 2013; Lewicka, 2011).

Rubinstein & Parmelee (1992) argued that experiences with a place generally lead to more place attachment. However, the experiences would have to be perceived as positively linked with place attributes (Hernández *et al.*, 2007). Place attachment is indeed a positive phenomenon; it is strongly linked to wellbeing (Theodori, 2001); better social capital (Mesch & Manor 1998); more satisfaction with life generally, high sense of coherence, less egocentricity, more interest in family roots and stronger neighbourhood ties. In general place attachment has positive social and emotional consequences which are necessary for well-being. Therefore, it is important for housing experts to understand the outcome of individuals and groups experiences that have taken place in a specific place and how that place affects their emotional responses in order to create stable communities. It is also necessary to take advantage of these attachments to place to foster positive community activities which will improve the conditions of these places. In this context of the *agbo'le*, a study of place attachment will be useful in the sense that rather than suggest relocation of the current population, and demolition of these places, policy experts can leverage on the bonds which people have to the place to foster group participation in the upgrading of the place. Thus, studying attachment to place could be a powerful tool for understanding the family house or the *agbo'le* and proffering solutions for its improvement.

Place attachment is defined as an affective bond between people and specific places (Low & Altman, 1992). It has also been defined as a positive affective bond (Hidalgo & Hernandez, 2001); suggesting that an individual has a tendency to maintain closeness to a place. Other similar concepts to place attachment are neighborhood attachment and community attachment. There are very little differences between these concepts and these differences arise more from the scale at which place attachment is considered.

Place attachment has also been conceptualized in different ways. Most often, place attachment is construed as a concept which comprises two dimensions in the literature; namely place dependence and place identity (Moore & Graefe,

1994; Williams & Vaske, 2003; Prayag & Ryan, 2011). Place dependence, also called functional attachment, describes how important a setting is in facilitating a person's goals and activities (Stokols & Shumaker, 1981). It usually denotes dependence on the physical attributes of the place. Place identity, on the other hand, refers to the symbolic importance of a place in terms of emotions and relationships which give meaning and purpose to living (Williams and Roggenbuck, 1989). It is also construed as emotional attachment but also with reference to place (William and Vaske, 2003). Other dimensions have however been suggested; namely attachment to people who live in the place (and not just to place, Low and Altman, 1992) and rootedness (Harris *et al.*, 1996). Hidalgo & Hernandez (2001) have also argued that there is a need to take account of the physical component of the place.

Another important issue which emerges from previous studies is that place attachment may vary with social, physical and environmental characteristics of the place. Consequently, these contextual characteristics and how they are related to place attachment need to be examined. Of particular importance are physical and socio-physical characteristics of places. From the literature, place attachment has two dimensions (Scannell & Gifford, 2010b): a physical one, which is dedicated to tangible environmental features of a place; and a social/psychological one, which is associated with the intangible or meaningful elements (Hidalgo & Hernández, 2001; Low & Altman, 1992). While some authors are of the view that the two dimensions are distinct, others are of the view that the two dimensions are in a symbiotic relationship and consequently, inseparable with respect to place (Burley, 2007). However, the majority of authors assert that the two dimensions should be distinguished and that they play different roles in place attachment (Lewicka, 2011). A review of recent literature however shows that most studies have focused on the social dimensions of place attachment much more than the physical dimensions (Brehm, 2007).

More recently, studies have begun to show the importance of physical or natural environmental characteristics in place attachment. In a study by Brown & Raymond (2007), the participants gave more value to environmental/physical dimensions such as aesthetics, biological diversity, recreation, and wilderness than to social and economic dimensions of the landscapes being examined. In addition, Scannell & Gifford, (2010b) found that natural attributes had higher scores than social attributes on an attachment scale. These studies as well as other studies have found that place attachment can be predicted by many physical factors such as quiet areas, aesthetics, presence of green areas,

(Brown *et al.*, 2003, 2004) housing and neighbourhood quality, access to nature, safety, homeownership, municipal services and neighbourhood density (Fried, 1982). However, there are other physical attributes peculiar to the traditional house (*agbo'le*) which also need to be examined with respect to place attachment. These include presence of home-based enterprises, household densities; number of bedrooms, activities performed in the *agbo'le*; facilities and amenities available in the *agbo'le* and in the neighbourhood.

Existing literature presented juxtaposing evidences between physical structure and individual personal attribute as important determinant of choice of living arrangement. However, there is no clear distinction and congruency on what may influence the choice of such living arrangement among the traditional Ibadan people. This evidence may be important in understanding the nexus between development and housing accommodation in Africa.

## Methods

This research was carried out among the traditional people in Ibadan (see figure 1 for the site and communities) at within a ring at 'Oranyan Community (see figure 2), a compact traditional neighbourhood located within the core of the city of Ibadan, Nigeria. The core of the city of Ibadan is characterized mainly by *agbo'les*. This makes Ibadan a suitable city in which to study the *agbo'le*. The courtyard/passage is an essential element of *agbo'le*. It is also noted as arena for family gathering and socialization, house chores, pen for free-range livestock at night and store for junks. All inhabited houses within the study area were enumerated (N=413) and adopted for the quantitative survey. Majority of the houses examined comprises of two or more households. However, the household survey was administered on randomly selected one household head or his/her representatives in each of the houses by trained research assistants.



