# RESIDUAL APPROACH TO MEASUREMENT OF HOUSING AFFORDABILITY AMONG LOW INCOME CIVIL SERVANTS IN LAGOS STATE, NIGERIA

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## ABSTRACT

*Housing is a major indicator of the living standard of people. Inadequate housing has been a challenge particularly to Nigerian low-income earners. While studies have mostly been based on the measurements of housing affordability using the ratio approach, that which captures household expenses on non-housing needs has not been given adequate attention in literature. This study therefore is designed to examine the extent to which low-income civil servants in Lagos State, Nigeria have been able to afford housing using the residual income approach. The study is hinged on the consumption and shelter-poverty theories. A case study research design was utilized while both primary and secondary data were sourced. Multi-stage sampling technique was adopted involving a purposive selection of 116 respondents from 8 (out of the 16) ministries with the highest representation of low-income civil servants in the state, for the administration of questionnaires. Analysis of data was done using descriptive statistics and Residual Income Analysis. The result showed that the high cost incurred on housing-related expenses, by an average low-income civil servant that were solely dependent on their monthly salary, ultimately led to their inability to meet up with their non-housing related expenses resulting in housing induced poverty. The study concluded that low-income civil servants in the state were cost burdened and recommends an increment in the monthly minimum wage.*

***Keywords:*** *Housing Affordability, Household Income, Housing and Non-Housing Expenditure, Residual Income Measure, Lagos State*

## INTRODUCTION/STATEMENT OF PROBLEM

Housing affordability has gained widespread attention in most nations of the world as it is estimated that by the year 2025, approximately1.6 billion people in the world, representing an additional 106 million low-income households will be facing the problem of lack of access to affordable decent accommodation (Woetzel et al., 2014; Oyo-Ita, 2017). Studies have established that a large number of households across the world are housing cost burdened and might be in jeopardy of inability to afford other basic needs of life and at the extreme become homeless (Revington, 2015; Kneebone & Wilkins, 2016; Adeleke & Olaleye, 2020). Particularly in Nigeria, low-income households are increasingly unable to afford housing in majority of the states in the country (Aliyu et al., 2011; Anthony et al., 2016; Adeleke & Olaleye, 2020). As at 2012, it was estimated that an annual average of 800,000 housing units needed to be constructed to address the national deficit of about 17million against the annual production of 100,000units (Centre for Affordable Housing Finance in Africa (CAHF), 2016). Efforts to make housing more affordable by the government include: rent control, site and service scheme, low cost housing scheme, partnering with private developers, amongst others. These efforts are yet to yield the desired results due to increasing cost of construction, inadequate supply of houses relative to demand, high rents of available properties and rising cost of living against the limited resources at the disposal of an average low-income earners in the society at large and within the civil service.

Various categories of workers are employed by the government in the nation's civil service namely: low-, middle- and high-income earners on salary grade levels 1-6, 7-10 and 12-17 respectively (Ngex, 2013). Being the least paid, majority of low-income households are unable to find housing affordable with dire consequences on their standard of living such as inability to afford basic necessities of life namely food, clothing, access to health facilities among others (Obi & Ubani, 2014; Anthony et al., 2016; Adeleke & Olaleye, 2020).

Literature abounds on the problems of housing affordability among low-income earners. Norazmawati and Muhammad (2008) investigated indicator of housing affordability and variables that affect the ability of low-income earners to afford same in Kuala Lumpur in Malaysia. The study identified household income and expenditure as the two main indicators and confirmed that individuals are said to afford housing if their income is adequate for their housing expense and other expenditures. Osman et al., (2017) examined housing affordability in the state of Johor using datasets over a two-year period, 2012-2014 on the basis of price-income ratio. The study concluded that housing was generally affordable in all the districts of the state. Yap and Ng (2018) explored the housing affordability in Malaysia in the context of perception, price ranges, influencing factors and policies through the adoption of qualitative approach. Findings revealed that the supply of affordable housing is grossly inadequate and has constituted a grave concern for the average citizen of the nation. Adeleke and Olaleye (2020) examined the capability of low-income civil servants in Lagos State, Nigeria to afford housing. The study was based on the 30 percent rule of thumb ratio. Findings revealed that housing was not affordable to the low-income earners in the civil service.

