

ANALYSIS OF URBANIZATION AND HOUSING DEPRIVATION IN THE CITY OF YENAGOA, BAYELSA STATE, NIGERIA

*GUNN, E.O.,¹ DEINNE, C.E.² AND BRAVE, J.²

¹Department of Urban and Regional Planning, Faculty of Environmental Sciences, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria

²Department of Geography and Environmental Management, Faculty of Social Sciences, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria

*Corresponding author: ovuokerie2001@gmail.com

Abstract

Africa is currently the fastest urbanizing continent in the world. The contemporary urban development in Africa is faced with multi-scale and diverse challenges one of which is housing deprivation. A cross-sectional survey research design involving a stratified sampling technique was utilized in this study. The indicators of housing deprivation were measured based on the headcount approach, the percentage of persons in the population living in dwellings without basic requirements such as the structural aspect of housing, the characteristics of roofs, walls, floor, access to quality water, electricity, sanitation, and habitability. An equal weight of 1 was assigned to each dimension in a nested fashion. The result reveals that (204) 52.7% of the respondents are males, while (183) 47.3% are females. Most of the respondents (292) 75.5% are aware of housing deprivation, while (281) 72.6% of respondents stated that there is a relationship between urbanization and housing deprivation in the city of Yenagoa. The result of the Pearson Product Moment Correlation reveals a coefficient of ($r = 0.660$), which means a strong positive relationship between urbanization and housing deprivation at a 0.01 significance level. This result implies that urbanization because of pull factors is one of the principal determinants of housing deprivation in Yenagoa. Lack of decent housing facilities contributed to the development of squatter settlements and with the ever-increasing rate of urbanization, it becomes imperative for the government to plan for the development of the housing sector and provide affordable low-cost housing estate, especially within Yenagoa city to redress the issue of poor housing.

Key Words: *Urbanization, Housing Deprivation, Headcount Approach, Stratified Sampling, Yenagoa City, Nigeria*

Introduction

There is no doubt that the world has increasingly become urban and the 20th century witnessed rapid and

unprecedented urbanization of the world's population. The global urban population increased from 13% in 1900 to 29% in 1950, 49% in 2005 and it is estimated that

by 2030, 60% of the global population will live in the cities. This trend is a reflection of the growth of urban population that increases from 220 million in 1900 to 732 million in 1950 and is expected that there will be 4.9 billion urban dwells by 2030. Almost all of this growth will be in lower income regions of Africa and Asia where urban population is likely to triple and in Asia will more than double. Of all the regions of the world, Asia and Africa are urbanizing faster and projected to become 56% and 64% urban, respectively by 2050. Three countries; Nigeria, India and China combined are expected to account for 37% of the projected growth of the world population between 2014 and 2050.

The global trend in urbanization is not the same in all parts of the world. Asia and Africa currently have the highest rates of urbanization. Mabogunje (1968) defined urbanization as the increase in the urban population and infrastructure compared with those in rural areas. It includes and results from far-reaching economic transformations at the national and international plan. It is the increased concentration of people in cities rather than in rural areas (UN-Habitat 2006).

Housing deprivation refers to the gap between what exists and what should exist or the number of dwelling units that would be required to provide adequate housing for every urban family without regard to its ability to pay for it. The basic needs of man are food, shelter, and clothing. To a large extent, the level of development intelligence, sophistication, and standard of living of any given community is usually determined by the quality of its houses. Housing provides the framework for meeting man's needs for shelter and constitutes the physical environment in which the family, society's basic unit

develops "A house must be a home, a resting place in which one tries to fulfill the fundamental purpose of human society, namely, a secure, rewarding, happy or at least a liveable life. In Addis Ababa, a report in 2008 found that 80% of the houses in the city were classed as slums due to the physical deterioration of its housing, overcrowding high density, poor access, and lack of infrastructure services (Tolon, 2008).

Literature showed that small-area deprivation measures have aimed to locate areas and the people living in these areas on a scale of material well-being (Carstairs and Morris,1991; Smith and Noble 2015), but more recently this has also extended to the physical environment (Richardson *et al.*, 2010). Similarly, Jiboye (2011) reported spontaneous and uncontrolled urbanization as a major challenge militating against adequate housing and increasing urban development. However, in studies on the historical development of Nigerian housing policies with special reference to housing the urban poor. Okoye (1990) posited that rapid urbanization and poor economic growth have compounded the problem of inadequate housing in Nigeria.