Figure 1: Map of Nigeria showing the location of Ibadan

Source: Nigeria Locator Map (ReliefWeb) (<https://reliefweb.int/map/nigeria/nigeria-location-map-2013>)



Figure 2: Google map showing boundaries of the study area at “Oranyan” within the core of Ibadan.

First, the quantitative data were analyzed with SPSS using frequencies and percentages. Individual attachment raw scores were considered for the dwelling and the family house separately using all the items which measure place attachment (10 items for the family house and 9 items for the dwelling). The scoring approach adopted is similar to the one employed in a study conducted by Amole, (2014). Overall place attachment scores were computed by summing up individual scores for the household and the family house separately. The overall scores at each of the two levels were sub-divided into five (5) groups and the results are presented in tables 2A & 2B. In addition, the physical characteristics of *agbo'le* employed as independent variables were cross tabulated against place attachment (dependent variable) at both the dwelling and the family house level to test for association between the two variables.

As suggested by Shrestha (2009), categorical regression was used to identify the predictors of place attachment. First at household level and secondly at family house level. With group attachment score (categorised) and individual attachment raw scores (uncategorised) as independent variables while housing physical characteristics and residents' demographic characteristics constituted the independent variable. Four sets of models of attachment were produced; two for attachment to the dwelling, another two for attachment to the family house. Finally, place attachment to household was correlated against attachment to family house to test if there is any significant difference between the two levels. Non-identifiable photographs were also taken to illustrate some of the findings.

## Results

### The household characteristics

Households' characteristics showed that 47.2% of the respondents were 60 years old and above. About half

of the residents (51%) were owners of their dwellings, while those in rent-free constituted 9.2%. Less than one-fifth (18.8%) rented the accommodation and about 2% were squatters. Residents' length of stay in the house indicated that 55.8% of the respondents had lived more than 20 years.

Only about 41% of respondents had completed primary education while 39.1% had no education. About 73.3% were self-employed, 17.3% worked with the private sector and 1.0% were employed by the state. Considering the income level of respondents' household, 57.4% of them earned a combined household income less than N18,000 (equivalent of US\$90.90) per month. Contrary to expectations, the predominant household configuration was the nuclear family and the average number of persons per room is 5.01.

### Dwelling physical characteristics

Out of the 404 houses/dwellings examined 75.2% were 60 or more years in age. Majority of the houses (78.0%) as indicated in table 1A had only one floor while 64.1% provided accommodation for more than two households. The room constitutes the basic unit of analysis in *agbo'le* as differentiation or classification of room for specific uses was not common in majority of the households. The highest number of rooms in household dwellings was 17 with a range of 16 rooms while about 38% of houses had only two rooms.

Measured drawings of the rooms revealed that the average floor area is (2.4 x 2.7) or 6.48m<sup>2</sup>. For the purpose of privacy and good health standards, room floor area in all the *agbo'le* visited is below the approved minimum standard of 7.0 m<sup>2</sup> per person approved by UN Habitat. Moreover, *agbo'le* occupancy ratio per room at an average of 5.01 persons per room is technically unacceptable.

**Table 1A: Physical characteristics of household's dwelling living spaces**

Variable	Category	% (N= 404)
Age of building in years	30-39	3.7
	40-49	8.2
	50-59	12.9
	60 and above	75.2
Number of floors	1	78.0
	2	21.8
	5	0.2
Number of rooms	1	33.9
	2	38.6
	3	21.5
	4	3.5
	5	1.5
	6 and above	1.0
Number of rooms dedicated to sleeping	None	33.9
	1	41.8
	2	21.5
	3	1.7
	4	1.0
	5	1.0
Number of households in a house	1	7.4
	2	28.5
	3	38.1
	4	20.3
	5	4.7
	6	1.0
Number of persons per room	not more than 1	6.4%
	not more than 2	28.05
	not more than 3	27.5%
	not more than 5	26.0%
	greater than 5	12.1%
Total		404 (100%)

Figure 3-6 below present the pictorial evidence of some of the facilities in the *agbo'le*. These are far below the minimum standard expected for healthy living. There are no toilet facilities in more than half of the buildings and also, there is no source of drinking water within the compound in most of the houses. Almost half of the households did not have designed and dedicated place for cooking, bathroom, toilet and place where to wash and dry clothes within their dwellings (see figures 4 and 5). Table 1B indicated that 51.5% of the household sampled prepared their food in the passage within their

dwellings while a vast number representing 71.8% had their bathroom made from shacks or a contraption of wood and raffia/discarded corrugated zinc located outside the dwelling. As touching toilet provision, the situation is more worrisome, 74.0% of the households defecate in the open or inside river Kudeti located at the edge of the community. This is because they did not have a toilet of whatever nature. Majority of the residents 95.3% (supported by on the spot observation) wash and dry their clothes in open spaces around their dwellings

