Original Research Article

An Evaluation of Affordable Housing Provision for the Urban Poor in Lafia Metropolis, Nigeria

Aliyu Ahmad Aliyu, Mohammed Alfazazi Okugya, Samirah Ibrahim Jibril, and Abdullahi Ali Abdu

Department of Estate Management and Valuation, Faculty of Environmental Technology, Abubakar Tafawa Balewa University, Bauchi, P.M.B. 0248, Bauchi, Bauchi State, Nigeria

Corresponding Author: Aliyu Ahmad Aliyu

ABSTRACT

In Nigeria today the dream of an average man is to be a home owner. The various tiers of the Nigerian government have put in place different policies and programmes with the aim of achieving the vision 2020. The study aimed at evaluating affordable housing provision for the urban poor using Lafia as a study area. Through questionnaire survey, results revealed that personal savings and mortgage loan are the most preferred housing finance options by households and that the use of academic/professional certificates as collateral security and increment in workers' salaries so as to enable them build houses on their own has been found to be the most common strategies for improving affordable housing provision. The study therefore recommends that there should be well-developed mortgage institutions in Nigeria to assist developers and purchasers of the housing stock to obtain mortgage loans at low interest rates. Furthermore, policies are needed to increase access to appropriate affordable building materials; this will facilitate affordable housing supply by private developers to the expected housing needs.

Keywords: Affordable Housing, Housing Finance Sources, Housing Provision, Property Development and Urban Poor

1. INTRODUCTION

The world's ever-increasing population has become concentrated in cities with urban development (Zhao and Qiming, 2014). It is expected that over 60% of the world's population will settle in urban areas by 2030 (UNPD, 2004). It is also expected that 2.5 billion people will be added to the world population by 2050, with almost 90% concentrated in Asia and Africa (UN, 2014). Nigeria population have grown to 180 million in 2006 and is expected to reach 289 million in 2050 (UN, 2014). This rapidly growing population will put enormous pressure on the demand for housing, while Nigeria already has a housing deficit of 17 million (UN, 2014).

The need to focus on alternative means of affordable housing has become pertinent.

This concern has led to several global Summits organized at various level of government, international Agencies including the United Nations. Specifically among such are, the Millennium Development Goals Summits, the 2002 World Summit in Johannesburg and the 2005 La-Havana UN sustainable cities documentation of experience programme among several others. In each of these summits, member nations reiterate the need for good and effective governance as a means of achieving sustainable development in the cities. (Oladunjoye, 2005 and UN, 2014).

Several authors have conducted various researches with the aim of assessing the role of private sector in the provision of affordable housing. Prominent among these were those conducted by Aribigbola (2011) who carried out research on the performance of private developers in housing provision in Nigeria. Eni and Danson (2014) examined private sector participation in urban housing supply. Similarly, Dwijendra (2013) explored on the quality of affordable housing projects by public and private developers in Indonesia. In another study, Ademiluyi and Raji (2008) conducted a study on the role of public and private developers as agents in urban housing delivery in sub-Saharan Africa. Also Abdullahi et al. (2011), looked at the extent of gap bridged between housing demand and the private sector response in Malaysia and Nigeria.

On the other hand Gbadeyan, (2011), examined private sector's contributions to the development of the Nigerian housing.

From the foregoing, it can be deduced that only few of the aforementioned studies explored on the issue of affordable housing through the private sector developers and that none or only few proffered strategies for affordable home ownership. Thus this is a research gap worthy of investigation which needs to be filled; hence this research attempts to explore and uncover the missing gap especially in Lafia metropolis, Nigeria.

2. RESEARCH QUESTIONS AND OJECTIVES
1. What are the affordable housing finance options for households in the study area?
2. What are the strategies for improving affordable housing provision in the study area?

The aim of this research is, therefore, to investigate the role of private sector in the provision of affordable housing to the public with a view to establishing strategies for improving affordable housing ownership in Lafia metropolis. This will be achieved through the following objectives:

1. To examine the available option of financing affordable housing in the study area.
2. To identify other alternative options available for the provision of affordable housing in the study area.

The focus of the research would be on the contributions of private estate developers in affordable housing provision rather than the private sector as a whole. This is due to the sporadic and modest number of private developers active in building affordable housing. The geographical scope is limited primarily to Lafia metropolis of Nasarawa State, Nigeria.

3. PREVIOUS STUDIES
3.1 An Overview on Housing Finance
King (2009) defined housing finance as what allows for production and consumption of housing. Housing Finance is a major factor that determines the quality and tenure of housing consumption, overall financial portfolio of the public, stability and effectiveness of the financial system (Diamond and Lea, 1992).

Struyk and Turner (1986) and Stephens (2002) argued that housing finance plays an important role in shaping a country's wider housing system and the housing system takes important social and economic consequences. It stands to reason that development of a viable housing finance system could positively impact on housing policy directions; hence the position of scholars on housing finance varies depending on the aspect of housing.

Omirin (1998) examined land accessibility and low income housing in metropolitan Lagos and based on her analysis of house builder's behavior of selected low income earners of Lagos, she posited that it is wrong to continue to rank land accessibility as the greatest constraint of house builders. She stated that lack of finance and escalating cost take precedence over land accessibility.

Ismail et al. (2015) conducted a study on housing financing facility and affordability level of Bumiputera within Iskandar Malaysia, and discovered that Bumiputera middle income can afford to buy and own a house below RM250, 000 with monthly installments under RM1, 000. In addition their findings revealed that the middle income has a desire to buy a house, but they restricted their study to affordability level. In addition, they discovered that the loan application will be rejected. Based on findings of their study, they concluded that the existing housing finance strategy should be changed to ensure that the financing should be done comprehensively to all levels of society. Thus, the prospective buyer will apply the house financing according to their affordability and the government should play a leading role because they have the ultimate authority to change the existing system. Finally the study recommends that Federal and State Ministries of Housing as well as Local Government should do a lot of planning and enforcement of housing projects in a comprehensive way including setting appropriate prices for the middle-income group as a matter of fact.

Malpass and Murie (1991) depict the need for housing finance. They asserted that in order to build a house, a builder brings together land, labor and materials using borrowed money to finance housing project. They further made distinction between development finance and consumption finance. The former refers to money, which is needed to pay for the initial construction of housing whereas the latter refers to the ways in which households meet the cost of buying or renting. What consumers need is some method of spreading the cost of housing over a long period, thereby reducing cost to an affordable proportion of regular income in terms of housing affordability.