Notwithstanding the various contributions of the aforementioned to knowledge, and while it is recognised that housing affordability is a local market problem, varying from place to place and from one category of people to the other (Adeleke & Olaleye, 2020), diversified for towns, regions, and income levels (Napoli, 2017), indicators adopted in the measurement is also of paramount importance. However, the issue of indicators to measure affordability have not been adequately explored in the Nigerian context. The focus of this study therefore is to examine the housing affordability of low-income civil servants in Lagos, Lagos state, Nigeria on the basis of the residual measure. This is of utmost importance to the nation's housing policy formulation.

**The Study Area**

Lagos is the most populous city in Nigeria and the commercial nerve-centre as it contains over half of the country's industrial investments (My Destination, 2015). Aside from being the largest city in Africa (World Population Review, 2019), it is the second and seventh fastest-growing city in Africa and the world respectively and equally the largest city in the sub-Saharan Africa. The capital of Lagos state is Ikeja. The latitude and longitude coordinates of the state are 6° 27' 55.5192'' N and 3° 24' 23.2128'' E respectively. The state was the capital of Nigeria until it was replaced in 1991 by Abuja. It had a population of about 21million inhabitants in 2016 (My Destination, 2015). Metropolitan Lagos constitutes 37 percent of its land area, containing over 85 percent of its population (Zodml, 2013). There are twenty local government areas (LGAs) in the state (Fig. 1), thirty-seven local council development areas (LCDAs) and a secretariat which is situated at Alausa, Ikeja, the seat of the government agencies and ministries (Zodml, 2013).

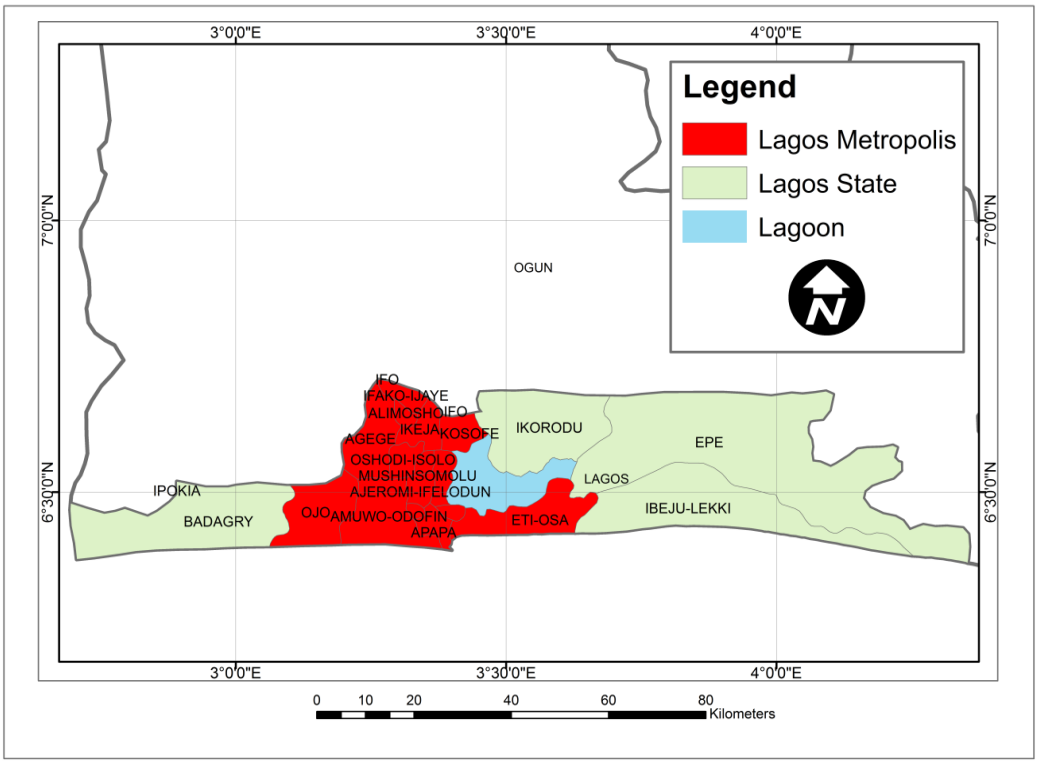


Fig 1: Lagos Metropolis in the context of Lagos State
Source: Cooperative Information Network (COPINE) (2016)

**Theoretical Framework: Keynes Psychological Law of Consumption and the Shelter Poverty Theory**

This article is anchored on Keynes Psychological Law of Consumption and the theory of Shelter-Poverty. Keynes Psychological Law of Consumption was propounded by the British economist John Maynard Keynes in 1936. It states that the current level of income of an individual or household determines their level of consumption. It based consumption on both subjective and objective factors as determinants of consumption expenditure. The theory is centred on the assumption that the current income dictates individuals and society's consumption spending. Thus, as income increases, consumption increases. In other words, household spending on housing and non-housing related expenditures in a particular period is a function of their income at that given period.

