Households' Ethnic Background and Crowding in Public Housing Multifamily Apartments in Lagos

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Abstract

Crowded housing is one of the housing stresses that bother policy makers and housing authorities in Lagos, Nigeria. At the core of the argument is the anthropology of proper and acceptable sleeping arrangements, particularly as it applies to households' ethnic and cultural groups. The study examined the crowding levels among persons of different ethnic and cultural origins occupying Lagos State Development and Property Corporation (LSDPC)'s apartments. Four housing estates were purposively selected among LSDPC's multifamily categories, comprising 7,764 apartments. A sample of 7.5% was chosen using stratification and systematic random techniques. A pretested questionnaire instrument was used to collect the relevant demographic data of occupants. The ethnic group of the household head was taken as a measure of the ethnicity and cultural background of the household. Apartment occupants were grouped into three: households that consist of 1-2 occupants; households that consist of 3-5 occupants; and households that consist of 6 or more occupants. Non-parametric statistical techniques were applied to analyse and compare data obtained from questionnaire. The result shows that households consisting of 3-5 occupants were dominant and no one ethnic group consistently maintained higher or lower crowding level across apartments. Hence, household head's ethnicity had no significant effect on apartment crowding. This result contrasts with findings from earlier researches in some countries which claim that household crowding varies considerably according to ethnic groups. It recommends that ethnic groups should be deliberately mixed to achieve ethnic and social integration.

Keywords: crowding, ethnicity, multifamily apartment, public housing.

Introduction

There is growing evidence that demographic characteristics are the most frequently used features to explain housing behaviour (Lee, 2005). Bures (2009) had also asserted that living arrangements are influenced by social and demographic trends. Yet, the housing literature is silent on housing behaviour and housing experiences of households of distinctive ethnic background in public housing in Lagos, Nigeria. Specifically, the matching of household head's ethnicity with crowding level in multifamily residential apartments in Lagos has not attracted research attention among scholars of housing demography. This study therefore focuses on examining ethnic-based disaggregation in the experience of household crowding in multifamily apartments belonging to Lagos State Development and Property Corporation (LSDPC).

The city of Lagos attracts Nigerians from across the federation as well as peoples from other parts of Africa and beyond. In fact, Oduwaye (2008) claimed that over 300 ethnic groups in Nigeria are resident in Lagos State. Household crowding experiences of people from various ethnic backgrounds are considered a big challenge for policy makers and housing authorities who are saddled with the task of public housing delivery in Lagos (Iweka, 2012). This can be substantially attributed to the recognition that there is a strong relationship between crowding and ethnicity of apartment residents (Gray, 2001; Iweka, 2012). Analysis by Statistics New Zealand (2012) also points out that household size and living arrangements vary considerably across ethnic groups. Thus different ethnic and cultural groups may not share the same beliefs, attitudes, and norms regarding acceptable crowding experiences. However, cultural views which specify how many people can occupy the sleeping rooms in an apartment, based on moral principles associated with conjugal relationships, age and gender of occupants do not vary substantially among people of different ethnic cleavages (El-Sheikh, 2011; Chirkov, 2015). In situations like this, assessment procedure is essentially objective and consistent. Beyond this universally accepted norm for occupying sleeping rooms, household living arrangements may reveal specific ethnic group's tolerance level for crowding. Some ethnic groups accept higher levels of crowding, as a way of life more than others. Thus emphasis in this study was on objective levels of crowding that manifest among households of different ethnic backgrounds, and not on crowding based on perception or ecological interpretation.

The delivery of public housing by the Lagos State Government has been largely done through its agency, the Lagos State Development and Property Corporation (LSDPC). There is no evidence of ethnic-based differentiation or bias on access to the prototype apartment units produced by LSDPC. The apartments are usually balloted for, based on socio-economic grouping of low, medium and high income class, irrespective of other characteristics like ethnic structure, extended family groups, regions or religion. People in any of these three socio-economic categories can apply for any apartment type in any preferred estate. Thus the outcome can

appear skewed in favour of certain ethnic groups with high social network, and who may wish to cluster together in certain areas. This paper reports the results of a study of possible differentiation among ethnic groups, for residential estate planning and management policy. The research focused on investigating how crowding levels of households vary by ethnicity or otherwise in the LSDPC's multifamily apartments in Lagos. Understanding ethnic and cultural differences is especially important in segmenting apartment users into more homogeneous subgroups in LSDPC's estates. This is currently lacking in the planning and management framework of LSDPC's estates