In common with many other developing countries, however, this pattern is changing. Nigeria has experienced over four decades of national planning, yet not much has been achieved as a result of some problem associated with the orientation and environmental in which development planning takes place in Nigeria. One of the major problems facing the planning of new cities in Nigeria is plan discipline (Taylor, 1988). The Nigerian society is undergoing both demographic transition (people are living longer) and epidemiological transition

(change in population health due to change in lifestyle mainly because of urbanization.

Urban area representing less than 13% of the land area of the country yet accommodate just about 44% of the total population. This increasing level of urbanization is producing the need for urban and regional planners in Nigeria to develop policies that can control and manage urban development appropriately. Nigerian cities as elsewhere within the sub-Saharan African region, lack adequate infrastructure for housing, sanitation water and open space amenities. Particularly worrisome is the pattern and speed of development of new urban cities and the continues increase of migration of people into the new emerging city centres, which often times are already over populated.

Researchers such as Aluko (2010), Jiboye (2011), Mukiibi (2011), Amao (2012), Potts (2012), and Ohwo (2014) have attempted to study urbanization and housing, but there is still dearth of research in urbanization and housing deprivation. Filling these empirical gaps is an addition to existing empirical literature and knowledge on the nexus between urbanization and housing. The foregoing issues raised some fundamental questions in this study.

The main research question is, what is the relationship between urbanization and housing deprivation? This study aimed at examining urbanization and housing deprivation among households in Yenagoa. The specific objective of this study is to examine the relationship between urbanization and housing in Yenagoa, while the hypothesis that there is no significant relationship between

urbanization and housing deprivation in Yenagoa was proposed for this study.

The Housing Needs Theory

The housing needs theory postulated by Ross in (1955) conceptualized housing needs and aspirations changes as households progress through different life cycle stages which generates different space requirements considered as the most important housing needs. The lack of adequate housing between the current and desired housing needs creates dissatisfaction with the current dwelling needs. Adequate housing meets the basic needs of the households including space requirements. This theory implies dwellings without the basic needs such as space, kitchen, bath and toilet facilities are considered dissatisfied or deprived. A housing unit without these basic space requirements within the city of Yenagoa is considered deprived. Aside this introductory section, this paper is structured into five sections.

Literature Review

Housing Deprivation

According to Kennedy and Carlow (2019), housing deprivation may be considered as one form of social unsustainability involving unmet basic needs which affect health, personal autonomy and ability to participate in society. It is experienced when living on low income and having problems with overcrowding, sub-standard dwelling quality, burdensome housing costs and rent/mortgage arrears. Households in this situation are also likely to have periodic/or on-going challenges paying for other essential goods such as food and energy and may be at risk of homelessness. Marsh, Gordon, Heslop and Pantazis,

(2000) stated that the physical and structural characteristics of housing affects people's quality of life. As such housing deprivation, which is understood not only as a lack of housing, but also those conditions in which a dwelling's physical characteristics do not meet the minimum standards due to the scarcity of economic resources of the affected persons which undermines people's wellbeing, increases poverty risk and social exclusion, and affects their health, among other things. Studies by other authors such as (Shaw, 2004; Walker, 2006; Navarro *et al.*, 2010 and Clair and Hughes 2019) stated that with regard to moisture problems and mold, a straight line could be drawn pointing to headaches, and the onset of wheezing symptoms and other respiratory problems. Moreover, Strachan and Sanders (1989) revealed that damp conditions in housing are a risk factor in the development of allergies. Persons living in housing that suffers from severe material deprivation increases the probability by 70% -140% and the individuals feel they are in poor health. In the same vein, (Mulder, 2007; Burgard *et al.*, 2012; Cannuscio *et al.*, 2012) posited that housing deprivation such as poor quality dwelling, unaffordability and insecurity have been linked to a range of social problems such as lower quality of life and wellbeing; poor physical and mental health, especially among those living in accommodation which is damp or mouldy (Bentley *et al.*, 2011 Rollins *et al.*, 2012; Webb *et al.*, 2013; Clark and Keams, 2012; Marmot, 2015; Reeves *et al.*, 2016).

