

# **URBAN HOUSING AFFORDABILITY AND HOUSING POLICY DILEMMAS IN NIGERIA**

by

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## **ABSTRACT**

Given the increasing importance of affordability in housing policy reform debates, this study develops a new composite approach to measuring housing affordability and employs it to examine the nature of urban housing affordability in Nigeria. The data used in this study are based on the Nigerian Living Standards Survey 2003-2004.

The aggregate housing affordability model developed here measures housing affordability problems more accurately and classifies the housing affordability status of households more appropriately than the conventional affordability models. Findings show very high levels of housing affordability problems in Nigeria with about 3 out of every 5 urban households experiencing such difficulties. There are also significant housing affordability differences between socio-economic groups, housing tenure groups and states in Nigeria.

The current national housing policy that de-emphasises government involvement in housing provision does not allow the country's full potential for tackling its serious affordability problems to be realised and, hence, the laudable 'housing for all' goal of the policy has remained elusive. Nigerian socio-economic realities demand far more vigorous government involvement in housing development, working with a more committed private sector, energised civil societies and empowered communities to tackle the enormous housing problems of the country.

## **DEDICATION**

This work is dedicated to Irma, Eche and Jide whose love has been unconditional including my wonderful parents Chief & Mrs. Innocent and Victoria Ndubueze who have borne my burden over so many years without reminding me!

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## **LIST OF ABBREVIATIONS**

IMF	International Monetary Fund
NHF	National Housing Fund
NHP	National Housing Policy
LUD	Land Use Decree
FMBN	Federal Mortgage Bank of Nigeria
PMIs	Primary Mortgage Institutions (PMIs)
FCT	Federal Capital Territory (FCT)
LGAs	Local Government Areas (LGAs)
FEC	Federal Executive Council (FEC)
FMWH	Federal Ministry of Works and Housing (FMWH)
UBS	Urban Basic Services Programme (UBS)
EAs	Enumeration Areas
PCHUD	Presidential Committee on Urban Development and Housing
UNHCHR	United Nations High Commission for Human Rights
GRA	Government Reserve Areas
FHA	Federal Housing Authority
CO	Certificates of Occupancy
NGOs	Non-Governmental Organisations
CBOs	Community Based Organisations
UNDP	United Nations Development Programme
UNCHS	UN Habitat (United Nations Centre for Human Settlement)
NS-SEC	National Statistics Socio-economic Classification (United Kingdom)
HEI	Housing Expenditure to Inome Model
SP	Shelter Poverty Model

## INTRODUCTION

### 1.1 Background of Study

Over the years, there has been an increasing shift towards expanding the role of the market in the social and public policy delivery systems of nations. As a result, the notion of the need for a welfare state as theorized by Wilensky and Lebeaux (1958), Kerr et al. (1960), Dennison (1967), Wilensky (1975), Barr (1992) amongst others to guard against ‘market failures’ is gradually diminishing in the face of increasing shift towards the market-end of the state-market continuum (Tosics, 1987; Lundquist, 1992). Previous systems which emphasized the central role of public agencies in physical planning and production of housing are thus giving way to market-based approaches where the private sector plays central roles (UNCHS, 1988; World Bank, 1993; UNCHS, 1996, 1997a). The pro-market shift has gained ascendancy largely due to the increasing dominance of *western* neo-liberal economic thinking, which emphasise market dynamism and efficiency in national economic management (Baken and Linden, 1993; Pugh, 1994; Jones, 1996; Fine, 1999).

Within the international housing policy discourse, this thinking implicitly requires the creation or the restructuring of a housing delivery framework in a way that will *enable the market to work*. It advocates creating housing policy frameworks that strongly propel market forces (i.e. market demand-supply-price mechanisms) to determine the production, distribution and consumption of housing. On the supply side, it favours private sector housing development and cost-recovery infrastructure financing. On the demand side, it promotes mutual credit association for housing financing, market-rate mortgage lending by banks and other financial intermediaries while avoiding any form of direct public housing grants, assistance or subsidies by the state (World Bank, 1993). Increasingly, most developing countries are being coerced by international lending agencies such as the World Bank to pursue these types of policy reforms, which will align with broad austerity policy packages in macro-economic structural adjustments

of these nations. These dominant international financial institutions discourage and condemn direct government involvement in housing as *distortions that hinders market efficiency* insisting that pro-market policy reforms promote market efficiency and stimulate economic growth (Pugh, 1994).