Literature Review

Household crowding

Crowding and space are critical factors taken into consideration in determining the risk faced by occupants. There is no single definition or measure of crowding. Some countries such as Canada define household crowding as a situation where one or more additional bedrooms are needed to meet the sleeping requirements of household residents. Statistics New Zealand (2012) explains that crowding occurs when a dwelling is too small to accommodate the number of people in a household. A few decades ago authors like Newman and Hagan (1981) saw crowding as a perceived phenomenon or the subjective feeling of having too many people around. Obviously, there are ambiguities and contradictions because crowding and overcrowding tend to be intertwined, while the

link between crowding and density appears indistinct among researchers. Those who discuss crowding alongside overcrowding see crowding as objective measure and overcrowding as subjective (Baldassare 1979; Warah 2003). In this perspective crowding is technically an indicator (or, an objective measure) of the number of persons per room in a housing unit. Overcrowding on the other hand gives an expression of a normative judgement concerning the degree of crowding that manifests on the scale. Warah (2003) concluded that the crowding indicator is objective but the adoption of a particular number of persons per room as an overcrowding standard is a subjective evaluation. Furthermore, there are researchers who associate crowding with density. They see crowding as subjective and density as an objective quantitative and neutral term that has no positive or negative connotations (Kaya & Erkip 2001; Pader 2002).

In this study crowding is taken as an objective measure and refers to the number of people per sleeping room in LSDPC's multifamily apartments in Lagos. In practice, the term crowding is often used to mean density. Hence most bureaucratic institutions around the globe have persisted in calculating crowding by using density measures of number of persons per sleeping room in a housing unit (UNCHS 1995; Memmott, Birdsall-Jones & Greenop 2012). In LSDPC's multifamily apartments, sleeping rooms are taken to mean habitable rooms, consisting of bedrooms, sitting/dining rooms, and in some cases the kitchen is included if the size is large

enough to hold a bed for an adult. The focus of the study was on crowding as a physical and social phenomenon rather than on crowding as a perceptual or ecological phenomenon. The crowding model adopted was based on differentiation between appropriate age and sex relationships in terms of prescribed sleeping patterns that are culturally applicable to the study area and many other parts of the world. Therefore, household crowding in this context was about the aggregate number of adult-equivalent occupants that can occupy the sleeping rooms after disaggregating them according to their ages, gender and marital relationships.

This definition of crowding based on sleeping arrangements is distinct from spaces available per person per square metre, which creates a dilemma across cultural divide. The emphasis in this study was on in-house or internal physical and social crowding, in order to express the total number of adult-equivalent occupants, each of whom could be assigned to one sleeping room in LSDPC's multifamily apartments.

In a recent study of social demography in South Africa, Odimegwu and Kekovole (2015) recommended this ratio of one person per sleeping room as ideal but noted that the sleeping arrangement of many South Africans is two adults and one child below five years to a room. Although the authors argued that one sleeping room to two adults and a minor does not necessarily constitute crowding, their recommendation of one adult per room supports the general findings from the literature. The definition of one adult or one adult-equivalent individual per sleeping room

was followed in the present research.

Culturally determined crowding measures

Crowding as defined in this study is hinged on the traditional understanding that rooms are used primarily for sleeping. The influence of room sharing is common and applicable to different ethnic and cultural backgrounds in LSDPC's multifamily apartments. Different authors have pointed out that the moral principles underlying the configurations of the sleeping arrangements are culturally acceptable universally (El-Sheikh, 2011;

Greenfield and Lewis, 2013; Chirkov, 2015). Chandra (2014) had contended that the arrangement of apartment occupants in sleeping spaces occurs according to combinations based on age, gender, conjugal status and kin relationships.