Historically, three standards or measures of poor housing have been used. Inadequate structural, amenities and space in relation to the numbers of users.

According to Tsui (2002), conceptualizing deprivation measurement involves two steps: The aggregation of data of different goods or services or well-being indicators into a single index and identification of the deprived according to established norm. Although, there is no consensus on how to define the weighing scheme. Alkire *et al.* (2015) stated that some authors attribute equal weights to different welfare dimension in a nested fashion, while (Decancq and Lugo, 2013) attributed different weights according to economic criteria or considerations. In development studies, measurement of housing deprivation or housing poverty is marred by complex and different weighing schemes. Hence, in this study, the indicators of housing deprivation were measured based on headcount approach (Alkire *et al.*, 2015; EU Statistics, 2023), while equal weights of 1 was assigned to each dimension in a nested manner.

Study Area

The study area of this study is Yenegoa, which is the capital city of Bayelsa state. Yenegoa happened to be one of the confluence towns in Bayelsa State. It is located on latitude 4°15' north latitude 5°53' south of the equator and longitudes 5°22' west and 6°15' East of the Greenwich Meridian. Yenegoa latitudinal location allows it to enjoy a hot humid climate condition with two distinct seasons namely, the wet and dry seasons. It has a longer wet season (usually between April to October, being seven months) them the dry season (between November to March). This does not do away with the even distribution of rainfall as the area belongs to the equatorial region. The long wet season is however been moderated by the short dry sun popularly known as the "August Break"

which more technically known as the “little dry season” (Tamuno 1996). The temperature conditions in Yenagoa are always in the neighbourhood of $30^{\circ}\text{C}\pm 3$. Relative humidity varies between 65% and 85% or more depending on the season. The city of Yenagoa is on a relatively flat plain. Its average height above sea level is less than 15m and in most places it is

between 12m and 13m respectively (Oyegun, 1999). The popular dendrite drainage pattern experience in most deltaic regions is what is obtainable in Yenagoa and its environs. The whole length of the emerging city has been drained by the Epie Creek which is a tributary of the river at the southern end of the city (Figure 1).