The term 'Shelter Poverty' was introduced by Michael Stone in 1993 in his research where he operationalized the residual approach to housing affordability using the 1981 United States Bureau of Labor Statistics (BLS) non-housing components (McConnell, 2012). The theory states that expenditure on housing accounts for the largest and least flexible expenses on the budget of every household at the detriment of non-housing spending. The metric established that the high cost incurred on housing may ultimately lead to household's inability to afford non-housing related goods and services resulting in housing induced poverty. It rests on the assumption that it should be possible to establish a household's minimum level of non-housing related spending and maximum amount to be spent on housing in such a manner that it could be related to the standard 30% ratio benchmark although not a fixed percentage of income (Herbert, Henmann & McCue, 2018). Another assumption of the shelter poverty concept is the fact that individual household

characteristics namely size and composition must be known alongside their precise household costs.

According to Stone (2006), affordability is "the challenge each household faces in balancing the cost of its actual or potential housing on one hand, and its non-housing expenditures on the other, within the constraints of its income". In essence therefore, consumption of housing must not be at the detriment of non-housing goods within the confine of available disposable income.

Studies have been conducted on the relationship between housing expenditures and non-housing expenditures relative to disposable income of households. According to Yates and Whelan's (2009) study on housing wealth and consumer spending, there is a positive correlation between housing price and the consumption pattern of households. According to Arlington County Affordable Housing Study (2014), a number of low-income households are forced to spend a huge proportion of their income on housing to the detriment of non-housing goods such as food, transportation, utilities and other necessities. The author reported that families are confronted by budget crisis in the course of meeting up with housing costs.

In the same vein, a study was conducted by Atalay et al. (2017) on housing prices, household debt and household consumption from the perspective of house values or housing wealth. Findings revealed that among the factors that drive household consumption is the price of housing. Haas et al. (2006), observed that while housing expenditures constitute more than half of working household' expenditures, it is just one out of many significant needs they have to budget for. In other words, when the bulk of household income is expended on housing, there is likelihood of less resources to cater for other family needs.

As a result of the foregoing, there is a consensus in literature that increase in spending on housing impact consumption of other goods and services. To this effect, this study intends to relate the households' consumption of housing and non-housing related goods and services to their disposable income in order to measure their overall ability to balance same within the limit of available household income.

**Literature Review**

Concern about housing affordability have been on the rise in both the developing and developed nations (Rangel et al., 2017). This is attributable to the fact that the capacity of households to afford both the cost of housing and basic necessities of life that are crucial to their wellbeing seem to have worsened over the years (Herbert et al., 2018). In order to operationalize housing affordability, the rule of thumb, housing cost to income ratio, that a household should not spend more than 30% of their disposable income have widely been embraced (Bieri, 2012; Adeleke & Olaleye, 2020; Herbert et al., 2018).

While relating housing affordability to housing cost to income ratio which may not adequately reveal the degree of deprivation a household experiences for other non-housing necessities after paying for housing (Kutty, 2005; Stone, 2006), authors such as Kazakevitch et al. (2013) and Hertz (2015) have advocated for residual income-based measure. According to Department of Communities and Local Government (2010), affordability analysis, apart from requiring a normative judgment about the cost of housing, must equally put into cognizance the income that must be left over for non-housing basic essentials. The residual approach is sufficiently robust in capturing the remaining income that is left after taking care of housing as it considers households' ability to pay for non-housing needs, being capability based (McConnell, 2012). The residual approach also provides insights into housing market dynamics as well as households' income adequacy (Australian Housing and Urban Research Institute (AHURI), 2012).