Nigeria, as a Sub-Saharan African country, offers a classic example of a nation whose policies have been directly affected by these changes. In 1986, the IMF/World Bank succeeded in convincing the then Nigerian military government into adopting Structural Adjustment Programme. Public enterprises were deregulated; government intervention in the economy became discredited; monetary and fiscal policies of government were over-hauled while protective mechanisms in international trade gave way to free trade. To keep-up the external pressures towards pro-market reforms – the country's capacity or political will to implement incisive structural reforms (or lack thereof) has remained a major talking point in its dealings with institutions such as the IMF and the World Bank. For instance, the Nigeria - Paris Club debt relief deal of November 2005 was predicated on and subject to stringent IMF reviews. This deal involved the elimination of \$18 billion of debt in exchange for \$12 billion in payments - a total package worth \$30 billion of Nigeria's total \$37 billion external debt (CIA, 2008).

It was therefore no surprise that the current housing policy has strongly shifted towards a more stringent pro-market emphasis than the previous policy it replaced. However, this shift towards the market has raised doubt about the feasibility of the housing policy goal, which is to *“ensure that all Nigerians own or have access to decent, safe and sanitary housing accommodation at affordable cost with secured tenure”* (Federal Government of Nigeria, 2002, p.1). The scepticism feeds off the evident increase in urban housing affordability problems and decline in housing conditions for the majority of urban dwellers (UNCHS, 1997b, 2001), which seems to question the efficacy of the market reforms being advocated given that market forces cannot be relied upon to guarantee equitable redistribution of resource within any society (Baken and Linden, 1993; UNCHS, 1993b; Jones, 1996; UNCHS, 1996). This increasing concern underscores the

need to rigorously assess the appropriateness of contemporary market-based housing policies and their underlying assumptions, especially as exported by such institutions as the World Bank to developing countries. This is especially so when most of these countries seem to pursue the housing policy goal of *'provision of adequate shelter for all'* as endorsed at the Earth Summit in Rio within the framework of Agenda 21 and consolidated by the Istanbul global commitment with Habitat II Agenda (United Nations Conference on Environment and Development, 1992; UNCHS, 1997a). Housing policy with such primary goal of *'provision of adequate shelter for all'* implicitly requires effective government mediation in the housing market to ensure a more equitable access to housing for all segments of the population. Thus, it does seem that pursuing drastic pro-market reforms alongside egalitarian housing policy objective of shelter for all is actually sending out two conflicting signals for the housing policy of nations. It constitutes a major core issue where consensus has not been reached in the current international housing policy discourse and tends to promote confusion in the articulation and implementation of housing policy in many developing nations such as Nigeria.

Consequently, the national housing policy reform in Nigeria appears not to have been thought through by policy and decision makers in the country. Thorough understanding of local realities and context should guide policy. There is the need to move away from the existing trend where decision and policy makers tend to conveniently accept the ever changing generalized conventional wisdom of the time, which more often are a sort of "hand-me-down" ideological strait jacket that reflect dominant interests other than the interests of people to whom such policies are meant to protect and serve (Onibokun, 1983). In pursuit of this need, no indicator can be more useful than housing affordability in offering valid insights to policy makers. Beyond reflecting the performance of the housing sector, housing affordability uniquely establishes the relationship between people and housing in monetary terms, and at a deeper level expresses the link between social and economic systems and the quest for satisfaction of basic human needs that is not merely monetary (Stone, 1993). It is this unique

perspective of housing affordability that provided the broad justification for undertaking this study. Having discussed the background of the research problem, the study will now present in more specific terms, the problem of study.