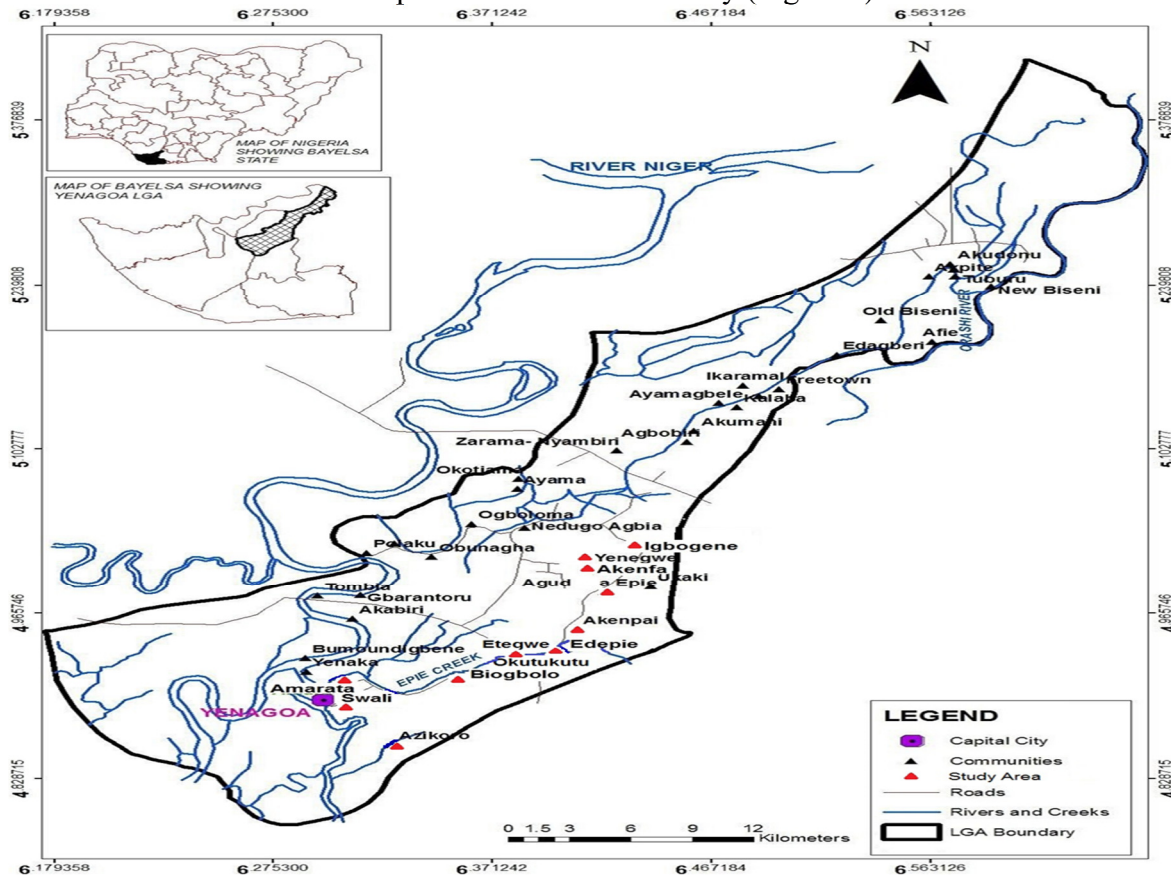


Fig. 1: Yenagoa City

Source: Office of the Surveyor-General of Bayelsa State (2023)

Methodology

Analysis of Urbanization and Housing Deprivation in the City of Yenagoa.....Gunn et al.
 A CROSS-SECTIONAL SURVEY RESEARCH design involving a systemic sampling technique was utilized after the sampling interval was determined statistically. The structured questionnaire divided into section A: demographic characteristics, section: housing and housing deprivation,

and section C: implications of housing households in Yenagoa.

Sample Size

The sample size for this study was statistically determined from the population of Yenagoa metropolis using Taro Yamane (1967).

The formula is stated thus: $n = N / (1 + N(e^2))$
 $88,781 / 1 + 88,781 \times (0.05)^2$
 $88,781 / 1 + 88,781 \times (0.0025)$
 $88,781 / 222.9525$
 398.2 approximately 400
 A total of 400 copies of questionnaires were administered, while 387 questionnaires were retrieved with a response rate of 96.75%.

The 1991 population was utilized because it has data for the communities at disaggregate level. The population projection of 2.56% per annum (3%) was used to project the 1991 population to 2023 (32 years) based on (NPC, 2021).
 $P_j = P_i (1 + r)^t$
 $P_j = p_i (1 + 0.03)^{32}$

Table 1: Projected population of selected settlements

Selected Settlements	1991 Population	2023 Population
Igbogene	3,536	9,105.49
Etegwe/Okutukutu	1,690	4,351.75
Agudama	3,002	7,730.15
Opolo	3,731	9,607.33
Kpansia	3,714	9,563.55
Yenezue-Epie	1,075	2,768.13
Okaka	2,931	7,547.33
Amarata	3,556	9,156.7
Swali	2,520	6,489.0
Yenagoa	8,723	22,461.73
Total	34,478	88,781.14

Source: Authors' Computation from National Population Census (NPC, 1991)

Sampling Technique

A stratified sampling technique involving 4 stages was utilized. In the first stage, Bayelsa state was purposively selected due to problems of increased urbanization and demand for housing, and housing types available. In the second stage, the city of Yenagoa designed to cover a radius of 15km in all direction, however, urbanization and urban sprawl has gone beyond this estimated 15km radius and stretched from Igbogene to Swali. In the third stage, using random sampling technique, 10 out of the 21 communities were selected for this study based on the population size of the communities, increased urbanization and demand for housing. The selected communities include Swali, Yenagoa,

Okaka, Kpansia, Biogbolo, Opolo, Etegwe, Agudama-Epie, Okukukutu and Igbogene. These communities therefore constituted the primary sampling units (PSU) of this study. In the fourth stage, the structured questionnaire was administered systematically to heads of households or any member of the household who was above the age of 18 at every 10th house after the first house was randomly determined along the major streets of selected communities in Yenagoa.