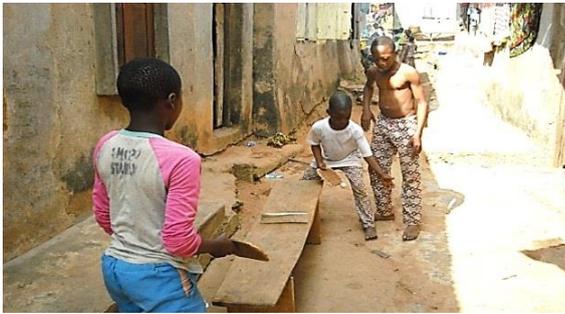


Figure 3: Lack of adequate space for recreation



Figure 4: Current condition of most bathroom



Figure 5: Outdoor cooking within space between buildings



Figure 6: Home based enterprise in front of dwelling

A greater percentage of the residents (43.1%) dump their refuse inside river Kudeti. A visual survey of the study site revealed the absence of water stand-pipe. This finding supported respondents' claim to non-availability of public water. Majority of those sampled, 58.4% sourced water for general household

use from covered well while 48.3% buy drinking water from water merchants. Nearly all 98.8% of the dwellings were connected to national power gridline and kerosene for 84.2% of the households constituted primary source of fuel for cooking.

**Table 1B: Physical characteristics of household's dwelling amenities**

Variable	category	% (N=404)
Place where you cook	Designed & dedicated space inside dwelling	17.6
	Designed & dedicated space outside dwelling	4.7
	Passage	51.5
	Temporary shed	8.4
	Open space outside dwelling	16.3
Place where you bath	Designed & dedicated space inside dwelling	13.6
	Designed & dedicated space outside dwelling	12.6
	Temporary shed	71.8
	Others	2.0
Place where you defecate	Designed & dedicated space inside dwelling	1.0
	Designed & dedicated space outside dwelling	25.0
	Open space outside dwelling	74.0
Place where you wash and dry clothes	Designed & dedicated space outside dwelling	4.7
	Open space outside dwelling	95.3
Drinking water	Covered well/borehole	25.0
	Public pipe water	4.2
	Commercial sources (water vendors)	70.8
Refuse disposal	Bush	11.9
	Pit	42.3
	Incinerator	2.7
	River Kudeti	43.1
Sewerage disposal	Septic tank	1.0
	Traditional pit/ VIP toilet	25.0
	Open public sewer	57.7
	Bush	16.3

Electricity	Yes	98.8
	No	1.2
Overall physical rating of dwelling	Extremely poor	-
	Poor	9.2
	Fair	12.4
	Good	67.8
	Excellent	10.6

Respondents' rating of the overall physical condition of their dwelling was measured on a 5 point Likert scale; the houses were categorized ranging from extremely poor with a score of (1) to excellent with a score of (5). The categorization was done using 7 criteria. The criteria include, dwelling layout and facilities, spaces between buildings, wall condition, floor condition, roof condition, ceiling condition, condition of water channels and walkways and condition of fittings and fixtures. Statistical analysis

showed that 78.4% of the respondents believed the physical quality of their housing in terms of design and construction was good while 17.0% agreed it was excellent.

#### **Residents' Attachment to *Agbo'le* and to their Individual Dwelling Units**

The result of place attachment in the *agbo'les* was examined and presented as stated below. Tables 2A & 2B show that overall, 74.5% and 80.9% of the respondents indicated attachment to their dwellings

**Table 2A: Place attachment at the household level**

Attachment scores	Frequency
0-9 (very unattached)	1 (0.2%)
10-18 (unattached)	20 (5.0%)
19-27 (indifferent)	82 (20.3%)
28-36 (attached)	193 (47.8%)
37-48 (very attached)	108 (26.7%)

**Table 2B: Place attachment at the family house level**

Attachment scores	Frequency
0-10 (very unattached)	0 (0%)
11-20 (unattached)	6 (1.5%)
21-30 (indifferent)	71 (17.6%)
31-40 (attached)	135 (33.4%)
41-50 (very attached)	192 (47.5%)

and family house respectively. Specifically, 47.5% expressed very high attachment to their family house while the score for the dwelling was only 26.7%. Moreover, the number of respondents who indicated very strong attachment to the family house is greater than those who expressed same for their dwellings. Consequently, it could be inferred that the residents were more attached to their family house than to their dwellings.

More analysis of the data was carried out using cross-tab to clarify the linear relationship (and the

level of significance) between family house physical characteristics (independent variable) and grouped place attachment (dependent variable) measured at two levels "the household" and "family house". The purpose is to examine *agbo'le's* physical characteristics that predict grouped place attachment within family house level and household dwelling level. From the Chi-square statistics, the calculated Pearson Chi-Square values, p-values, and df are shown below in table 3.