In order to check the decline in housing affordability, it is essential to measure its level holistically in real terms by incorporating households' expenditure on housing and non-housing related goods and services such as decent food, adequate clothing, childcare, transportation,

healthcare, taxes, incidental expenses and reasonable savings amongst other basic necessities that makes a person or household live a relatively comfortable life, within the context of available income. Thus, a household that is unable to afford non-shelter related goods after paying for housing is viewed as the one facing "shelter poverty" (Stone, 1993, 2006) or suffering from housing induced poverty (Kutty, 2005), resulting from high expenditure on housing. Such a household is being confronted by the problem of affordability when its income falls below the minimum socially acceptable standard after deducting housing cost. According to Yang and Shen (2008), social minimum is the amount of resources that a household require in order to lead healthy and productive lives within their society. Thus, the residual method measures the extent to which households' income is sufficient in meeting the minimum standard of basic non-housing needs following the deduction of housing expenses.

Prominent studies that have been conducted on the residual measure and related issues dates back to over a decade. Past and recent studies include: Stone (2004); Yates (2007); Tang (2009); Stone et al. (2011); AHURI (2012); Henman and Jones (2012); McConnell (2012); Joseph Rowntree Foundation (JRF) (2013); Napoli (2017); Herbert et al. (2018) among others. Stone (2004) examined housing affordability in the United States over a three decade-period on the basis of the residual approach. The study confirmed over 70 percent increase in shelter-poor households since 1970. Also, compared against households with one or two adults, the rate of shelter-poverty is higher among households with children and larger households comprising three or more people. Further, almost half of renter families are victims of low income and shelter poverty.

Yates (2007) analyzed the factors that contribute to financial stress that results from households' inability to meet their housing and non-housing needs. Findings revealed that the incidence of housing affordability and financial stress is among low-income groups, youths, households with just one adult and tenants. Younger households (aged less than 25 and between 25 and 34 years old) have a significant probability of being prone to housing stress relative to older households despite earning equal income. Low-income earners have problems associated with the volume of their earning which is inadequate. The paper suggests that housing and financial stress is a function of the socio-economic characteristics of a household.

Tang (2009) examined the residual income measures adopted in the investigations of the impact of housing association rents on household's capacities to afford an adequate standard of living in the United Kingdom. From the findings of the analysis of the residual income between household types, affordability problems is most likely to be experienced by families with children, single person household and those below 60 years old (non-elderly adults). The author asserted that these groups have residual income that is below the minimum standard.

Stone, Burke and Ralston (2011) used the residual income approach to calculate the maximum mortgage costs on a weekly basis, affordable for households earning above $30,000 per annum. The study utilized findings for households earning single income and one with two children. Findings revealed a considerable difference in purchasing affordability of the two sets of households. Given the higher non-housing related expenditure of the couple with the two children, they have less mortgage capacity than the single person household.

In a succeeding study, Burke, Stone and Ralston (2011) and AHURI (2012) explored the use of the residual method in the calculation of housing affordability distribution in Australia households on the basis of their tenure, type, size, income, among other variables. Similar to their earlier paper, the study modelled two case study households namely: single income and one with two children. The model revealed that households with children had insufficient residual income for housing cost, due to huge expenditures on other goods and services. Thus, they were considered to have an affordability problem. The model also suggested severe affordability problems among renters and lower income households due to inadequate income and

government support payments. The paper recommended the need for more fund and rent-setting reform.

Henman and Jones (2012) investigated the potential use of the residual income method for Australian housing policy and research by exploring its inherent advantages. The study conceptualized the relationship between disposable income, housing consumption and households' living standard through the use of Australian budget standard datasets on living standard. On the basis of the datasets, households' residual disposable income was determined as well as the impact of housing cost on households' benchmarked standard of living and wellbeing. Findings revealed that while the method is a bit complex to use, it proved to be more sensitive to households' structure, their diverse income levels and also more instrumental to assessing their living standard than the ratio approach.

McConnell (2012) explored the residual approach to operationalized housing affordability by focusing on housing-induced poverty, as developed by Kutty (2005). The study investigated the racial/ethnic differences among five groups of Los Angeles households namely: United States born Latinos, Non-Hispanic Whites, and African Americans, authorized Latino immigrants, and unauthorized Latino immigrants. Deriving from the results, insight is provided on the likelihood of each group to experience housing-induced poverty. The study proved that the residual standard is a veritable tool in measuring affordability and equally shows the prevalence of housing affordability difficulties among the low-income households, nearly half of which are confronted by housing-induced poverty.