Method of Data Analysis

Research Hypothesis

The hypothesis which states that there is no significant relationship between urbanization and housing deprivation in Yenagoa was analyzed using Pearson Product Moment Correlation analysis

(PPMC) which is a parametric method utilized when the sample size is statistically large, normally distributed and variables are measured on ratio or interval scale. Correlation does not imply dependency but emphasizes co-variation of the variables, the degree to which two or more variables correlate, the strength and direction of co-variation. The formula is expressed as follows:

$$R = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

Measurement of Deprivation Dimensions, Indicators and Items

The common practice is to choose a set of structural characteristics of the dwelling

and count the number of housing inadequacies to measure the incidence of deprivation (Amore *et al.*, 2013). The indicators of housing deprivation was measured in this study based on headcount approach (frequency or percentage of persons in the population living in dwellings without basic requirements) such as the structural aspect of housing, the characteristics of roofs, walls, floor, kitchen, access to quality water, distance to water source, electricity, sanitation, habitability, security of tenure and type of dwelling (housing).are presented in Table 2. An equal weight of 1 was assigned to each dimension in a nested fashion (Alkire *et al.*, 2015).

Table 2: Measurements and Dimensions of Housing Deprivation

Dimension	Variable	Constructed Categories	Description/Unit of Measurements/Threshold
Infrastructure/ Building Materials	Wall material	Mud, bricks and woods Concrete/Blocks	The percentage of persons in the total population living in dwelling with damp walls, leaking roof, damp floors/foundation.
	Roof material	Mud or wood with mud Fired bricks or concrete Roofing sheets	
	Floor material	Earth Concrete/Tile	
	Kitchen type	Cooking done in the open Kitchen part of the room inside the dwelling Kitchen is in a separate room outside the dwelling Kitchen in a separate room inside the dwelling	
Habitability	Number of rooms	If there is no overcrowding; 0 otherwise	The percentage of persons with shared or overcrowded rooms
Services	Sanitation	1 if there is a pit latrine with slab or covered, or a flush toilet; 0 otherwise	The percentage of persons in the total population living in a dwelling without bath, shower, indoor flushing toilet for sole use in the household.

Security of Tenure	Water	1 if there is piped water, hand pumped water or covered well; 0 otherwise	The percentage of population without access to piped water, hand pumped water or covered well.
	Electricity/Lighting	1 if there is access to electricity in the households, from any source; 0 otherwise.	Households without access to electricity from electric grid, generator, solar panel, or a battery.
	Dwelling Type	Temporary shelter/shack Shared house Single rooms family house.	The percentage of population living in temporary shelters/ shared dwellings and single rooms family house.
	Security of tenure	1. Tenant 2. Owner	The percentage of the population living in rented apartments.

Source: Adapted from Balcazar and Redaelli (2017) and EU Statistics on Housing Deprivation (2022)

Results

Socio-Economic Characteristic of Respondent

This section presents the socio-economic characteristics of the respondents followed by test of hypothesis and discussion of results and findings.

Age Distribution of Respondents

Table 3 shows that majority of this respondents fall between the age bracket of 31 – 40 years (22.7%). 20.4 % of the respondents fall between the ages of 41–

50 years, 16.3% of the respondents fall between the ages of 51 – 60 years, 15.8% of respondents fall between the ages of 21 – 30 years, 12.7% of respondents fall between the ages of 61 – 70 years, 11.1% of respondents fall between the ages of less than 20 years, while only 1.0% of respondents are more than 70 years of age. The significance of this statistics is that the respondent are adults who are aware of the housing needs and the implications of deprivation in Yenagoa.

Table 3: Age of Respondents

Age Distribution	Frequency	Percent
<20 Years	43	11.1
21-30 Years	61	15.8
31-40 Years	88	22.7
41-50 Years	79	20.4
51-60 Years	63	16.3
61-70 Years	49	12.7
>70 Years	4	1.0
Total	387	100.0

Gender of Respondents

Table 4 reveals that (204) 52.7% of the respondents are males, while (183) 47.3%

are females. This shows that a good number of the respondents surveyed are male heads of the households.