The relationship between savings and down payment had been studied by Mayer and Engelhardt (1996). They used survey data in US to explore housing affordability for first-time buyers by looking at how buyers financed their homes. They found that first-time home buyers relied on gifts from relatives rather than on their own savings in accumulating the down payment. They equally discovered that consistent increases in house prices had a significant effect on down payment accumulation. Government-provided assistance for the first home buyers is another way to help with the down-payment problems.

Similarly, Li and Yi (2007) examined the housing finance system in Guangzhou and found that the main source of money facilitating home purchases is the nationwide mandatory Housing Provident Fund (HPF). However, only about 20 percent of home purchased were financed by the HPF and personal savings. They found out that parental support was the most important sources of funding for home purchase. Access to mortgage finance has played a relatively minor role in China's drive towards homeownership.

According to Rakhodi (1991), finance for house construction and purchase is in very limited supply in the third world. The formal sector housing finance is only available to small portion of urban population. Bichi (2002) differentiated between housing affordability and housing finance affordability. Housing affordability is generally an issue of absolute poverty-households that cannot afford minimum housing standard available and require assistance. Housing finance affordability describes the problem of low and moderate income groups with regard to high cost of housing finance. Also, a study by Gibb and Whitehead (2007) suggested that there are three sources of finance for house ownership: the individual household's own available resources; borrowing from others and therefore paying later; or contributions from others, notably through government taxation and subsidy.

In addition, Adedeji, and Olotuah (2012) examined accessibility of low-income earners to housing finance in Nigeria. He uncovered that the level of

accessibility of low-income earners to housing finance in Nigeria is still very low despite the intermediation of private developers and cooperative societies in sourcing housing finance. The study further shows that funds obtained from credit societies for housing are often insufficient due to high cost of building materials and labor for construction. However, in spite of these intermediation efforts of private developers and cooperative societies in providing finance for housing, accessibility level to housing finance by the low-income earners is still very low. The study recommends that access to housing finance will enhance their chances of putting up houses that meet their needs and which are built in accordance to their economic state.

3.2 Related Studies on Housing Affordability

In Australia, housing affordability relates more broadly to a households ability to pay for their housing and is seen as a general goal across the housing market (AHURI, 2011; Ruming, Gurran and Randolph 2011). Stone, (2006) suggests that housing affordability directly expresses the challenges each household faces in balancing the cost of its actual or potential housing and its non-housing expenditure within the constraints of its income Stone also acknowledges that affordability is not a characteristic of housing it is a relationship between housing and people.

There is still debate surrounding the issues of when housing is considered to be unaffordable. However, a common measure of housing affordability is that households should spend not more than 30 per cent of their gross household income on housing costs (URI, 2011). It is when households spend more than 30 per cent on housing costs that they may start to experience housing stress (AHURI, 2011). However, even this seemingly simply measure of housing stress attracts much debate amongst not only academic researchers but also within the circles of policy makers across the nation as it excludes extremely low income earners and may underestimate the number of people actually experiencing housing stress (Nepal, Tanton and Harding, 2010).

Abimaje, Akingbohungbe and Ndalai (2014) studied housing affordability in Nigerian towns: a case of idah, Nigeria. Their findings revealed among other things that, greater percentage of the people in the study areas spend above 30% of their monthly income on housing. This is at variance with the 30% affordability benchmark set by scholars such as Andrew(1998), Cox and Pavletich (2010) as well as Adedeji and Olotuah (2012). The study concluded that the greater percentage of the people in the study area cannot afford adequate housing while others pay not just over 30% but over 50% of their monthly income on housing which is cost-burden.

Boamah, (2010) carried a study on housing affordability in Ghana and reported that housing units with basic acceptable standards are unaffordable by many households in the study areas. Also, most households in Kumasi and Tamale cannot afford mortgage credit as well as adequate rented and owner occupied housing units due to low income levels. Other factors were: high unemployment rate and high interest rates. He also uncovered that interventions by government have been unsuccessful in providing affordable housing in the country.

Recently, Amamata, Safiya and Bala (2015) investigated integrating factors of housing affordability as a scheme in governmental policies. Their findings revealed that the provision of public housing is an important aspect in the housing sector for all income groups, but most especially for those in the low income group.

Aribigbola (2011) conducted a study on housing affordability as a factor in the creation of sustainable environment in developing world: the example of Akure, Nigeria. The data utilized in the study was generated through a systematic survey of 1,266 householders in the nine political wards into which the city was stratified.

Findings of the study revealed the problems associated with urban housing in the area of which affordability is a major one. The study argues that this poses a great challenge to sustainable development of the built environment. Thus, it was suggested that the institutional framework to promote, enhance and encourage affordable housing provision should be created in the city as a matter of fact.

Similarly, Rukaiyat, et al (2015), examined housing affordability by federal civil servants in Minna, Nigeria. They used a total of 200 federal civil servants as sample which was spread across all grade levels. Simple descriptive statistic, likert scale, relative index and Pearson product moment correlation were used to analyse collected data. Their findings revealed that federal civil servants in the study area spend between 7.3% and 23.8% of their annual income on rents. The study also revealed that civil servants' level of income having a relative index of 0.96 is the major factor influencing the choice of residential accommodation by federal civil servants in the study area.

It further revealed a strong positive correlation between their annual income and rental values of residential properties occupied by them. The sampled respondents expressed varied levels of satisfaction with the houses they occupy, with as much as 59% being unsatisfied with their rented housing units; these were attributed to poor housing quality, small sizes of housing units and densely populated neighborhoods, among others. Housing Affordability Index was also adopted and used to determine housing affordability levels in the study area. The study recommended a home ownership scheme to enable federal civil servants purchase or build their own houses and pay conveniently because all respondents desired to own their own houses.