Recent works of El-Sheikh (2011) and Chirkov (2015) found that variability in household sleeping arrangements across cultures were insignificant. In a study of cultural norms for sleep and sleeping arrangements, El-Sheikh (2011) reported that the percentage of black families who engaged in regular co-sleeping was very similar to the percentage of Japanese families engaged in regular co-sleeping even though the two groups held different cultural values. Chirkov (2015) also reported an earlier work that compared the meaning of sleeping arrangements among different cultural communities in India and the United States. In that study, researchers provided three rooms and asked families of seven members to make

convenient sleeping arrangements which if violated will result in crowding. Each family consisted of father, mother, son (15 years old), son (11 years old), son (8 years old), daughter (14 years old), and daughter (3 years old). The results revealed some moral principles applicable to India and America. The moral principles are: (a) Incest avoidance, which forbids sexually mature relatives of opposite sex from sleeping together, (b) The sacred couple which requires husband and wife to always sleep in one room, (c) Care for the dependents which stipulates that very young children should not sleep alone, (d) Respect for hierarchy which requires that males should not sleep with other males who must defer to them in order to avoid disrespectful familiarity, (e) Respect for individual privacy requiring that individuals should sleep alone as much as conditions allow.

These moral principles represent the limits of persons-per-sleeping room, and therefore represent measures of crowding applicable to the current study. The emphasis on socially and culturally acceptable age-sex compatibility arrangements formed the core of the London County Council's index for allocating three-room accommodations to families in need (two bedrooms and a sitting room). The index allows the three rooms to be occupied by a married couple and one child, or a married couple and two children of same sex, or a married couple and three children under six years of age, or a married couple and two children of opposite sex if the younger is less than three years, or an adult pair not married (for example, brother and sister, father and daughter, etc.) (Baldassare, 1979). Deviations from any of these arrangements is regarded as crowded.

Similar value assumptions for age-sex limit for sleeping room partners was set forth by the United States Department of Housing and Urban Development. One separate room is allowed for each of the following: (a) married couple (b) Two children of the same sex above the age of twelve (c) two children of opposite sexes above the age of three (d) all others must have individual sleeping chambers.

All these contexts describe crowding as a situation where the number of people residing in an apartment exceeds the capacity of the household to accommodate appropriate sleeping arrangement for its members. These models for measuring and predicting crowding are based on appropriate sleeping arrangement and living norms in nuclear families across cultures. The models are embedded in Canadian National Occupancy Standards (CNOS) which has been adopted in several countries. In Lagos Nigeria, this sleeping arrangement orthodoxy particularly in terms of separation of sexes is considered useful and applicable for understanding crowding in LSDPC's multifamily apartments.

The CNOS is based on the number, sex, age, and inter-relationships of household members and identifies the number of adult-equivalent occupants entitled to separate sleeping rooms. The specifications of CNOS that were applied in this research include: (a) there should be no more than two persons per bedroom, (b) Couples should have a separate bedroom, (c) Children under five years either of the same sex or opposite sex may share a bedroom, (d) Children five years of age or over

of opposite sexes should not share a bedroom, (e) Children less than 18 years of age and of the same sex may reasonably share a bedroom, (f) Single household members aged 18 years or over, and any unpaired children require a separate bedroom. (Australian Bureau of Statistics year book 2008; Memmott, Birdsall-Jones & Greenop 2012; Iweka 2012). Households living in apartments where this standard cannot be met are considered to be crowded. For example, a two-sleeping-room apartment for a couple, an eight year old and a twelve year old is crowded if the children are of opposite sex, but not crowded if they are the same sexes irrespective of the sizes of the two rooms in terms of person per square metre.

The sleeping arrangements considered in CNOS are generally applicable to Nigeria, particularly in terms of separation of sexes. Furthermore, LSDPC's multifamily housing stock under investigation was presumably designed for nuclear households typical of what obtains in countries where CNOS thresholds are applicable. The CNOS specifications provided a basis for establishing the number of occupants in an apartment. Thus, the total number or combinations of persons permitted by CNOS to inhabit a room is regarded as "one adult" or "one occupant".