Table 4: Gender of Head of Households

Sex	Frequency	Percent
Male	204	52.7
Female	183	47.3
Total	387	100.0

Educational Status of Respondents

Table 5 reveals that (117)30.2 % of the respondents had secondary education, followed by (112)28.9% of respondents who had tertiary education, (90)23.3% of

respondents had primary education, while (68)17.6% had no formal education. From this statistics there are more respondents with secondary education in the study area.

Table 5: Level of Education of Respondents

Education	Frequency	Percent
No Formal Education	68	17.6
Primary Education	90	23.3
Secondary Education	117	30.2
Tertiary Education	112	28.9
Total	387	100.0

Primary Economic Activity of Respondents

Table 6 shows that majority of respondents (161) representing 41.6% are involved in business/trade activities, while (79)20.4% of respondents are

unemployed, (75) 19.4% of respondents are civil servant, (34)8.8% of respondent are retirees, (25)6.5% of respondents are involved in farming and (13) 3.4% of respondents are involved in fishing activities.

Table 6: Economic Activities of Respondents

	Frequency	Percent
Fishing	13	3.4
Farming	25	6.5
Civil Service	75	19.4
Business/Trade	161	41.6
Unemployed	79	20.4
Retiree	34	8.8
Total	387	100.0

Income Level of Respondents

Table 7 shows that majority of respondents (128) 33.1% earned monthly income of less than ₦50,000, while (105)27.1% earned between ₦ 51,000 –

₦100,000, (58)15.0% earned between ₦101,000 – ₦150,000, (56)14.5% of respondents earned between ₦151,000 – ₦ 200,000, while (40) 10.3% of respondents earned more than ₦200,000.

Table 7: Income Level of Respondents (₹)

	Frequency	Percent
<₹50,000.00	128	33.1
₹51,000.00-₹100,000.00	105	27.1
₹101,000.00-₹150,000.00	58	15.0
₹151,000.00-₹200,000.00	56	14.5
>₹200,000.00	40	10.3
Total	387	100.0

Nature of Tenure/Ownership

The information in Table 8 reveals that (110) 28.4% of respondents are owner occupiers, while majority of respondents

(277) representing 71.6% are renter/shared occupiers, it is obvious a lot of people rent houses for accommodation purposes.

Table 8: Nature of Tenure/Ownership

Tenure	Frequency	Percent
Owner Occupier	110	28.4
Renter/Sharer Occupier	277	71.6
Total	387	100.0

Main Source of Water

Table 9 shows that (66) 17.1% of the respondents' source of water is piped water, (162) 41.9% got their water from

borehole, (113) 29.2% got their water through the services of water vendors, (23) 5.9% got their water from well and river/stream respectively.

Table 9: Main source of water

	Frequency	Percent
Piped Water	66	17.1
Borehole	162	41.9
Water Vendor	113	29.2
Well	23	5.9
River/Stream	23	5.9
Total	387	100.0

Types of Toilet Facilities

Table 10 shows that a significant proportion of the respondents (168) 43.4% used water closet, followed by (162)

41.9% who used pit latrine, (31)8.0% used the bush, while (26) 6.7% used the rivers/streams as means of convenience.

Table 10: Type of Toilet Facility

Toilet Types	Frequency	Percent
Water Closet	168	43.4
Pit Latrine	162	41.9
Bush	31	8.0
River/Stream	26	6.7
Total	387	100.0

Knowledge of Housing Deprivation

Information in Table 11 shows that (292)75.5% of respondents are aware of

housing deprivation, while (95)24.5% are not aware of housing deprivation.

Table 11: Knowledge on Housing Development

Knowledge	Frequency	Percent
Yes	292	75.5
No	95	24.5
Total	387	100.0

Causes of Housing Deprivation

Table 12 shows that (94) respondents representing 24.3 % asserted that housing deprivation is caused by urbanization, (67) 17.3% of respondents said high rent/income level are also factors of housing deprivation, (47)12.1% of respondents identified low quality of housing as a cause of housing deprivation, (46)11.9% of respondents specified

unemployment as a factor of housing deprivation, (45)11.6% of respondents identified inadequate housing and limited space for habitation as factors of housing deprivation, while (39) 10.1% of respondent said over crowding is the cause of housing deprivation and (49) 12.7% of respondents identified insecurity of tenure as a major cause of housing deprivation in Yenagoa.