Table 3.1: Theoretical Framework Development

S/N	Author (s)and Year	Theme Covered	Study Area	Major findings
1	Olugbenga & Adekemi, (2013)	Challenges of housing delivery	Lagos, Nigeria	Land plays a major role in ensuring effective housing delivery
2	Ugonabo &Emo,(2013)	Challenges of housing development and delivery	Anambra, Nigeria	Major challenge to housing development and delivery are lack of secure access to land, high cost of construction, limited access to finance, bureaucratic procedures.etc
3	Olotuah &Taiwo (2015)	Housing Strategies and Quality of Housing	Nigeria	Despite huge allocations of money to the housing sector by government, very little has been achieved in terms of meeting specified targets in housing construction.
4	Joseph et al. (2012)	Assessment of Housing Delivery	Nigeria	Same as in above
5	Moko, (2014)	Determinants of house construction cost	Kenya	Land, building materials and infrastructure determinants have the most influence on the housing cost.
6	Aliyu, Kasim & Martin, (2011)	Factors affecting property development	Bauchi, Nigeria	High cost of building materials, non-use of local building materials, low income level and poor sources of finance .are the major factors affecting housing development
7	Ismail, et al. (2015)	Housing Financing Facility and Affordability	Malaysia	Middle income earners have a desire to buy a house, but they are restricted by affordability level, in addition they are worried that the loan application will be rejected
8	Mayer & Engelhardt (1996),	Housing affordability for first-time buyers	United states	First-time home buyers relied on gifts from relatives rather than on their own savings in accumulating the down payment and consistent increases in house prices had a significant effect on down payment accumulation
9	Li &Yi (2007)	Housing finance system	Guangzhou	Main source of money facilitating home purchases is the nationwide mandatory Housing Provident Fund (HPF).
10	Gibb &Whitehead (2007)	Housing Finance Affrodability	United States	The main source of housing finance are household available resources, borrowed fund and contributions from others
11	Adedeji, &Abiodun (2012)	Accessibility of Low-Income Earners to Housing Finance	Nigeria	Funds obtained from credit societies for housing are often insufficient due to high cost of building materials and labor for construction
12	Ahmed, Badarulzaman & Roosli, (2014)	Residents perception of the affordability of private housing schemes	Istanbul, Turkey	Cost of housing in the area is beyond the reach of the populace and most families cannot afford purchasing the private houses without credit availability
13	Mohamed, Suzana, & Raji, (2015)	Need for Affordable Livable Sustainable Housing Based on Maslow's Theory of Need	Malaysia	Housing need to be adequate, safe and secured and majority of people need houses that is sustainable,

Table 3.1 to be continued…				
14	Wan Abd Aziz, Hanif, Singaravello,(2014)	Affordable housing within the middle income households	Malaysia	Middle income households can be categorized into three main sub-groups; Low-Middle Income, Middle-Middle Income and Upper-Middle Income. and cost of housing in the area is beyond their reach
15	Mulliner & Maliene (2011)	Criteria for sustainable housing affordability	Vilnius, Lithuania	Housing affordability must be defined and evaluated by a broader range of criteria if more sustainable outcomes from housing policy are desired
16	Ajibola, Oluwunmi & Eguh (2012)	Factors contributing to affordable housing	Lagos, Nigeria	Factors contributing to affordable housing are ease of obtaining finance, availability of cheap land and stable economy .while the major problems confronting provision of affordable housing are lack of funds, high cost of land and high cost of building material
17	Ahmad, Hasmah and Norhaslina (2010)	Relationship between demographic factors and housing affordability	Malaysia.	Demographic factors have influenced the housing market which resulted in different level of affordability
18	Abimaje, Akingbohungbe & Ndalai (2014)	Housing affordability in Nigerian towns	Idah, Nigeria	Greater percentage of people in the area spend above 30% of their gross monthly income on housing
19	Nicholas, (2010)	Housing Affordability in Ghana	Kumasi and Tamale, Ghana	Household cannot afford mortgage credit for housing due to due to low income levels, high unemployment rate, and high interest rates.
20	Zakari¸ Othman & Bala (2015)	Integrating factors of housing affordability	Nigeria	An important aspect in the housing sector is the provision of public housing most especially for low income group.
21	Aribigbola (2011)	Housing affordability as a factor in the creation of sustainable environment	Akure, Nigeria	Affordability of housing is found to be a major problem in the area.
22	Elegbede, Olofa and Olojede (2015)	Housing affordability by federal civil servants	Minna, Nigeria	Civil servants low level of income is the major factor influencing the choice of residential accommodation
23	Gbadeyan, (2011).	Appraisal of the performance of private developers in housing provision	Nigeria	Private sector are vital tool for housing development, but received no incentives from the government.
24	Salford City Council	Private sector's contributions to the development of the Nigerian housing market	Nigeria	Private developers make significant contribution to the Nigerian housing market but are mainly influenced with the problem of finance.
25	Ngakan, (2013)	Condition of private sector dwellings across the city	Salford City	Same as in above
26	Israel and Bashiru, (2008)	Quality of affordable housing projects by public and private developers	Indonesia	Low-quality affordable housing provision is often unsuitable for dwellers
27	Eni and Peter, (2014)	Role of public and private developers as agents in urban housing delivery in sub-saharan Africa	Lagos, Nigeria	Majority of public developers uses local building materials while majority of private developers uses imported building materials
28	Bawa, et al. (2014)	Private sector participation in urban housing supply	Calabar, Nigeria	Cost of housing, land, rents, and per capita income of urban residents are the major factors that affect private sector supply of housing
	Elegbede, Olofa, and Olojede (2015)	Role of private sector participation in achieving anticipated outcomes for low-income group	Malaysia	Revealed the extent of gap bridged between housing demand and the private sector response

Source: Literature Survey, (2016)

4. MATERIALS AND METHODS
4.1 Research Design

The research employed survey research design to carry out the investigation. The research design was preferred because it allowed unlimited collection of data and enhanced a comprehensive and in-depth scrutiny of the phenomena under research.

The research used questionnaire to collect the pertinent data. Survey designs are suitable when results are intended to be generalized to a wider population as in this research. Likewise, questionnaire has the ability to enhance objectivity in response and to minimize respondents' bias. It also provides higher response rates that cannot otherwise be achieved with qualitative methods especially when studies are geographically widespread as the current research.

4.2 Study Population

The study population is the total number of all individuals who have certain

characteristics and are of interest to the researcher. The target population for this study is mainly urban households on rental housing tenure and private estate developers in Lafia.

4.3 Sample Frame and Sample Size Determination

The population for the study is large and widely distributed geographically and so it could not be covered in a study of this nature. Therefore, a sample of the population would be selected for the survey.

The sample size is a portion of the sample frame, a subset of the entire population selected for the purpose of generalizing. Sampling is usually done when the study population is too large for the researcher to come in contact with each and every element in the population. There are several sample size determination techniques. However, for this study; it is determined using Krejcie and Morgan (1978) table for determining sample size from a given population. A sample size of two hundred and fifty five (255) urban households on rental tenure and ten (10) private developers on rental tenure were selected.