JRF (2013) explored the relationship between housing and poverty. The study established a strong link between housing cost, material deprivation and poverty (housing cost induced poverty) and concluded that it is most prominent among single people. Napoli's (2017) study compared the housing affordability problems in two metropolitan areas of Sicily and Italy, a less developed European region, through the application of the residual income approach to verify the presence or absence of housing challenges. In the two areas, results of findings indicated that housing affordability problem is very real among the very low income households, as they cannot purchase houses in any zone of the areas. For the low income households, housing affordability decreases or is completely absent depending on the zones within the metropolitan areas. The author suggested housing subsidy for the very low income household.

Herbert et al. (2018) examined the extent at which the rule of thumb 30% threshold and the residual income approach serve as a gauge for housing affordability. The study compared housing cost burdens of three prototypical households in three metropolitan areas, namely: Los Angeles, Phoenix and Cleveland in relation to their housing cost hierarchy ranging from high, moderate and low respectively. Using both approaches, the paper revealed that compared to the residual measure, there is a tendency in the ratio approach to overstate the level of housing affordability challenges of smaller households and those earning high income and thus advocated for caution in its use. However, using either of the two methods, findings indicated that a huge proportion of the extremely low income renters were facing the problem of housing affordability. In addition, under the residual measure, the extent to which households are cost burdened is a function of costs incurred on essential goods and services such as food, transportation, childcare, health care and taxes.

From the foregoing, studies abound on the use of the residual approach as a measure of housing affordability that incorporates both housing and non-housing related goods in ascertaining whether they are suffering from shelter poverty or otherwise. However, studies in this regard are sparse and are outside the frontiers of this nation. Chakrabarti and Zhang (2014) have confirmed that housing affordability varies from one place to another. In essence, it is important to extend the frontiers of knowledge by examining the housing affordability of low income civil servants in Lagos State using the residual income approach.

## METHODOLOGY

The study employed a case study research design relying on primary and secondary data sources. A multi-stage sampling technique was used to elicit information from low income civil servants on grade levels 1 to 6. This involved a purposive selection of 116 respondents from 8 (out of the 16) ministries with the highest representation of low income civil servants in the state, for the administration of questionnaires. Data collected include: individual low income civil servant's monthly income, housing expenditure and non-housing related expenses, in order to determine the housing affordability levels of the respondents. Respective data collected were subsequently grouped for ease of analysis while the averages were computed. Data were analyzed by means of descriptive statistics and residual income analysis to determine the respondents housing affordability levels.

## RESULTS AND DISCUSSION OF FINDINGS

### 1. Socio-economic Characteristics of the Low Income Civil Servants

Information on the result of the socio-economic characteristics of the respondents, namely their gender, educational status, marital status, age, religious affiliation, type of family and household size is indicated in Table 1. The gender distribution shows that 53.4% were male while 46.6% were female. On the educational status, findings show that majority were literate with just 4.3%% having no formal education. From the total, majority (69.0%) were married, singles accounted for 25%, while divorced and separated were 1.7% respectively. The fact that majority of the respondents were married suggests the likelihood of additional income being earned by the spouses. It also implies the possibility of children as dependants and their associated expenses. Based on the submission of Stone et al. (2011), Burke et al. (2011) and AHURI (2012), couples with two children tend to have higher non-housing related expenditure compared to households earning single income, leading to a lower mortgage capacity for them. Other scholars have also testified that housing affordability is influenced by the presence of children (Kutty, 2005; Bujang, 2010; Wood & Ong, 2011; AHURI, 2012; Ying et al., 2013). According to Joseph Rowntree Foundation (JRF) (2015), the risk of shelter induced poverty is higher for singles. In essence, the size of a household is a function of their ability to afford housing aside other crucial basic needs.

The analysis of the age distribution, in the table, is done through its categorization into four segments namely: the youth (18-30) years; young adult (31-45) years; adult (46-60) years and aged (above 60) years. Deriving from this, 19.0%, 51.8% and 24.0% were youth, young adult and adult respectively. The result showed that most of the respondents were young adults while none was above 60 years old. According to Yates (2007), young people are less likely to afford housing than the old, due to financial stress. Also, 58.6% were Christians while 37.9% and 0.9% were practicing Islam and traditional religion respectively. In essence, the majority being Christians have less tendency to be practicing polygamy than their Muslim counterparts, hence, a greater percentage of the respondents, being 60.3% had nuclear family.