Table 12: Causes of Housing Deprivation

	Frequency	Percent
Urbanization	94	24.3
High rent/income level	67	17.3
Low quality of housing	47	12.1
Unemployment	46	11.9
Inadequate housing and space for habitation	45	11.6
Overcrowding	39	10.1
Insecure housing/No security of tenure	49	12.7
Total	387	100.0

Structural Characteristics of Housing Deprivation

Table 13 shows that (78) respondents representing 20.2% identified leaking roof as a feature of deprived house, (65)16.8% of respondents identified damp walls/floors/foundations or rot in window frames or floors as features of housing deprivation, (112)28.9% of respondents

identified lack of bath or shower in the dwelling, (82)21.2% of respondents identified lack of indoor flushing toilet for the sole use of the household, while (50)12.9% of respondents identified poor lighting system which can also be termed as where the dwelling is too dark for comfort or habitation as features of housing deprivation.

Table 13: Characteristics of a Deprived Housing

	Frequency	Percent
Leaking roof	78	20.2
Damp walls/floors/foundations, or rot in window frames or floors	65	16.8
No bath or shower in the dwelling	112	28.9
No indoor flushing toilet for the sole use of the household	82	21.2
Dwelling too dark	50	12.9
Total	387	100.0

Relationship between Urbanization and Housing Deprivation

Information in Table 14 shows that (281) respondents representing 72.6% stated that there is a relationship

urbanization and housing deprivation, while (106)27.4% stated that there is no relationship between urbanization and housing situation in Yenagoa.

Table 14: Relationship between urbanization and housing deprivation

		Frequency	Percent
Valid	Yes	281	72.6
	No	106	27.4
	Total	387	100.0

Effects of Urbanization on Housing Situation

Table 15 shows that (81) 20.9% of the respondents identified high rent as an effect of urbanization on housing, (84)21.7% identified poor housing as an effect of urbanization on housing, (55)14.2% of respondents identified poor

sanitation as an effect of urbanization on housing, (42) 10.9% of respondent identified overcrowding in dwelling as an effect of urbanization on housing, while (56)13.7% of respondents identified physical planning problems as an effect of urbanization on housing.

Table 15: Effects of urbanization on housing

	Frequency	Percent
High rent	81	20.9
Poor housing development	84	21.7
Poor sanitation	55	14.2
High crimes in neighbourhoods	72	18.6
Overcrowding of dwellings	42	10.9
Physical planning problems	56	13.7
Total	387	100.0

Test of Hypotheses

The hypothesis which states that there is no significant relationship between urbanization and housing in Yenagoa was

analyzed using Pearson Product Moment Correlation Analysis. The correlation result of $r = 0.660$ reveals a strong positive relationship between urbanization and

housing deprivation at 0.01 significance level. This result implies that urbanization is one of the principal determinants of

housing deprivation in Yenagoa (Table 16).

Table 16: Correlation of Urbanization and Housing Deprivation

		Urbanization	Housing Deprivation
Urbanization	Pearson Correlation	1	0.660
	Sig. (2-tailed)		0.01
	N	387	387
Housing Deprivation	Pearson Correlation	0.660	1
	Sig. (2-tailed)	0.01	
	N	387	387

**Correlation is significant at the 0.01 level (2-tailed)

Test of Validity and Reliability
Chronbach Alpha Test

Table 17 and Table 18 present the result of the reliability test for the two variables urbanization and housing deprivation using Chronbach Alpha which reveals a (0.958) or 95% consistent reliability which implies that the indicators of urbanization and housing

deprivation utilized in this study are reliable. In the same vein, the result of the reliability test on all the questionnaire items reveals a (0.978) or 97% consistent reliability. This result implies that the indicators adopted adequately measured urbanization and housing deprivation in Yenagoa.