4.4 Sources of Data Collection

Primary data were collected using questionnaires administered to the target respondents. Primary data collections involved both open and close-ended questions in the questionnaire. The questionnaires were administered personally by the researcher himself. This approach was chosen because it is affordable, time saving and allows for in-depth data collection as it fosters high rates of personal responses (Yin, 2003).

On the other hand, secondary data were collected from extant publications and researches. Thus, such data were gathered from, government releases, editorial in newspapers, editorials in journals, newsletters, non-published dissertations, published dissertations, and conference papers, institution of higher learning publications, international journals, regional journals, published books, online books, and book reviews amongst others.

4.5 Instrument of Data Collection

In this research questionnaire was used to collect necessary information so as to provide answers to the research question. Both open and close-ended questions were used to put the questionnaire together. The questionnaire consisted of two types, the first was designed and administered to private estate developers and the other was designed for urban households on rental tenure.

4.6 Sampling Technique and Procedure

Stratified sampling technique was adopted for the study. In designing the sampling procedure for the survey; the study considered the need for an efficient spread of the sample and an even distribution of the survey. As earlier stated, the structure of the population necessitated that the survey covers high, medium and low densities in terms of development. Treating each of the three density areas as a separate stratum would be essential in the study to ensure a fair representation of the different segments of the population.

Having considered all the relevant factors involved in the research design, the research has adopted the stratified random sampling with optimum allocation of samples as the sampling design. The population was stratified into three based on high, medium and low densities in terms of development accordingly, the strata include Angwan Doka (High density area), Tudun Gwandara (Medium density area), and Angwan Tiv (Low density area). These three areas were selected using density of development for detail study.

4.7 Method of Data Analysis

Data obtained from the field were processed and analyzed using statistical packages for social science (SPSS). The findings were presented using tables, and other relevant statistical tools. This is because of their

relevance and the nature of the data which require such tool of analysis.

5. RESULTS AND DISCUSSION

This section presents and analyzes the data obtained from the respondents. Furthermore, discussions of the findings were made to uncover whether the results extend, challenge, refute or validate the works of the previous scholars.

5.1 Analysis of Questionnaire Administered

The level of response for the total number of questionnaires administered was presented below.

Table 5.1: Analysis of Questionnaire Administered

Head of Households			
S/N	Respondents	Frequency	Percentage (%)
1	Number of copies returned	195	76.47
2	Number of copies not returned	60	23.5
3	Total number of questionnaires	**255**	**100**
Private Developers			
S/N	Respondents	Frequency	Percentage (%)
1	Number of copies returned	10	100
2	Number of copies not returned	0	0
3	Total number of questionnaires	**10**	**100**

Source: Field Survey (2016)

Based on the research objectives, two sets of respondents were used for the research, i.e. urban households on rental tenure and private estate developers. Two hundred and fifty five (255) questionnaires were administered to head of household on rental tenure in the study area, out of which one hundred and ninety five (195) were returned with substantial information; representing 76.5% while sixty (60) were not returned representing 23.5%. Likewise ten (10) questionnaires were administered to private estate developers in the study area and all were filled and returned with substantial information.

Table 5.2: Spatial Distribution of Questionnaires to Household Heads

S/N	Location	No. of Questionnaire Administered	No. of Questionnaire Collected	% Responses
1	Angwan Doka (High Density Area)	118	94	79.66
2	Tudun Gwandara (Medium Density Area)	87	67	77.01
3	Angwan Tiv (Low Density Area)	50	34	68
	Total	**255**	**195**	**76.47%**

Source: Field Survey (2016)

5.3: Analysis of Demographic Information of the Respondents

5.3.1 Gender of the Respondents

The research observed that the male gender responded more than the female gender within the study area.

Table 5.3: Gender of the respondents

S/N	Gender	Frequency	Percentage
1	Male	141	72.3
2	Female	54	27.7
	Total	**195**	**100**

Source: Field Survey (2016)

Analysis of the table above shows that one hundred and forty one (141) respondents, representing 72.3% of the respondent are male, while fifty four (54) respondents representing 27.7% were female. Therefore, the research observed that most of the head of households in the study area were males.

5.3.2: Age of the Respondents

Table 5.4: Age Bracket of the Respondents

S/N	Age bracket	Frequency	Percentage (%)
1	18-25years	22	11.3
2	26-35years	38	19.5
3	36-45years	40	20.5
4	46-55years	85	43.6
5	56 and above	10	5.1
	Total	**195**	**100**

Source: Field Survey (2016)

An analysis of the above table indicates that twenty two (22) respondents representing 11% falls between the age

range of18-25 years. Furthermore, thirty eight (38) respondents representing 20% are between 26-35 years, while forty (40) respondents representing 21% are between 36-45 years. In the same vein, eighty five (85) respondents representing 44% are between 46-55 years, while ten (10) respondents representing 5% are between 56 years and above.

The data indicate that the majority of the household heads in the study area are in the active age range which implies that most heads will be actively engaged in economic activities.

5.4: Objective One (Affordable Housing Finance Options for Households)
5.4.1: How do you Sustain your Current Accommodation?

The table below highlights on the ways by which respondents maintain and sustain their housing accommodation though different means as required in housing development or occupation. The responses obtained from the respondents were analyzed in Table 5.5 below.

Table 5.5: Method of Sustaining Current Accommodation

Method of Sustaining Housing Accommodation	Strongly Disagree	Disagree	Undecided	Agree	StronglyAgree
By rent	31(15.9%)	27(13.8%)	4(2.1%)	51(26.2%)	82(42.1%)
Owner occupier allowances	71(36.4%)	49(25.1%)	14(7.2%)	36(18.5%)	25(12.8%)
Rent deduction from salary	36(17.9%)	9(4.6%)	55(28.2%)	60(30.8%)	36(18.5%)

Source: Field Survey (2016)

It has been observed through the findings of this study as depicted in table 5.5 above that majority of the households in the study area, financed their current housing by means of a periodic payment i.e. rent which is either monthly or annually based on their earnings.

Based on the data presented on the aforementioned table, it appears that most household's heads prefer rent as against owner-occupier allowance or even rent deduction from current salary as a preferred means of financing their accommodation.

5.6: What are the sources of finance for affordable housing development?