Ethnicity and household crowding

Bulmer (1996) quoted in Llangco (2013) defined an ethnic group as a collectivity within a larger population having real or putative common ancestry, memories of a shared historical past and a cultural focus upon one or more symbolic elements which define its identity such as kinship, religious affiliation, language, shared territory, nationality, physical contiguity or any combination of these. Ethnicity is an individual characteristic that may also be tied to the native language spoken and the respondent's local government area of origin. The relationship between household's ethnic background and crowding has attracted the attention of several researchers (Gillis, Richard & Hagan 1986; Fuller, Edwards, Vorakitphokatorn & Sermsri 1993; Moller, Johnson & Dardia 2002; Pader 2002; Statistics New Zealand 2012; Ministry of Health 2014). There seems to be a general consensus that crowding and attitude to crowding vary between ethnic and cultural groups. In a study of crowding level in California, Moller, Johnson and Dardia (2002) found that Hispanics were 26 times more likely to be crowded than those headed by native whites. Also, Latinos and Asians have substantially higher average household sizes than Blacks and Whites. An earlier investigation by Gillis, Richard and Hagan (1986) equally found that Asians were more adaptable to high density living and more able to cope with crowding than North Americans and the British. In Australia, a study by Ministry of Health (2014) shows that 40% of Pacific peoples live in crowded apartments compared to 20% for Maori; 18% for Asians and 4% for Europeans. Fuller, Edwards, Vorakitphokatorn and Sermsri (1993) also carried out a study on household crowding and family-relations in Bangkok. It was found that the normative tolerance for crowding in Bangkok was high compared to North American standard. The researchers argued that this could be due to some ameliorating cultural factors. The Thais were acknowledged as people who place

higher value on social interaction and less value on privacy. This is largely in contrast with the situation in the United States. Thus space and time appear to be crucial in comparing or contrasting the findings and more importantly for formulating appropriate estate planning and management policy.

Methodology

The housing estates belonging to Lagos State Development and Property Cooperation (LSPDC) were purposively chosen for this research. A survey research component was incorporated to provide the data on the research variables that could not be obtained through observation or direct measurement. Illesanmi (2005) and Iweka (2012) justified the use of case study approach in this type of research on the grounds that the study focuses on information specific to a particular context of LSPDC. Furthermore, it permits the researcher to concentrate on an in-depth investigation of a specific issue, ethnicity and crowding levels of residents. The single institutional context of LSDPC is classified as a single unit entity, or single case with several embedded units for in-depth examination. The LSPDC has 40 residential estates, with a total of 20,572 apartments (Fatoye and Odusanmi 2009; Jiboye 2009; 2010). This research focused on low and medium income estates containing multifamily apartments.

Twelve estates with a total of 17,679 apartments fell into these categories and hence constitute the study population. These are made up of nine estates with 15,950 apartments in the low income group and three estates with 1,729 apartments in the medium income group. Three low income estates and one medium income estate were purposively selected as cases for in-depth study. The three selected low income estates are Abesan (4,272 apartments), Iba (2,388 apartments) and Dolphin II (576 apartments). They constitute 65% of the nine Low income estates that make up the study population. Also, one medium income estate, Ebute-Metta (528 apartments) was purposively chosen as a case for in-depth study. The 528 apartments in Ebute-Metta constitute 40% of all the three middle medium income apartments. The sample frame of this study was the 7,764 apartments in the four selected estates. In the low income category, there are two apartment prototypes at Abesan, one prototype at Iba and two prototypes at Dolphin II. The medium income estate at Ebute-Metta contains only one prototype apartment.

Sampling

In all a 7.5% (582) sample of all the apartments in the four selected estates was chosen. This large sample was chosen based on the argument that as the sample size increases,