## **1.2 Statement of Problem**

In the last five decades, Nigeria has been experiencing very rapid urbanization. This is largely due to very rapid urban growth associated with natural population growth and rural-urban migration driven by rapid socio-economic changes and development. However, this growth has not been matched with simultaneous provision of adequate services/infrastructure and resource development. Thus, the significant rise in population, number and size of Nigerian cities have led to the acute shortage of dwelling units, resulting in overcrowding, high rents, poor urban living conditions, low infrastructure services, deteriorating environment, increasing poverty and rise in urban insecurity (Agunbiade, 1983; Ajanlekoko, 2001; Oluwasola, 2007; Owei, 2007). In 1991, the National Housing Policy (FRN, 1991) projected the urban housing shortage to be about 5 million housing units while the rural housing shortages stood at 3.2 million. Thus, it was projected that some 700,000 housing units had to be produced annually to tackle these shortages by the year 2000 AD. More recent United Nations study put the overall housing deficit at 17 million units while Nigeria National Bureau of Statistics estimates are between 12 and 14 million housing units (Anosike 2007). These problems have also been exacerbated by excessive inequalities in the country with Gini index of 43.7%. While the share of total expenditure of the poorest 10% is about 1.9%, that of the richest 10% is about 33.2% whereas about 70.8% earn less than \$1.00 (US dollar) a day between 1990 and 2005 (United Nations Development Programme, 2008). As have been argued in UNCHS (1996, p.xxviii), if it is considered that often the proportion of households living in inadequate housing tends to be usually higher than those below the poverty line, then the enormity of Nigerian housing inadequacy will be more readily appreciated. Ajanlekoko (2001) aptly observed that given the simultaneous decline of per capita income in Nigeria as well as in the real income of the

average Nigerians in recent years, the rapid up-swing in the prices of building materials has further reduced the housing affordability for most Nigerian. He reasoned that if the problem of how to finance the construction of housing for all income groups is not effectively addressed, the enormous housing problem in Nigeria is bound to further escalate. Some of these issues will be elaborated further in the next chapter.

In order to deal with these problems, the country has pursued a range of successive housing programmes and policies. Currently, the Nigerian housing policy reform is beset with the major dilemma of how to strike the delicate balance between market liberalization, government intervention, and social mechanisms in the housing process in order to achieve the desired goal of ensuring adequate access to decent housing for all. On one hand, the government is implementing broad deregulation policies in foreign exchange and finance markets, trade and investment, and industrial development within the framework of economic structure adjustment and reforms, which seek to promote private sector-led housing provision. This policy orientation tends to discourage the use of innovative direct supply-side and demand-side subsidies to promote housing sector development. On the other hand, the government has continued to insist on ensuring adequate housing for all as a primary housing policy objective in the face of compelling arguments on the limitations of the unregulated market in achieving such an egalitarian objective. In the light of this basic contradiction and beyond, the housing condition of Nigerians has continued to decline under the current housing policy regime, with the majority of households still saddled with a lack of basic facilities alongside serious housing affordability problems (Aribigbola, 2008). According to Aribigbola;

“Housing policy formulation and implementation in the country must take cognisance of the socio economic circumstances and condition of the people and reflect it in the policy. The present move or tendency on relying wholly on market forces of demand and supply and leaving housing to private initiatives will not solve the problems of housing shortages and quality in the country” (2008, p.132).

Such observations raise concerns about the suitability of current housing policy orientation in dealing with Nigerian housing problems. As has been observed by Malpass and Murie (1994), central to the achievement of adequate provision and distribution of housing is the issue of managing the relationship between the price of housing and the capacity of household to pay for their housing. Thus there is the need to pay attention to policy impacts on house price, rents, transaction costs and household income. Given the repeated failure of direct public housing by government in the country, closer attention should be paid to other forms of subsidies that could be more effective in providing decent housing to households.

Hence, the need for policy and decision makers to have deeper understanding of the forces that influence and shape housing affordability of different groups within the society. The enablement approach in advocating the move towards private sector and market-driven housing provision, added an important caveat that it must be pursued within a framework that addressed those areas where the private and unregulated markets do not work” (UNCHS, 1996, p.337). In reflecting this concern, the Habitat II Agenda document recommended that “governments at appropriate levels and in consistent with their legal authority should periodically assess how best to satisfy the requirements for government intervention to meet the specific needs of people living in poverty and vulnerable groups for whom traditional market mechanisms fail to work” (UNCHS, 1997a, p.43). Thus, it is crucial to clearly articulate and determine those areas where the private and unregulated markets do not work in the country, since understanding the limits of the market is a critical factor in implementing the enablement approach. To this end, thorough understanding of the housing affordability of households in Nigeria will be valuable. Unfortunately, very little has been done in this direction. Little effort has been made to articulate “those areas where the private and unregulated markets do not work.” While this need underscores the importance of examining housing affordability of households to identify areas of market limitations, there are very few rigorous research studies on urban housing affordability in Nigeria. If there are no real attempts to understand the dynamics of housing affordability across different social and