There are different ways of sourcing funds for financing housing development. This ranges from cooperatives, family, friends and relatives, bank loan, mortgage and the likes. Each source of finance plays a vital role in assisting an individual in carrying out development of his property. Below are responses obtained from the respondents on the above caption.

Table 5.6: Sources of Finance for Affordable Housing Development

Sources of Financing Housing Accommodation	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Loan from bank	60(30.8%)	58(29.7%)	15(7.7%)	23(11.8%)	39(20.0%)
Personal savings	17(8.7%)	11(5.6%)	6(3.1%)	40(20.5%)	121(62.1%)
Mortgage	39(20.0%)	31(15.9%)	25(12.8%)	40(20.5%)	60(30.8%)
Loan from employer	51(26.2%)	39(20.0%)	14(7.2%)	41(21.0%)	50(25.6%)

Source: Field Survey 2016

Analysis of table 5.6 above shows that sixty (60) respondents representing 31% strongly disagree, while fifty eight (58) respondents representing 30% disagree respectively with bank loan as a source of finance for affordable housing. While only twenty three (23) respondents representing 12% agree and thirty nine (39) respondents representing 20% strongly agree with the notion. The data suggest that majority of

household disregard bank loan as a means of financing housing development this is because banks tends to impose high interest on loan they issued to customers.

On the other hand, majority of the respondents in the aforementioned table which is one hundred and twenty one (121) representing 62% agree with personal savings as the preferred means of financing affordable housing. This is because equity

fund tends to be more secured and has no interest imposed on it but it is usually not enough or it takes time to accumulate.

Further analysis of the above table equally indicates that a significant proportion of the households also prefer loan from their various employers as an effective means of financing their housing development. This is because loan from employer tends to be a little bit less stringent as compared to bank loan since no collateral security is involved.

5.7: What are the Reasons for not Obtaining Bank Loan for Housing Development?

As a matter of fact, obtaining loan from banks for financing property development is difficult and frustrating as a people consider it a last resort. Due to all these stringent conditionalities and other requirements, people shun away from it. The table below presents findings from the questionnaires administered to the respondents in that regard.

Table 5.7: Reasons for not Obtaining Bank Loan for Housing Development

Reasons for not Obtaining Bank Loan for Housing Development	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Fear of inability to repay the loan	65(33.3%)	51(26.2%)	10(5.1%)	40(20.5%)	29(14.9%)
High interest rate	22(11.3%)	16(8.2%)	nil	67(34.4%)	90(46.2%)
Difficulty and lengthy procedures	51(26.2%)	26(13.3%)	20(10.3%)	40(20.5%)	58(29.7%)
Lack of collateral	18(9.2%)	nil	7(3.6%)	69(35.4%)	101(51.8%)

Source: Field Survey (2016)

It has been observed from table 5.7 above that the majority of the households in the study area disclosed that lack of collateral security is one of the major reasons why they could not obtain bank loan for housing development. On the other hand a significant majority also revealed that higher interest rate imposed on bank loan also prevents them from obtaining bank loan and that bank loan tends to have difficult and lengthy procedures.

5.8: Objective Two (Strategies for Improving Affordable Housing Provision)

5.8.1: Direct Construction of House by Homeowner with Loan from Government as a Strategy for Improving Affordable Housing Development

As highlighted above, since bank loan was considered to be not forthcoming and proved unreliable. Others strategies for improving affordable housing provision should be explored, loan from governmental agencies and parastatals might serve as an alternative strategy. The table below highlights on the responses gotten from respondents on direct construction of house by a homeowner with loan from government as a strategy for improving affordable housing development.

Table 5.8: Direct Construction by a Homeowner with Loan from Government

S/N	Options	Households		Private Estate Developers	
		Frequency	Percentage%	Frequency	Percentage%
1	Strongly Disagree	10	5.1	5	50.0
2	Disagree	38	19.5	3	30.0
3	Undecided	15	7.7	Nil	Nil
4	Agree	54	27.7	2	20.0
5	Strongly Agree	78	40.0	nil	nil
	Total	195	100	10	100

Source: Field Survey (2016)

Table 5.8 above shows that the majority of households i.e. fifty four (54) representing 28% agreed while seventy eight (78) respondents representing 40% strongly agreed that construction of housing unit with loan from ones employer could be a strategy for improving affordable home ownership for prospective households in the study area. This is because loan from employer is less stringent and that no collateral is involved and most of all the repayment period is spread over a long

period of time as compared to bank loan as a matter of fact.

On the other hand, private estate developers object the idea that affordable housing can be improved by a direct construction of the housing unit with loan from employer, since the majority representing about 80% strongly disagreed.

5.9: Charging Minimal Interest Rate on Loan by Mortgage Institutions as a Strategy for Improving Affordable Housing

Interest charged by financial institutions on mortgage loans is one of the hindrances that deter them from obtaining loan from banks. The higher the interest charged by banks, the lower the patronage by property developers and vice versa. The table below presents the findings from the responses of the respondents on whether interest charged by banks was one of the problems preventing them from applying for a loan.

S/N	Options	Households		Private Estate Developers	
		Frequency	Percentage%	Frequency	Percentage%
1	Strongly Disagree	49	25.1	1	10.0
2	Disagree	21	10.8	2	20.0
3	Neutral	9	4.6	1	10.0
4	Agree	51	26.2	2	20.0
5	Strongly Agree	65	33.3	4	40.0
	Total	195	100	10	100

Table 5.9: Charging Minimal Interest Rate on Loan by Mortgage Institutions

Source: Field Survey (2016)

An analysis of table 5.9 above indicates that a substantial percentage of both respondent, that is, urban households on rental tenure and private developers agreed that charging of minimal interest rate on mortgage loans could be a very good strategy for improving the development of housing, that is affordable to both the middle and low income earners in the study area.

5.10: Promoting the Use of Local Building Materials as a Strategy for Improving Affordable Housing Development

Building material whether foreign or local in nature plays a significant role in property development. As observed in the literature, it carries modern 70% of the property development finance. Local building materials are quite cheap and affordable but in most cases they are not of high quality. On the other hand, foreign building materials are of high quality and durable in nature but they are quite expensive and not frequently available. Promoting the use of local building materials could only be achieved if their quality is to be enhanced and improved. The table below presents the responses obtained from the dwellers as well as private property developers in the study area.