Table 1: Grouped measures of crowding level based on household ethnicity

Apartment type	Ethnicity of household	1 – 2 Occupants (%)	3 – 5 Occupants (%)	6 occupants & above (%)	Total (%)
Type One 2-bedroom Abesan	Yoruba	16.67	77.77	5.56	100.00
	TOTAL	16.67	77.77	5.56	100.00
Type Two 2-bedroom Dolphin	Yoruba	6.67	26.67	20.01	53.35
	Hausa Fulani	-	13.33	-	13.33
	Igbo	-	13.33	6.67	20.00
	Edo	-	6.67	-	6.67
	Others	-	6.67	-	6.67
	TOTAL	6.67	66.70	26.68	100.00
Type Three 3-bedroom Abesan	Yoruba	23.88	44.78	7.46	76.26
	Hausa Fulani	-	2.99	-	2.99
	Igbo	-	8.96	1.49	10.40
	Edo	-	4.48	-	4.48
	Ibibio	-	1.49	-	1.49
	Kanuri	1.49	-	-	1.49
	Ebira-Nupe	-	1.49	-	1.49
	Others	-	1.49	-	1.49
	TOTAL	25.37	65.68	8.95	100.00
Type Four 3-bedroom Iba	Yoruba	-	13.33	6.67	20.00
	Igbo	20.00	40.00	13.33	73.33
	Edo	6.67	-	-	6.67
	TOTAL	26.67	53.33	20.00	100.00
Type Five 3-bedroom Dolphin	Yoruba	8.00	32.00	16.00	56.00
	Hausa Fulani	-	8.00	-	8.00
	Igbo	-	4.00	-	4.00
	Ijaw	-	4.00	-	4.00
	Edo	-	4.00	4.00	8.00
	Ibibio	4.00	-	-	4.00
	Kanuri	-	4.00	-	4.00
	Tiv	-	4.00	-	4.00
	Others	-	8.00	-	8.00
	TOTAL	12.00	68.00	20.00	100.00
Type Six 4 bedroom Ebute-Metta	Yoruba	2.86	22.88	2.86	28.60
	Hausa Fulani	2.86	5.72	-	8.58
	Igbo	14.30	25.74	2.86	2.86
	Ijaw	2.86	-	-	2.86
	Edo	2.86	5.72	-	8.58
	Ijaw	-	2.86	-	2.86
	Others	-	2.86	2.86	5.72
	TOTAL	25.74	66.70	8.58	100.00

This was achieved by grouping all the apartment occupants in each of the ethnic groups into three categories: (a) households that contain one or two occupants; (b) households that contain three to five occupants and (c) households that contain six or more

occupants. The occupants are interpreted as total number of adults or adult-equivalent that can be arranged in an LSDPC's multifamily apartment's sleeping rooms, according to combinations based on age, gender, conjugal status and kin relationships. This is extracted by reconciling the questionnaire data with CNOS specifications. The analysis for each of the four locations covered in this study is discussed below.

ABESAN ESTATE: As revealed in Table 1.0, 100% of all respondents in Type One (2-bedroom) apartments are Yoruba. Among the households investigated 77.79% consists of 3-5 occupants. Also, 16.67% of the households contain 1-2 occupants while 5.56% are occupied by six or more residents. The Yoruba group constitutes 76.26% of all the residents of Type Three (3-bedroom) apartments, Abesan. Six other ethnic groups found in this apartment type are Hausa-Fulani (2.99%), Igbo (10.40%), Edo (4.48%), Ibibio (1.49%). Of all these apartments, those containing 1-2 occupants were found among the Yoruba (23.88%) and Kanuri (1.49). Similarly, households containing six or more occupants were more likely to be found among the Yorubas (7.46%) and the Igbos (1.49%). Apartments that consist of 3-5 occupants were the most dominant, making up six out of the seven ethnic groups in Type Three (3-bedroom) category.

DOLPHIN II ESTATE: Table 1.0 also indicates that Type Two (2-bedroom) in this estate is inhabited mainly by the Yoruba (53.35%), Hausa-Fulani (13.33%), Igbo (20.00%) and Edo (6.67%). Of the four ethnic groups in this apartment type, households containing 1-2 occupants were all Yoruba and

constituted 6.67%. Similarly households containing six or more occupants were found among the Yoruba (20.01%) and Igbo (6.67%). On the contrary, respondents in apartments that consist of 3-5 occupants were found in all the four ethnic categories that occupy this apartment type. Moreover, this occupancy of 3-5 persons represents the highest for each of the four ethnic groups. The Yoruba ethnic group has the highest occupancy of 26.67%. Hausa-Fulani and Igbo have 13.33% each while Edo has 6.67%. The Type Five (3-bedroom) at Dolphin is occupied by eight ethnic groups and this represents the highest number in all the six apartment types investigated. The ethnic groups found in this apartment type are Yoruba (56%), Edo (8%), Hausa-Fulani (8%), Igbo (4%), Ijaw (4%), Ibibio (4%), Kanuri (4%) and Tiv (4%).

A similar level of crowding experience was found in both Type Two (2-bedroom) and Type Five (3-bedroom). Households containing 1-2 occupants are very few, with the Yoruba (8%) and Ibibio (4%). Also, households of six or more occupants are more likely to be found among the Yoruba (16%) and the Edo (4%). The highest proportion of residents belonging to each of the eight ethnic groups in this apartment type were households with 3-5 occupants.