**Table 3: Chi-Square Test**

Variable	Household dwelling attachment			Family house attachment		
	value	df	Asymptotic significance (2 sided)	Value	df	Asymptotic significance (2 sided)
Do you operate a home-based enterprise?	2.179	4	0.700	3.190	3	0.363
Do you share the place where you wash clothes with others?	4.172	4	0.383	2.475	3	0.480
Do you share toilet with other households?	6.135	4	0.189	3.082	3	0.379
Do you share bathroom with other households?)	8.697	4	0.069	0.809	3	0.847
Do you share the place where you cook with other households?	3.142	4	0.534	1.932	3	0.587
Do you share the place where you eat with other households?	1.941	4	0.747	8.571	3	0.036
Number of persons living in household including yourself	38.024	28	0.098	12.660	21	0.920
How many rooms in total are in your dwelling?	20.919	20	0.402	20.947	15	0.139
Household density group	11.086	35	0.000	27.187	21	0.165

With all the p-values greater than 0.05, this implies that with respect to household attachment group and family house attachment group, the Pearson Chi-square test is not significant for any of the variables above.

#### **Predicting of place attachment: Correlation between physical factors, residents' demographic characteristics and attachment at household and family house level**

Categorical regression analyses were performed to understand the predictors of place attachment. In the first set of analyses, the dependent variable was the grouped place attachment. Respondent's characteristics (age, marital status, religion, education, level of education completed, occupation, nature of work, combined household monthly income, household current configuration) in addition to the physical characteristics of the family house mentioned in table 3 were the independent variables.

One model each was provided for group place attachment at household level (M1) and family house level (M2). The model presented at household level (M1) was not significant ( $F=0.895$ ,  $df=34$ ,  $p=0.640 >0.05$  and  $R^2=0.120$ ). Only two of the 17 characteristics could predict place attachment. These were respondents' level of education ( $F=3.549$ ,  $df=3$ ,  $p=0.15 <0.05$ ) and respondents' current household configuration ( $F=6.517$ ,  $df=4$ ,  $p=0.000$ ). On the other hand, the model produced for group place attachment at family house level (M2) was significant ( $F=1.579$ ,  $df=32$ ,  $p=0.026 <0.05$  and  $R^2=0.120$ ) but the fit between the data and the model was poor. Three of the 17 characteristics could predict place attachment. These were respondents' occupation ( $F=5.517$ ,  $df=4$ ,  $p=0.000 <0.05$ ), nature of work ( $F=3.945$ ,  $df=4$ ,  $p=0.004 <0.005$ ) and respondents' current household configuration ( $F=8.617$ ,  $df=4$ ,  $p=0.000$ ).

**Table 4A: Model summary- dependent variable\* physical and residents' characteristics**

Model	Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
M1	.276	.076	-.009	.924 <sup>a</sup>
M2	.346	.120	.044	.880 <sup>b</sup>

a. Dependent variable: group place attachment (household level)

b. Dependent variable: group place attachment (family house level)

**Table 4B: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
M1. Regression	30.784	34	.905	.895	.640 <sup>a</sup>
Residual	373.216	369	1.011		
Total	404.000	403			

M2. Regression	48.419	32	1.513	1.579	026 <sup>b</sup>
Residual	355.581	371	.958		
Total	404.000	403			

- a. Dependent Variable: group place attachment (household level)  
Predictors: Physical characteristics and respondent's demographic characteristics
- b. Dependent Variable: group place attachment (family house level)  
Predictors: Physical characteristics and respondent's demographic characteristics.

Further analyses were carried out with individual place attachment scores (uncategorized). At the level of the household attachment (M3), the regression model was not significant when all the 17 variables were imputed ( $F=1.069$ ,  $df=34$ ,  $p=0.368 > 0.05$  and  $R^2=0.090$ ). The fit between the data and the model was very small. The results showed that there were five characteristics out of 17 that could predict attachment to household (as against two found in group place attachment). These were the respondents' highest level of education ( $F=5.982$ ,  $df=2$ ,  $p<0.001$ ); occupation ( $F=3.147$ ,  $df=4$ ,  $p<0.015$ ), nature of work ( $F=3.396$ ,  $df=4$ ,  $p<0.010$ ), household configuration ( $F=7.711$ ,  $df=4$ ,  $p<0.000$ ), and total number of rooms in respondents' dwelling ( $F=5.239$ ,  $df=1$ ,  $p<0.023$ ).

However, the adjusted (M3\*) model was significant when the five (5) predictors were regressed against household attachment scores. The results show that ( $F=1.699$ ,  $df=16$ ,  $p=0.044 < 0.05$  and  $R^2=0.066$ ) but  $R^2$  was very small. In the adjusted model, the correction for each of the characteristics in the model is as follow: level of education ( $F=6.356$ ,  $df=3$ ,  $p<0.000$ ); occupation ( $F=4.795$ ,  $df=4$ ,  $p<0.001$ ), nature of work ( $F=3.522$ ,  $df=4$ ,  $p<0.008$ ), household configuration ( $F=8.395$ ,  $df=4$ ,  $p<0.000$ ), total number of rooms in respondent's dwelling ( $F=7.747$ ,  $df=1$ ,  $p<0.006$ ). Therefore, it can be seen that in the prediction of place attachment to household dwelling none of the five characteristics was found to be redundant.