S/N	Options	Households		Private Estate Developers	
		Frequency	Percentage%	Frequency	Percentage%
1	Strongly Disagree	25	12.8	2	20.0
2	Disagree	36	18.5	1	10.0
3	Neutral	6	3.1	nil	nil
4	Agree	51	26.2	2	20.0
5	Strongly Agree	77	39.5	5	50.0
	Total	195	100	10	100

Table 5.10: Promoting the Use of Local Building Materials

Source: Field Survey (2016)

It has been observed and established through the findings of this study as it could be seen in table 4.30 above that the use of local building materials could improve the ownership of affordable housing by prospective households in the study area.

This is because a good percentage of the both respondents agreed with the statement. Hence based on the findings, it can be deduced that affordability of housing among prospective households can be improved by encouraging as well as promoting the production of standardized construction materials in the study area.

5.11: The Use of Authenticated Academic/Professional Certificates as Collateral Security and as a Strategy for Improving Affordable Housing

Loan from financial institutions and national housing funds is one of the major sources of financing housing development. However, collateral security is a requirement prior to obtaining the loan. Most property developers are being constraint by this collateral security as most of them could not afford to get the required collateral. The surrendering of credentials to the financial institutions as collateral is in most cases not feasible owing to the fact that most of the private property developers do not have higher degrees or professional qualification. The table below presents the findings of the research in that regard.

	Table 5.11: Use of Authenticated Academic/Professional Certificates as Collateral Security				
S/N	Options	Households		private estate developers	
		Frequency	Percentage%	Frequency	Percentage%
1	Strongly Disagree	26	13.3	3	30.0
2	Disagree	32	16.4	4	40.0
3	Neutral	18	9.2	nil	nil
4	Agree	56	28.7	2	20.0
5	Strongly Agree	63	32.3	1	10.0
	Total	195	100	10	100

Source: Field Survey (2016)

An analysis of table 5.11 above shows that a good proportion of the respondents i.e. fifty six (56) representing 29% and sixty three (63) representing 32% strongly agree on the use of authenticated academic/professional certificates as strategy for improving affordable home ownership in the study area.

However, the private developers on the other hand clearly disagree to this assertion. This is because the households in question might negligently default in repayment.

5.12: Increasing the Salaries of Workers as a Strategy for Improving Affordable Housing Development

Income of the property developer is equally considered as one of the ways of financing housing development. Nevertheless, most of the households and property developers in the study area are low or medium income earners and therefore their salaries or income could not cater for their daily needs let alone setting aside some amount for owning housing accommodation. Since most of the households and property developers in the study area are civil servants, resorting to increasing their salary might be considered as a strategy for enhancing housing development by the respondents in the study area. The table below shade more light in that regard.

	Table 5.12: Increasing the Salaries of Workers Encourages Housing Development				
S/N	Options	Households		private estate developers	
		Frequency	Percentage%	Frequency	Percentage%
1	Strongly Disagree	6	3.1	3	30.0
2	Disagree	12	61.2	3	30.0
3	Neutral	5	2.6	1	10.0
4	Agree	61	31.3	2	20.0
5	Strongly Agree	111	56.9	2	20.0
	Total	195	100	10	100

Source: Field Survey (2016)

An analysis of table 5.12 above shows that majority of the households in the study area representing about 87% disclosed that increase in worker's salary by government could be an effective strategy for improving affordable home ownership in the study area. On the contrary, the private developers in the study area have a different opinion in that regard.

6. SUMMARY OF FINDINGS

Based on the information gathered from the literature and the analysis carried out, the findings of the study are summarized as follows

a) The study revealed that most household's heads are in active age range and thus will actively engage in economic activities which will impact tremendously on affordability of housing units in the study area.

b) In terms of improving incremental affordable housing units, the study found out that the alternatives available for improving affordable housing provision includes, direct construction by the households, charging of minimal interest rate by mortgage institutions, the use of authenticated academic/professional certificates as collateral security and increment in workers' salaries so as to enable them build houses on their own.

c) The study discovered that majority of the households in the study area choose rent as compare to other financing options as the most effective means of financing their current accommodations. This might be due to their income level as housing is beyond their rich. In other words, owing housing accommodation was unattainable. This was due to the fact that most of the respondents are low income earners.

d) The study also uncovered that affordability of housing among prospective households can be improved by encouraging as well as promoting the production of standardized building/construction materials in the study area.

e) The findings uncovered that most of the respondents prefer personal savings and mortgage loan as the most preferred way in which fund can be raised for housing development. Furthermore, they are dissatisfied with the idea of mortgage financing while vast majority are affected with religious belief and thus, could not take mortgage loan for housing development.

f) Furthermore, lacks of collateral security and high interest rate imposed on loans have been found to be the major reason why most households could not take bank loan for affordable housing development.

7. CONTRIBUTION TO KNOWLEDGE

It has been documented that housing is cardinal to all human endeavors. It promotes productivity, guarantees better health of the citizenry and generates employment. It is also an object of investment among others. And for man to continue to contribute meaningfully to the economy of a nation, he must have shelter over his head and that of his family.

Based on this, this research adds to the body of knowledge on private sector housing provision towards affordable housing, which would be beneficial to prospective households, academicians, policy makers, house financiers, learning institution instructors and other stakeholders. It would also provide a basis for further research on the subject matter. In addition it will be of value to:

a) **Prospective Home Owners:** This research would make potential households to become aware of what stands in their way to affordable housing and thereby making it easier for them to device ways of overcoming and minimizing these challenges.

b) **Financiers:** Financiers will better understand the financial and housing needs of their many and willing clients as housing affordability has been studied

in this research to a considerable extent. These financial institutions will also appreciate their role in facilitating development of affordable housing for the urban poor in Lafia metropolis and Nigeria at large.

c) **The Government:** The government has a major role in facilitating and developing affordable housing for its people through encouraging construction of affordable housing by offering incentives to developer and builders who take into account low cost housing in their projects. Hence, this research will add an insight through outlining the government's critical role in developing policies that regulate and promote provision of loans by financial institutions. Such an assertion is founded on the fact that the government is the main overseer of the housing sector to maintain sanity and ultimately affordability.

d) **Real Estate Developers:** This research will pursue the housing needs of the middle and low income household's and will thus help the real estate developers in meeting these needs. It can however be noted that the real estate developers also face their greater share of troubles in providing affordable housing to the middle and low income households. However, all is not lost as this research and deliberations on some of these issues can help make the troubles less sour.