Investigation was conducted on the respondents' monthly income. This was classified into five categories for ease of analysis (see Table 2). In the state, the highest proportions of the low income civil servants, 26.9% earned an average of between ₦18,000 – ₦23,000. Those receiving the ranges ₦24,000 – ₦29,000 and ₦30,000 – ₦35,000 were 25.4% and 17.7% respectively. Income range of ₦36,000 – ₦41,000 was earned by 19.2% of the respondents while 10.8% received above ₦41,000.

The minimum monthly salary received by a low income civil servants in the state was ₦18,000.

**Table 1: Socio-economic characteristics of the Respondents**

| **Gender** | **Frequency** | **%** |
|---|---|---|
| Male | 62 | 53.4 |
| Female | 54 | 46.6 |
| **Total** | **116** | **100.0** |
| **Educational status** | **Frequency** | **%** |
| No formal education | 5 | 4.3 |
| Primary | 6 | 5.2 |
| Secondary | 17 | 14.7 |
| NCE/OND | 34 | 29.3 |
| HND/B.Sc | 40 | 34.5 |
| PG degree | 13 | 11.2 |
| Others | 1 | 0.9 |
| **Total** | **116** | **100.0** |
| **Marital status** | **Frequency** | **%** |
| Married | 80 | 69.0 |
| Single | 29 | 25.0 |
| Divorced | 2 | 1.7 |
| Separated | 2 | 1.7 |
| Widowed | - | - |
| No response | 3 | 2.6 |
| **Total** | **116** | **100.0** |
| **Age range (in years)** | **Frequency** | **%** |
| Youth (18-30) | 22 | 19.0 |
| Young Adult (31-45) | 60 | 51.8 |
| Adult (46-60) | 28 | 24.0 |
| No response | 6 | 5.2 |
| **Total** | **116** | **100.0** |
| | | |
| **Religious Affiliation** | **Frequency** | **%** |
| Christianity | 68 | 58.6 |
| Islam | 44 | 37.9 |
| Traditional | 1 | 0.9 |
| No response | 3 | 2.6 |
| **Total** | **116** | **100** |
| Type of family | **Frequency** | **%** |
| Nuclear | 70 | 60.3 |
| Extended | 37 | 31.9 |
| No Response | 9 | 7.8 |
| **Total** | **116** | **100** |
| **Household Size** | **Frequency** | **%** |
| 1-3 | 14 | 12.1 |
| 4-6 | 67 | 57.8 |
| 7-9 | 6 | 5.2 |
| 10 and above | 5 | 4.3 |
| No response | 24 | 20.7 |
| **Total** | **116** | **100** |
| **Tenure** | **Frequency** | **%** |
| Landlord | 35 | 30.1 |
| Tenant | 61 | 52.6 |
| Squatter | 6 | 5.2 |
| No response | 14 | 12.1 |
| **Total** | **116** | **100** |

## 2. Income and Expenditures of the Respondents

Information on the findings of the survey on the income and expenditures of the respondents, namely: monthly income, average monthly housing and non-housing related expenses required in the calculation of their housing affordability level is detailed in the Table 2.

The information was subsequently used to measure the extent to which they were able to balance their consumption of housing and non-housing related goods given the amount of income at their disposal.