In the next analysis, the same independent variables were regressed against individual attachment scores but at family house level. Overall, the regression model (M4) was not significant ( $F=1.241$ ,  $df=32$ ,  $p=0.178 > 0.05$  and  $R^2=0.097$ ).  $R^2$  was very small and there was also a little fit between the data and the model. The results show that six of the characteristics could predict place attachment. One more variable, respondents' religion ( $F=3.659$ ,  $df=2$ ,  $p<0.027$ ) was added to the five predictors found at household level. These included respondents' highest level of education ( $F=3.285$ ,  $df=2$ ,  $p<0.039$ ); occupation ( $F=6.622$ ,  $df=4$ ,  $p<0.000$ ), nature of work ( $F=3.216$ ,  $df=4$ ,  $p<0.013$ ), household configuration ( $F=5.091$ ,  $df=4$ ,  $p<0.001$ ), and total number of rooms in respondents' dwelling ( $F=6.508$ ,  $df=1$ ,  $p<0.011$ ).

The adjusted model (M4\*) was significant ( $F=1.888$ ,  $df=17$ ,  $p=0.018 < 0.05$ ) but  $R^2$  (0.077) was small and still the fit between the data and the model was poor. Two of the characteristics were not very strong predictors of place attachment. These were respondents' level of education ( $F=2.504$ ,  $df=2$ ,  $p=0.83 > 0.05$ ) and religion ( $F=2.396$ ,  $df=2$ ,  $p=0.92 > 0.05$ ). Respondents' occupation ( $F=5.708$ ,  $df=4$ ,  $p=0.000$ ); nature of work ( $F=3.839$ ,  $df=4$ ,  $p=0.005$ ); current household configuration ( $F=4.548$ ,  $df=4$ ,  $p=0.001$ ) and total number of rooms in respondents' dwelling ( $F=5.128$ ,  $df=1$ ,  $p=0.024$ ) were all predictors of attachment. Above all, all the models revealed that other characteristics such as age, sex, sharing of dwelling amenities did not predict place attachment.

**Table 5A: Model summary- dependent variable\* physical and residents' characteristics**

Model	Multiple R	R Square	Adjusted R Square	Apparent Prediction Error
M3	.299	.090	.006	.910 <sup>c</sup>
M4	.311	.097	.019	.903 <sup>d</sup>
M3*	.256	.066	.027	.934 <sup>e</sup>
M4*	.277	.077	.036	.923 <sup>f</sup>

- a. Dependent variable: place attachment scores (household level)
- b. Dependent variable: place attachment scores (family house level)
- c. Dependent variable: place attachment scores (household level)
- d. Dependent variable: place attachment scores (family house level)

**Table 5B: ANOVA**

	Model	Sum of Squares	df	Mean Square	F	Sig.
M3	Regression	36.234	34	1.066	1.069	.368 <sup>c</sup>
	Residual	367.766	369	.997		
	Total	404.000	403			
M4	Regression	39.055	32	1.220	1.241	.178 <sup>d</sup>
	Residual	364.945	371	.984		
	Total	404.000	403			
M3*	Regression	26.519	16	1.657	1.699	.044 <sup>e</sup>
	Residual	377.481	387	.975		
	Total	404.000	403			
M4*	Regression	31.014	17	1.824	1.888	.018 <sup>f</sup>
	Residual	372.986	386	.966		
	Total	404.000	403			

c. Dependent Variable: place attachment scores (household level)

Predictors: Physical characteristics and respondent's demographic characteristics

d. Dependent Variable: place attachment scores (family house)

Predictors: Physical characteristics and respondent's demographic characteristics.

e. Dependent Variable: place attachment scores (household level)

Predictors: Physical characteristics and respondent's demographic characteristics.

f. Dependent Variable: Place attachment scores (family house level)

Predictors: Physical characteristics and respondent's demographic characteristics.

**Table 6A: Coefficients of predictor variables**

	Standardized Coefficients		df	F	Sig.
	Beta	Bootstrap (1000) Estimate of Std. Error			
what is your highest level of education you have completed	-.122	.048	3	6.356	.000
what is your occupation	.181	.083	4	4.795	.001
how would you describe the nature of your work	.132	.070	4	3.522	.008
which of the configuration best describes your current household	.111	.038	4	8.395	.000
how many rooms in total are in your dwelling (including sitting room)	.144	.052	1	7.747	.006

Dependent Variable: Place attachment score (household)

**Table 6B: Coefficients of predictor variables**

	Standardized Coefficients		df	F	Sig.
	Beta	Bootstrap (1000) Estimate of Std. Error			
what is your highest level of education you have completed	-.119	.075	2	2.504	.083
what is your occupation	.167	.070	4	5.708	.000
how would you describe the nature of your work	.110	.056	4	3.839	.005
which of the configuration best describes your current household	.089	.042	4	4.548	.001

how many rooms in total are in your dwelling (including sitting room)	.139	.062	1	5.128	.024
what is your religion	.075	.048	2	2.396	.092

Dependent Variable: Place attachment score (family house)

It can be seen from the two tables 6A & 6B above that respondent's level of education has a negative influence on place attachment with scores of -0.122, & -0.119 respectively while respondent's occupation recorded the highest positive influence on place attachment with 0.181 & 0.167 in that order. In the

final model, correlation between household attachment group indicated by the question "how long have you been living in this house?" and family house attachment group designated by the question "how long have you been living in this neighbourhood was done?"