economic groups and factors that shape it within the Nigerian context, improving housing conditions of households under the current housing policy regime will continue to remain elusive. The current dearth of reliable information necessary to design or adopt appropriate housing intervention strategies traps the country in the vicious circle of continually ‘stabbing in the dark’ in the effort towards ensuring access to adequate housing for all segments of the population. In this regard, such difficult issues as developing better ways to measure housing affordability of households should be confronted. The existing conventional/traditional housing affordability methodologies and indicators with their empirical limitations need to be improved upon. They inherently tend to emphasize particular aspects of housing affordability, which often fails to capture the multi-dimensional nature of affordability. The continuous use of these indices as analytical tools limits the scope and quality of analytical insights they provide. Consequently, this study strongly argues that adopting a composite approach in measuring housing affordability will likely provide more reliable results. Such valuable insights are needed in the current debate on how to achieve the goal of ensuring adequate housing for all households in countries such as Nigeria.

### **1.3 Goals of the Study**

Often, housing needs and individual preferences change according to incomes, family characteristics, gender and age, location, form and tenure while housing conditions also vary significantly between cities (UNCHS, 1997b). It is also common knowledge that good quality housing is a resource that is not readily available or accessible to all groups in the cities. It is in recognition of the fundamental human right to adequate housing and the need to create a more egalitarian society that informed the current Nigerian national housing policy goal of ensuring adequate housing for all. In the light of such a policy goal, it is crucial to examine the housing differences of various groups in Nigerian cities. Not only will it deepen our understanding of local housing realities of different groups, it will more importantly offer

possible insights into how best to effectively deal with their respective housing problems (where they exist).

If, as contended by Balchin and Rhoden (1999), people in different socio-economic groups have different consumption characteristics; and there is a wide income/expenditure disparity between the higher and lower income quintile groups – it will be important to examine the housing affordability of different socio-economic groups in the country. If it is true that different housing tenure groups have different housing characteristics and problems, as contended by (Rakodi, 1995; Arimah, 1997; Udechukwu, 2008), it will be important to examine the housing affordability of different housing tenure groups in the country.

Furthermore, there seems to be a persistent spatial variation of poverty levels between states and regions in Nigeria with the North-eastern and South-eastern regions recording the highest and lowest levels of poverty respectively as indicated in the Poverty Profile for Nigeria 1996 and the Poverty Profile for Nigeria 2004, (Federal Office Of Statistics, 1999; Federal Office of Statistics Nigeria, 2005; , 2006b). If as a result the enormous and complex housing problems in Nigeria exhibit apparent and marked regional differences as contended by the National Housing Policy (FRN; 1991,p.1), then it will be important to also examine and compare housing affordability across the states in Nigeria to ascertain the nature of regional housing affordability differences in the country. Therefore, examining housing affordability across different socio-economic groups, housing tenure groups and states in Nigeria will hopefully offer valuable insights towards understanding local housing realities and the type of policy reforms necessary to significantly improve housing conditions of households in the country.

Thus, the intention here is to examine housing affordability across different socio-economic groups, housing tenure groups and states; within a context that links the results and the valuable insights they bring to wider discussions about choice of housing policy reform in Nigeria. Therefore, the broad goal of this study is to better understand how housing policy can be oriented to be more effective given the particular Nigerian housing and socio-economic

context. In more specific terms, the study aims to develop a new composite approach to measure housing affordability and employ it to examine the nature of urban residential housing affordability across different socio-economic groups, housing tenure groups and States in Nigeria with the view to explore the implications of findings for Nigerian housing policy reform.

### **1.3.1 Objectives of Study**

The specific objectives of this study include the following;

- a) to generate the conventional (housing expenditure to income ratio and shelter poverty) housing affordability indices for Nigeria.
- b) to modify these conventional affordability indices into more appropriate housing affordability measurement indices.
- c) to recombine these modified indices into a composite aggregate housing affordability index.
- d) to model aggregate housing affordability in the study area based on household income, housing expenditure and household size.
- e) to determine and compare the residential housing affordability across different socio-economic groups, housing tenure groups and States in the study area.
- f) to determine to what extent household income, non-housing expenditure and housing expenditure influence the differences in aggregate housing affordability of socio-economic groups, housing tenure groups and States in the study area.
- g) to examine the housing policy implications of findings in the study area.