**Table 2: Income and Expenditures of the Respondents**

| **Average Income (₦)/month** | **Frequency** | **%** |
|---|---|---|
| 18,000-25,000 | 37 | 49.0 |
| 26,000-33,000 | 28 | 21.2 |
| 34,000-41,000 | 24 | 21.2 |
| Above 41,000 | 9 | 8.7 |
| No response | 18 | 15.5 |
| **Total** | **116** | **100.0** |
| **Sources of income** | **M.I. (M)** | **M.I. (S)** |
| Civil service | ₦29,356.87 | ₦29,356.87 |
| Spouse | ₦51,461.30 | - |
| **Total** | ₦80,818.17 | ₦29,356.87 |
| **Housing – Related items** | **M.E. (T)** | **M.E. (L)** |
| Rent | ₦7,000.48 | - |
| Lighting/ Electricity | ₦3,820.19 | ₦3,820.19 |
| Water | ₦1,788.77 | ₦1,788.77 |
| Refuse disposal | ₦1,359.72 | ₦1,359.72 |
| Security | ₦1,892.47 | ₦1,892.47 |
| Sanitation | ₦383.82 | ₦383.82 |
| **Total** | **₦16,245.45** | **₦9,244.97** |
| **Non Housing – Related items** | **M.E. (M)** | **M.E. (S)** |
| Feeding | ₦9,010.44 | ₦9,010.44 |
| Telephone/E- Communication | ₦2,385.15 | ₦2,385.15 |
| Childcare | ₦2,762.83 | - |
| Transportation | ₦7,392.36 | ₦7,392.36 |
| Healthcare | ₦1,451.61 | ₦1,451.61 |
| Personal accessories | ₦2,756.25 | ₦2,756.25 |
| Recreation/ Entertainment | ₦1,794.10 | ₦1,794.10 |
| Contingencies / Savings | ₦1,235.61 | ₦1,235.61 |
| Social & religious activities | ₦2,322.38 | ₦2,322.38 |
| Self-development | ₦2,322.61 | ₦2,322.61 |
| **Total** | **₦33,433.34** | **₦30,670.51** |
| **Total expenditures for Tenants** | **M.E. (M)** | **M.E. (S)** |
| Housing related expenses | ₦16,245.45 | ₦16,245.45 |
| Non-housing related expenses | ₦33,433.34 | ₦30,670.51 |
| Total | ₦49,678.79 | ₦46,915.96 |
| **Total expenditures for Landlords** | **M.E. (M)** | **M.E. (S)** |
| Housing related expenses | ₦9,244.97 | ₦9,244.97 |
| Non-housing related expenses | ₦33,433.34 | ₦30,670.51 |
| Total | ₦42,678.31 | ₦39,915.48 |
| **Residual income for Landlords** | **M.I. (M)** | **M.I. (S)** |
| Income | ₦80,818.17 | ₦29,356.87 |
| Total expenses on housing | ₦9,244.97 | ₦9,244.97 |
| Residual income | ₦71,573.20 | ₦20,111.90 |
| **Residual income for Tenants** | **M.I. (M)** | **M.I. (S)** |
| Income | ₦80,818.17 | ₦29,356.87 |
| Total expenses on housing | ₦16,245.45 | ₦16,245.45 |
| Residual income | ₦64,572.72 | ₦13,111.42 |

*Note*. Data from authors' field survey

### (i) Average income of the respondents

The monthly income of the respondents was classified into four categories namely: ₦18,000 – ₦25,000; ₦26,000 – ₦33,000; ₦34,000 – ₦41,000 and above ₦41,000 and received by 49%,

21.2%, 21.2%, and 8.7% respectively. Majority of the respondents, constituting 49.0% earned an average of between ₦18,000 – ₦25,000 per month, which is the lowest range of the low income earning category. According to Yates (2007), low income households are more vulnerable to facing the challenges of housing affordability and financial stress. It is expected that being at the lowest range of income will be particularly more challenging.

**(ii) The monthly income and expenditure for a single person household:**

The monthly income for a single person is basically made up of his individual income from the civil service, devoid of a spouse's income and other sources of income, hence:
The total income = ₦29,356.87
Residual income calculated solely on the basis of civil service income for a tenant:
i.e. ₦29,356.87 - ₦16,245.45 = ₦13,111.42
Residual income calculated solely on the basis of civil service income for a landlord:
i.e. ₦29,356.87 – ₦9,244.97 = ₦20,111.90
Comparison of residual income to monthly expenditures for non-housing related expenses:
(Note: The non-housing related expenditure is total non-housing related expenses less childcare for a single unmarried worker: i.e. ₦33,433.34 - ₦2,762.83 = ₦30,670.51)
Deficit for tenants: ₦13,111.42 - ₦30,670.51= - ₦17,559.09
Deficit for landlords: ₦20,111.90 - ₦30,670.51 = - ₦10,558.61
From the foregoing calculations, the high cost incurred on housing-related expenses ultimately led to households' inability to meet up with their non-housing related expenses resulting in housing induced poverty. This confirms the assertion of Arlington County Affordable Housing Study (2014), that a good proportion of low-income households are forced to spend a huge percentage of their income on housing at the detriment of non-housing related goods and thus confronted by budget crisis in the course of meeting up with housing costs.