**Table 7: Correlation: household dwelling attachment against family house attachment**

		Household attachment	Family house attachment
Household attachment	Correlation coefficient	1.000	.649**
	Sig. (2-tailed)		.000
	N	404	404
Spearman's rho Family house attachment	Correlation coefficient	.649**	1.000
	Sig. (2-tailed)	0.000	
	N	404	404

\*\* Correlation is significant at the 0.01 level (2-tail).

The result of the crosstab is presented in table 7. The result shows that the two variables are related and with a score of 0.649\*\*, there is a strong relationship between them.

### Discussion and conclusion

It is apparent that the residents were permanent residents, owner-occupiers and had been living in the place for a considerable period of time, with several among them remaining in same place for more than 10 years. Consequently, they were very much attached to their household dwelling and family house. This finding is in line with Jiboye & Ogunshakin, (2010) who found that permanent residents, owner-occupiers express strong preference for the places they occupy and would not like to walk away. In the case of *agbo'le* residents, this apparent attachment to place is likely to be so because the houses do not only serve as living quarters but also as centre for home-based enterprises, arena for family and festive celebrations as well as ritual grounds. Hence, these houses are important as a home to most of the residents.

According to Okoko, (2001) and Obateru, (2005) the Nigerian government prescribed an index of 2.0 persons per room for the country. Contrary to submissions of previous researchers, (Mayfield, 2011; Kelly & Hoskings, 2008; Cook, 1988), the context of the study did not have much significant influence on how attached people are to places. There was no significant difference between residents' attachment at household level and at family house

level. This is not in agreement with the finding of Kelly & Hosking, (2008), who compared two townships and found significant differences in both places.

Apart from the difference in place scale in place attachment, the specificity, of place was also found to be an important issue when studying attachment. It could be seen that attachment develops to different degrees in different places. There were differences between the overall attachment to place and to specific levels of the environment. While it was important to understand overall attachment, attachment to specific places differed. Though, the difference in attachment at household level and family house levels was not significantly different, the residents felt more attached to the family house than to their individual dwelling units. This was unexpected as people tend to be attached more to personal than public spaces. This is a divergence from Harris *et al.*, (1996) who found a relationship between place attachment and privacy.

Users' characteristics as well as the characteristics of the place have been suggested as the main predictors of place attachment (Woolever, 1992). The findings of this study indicate that the factors which may explain place attachment are more complex. This fact is supported by previous works (Steadman, 2006; Moore & Scott, 2003) which examined the predictors of place attachment in different contexts and also by this study. This study found that users' characteristics and the physical context could not all together explain place attachment to the household or family house.

This suggests that many other factors such as beliefs, participation, social networks, values and goals may be far more important than those used in this study in explaining place attachment. This is also why much of the variance in place attachment (where the model was significant) could be explained by the variables in the model. The explanatory power of the variables was small.

In addition, resident's demographic characteristics such as gender were not found to be a significant predictor of place attachment as found by Hildago & Hernandez (2001). Hildago & Hernandez (2001) established that age is correlated to attachment, nevertheless, in this study it was not found to be so. However, level of education, occupation and nature of work were predictors of place attachment. This might be because they are highly correlated with one another; they were all related to economic activities which for majority of the residents is home-bound.

Although the physical aspects of the living arrangement of the households examined in the context of the family house did not provide sufficient evidence of attachment, yet the aspects related to economic opportunities appeared to be good predictors. The implication of this is that in the creation or recreation of new *agbo'les*, architects, urban designers/planners should never take for granted those aspects related to residents' characteristics that would support their economic activities. Majority of the residents could not be integrated into the public sector because they fall within the group that did not enjoy education at all or those who did not go beyond primary school. Hence, they depend on the available spaces for work-base within their family houses for making daily living/survival.

Therefore, findings from this study suggests, the dependence of the residents on their houses (*agbo'le*) in fulfilling needs related to economic activities could be a major determinant of their attachment. In addition, it could be the reason why they were more attached to their houses more than to dwellings as some of them have their home-based businesses within the family house (for instance shared spaces, such as locations like courtyard, open spaces, corridors/halls, etc.) but not necessarily within their individual dwellings. This finding is consistent with previous study by Kamalipour *et al.*, (2012) where the significance of the city is related to economic opportunities such as availability of jobs.

As expected from past research, physical and psychological conditions of dwelling, neighbourhood or city affect the significance of each place for inhabitants' attachment. Based on the foregoing, the authors would like to suggest that further studies involving demographic and psychological factors should be carried out so as to clarify the variables that predict attachment to the family house.