8. CONCLUSION

It must be stated that problem identified gives a clue to its solution. This research has brought to surface that housing has been a major issue in the advancement of humanity. The ever increasing human population and its associated poverty have dire consequences on housing provision. The affordability tag on housing shall continue to elude man if steps are not taken to holistically involve housing stakeholders in an objective and unbiased discourse.

Affordable houses are few and many are demanding them for habitation but the means to secure or lay hands on such accommodation is predominantly constrained by low income levels and funding options. It is hoped that findings and recommendations of the study would go a long way to improve supply of affordable housing for the urban poor and nongovernmental organizations. It is also hoped that the findings will policy makers to make informed decisions in relation to affordable housing investments.

9. RECOMMENDATIONS

Deducing from the summary of findings of the study the following recommendations could go a long way in addressing affordable housing problems for urban households on rental tenure.

a) The government must desire to provide adequate affordable housing to its citizens more especially the urban poor. The provision of the housing units could take the form where the government mobilizes funds from the capital market in the long term to boost affordable housing production. Another long term housing arrangement is for the government to arrange for mortgage facilities to provide affordable housing for its citizens depending on some parameters like income levels and working age of employees.

b) There seems to be inequity in housing finance options for most employed household. Some household are given rent subsidy and owner-occupier allowance and majority of households are not entitled to any housing finance option. In the shortest possible time, the government should provide options to cater for those who do not enjoy any housing finance options under the state and national housing policy. This shall go a long way to address inequities in housing finance for most households.

c) It is strongly advised that in the short, medium and long terms, the government must actively engage the private sector production in decent affordable housing. The short term measure is to attract the attention of the private sector by presentation of housing investment ideas.

The medium term is for a University/higher institution of learning or research institute to have a thorough analysis as to how to effectively and efficiently partner with willing private sector in housing development. The long term is for the implementation of terms of contract of the affordable housing project.

d) The government should also lower interest rates and taxes on mortgages to make housing affordable to most households. Moreover, the government should streamline and harmonize the land registration procedure to make the process simpler, time efficient, accurate and legitimate. Such a move will make the costs associated with land registration less expensive.

e) Lending institutions such as micro finance institutions, mortgage institutions, commercial bank and the likes should be gingered, encouraged and empowered to increase their housing finance lending capacity. Such a move will cover the middle and lower classes who are the majority.

f) Mortgage lending institutions should try and improve their long term lending capacity. This is necessary so that they should be able to lend for periods more than twenty years. Additionally, they should also try and give more people access to finance at low interest rates,

g) Lastly, alternative and cheaper building technologies should be espoused by the prospective home owners and real estate agents.

10. REFERENCES

- Abdullahi, B.C. & Aziz, W.N.A. (2011). The Role of Private Sector Participation in Achieving Anticipated Outcomes for Low-Income Group: A Comparative Analysis of Housing Sector between Malaysia and Nigeria. *African Journal of Business Management*, 5(16), pp: 6859-6878.
- Abdulai, H. & Owusu-Ansah, A. (2010), House Price Determinants in Liverpool, United Kingdom, *Current Politics and Economics of Europe,* 22(1), pp: 1 -26.
- Abimaje, J., Akingbohungbe, D.O. & Baba, A.N. (2014). Housing Affordability in Nigerian Towns: A Case of Idah, Nigeria. *International Journal of Civil Engineering, Construction and Estate Management*, 1(2), pp: 31-38.
- Acharya, G. & Bennett, L.L. (2001), Valuing Open Space and Land Use Patterns in Urban Watersheds, *Journal of Real Estate Finance and Economics,* 22(2/3), pp: 221-237.
- Adedeji, Y.D. & Olotuah, A.O. (2012). An Evaluation of Accessibility of Low-Income Earners to Housing Finance In Nigeria. *European Scientific Journal, ESJ*, 8(12). pp: 149-168.
- Ademiluyi, A.I. & Raji, B.A. (2008). Public and Private Developers as Agents in Urban Housing Delivery in Sub-Saharan Africa: The Situation in Lagos State. *Humanity and Social Sciences Journal*, 3(2), pp: 143-150.
- Ajibola, M.O. & Oluwunmi, A.O. (2012). Examining the Factors Contributing to Affordable Housing in Kosofe Local Government Council Area, Lagos, Nigeria. *Journal of Asian Business Strategy*, 2(10), pp: 206-219.
- Aliyu, A.A., Kasim, R. & Martin, D. (2011). Factors Affecting Housing Development in Makama Jahun Area of Bauchi Metropolis, Nigeria. *International Journal of Trade, Economics and Finance*, 2(4), pp: 263-268.
- Amamata, Z.A., Safiya, O. & Bala, B. (2015). *Integrating Factors of Housing Affordability as a Scheme in Governmental Policies.* Accessed Online on 29/12/2016.
- Andrew, O.N. (1998). *Trends in the Supply of Affordable Housing*: Meeting America's Housing Needs (MAHD): A Habitat 11 Follow-up Project.
- Aribigbola, A. (2011). Housing Affordability as a Factor in the Creation of Sustainable Environment in Developing World: The Example of Akure, Nigeria. *Journal of Human Ecology*, 35(2), pp: 121-131.
- Australian Housing and Research Institute (AHURI) (2011). Measuring Housing Affordability. *AHURI Research and Policy Bulletin,* Issue 45.
- Aziz, W.N A., Singaravelloo, K., Doling, J. & Hanif, N.R. (2014). Towards a Housing Policy in Malaysia. *Housing East Asia: Socioeconomic and Demographic Challenges*, 140.
- Ball, R. (1999). Developers, Regeneration and Sustainability Issues in the Reuse of Vacant Industrial Buildings. *Building*

Research and Information, *27*(3), pp: 140-148.

- Baqutayan, S.M.S., Ariffin, A.S.B. & Raji, F. (2015). Describing the Need for Affordable Livable Sustainable Housing Based on Maslow's Theory of Need. *Mediterranean Journal of Social Sciences*, *6*(3), pp: 353-269.

- Bichi, K.M, (2002). Housing the Nigerian Population: Problems and Prospect. *A Paper Printed to Senior Executive Course No. 24,* Participants at the Nigerian Institute of Policy and Strategic Studies, Kuru, Jos, Nigeria.

- Boamah, N.A. (2010). Housing Affordability in Ghana: A Focus on Kumasi and Tamale. *Ethiopian Journal of Environmental Studies and Management*, *3*(3), pp: 319-324.