**(iii) The monthly income and expenditure for a married people household:**

Income for a married household is made up of the combination of the husband and wife's earnings where both couples are working (Sohaimi, Abdullah & Shuid, 2017).
Total Income = income from civil service with the addition of spouse's income:
i.e. Total income = ₦29,356.87 + ₦51,461.30 = ₦80,818.17
The housing related expenditure for a tenant = ₦16,245.45
The housing related expenditure for a landlord is total housing related expenses less rent:
i.e. ₦16,245.45 - ₦7,000.48 = ₦9,244.97
Residual income calculated solely on the basis of civil service income for a married tenant:
i.e. ₦80,818.17 - ₦16,245.45 = ₦64,572.72
Residual income calculated solely on the basis of civil service income for a married landlord:
i.e.₦80,818.17 – ₦9,244.97 = ₦71,573.20
Comparison of residual income to monthly expenditures for non-housing related expenses:
(Note: monthly expenditures for non-housing related expenses = ₦33,433.34).
Difference for tenants: ₦64,572.72 - ₦33,433.34 = ₦31,139.38
Difference for landlords: ₦71,573.20 - ₦33,433.34 = ₦38,139.86
Based on the foregoing calculations, the residual income was adequate to cater for the non-housing needs of households having two sources of income irrespective of the nature of their tenure whereas single income households are deprived of basic necessities of life after taking care of their housing expenses, thus they suffer from shelter-poverty. The findings confirm JRF (2013)'s study that the incidence of shelter-poverty is most prominent among single people given the single income at their disposal.

**Conclusion**

The study has examined the ability of the low income civil servants to afford housing. Findings revealed that majority of them find housing unaffordable. A greater proportion of them had to seek for additional jobs and other sources of income, otherwise would not have been able to afford housing which is basic to their wellbeing. In summary, the study has established that the low income civil servants in Lagos state were housing cost burdened. This has grave implication on their living standard.

## Recommendations, Implication and Limitation of the study

It is evident from the study that households that relied solely on salaries received by a low income earner from the civil service would be housing cost burdened. This was because they had to spend more than 30% of the monthly income on housing. The income cannot adequately take care of their housing expenses without recourse to seeking for means of earning additional income. Based on these, the followings are recommended in improving the housing affordability level of low income civil servants in Lagos State and by extension, Nigeria.

### i. Increments in wages and tax reliefs

Inasmuch as low-income civil servants were hardly earning enough to cater for their day-to-day expenses, government should increase the minimum wage to such that will afford them not spending more than 30% of the monthly income on housing. Tax reliefs should also be introduced for them in order to further boast their income and alleviate their poverty.

### ii. The provision of low income housing and food tickets

Government should embark on construction of affordable mass housing schemes strictly for low income earners. The government had embarked on some low cost housing in the past. Eventually the houses were taken over by the medium and high income earners just because their prices were beyond the reach of an average low income earner. Corruption in the allocation of such houses should be mitigated to ensure that higher income earners do not deprive the low income earners access to such housing. Moreover, such buildings should be on several floors to ease the problem of land availability. Also, options of outright purchase on installmental basis or rentage at subsidized rate should be given to low income households.

Furthermore, the government should introduce the giving of food tickets to low income households. This will involve establishing food banks in various local governments where the beneficiaries could collect free rations on a monthly basis to reduce their spending on non-housing expenses and enhance their ability to afford housing.

### iii. Provision of long term credit for housing development

Housing development is capital intensive and most low income are unable to afford required fund. As such government should ensure that low income earners have access to affordable long term loans through the mortgage institutions at very low interest rate.

The study is limited to low income civil servants. It would have been interesting to measure also the extent to which high and middle income civil servants are able to afford housing. A comparative could equally have been done between one state and another and between geographical regions.

### Limitations of study

Households' tendencies to indulge in luxury goods and extravagant spending may lead to a reduction in their ability to afford housing leading to equity concerns and affordability crisis. Residual income approach requires individuals and households detailed and specific information

such as family structure, food requirement, income, taxes, prices of goods and services, etc, which may not be easy to collect and compute.

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