### **1.4 Broad Research Questions and Research Hypothesis**

In order to achieve the research objectives, sets of broad and more specific research questions have been raised to guide the study. While this introductory section will be concerned with the broad research questions, more specific questions will be presented in the methods and

procedure chapter after laying-out the arguments that justify such research questions. Suffice it to state here that given the goal of the study, it is crucial to find an answer to the question as to *how current housing policy can be made more effective in responding to the housing affordability realities of households in the study area?* This is the broad research question that guided the study.

The broad research hypothesis of the study is embedded in the above-stated research question. In a null form, it posits that *there are no significant housing affordability differences between socio-economic groups, housing tenure groups and states in Nigeria.* Just as with the detailed research questions, the more specific research hypotheses will also be elaborated in the methodology chapter. However, successive chapters will endeavour to develop the justifications for the research questions and the hypotheses as framed in this study.

## **1.5 Methodology**

The study made extensive use of quantitative research methods to address the range of the research questions raised in the study. Quantitative techniques were employed in the study to deal with the methodological challenges of developing more appropriate measures of housing affordability and applying such measures to the Nigerian housing context. As the study was essentially concerned with micro levels analyses to determine the nature of residential housing affordability of households across different socio-economic groups, tenure groups, and states, horizontal (cross-sectional) research designs were used.

### **1.5.1 Secondary Data**

The bulk of the data used in the study were based on secondary data types and sources. Availability of and accessibility to a detailed Nigerian household survey database (the Nigeria Living Standards Survey 2003-2004) was a major key component that facilitated this study. According to the survey documents explaining how the sampled households were drawn, the sample design for the study was a two stage stratified sample design. The first stage was a

cluster of housing units called Enumeration Area (EA), while the second stage was the housing unit. One hundred and twenty EAs were selected for a state while 60 EAs were selected for the Federal Capital Territory for the twelve months survey duration. The overall sample size to 21,900 households (Federal Office Of Statistics, 2004, p.125). The urban households consisting of 4,662 households of 19,679 persons were isolated and used in the study.

### **1.5.2 Quantitative Analytical Techniques Used in the Study**

The initial processes of extracting required information and data from the Nigeria Living Standards Survey 2003-2004 (NLSS) database involved preliminary identification of relevant variables and data exploration. As a result, many of the relevant variables that were initially identified were modified, standardised, transformed and recombined with other variables to generate required secondary variables for the study. These secondary variables were subsequently used to develop the housing affordability indices for the study. A wide range of analytical and statistical tools and techniques were used in this study. Some of the major ones include; Principal Component Analysis (PCA); Partial Least Square Regression (PLS); Multi-Level Modelling of Regression Analysis (RA), Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA). A Geographic Information Systems (GIS) was used to permit spatial analysis and data manipulation. Principal Component Analysis (PCA) was used to develop the housing quality variable while the Partial Least Square Regression (PLS) was used to develop the aggregate housing affordability index of households. Variations of Multi-Level Modelling technique were used in the study. Multi-level regression analysis (RA) was used to determine the relationship between aggregate housing affordability as the dependent variable and set of independent variables that include income, housing expenditure and household size. The Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA) were used to determine, first, significant differences in aggregate housing affordability of different socioeconomic groups, housing tenure groups, and States in Nigeria, and second, how such factors as household income, non-housing expenditure and housing expenditure influence

these differences. Geographic Information Systems (GIS) Classification Analysis was used to map the various analytical representations of the aggregate housing affordability of states in the study area.

## **1.6 Scope of Study**

The study is essentially concerned with developing a new technique of measuring housing affordability of households; and applying it to comparatively analyse the housing affordability of various socio-economic groups, housing tenure groups and states in Nigeria with the view to exploring their housing policy implications. The study is focussed on urban housing sector and thus, it is limited to examining the housing affordability of the urban households. The reasons for limiting the scope of this study to the urban housing sector include the fact that urban housing problems in the country are generally more severe and profound than rural housing problems both in their intensity and complexity. In Nigeria, the urban areas have higher levels of population density, higher population growth rates, high levels of in-migration, higher costs and value of property and land, and higher levels of income and employment disparity. Consequently, overcrowding, high rents, slums and squatter settlements, are common features of the Nigerian urbanscape (Mba, 1993). Thus, the study intends to focus on the urban sector because it has more severe housing problems. Another reason to concentrate on the urban housing sector is the fact that the main housing problems in the rural areas revolve around the issue of qualitative improvement in terms of sanitation and infrastructure for existing housing (Federal Republic of Nigeria, 1991). Thus, issues of housing affordability problems are of less significance in rural areas than in urban areas. Another consideration was the issue of study relevance to the current housing policy reform in the country. Given that successive housing programmes and policies in the country have focused mainly on urban housing, many of the contentious housing policy issues and dilemma which the study intends to discuss are largely more relevant to the urban housing sector.