- Bujang, A.A., Zarin, H.A. & Jumadi, N. (2010). The Relationship between Demographic Factors and Housing Affordability. *Malaysia Journal of Real Estate*, *5*(1), pp: 168-183.

- Cox, W. & Pavletich, H. (2010). *6th Annual Demographic International Housing Affordability Survey,* with An introduction by T. Recsei. Accessed Online 19/11/2016.

- Diamond Jr, D.B., & Lea, M.J. (1992). *The Decline of Special Circuits in Developed Country Housing Finance.* Accessed Online 19/11/2016.

- Eni, D.D., & Danson, T.P.K. (2014). *Private Sector Participation in Urban Housing Supply in Calabar, Nigeria.* Accessed Online 23/11/2016.

- Dwijendra, N.K.A (2013). Quality of Affordable Housing Projects by Public and Private Developers in Indonesia: The Case of Sabagita Metropolitan Bali. *Journal of Geography and Regional Planning,* 6(3), pp: 69-86.

- Gbadeyan, R.A. (2011). Private Sector's Contributions to the Development of the Nigerian Housing Market. *Current Research Journal of Social Sciences*. *3*(2), pp: 104-113.

- Gibb, K. & Whitehead, C. (2007). Towards the More Effective Use of Housing Finance and Subsidy. *Housing Studies*, *22*(2), pp: 183-200.

- Ismail, A., Bujang, A.A., Jiram, W.A., Zarin, H.A. & Ja'afar, M.N. (2015). Housing Financing Facility and Affordability Level of Bumiputera within Iskandar Malaysia. *Journal of Economics, Business and Management*, *3*(9), pp: 327-346.

- King, P. (2009). *Understanding Housing Finance: Meeting Needs and Making Choices*. Routledge, Accessed Online 16/12/2016.

- Krejcie, R.V. & Morgan, D.W. (1978), Determining Sample Size for Research Activities, *Educational and Psychological Measurement*, 30(1), pp: 607-610.

- Malpass, P. & Murie, A. (1991). H*ousing Policy and Practice*: *The Financial Framework,* Fourth Edition. Macmilllan: USA, p. 183.

- Mayer, C.J. & Engelhardt, G.V. (1996). Gifts, Down Payments and Housing Affordability. *Journal of Housing Research*, *7*(1), pp: 59-76.

- Moko, S.K. & Olima, W.H. (2014). Determinants of House Construction cost in Kenya: A case of Nairobi County. *International Journal of Business and Commerce*, *4*(1), pp: 19-36.

- Mulliner, E. & Maliene, V. (2011). Criteria for Sustainable Housing Affordability. *Proceedings of the 8th International Conference Environmental Engineering*.

- Nepal, B., Tanton, R. & Harding, A. (2010). Measuring Housing Stress: How Much Do Definitions Matter?*Urban Policy and Research*, *28*(2), pp: 211-224.

- Oladunjoye, A.O. (2005). Nigeria: Implementation of the Sustainable Cities Programme in Nigeria. *Sustainable Cities Programme. Localizing Agenda 21 Programme. United Nations Programme for Human Settlements.* (UN-HABITAT). Available: www.unhabitat.org/scp - http://ww w.unhabitat.org/la21. (September 30, 2010).

- Olugbenga, E. & Adekemi, O. (2013). Challenges of Housing Delivery in Metropolitan Lagos. *Research on Humanities and Social Science*, *3*(20), pp: 1-8.

- Omirin, M.M. (1998). Land Accessibility and Low Income House Building Activity in Metropolitan Lagos. *Journal of Environmental Studies*, *1*(1), pp: 76-91.

- Li, S.M. & Yi, Z. (2007). Financing Home Purchase in China with Special Reference to Guangzhou. *Housing Studies*, *22*(3), pp:

409-425.

- Rakodi, C. (1991). Women's Work or Household Strategies? *Environment and Urbanization*, *3*(2), pp: 39-45.
- Rukaiyat, O.A., Yakubu, S., Foluke, F.O. & Ismail, O. (2015). Housing Affordability by Federal Civil Servants in Minna, Nigeria: Emerging Issues. *Journal of Management and Sustainability*, *5*(1), pp: 90-107.
- Ruming, K., Gurran, N. & Randolph, B. (2011). Housing Affordability and Development Contributions: New Perspectives from Industry and Local Government in New South Wales, Victoria and Queensland. *Urban Policy and Research*, *29*(3), pp: 257-274.
- Stephens, M. (2002*). International Models of Housing Finance: Housing Finance in the Western and Transition Economies.* Accessed Online 19/11/2016.
- Shaqra'a, E.A.A., Badarulzaman, N. & Roosli, R. (2015). Residents' Perception of the Affordability of Private Housing Schemes: Lessons from Aden, Yemen. *Procedia-Social and Behavioral Sciences*, *202*, pp: 389-399.
- Stone, M.E. (2006). What is Housing Affordability? The Case for the Residual Income Approach. *Housing policy debate*, *17*(1), pp: 151-184.
- Struyk, R.J., & Turner, M.A. (1986). Exploring the Effects of Racial Preferences on Urban Housing Markets. *Journal of Urban Economics*, *19*(2), pp: 131-147.
- Ugonabo, C U. & Emoh, F.I. (2013). The Major Challenges to Housing Development And Delivery in Anambra State of Nigeria. *Civil and Environmental Research*, *3*(4), pp: 1-20.
- United Nation (UN) (2014). World Urbanization Prospect: World's Population Increasingly Urban with More than Half Living in Urban Areas, New York. Available at: www.un.org/dev/desa/population/world-urbanization-prospects. ST/ESA/SER.A/366.
- UNPD (United Nations, Department of Economic and Social Affairs, Population Division) (2004). *World Urbanization Prospects: The 2003 Revision.* New York: United Nations. Accessed Online 13/12/2016.
- Urban Research Institute (URI) (2011). *How Great is the Affordable Housing Supply Crisis in Australia's Private Rental Market*, (144). Accessed Online 19/11/2016.
- Yin, R.K. (2003). *Case Study Research: Design and Methods,* 3rd Edition, London: Sage Publications.
- Zhao, X. & Qiming, L., (2014). Integrating the Empirical Models of Benchmark Land
- Price and GIS Technology for Sustainability Analysis of Urban Residential Development. *Habitat International,* Issue No: 44 (2014). Accessed Online 23/9/2016.

******