## References

- Abdul, S. B. O. (2014). "The family as basis of social order: Insights from the Yoruba traditional culture". *International Letters of Social and Humanistic Sciences*, 23, 79–89
- Adeboyejo, T. A. and Onyeonoru, I. P. (2005). "Aspects of home environment and adolescent sexual behaviour in Southwestern Nigeria". *African Population Studies*, 20 (1)
- Adelekan, I. (2016). "Ibadan city diagnostic report". *Urban Africa risk knowledge*
- Afram, S. and Korboe, D. (2009). "Continuity, utility and change: the urban compound house in Ghana". *Open House International*, Vol. 34, pp.36-46.
- Amole, B., Korboe, D. and Tipple, G. (1993). "The family – house in West Africa: A forgotten Resource for policy maker". *Third World Planning Review* 15/4, p.355
- Amole, D. O. (2014). "Place attachment in selected urban and semi-urban students' residences in southwestern Nigeria". *Journal of Environmental Design and Management*, Vol. 6 (1 &2), pp.13-28
- Brehm, J.M. (2007). "Community attachment: The complexity and consequence of the natural environment facet". *Human Ecology*, 35 (4), pp.477- 488
- Brown, B.B., Perkins, D.D. and Brown, G. (2004). "Incivilities, place attachment and crime: Block and individual effects". *Journal of Environmental Psychology*, 24(3), pp.359-371
- Cook, C.C. (1988). "Components of neighborhood satisfaction: Responses from urban and suburban single-parent women". *Environment and Behavior*, 20 (2), pp.115-149
- Chen, N., Dwyer, L. and Firth, T. (2014). "Effect of dimensions of place attachment on residents' word-of-mouth behavior". *Tourism Geographies*, 16 (5), pp.826 - 843
- Fried, M. (1982). "Residential attachment: Sources of residential and community satisfaction". *Journal of Social Issues*, 38 (3), pp.107-119
- Gabrielli, G., Paterno, A. and Sacco, P. (2018). "Living arrangements in sub-Saharan Africa between modernization and ethnicity". *African Population Studies*, 32(2), pp.4260-4272
- Harris, P.B., Brown, B.B. and Werner, C.M. (1996). "Privacy regulation and place attachment: Predicting attachments to a student family housing facility". *Journal of Environmental Psychology*, 16(4), pp.287-301
- Hays, J.C. (2002). "Living arrangements and health status in later life: a review of recent literature". *Public Health Nursing*, 19(2):136-151
- Hernández, B., Hidalgo, M.C., Salazar-Laplace, M.E. and Hess, S. (2007). "Place attachment and place identity in natives and non-natives". *Journal of Environmental Psychology*, 27(4), pp.310-319