In terms of geographical scope, the study covers the entire country to examine the housing affordability of households and states across all the 36 states including the Federal Capital Territory (FCT) in Nigeria. It is envisaged that the first part that is concerned with developing a new approach to measuring housing affordability of households can essentially be applied to any country of the world. It is however, the second part of the study that discussed the nature of urban housing affordability problems in Nigeria and their housing policy implications will have more relevance to many developing countries, especially in sub-Saharan Africa that share similar social, economic, political and geo-cultural conditions as Nigeria.

### **1.7 Limitations of Study**

Beyond limiting this work to the urban areas, the study encountered some limitations. The key limitations encountered in the course of the study were data related limitations, inherent in the data on which the study was based upon – the Nigerian Living Standard Survey (NLSS) 2003-2004 database. Whereas existing data contained in the database was detailed enough to undertake the study as shown in this thesis, there were four areas where availability of additional information would have enriched the study. These areas include; lack of precise information/data identifying households living in informal settlements; lack of precise information/data identifying households heads employed in the informal sector; lack of precise information/data on the actual position in work place or grade-level of employees at work place; and lack of useable information/data on income tax payments and remissions of households.

Given that both formal and informal settlements were sampled during survey, it was unfortunate that there were no specific information/data to identify or classify households living in formal or informal settlements. It is common knowledge that households living in formal settlement are those within the formal housing market while those in the informal settlements consist of those surviving outside the formal housing market. It must however be acknowledged that informal housing is often mediated by market forces although such market

are configured differently and often work through different channels (e.g. outside of any tax/subsidy system) than in the formal markets. Hence if these relevant data were available, the main interest would have been to determine and compare the degree of housing affordability of households living in the formal housing sector and informal housing sector. It would have been valuable in this study to contrast the housing affordability of these households and possibly to examine the links between the formal and informal housing markets. Hence, the inability to separate sampled households into formal and informal settlement in the database is considered a limitation.

It was also difficult to comprehensively identify household heads employed in formal and informal sectors of the economy due to non-availability of this information in the NLSS 2003-2004 database. This information would have been needed to improve the socio-economic classification applied in the study. It would have been possible to disaggregate and delineate the small employers group and own account workers (self employed without employees) group along the formal and informal sector criteria.

Similarly, it would also have been helpful to be able to have precise information/data on the actual position of household heads in work place or their actual grade-levels at work place in the section of the database that dealt with employment status of sampled households. This information would have made the classification of socioeconomic groups in the study easier.

There was also limited information on income tax remittance and payments by household heads in the database. This confined the study to only the use of gross household income in the various analysis carried out. The availability of these data would have made it possible to also use net household income in some of the analyses made in the study and, more importantly, to contrast the effect of gross and net household income on aggregate housing affordability of households.

Although these identified limitations in the NLSS 2003-2004 database were not critical in defining the research results, they would have provided more scope for some of the analyses reported in the study had these data been available. Identifying some of the relevant data that

would have enriched the study also serve to identify some of the possible areas, where the National Living Standard Survey in Nigeria could be improved upon.

### **1.8 Significance of Study**

This study is both theoretically and geographically significant in many respects. In attempting to develop more reliable and responsive housing affordability indices, it is hoped that this study will contribute to the process of developing better housing affordability measures that will more readily reflect the housing realities of households as shaped by prevailing housing market as well as their particular household circumstances. Given, the need to develop better methods of measuring the affordability concept, the study attempts to bring together the current different perspectives on how affordability is measured with the view to developing a more realistic composite way of measuring housing affordability of households.