IBA ESTATE: All the respondents from this estate belong to three ethnic groups namely Yoruba (20%), Igbo (73.33%) and Edo (6.67%) as given in Table 1.0. This is the only apartment type where households of Yoruba ethnic group were not found among households containing 1-2 occupants. Instead the Igbo (20%) and Edo (6.67%) dominate this

household crowding level. The study shows that the Edos were not found among the households with 3-5 occupants and six or more occupants. These occupancy levels were found among the Yoruba and Igbo. However, among the Igbo, households containing 3-5 occupants constituted 40% while households of six or more occupants constituted 13.33%.

EBUTE-METTA ESTATE: Table 1.0 shows that the respondents in this estate were Yoruba (8.58%), Igbo (2.86%), Ijaw (2.86%), Edo (8.58%), Tiv (2.86%). The Ijaws were only found in households containing 1-2 occupants, while the Tivs were only found in households containing 3-5 occupants. The Yoruba and Igbo were found among the three measures of crowding level, while Hausa-Fulani and Edo ethnic groups were mostly found in households containing 1-2 occupants and households containing 3-5 occupants.

Overall, households that harbour 3-5 occupants were highest among the six ethnic groups covered in Type Six (4- bedroom) apartment in Ebute-Metta.

Statistical validation of effect of ethnicity on household's crowding level

The effect of ethnicity on crowding level among residents of the six apartments was tested using chi-square technique. The results are shown in Table 2.0. The statistical level of significance for acceptance or rejection was set at 95% confidence interval. Thus P-Value (that is, T tabulated) represents the effect of ethnicity on crowding level. The decision rule is that at the same degree of freedom, if the P-Value is less than 0.05, the effect of ethnicity on dwelling density is classified as "significant".

Table 2: Effect of ethnicity on household's crowding

Apartment type	Chi-square Value X2	D.F.	P-Value (T- tabulated)	Remark
Type one (2-bedroom), Abesan	Constant			Ethnicity has
Type two (2-bedroom), Dolphin II	3.344	8	0.911	no significant
Type three (3-bedroom), Abesan;	10.678	14	0.711	effect on
Type four (3-bedroom), Iba	3.939	4	0.414	crowding level in all apartment
Type five (3-bedroom), Dolphin	13.151	16	0.662	types
Type six (4-bedroom), Ebute-Metta	10.427	12	0.579	

This implies that at the same degree of freedom, if the P-Value is higher than 0.05, the effect of ethnicity on dwelling density is classified as "not significant". Table 2.0

reveals that ethnicity had no significant effect on household's crowding level, at 95% confidence level.

Conclusion

The four ethnic groups of Yoruba, Igbo, Edo and Hausa Fulani constitute 91.4% of the total number of respondents. Therefore the cultural traits and life styles that are common and acceptable to these four dominant groups should be considered in the site planning and architectural designs of public housing providers in Lagos. Disaggregating the 176 household heads sampled across groups revealed that no one ethnic group consistently maintained higher or lower crowding level over the other groups. A chi-square test further revealed that ethnicity of household head did not have any significant effect on apartment crowding, at 95% confidence level.

Overall, an occupancy level of 3-5 persons per household represents the most occurring experience among the ethnic groups in all the apartments investigated. This result contrasts with findings from earlier research which highlighted differences among ethnic groups in their apparent acceptance of higher levels of crowding (Moller, Johnson, and Dardia, 2002; Statistics New Zealand 2013; Gillis, Richard and Hagan 1986; Ministry of Health 2014; Fuller, Edwards Vorakitphokatorn, and Sermsri 1993). Two postulations can be adduced. (1) LSDPC tends to propagate the idea of one-size-fits-all compact prototype apartments for nuclear households, (2) earlier finding that the dominant pattern of LSDPC's apartments was inclined towards Eurocentric lifestyles of nuclear family arrangement with not more than five adult-equivalent occupants (Iweka,

2013).

Even though ethnicity does not have any significant effect on household crowding, the design of LSDPC apartments should target meeting the spatial needs of persons from Yoruba, Edo, Ibo and Hausa-Fulani ethnic origin all of which constitute 91.4% of the total number of respondents. These four ethnic groups should be deliberately mixed to achieve ethnic and social integration. However, further research is required to validate these results before applying them to settlements in Lagos that are outside public housing estates.

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