- Hidalgo, M.C. and Hernandez, B. (2001). "Place attachment: Conceptual and empirical questions". *Journal of Environmental Psychology*, 21(3), pp.273-281.
- Jiboye, A.D. and Ogunshakin, L. (2010). "The place of the family house in contemporary Oyo town, Nigeria". *Journal of Sustainable Development*, 3(2), pp.117
- Kabisch, S. and Grossmann, K. (2013). "Challenges for large housing estates in light of population decline and ageing: Results of a long-term survey in East Germany". *Habitat International*, 39, pp.232-239
- Kamalipour, H., Yeganeh, A. J., and Alalhesabi, M. (2012). "Predictors of place attachment in urban residential environments: A residential complex case study". *Procedia-Social and Behavioral Sciences*, 35, pp. 459-467
- Kelly, G. and Hosking, K. (2008). "Nonpermanent residents, place attachment, and "sea change" communities". *Environment and Behavior*, 40(4), pp.575-594
- Lewicka, M. (2011). "Place attachment: How far have we come in the last 40 years?" *Journal of Environmental Psychology*, 31(3), pp.207-230
- Low, S.M. and Altman, I. (1992). "Place attachment: A conceptual inquiry". *Human Behaviour and Environment: Advances in Theory and Research*, pp. 1-12
- Mabogunje, A. L. (1962). "The growth of residential districts in Ibadan". *Geographical Review*, 1: 56-77
- Manzo, L.C. and Devine-Wright, P. (2013). *Place attachment: Advances in theory, methods and applications: Routledge*, pp. 1-12
- Mayfield, M. (2011). "A place just right: Effects of place attachment on preference for restorative environments".
- Mesch, G.S. and Manor, O. (1998). "Social ties, environmental perception, and local attachment". *Environment and Behavior*, 30(4), pp.504-519
- Moore, R.L. and Graefe, A.R.(1994). "Attachments to recreation settings: The case of rail-trail users". *Leisure Sciences*, 16(1), pp.17-31
- Morgan, P. (2010). "Towards a developmental theory of place attachment". *Journal of Environmental Psychology*, 30(1), pp.11-22
- Obateru, O.I. (2005). "Planning regional and rural development". *Penthouse Publication*, Ibadan, Nigeria.
- Okoko, E. (2001). "Residential crowding and privacy in high-density neighbourhoods in Akure, Nigeria". *Ife Social Sciences Review*, 19(1), 133-144
- Prayag, G. and Ryan, C. (2011). "The relationship between the push and pull factors of a tourist destination: The role of nationality—an analytical qualitative research approach". *Current Issues in Tourism*, 14(2), pp.121-143
- Rubinstein, R.I. and Parmelee, P.A. (1992). "Attachment to place and the representation of the life course by the elderly". *Place Attachment* (pp. 139-163), Springer, Boston, MA.
- Scannell, L. and Gifford, R. (2010). "Defining place attachment: A tripartite organizing framework". *Journal of Environmental Psychology*
- Scannell, L. and Gifford, R. (2010b). "The relations between natural and civic place attachment and pro-environmental behavior". *Journal of Environmental Psychology*, 30(3), pp.289-297
- Shrestha, S. L. (2009). "Categorical regression models with optimal scaling for predicting indoor air pollution concentrations inside kitchens in Nepalese households". *Nepal Journal of Science and Technology*, 10, pp.205-211
- Sitawa R. K. (2005). "Living Arrangements and Conditions of Older People in Zimbabwe". *African Population Studies*, Vol. 20(2)
- Stedman, R.C. (2002). "Toward a social psychology of place: Predicting behavior from place-based cognitions, attitude, and identity". *Environment and Behavior*, 34(5), pp.561-581
- Sutapa, A. (2005). "Analyzing Adolescent Risk-Taking Behaviour in India: Findings from a large scale survey". Paper presented at the IUSSP XXV International Population Conference Tours, France 18-23 July 2005
- Theodori, G.L. (2001). "Examining the effects of community satisfaction and attachment on individual well-being". *Rural Sociology*, 66(4), pp.618-628
- Williams, D., Patterson, M., Roggenbuck, J., and Watson, A. (1992). "Beyond the commodity metaphor: Examining emotional and symbolic attachment to a place". *Leisure Sciences*, 14, 29-46
- Weissman, J.D. and Russell D. (2018). "Relationships between Living Arrangements and Health Status among Older Adults in the United States, 2009-2014: Findings from the National Health Interview Survey". *J. Appl. Gerontol.*, 37(1), pp.7-25
- Williams, D.R. and Vaske, J.J. (2003). "The measurement of place attachment: Validity and generalizability of a psychometric approach". *Forest Science*, 49(6), pp.830-840
- Woolever, C. (1992). "A contextual approach to neighbourhood attachment". *Urban Studies*, 29(1), pp.99-116
- Yetunderonke, O. (2015). "A study of housing adequacy of multi-habited houses in a typical Nigerian town". *International Journal of Advanced and Multidisciplinary Social Science*, 1(1), pp.7-12.

[https://commons.wikimedia.org/wiki/File:Nigeria-\\_Location\\_Map\\_\(2013\)\\_-\\_NGA\\_-\\_UNOCHA.svg](https://commons.wikimedia.org/wiki/File:Nigeria-_Location_Map_(2013)_-_NGA_-_UNOCHA.svg)

**Author/s Guarantee Form:** Authors declare that all named authors have contributed sufficiently to the work submitted and that the content of the manuscript has never been previously published.

## Appendix

### Survey questions for attachment to household dwelling and family house

#### Household Dwelling

How do you agree with the following statements with respect to your dwelling? Please check the box/number that best represents your answer.

		Strongly disagree	disagree	Do not know	Agree	Strongly agree
i	This is an ideal dwelling to live in	1	2	3	4	5
ii	I feel my dwelling is a part of me	1	2	3	4	5
iii	I feel secured in my dwelling	1	2	3	4	5
iv	I use this dwelling to help define and express who I am inside	1	2	3	4	5
v	My dwelling is the best place for doing many things	1	2	3	4	5
vi	I would not substitute any other area for doing the type of things I do in my dwelling	1	2	3	4	5
viii	I am always glad to return to my dwelling	1	2	3	4	5
ix	I would feel sorry if I had to move out of my dwelling	1	2	3	4	5
x	I would feel sorry if I had to move out of my dwelling without my neighbours	1	2	3	4	5

#### Family House

How do you agree with the following statements with respect to your family house? Please check the box/number that best represents your answer.

		Strongly disagree	disagree	Do not know	Agree	Strongly agree
i	My family house is an ideal place to live in	1	2	3	4	5
ii	I feel my family house is a part of me	1	2	3	4	5
iii	I feel secured in my family house	1	2	3	4	5
iv	My family house help to define and express who I am inside	1	2	3	4	5
v	My family house is the best place for doing many things	1	2	3	4	5
vi	I would not substitute any other area for doing the type of things I do here	1	2	3	4	5
vii	I get more satisfaction from my family house than from my dwelling	1	2	3	4	5
viii	I am always glad to return to my family house	1	2	3	4	5
ix	I would feel sorry if I had to move out of my family house without my neighbours	1	2	3	4	5
x	I would feel sorry if I and my neighbours had to move out of my family house	1	2	3	4	5



Figure 13: *Agbo 'le* Lasiede (Lasiede Family Compound)