Table 17: Reliability Test for urbanization and housing deprivation

Chronbach's Alpha	Number of Items
0.958	2

Table 18: Reliability Test for all variables

Chronbach's Alpha	Number of Items
0.978	31

Conclusion

This study focused on the twin problems of urbanization and housing deprivation within the city of Yenagoa. The findings revealed that population is on the increase due to pull factor which in turn give rises to urbanization is a major challenge to housing deprivation. A good number of the respondents surveyed (78) 20.2% identified leaking roof as a feature of housing deprivation, (65) 16.8% identified damp walls/floors or rot in window frames or floors as features of

housing deprivation. (112) 28.9% identified lack of bath or shower in a dwelling, (82) 21.2% identified lack of indoor flushing toilet for sole use of the household and (50) 12.9% identified poor lighting system as characteristics of housing deprivation in Yenagoa metropolis. This finding corroborates the research of Jiboye (2011) that urbanization is a major challenge of adequate housing. This study also showed that the lack of decent housing facilities as one of the factors that contributes to the

development of slums and squatter settlements in many Nigerian cities like Yenagoa. Therefore, we can conclude that there is also a relationship between urbanization, and housing deprivation in the city of Yenagoa. This study recommends plan discipline, and due to the ever-increasing rate of urbanization, there is necessity for government to construct affordable low-cost housing estates in the city of Yenagoa to improve housing condition and deprivation experienced.

References

- Akinyode, B.F. and Taref, H.K. (2014). Bridging the gap between housing demand and housing supply in Nigeria Urban Centres: Review of Government Intervention So Far”, *British Journal of Arts and Social Sciences*, 18(2): 2046-9578.
- Aluko, O.E. (2010). “The impact of urbanization on housing development: The Lagos experience, Nigeria.” *Ethiopian Journal of Environmental Studies and Management*, 3: 64-74.
- Amao, F.L. (2012). Urbanization, housing quality and environmental degeneration in Nigeria, *Journal of Geography and Regional Planning*. 5(16): 422-429.
- Amao, F.L. and Iesanmi A.O (2013). “Housing delivery in Nigeria: Repackaging for sustainable development”, *International Journal of African and Asian Studies*”, *An Open Access International Journal*, volume 1, Available from <http://www.cebe.heacademy.ac.uk/transactions/index.php>.
- Burgard, S.A., Seefeldt, K.S. and Zelner, S. (2012) ‘Housing Instability and Health: Findings from the Michigan Recession and Recovery Study’, *Social Science and Medicine* 75: 2215–2224.
- Cannuscio, C.C., Alley, D.E., Pagán, J.A., Soldo, B., Krasny, S. and Shardell, M. (2012). ‘Housing Strain, Mortgage Foreclosure, and Health’, *Nursing Outlook*, 60: 134–142.
- Clair, A. and Hughes, A. (2019). Housing and Health: New Evidence Using Biomarker Data. *J. Epidemiol. Community Health*, 73: 256–262.
- Decancq, K. and Lugo, M.A. (2013). Weights in multidimensional indices of wellbeing: An overview. *Econometric Reviews*, 32(1): 7-34.
- Jiboye, A.D. (2011). Urbanization challenges and housing delivery in Nigeria: the need for an effective policy framework for sustainable development”, *International Review of Social Science and Humanities*, 2(1): 176-185.
- Kennedy, P. and Carlow, I. (2019). Severe housing deprivation: Addressing the social sustainability challenge in the EU. UCD Geary Institute for Public Policy discussion paper series. 1-35.
- Marsh, A., Gordon, D., Heslop, P. and Pantazis, C. (2000). Housing Deprivation and Health: A Longitudinal Analysis. *Hous. Stud.* 15: 411–428.
- Mulder, C. (2007). The Family Context and Residential Choice: A Challenge for New Research, *Population, Space and Place* 13: 265–278.
- Navarro, C., Ayala, L. and Labeaga, J.M. (2010). Housing Deprivation and Health Status: Evidence from Spain. *Empir. Econ.*, 38: 555–582.

- Shaw, M., Strachan, D.P. and Sanders, C.H. (1989). Damp Housing and Childhood Asthma; Respiratory Effects of Indoor Air Temperature and Relative Humidity. *J. Epidemiol. Community Health*, 43: 7–14.
- Tsui, K.Y. (2002). Multidimensional poverty indices. *Social Choice and Welfare*, 19(1): 69-93.
- Walker, J.J., Mitchell, R., Platt, S.D., Petticrew, M.P. and Hopton, J. (2006). Does Usage of Domestic Heating Influence Internal Environmental Conditions and Health? *Eur. J. Public Health*, 16: 463–469.