The study aspires to improve our capacity to accurately assess the accessibility of any given housing market and by extension the suitability of policies that shape such markets within any particular national context. It is hoped that the study meaningfully contributes towards a better understanding of the impacts of household income, non-housing expenditure, housing expenditure and household size on housing affordability across the socio-economic groups, housing tenure groups and States in the study area. These would hopefully contribute towards appreciating actual housing conditions in Nigeria, allowing improved housing delivery strategies that are effective in improving adequate housing delivery.

Furthermore, this study attempts to contribute to the growing debate on defining the suitable housing policy direction of many Sub-Saharan Africa (and other similar developing) countries. Many of these countries are confronted with the dilemma of implementing market-driven economic reforms in all sectors including housing on the one hand and to also ensuring that every citizen is given equal access to housing opportunities on the other. Given the fact that creating equitable access within any society usually demands some sort of market regulation by

state, there is a growing debate on the appropriateness of forcing these countries down the road of comprehensive structural and sectoral market-driven reforms with little or no market intervention mechanisms. Uncovering such impacts across various socio-economic and tenure groups would readily give insight into areas where the private and unregulated markets do not work and *'who' and 'where'* to actually target assistance in any attempt to mitigate housing market failures while pursuing market driven housing policy reforms. Further, the study contributes towards improving the current dearth of rigorous housing research studies and literature on this area of housing studies in Nigeria.

The negative consequences of the current lack of in-depth relevant bodies of housing literature and data system in the country and the need to redress the situation cannot be over-emphasized. This study responds by attempting to close the information and data gap that exists in understanding the level of housing affordability in Nigeria. Considerable advances in techniques and tools have been used in this study to develop the aggregate housing affordability index and explore the relationships between aggregate housing affordability and such factors as household income, housing expenditure, non-housing expenditure and household size. The study constitutes a rigorous pioneering work on housing affordability in Nigeria and thus contributes to filling the existing literature gap in this field of housing research in Nigeria as well as other similar Sub-Saharan African countries.

## **1.9 Structure of the Thesis**

The thesis is made up of ten chapters, including this chapter, which has attempted to introduce the basic elements of the study. As noted, the study is concerned with developing a new composite measure of housing affordability at household level; and examining the nature of housing affordability across different socio-economic groups, housing tenure groups and States in Nigeria with the view to examining their housing policy implications. It is set against the backdrop of the current housing policy reform in Nigeria. Chapter 2 attempts to establish

the motivation for this study by discussing the context of the Nigeria housing sector and the current housing policy dilemma of pursuing more stringent pro-market housing policy reforms while at the same time retaining the egalitarian housing policy goal of ensuring adequate housing for all. The apparent mismatch between Nigerian housing policy goal and housing policy strategies underpins this dilemma. Subsequently, Chapter 3 links the Nigerian housing policy dilemma to the on-going debate within international housing policy discourse on the role of government and market in ensuring adequate housing for all households; thus providing the complimentary theoretical and conceptual motivation for the study. It situates the current debate within the broader framework of normative public interest economic regulation theory and theories of distributive justice to emphasise the necessity of considering such issues as fairness, justice, rights and needs in housing policy debates. Both sides of the market versus non-market debate in housing policy are also presented. These issues underscore the need for local housing realities of households to mediate such debates. From their different perspectives both chapters emphasise the centrality of housing affordability considerations in articulating housing policy reforms. Having established the justification for the housing affordability focus of the study, the review of existing housing affordability literature is undertaken in Chapter 4. The chapter focuses on some relevant areas of housing affordability such as definitions and concepts; housing policy significance of affordability; types of affordability models and a critique of existing housing affordability related literature on Nigeria. This chapter identifies some pertinent weaknesses, knowledge gaps and considerations that influenced the particular focus of this research.

Chapter 5 is devoted to explaining in detail the research methods and procedures adopted in the study, highlighting the sources and types of data used, the procedures employed in deriving the secondary variables and a description of the relevant variables and data used in the study. The methodology discussions in Chapter 5 creates the framework for the first part of data analysis and research findings reported in Chapter 6. In this chapter, an attempt is made to present in a coherent manner the actual construct of the aggregate housing affordability index

derived from the composite approach of measuring housing affordability that is developed in the study. The Chapter also discusses the multi-level modelling of the aggregate housing affordability of households based on household income, housing expenditure and household size and provides empirical tests to support the superiority of the aggregate housing affordability index over each of the conventional housing affordability indices. It also explores the characteristics of, and differences between, the housing affordability quintile groups identified in the study area. Thereafter, the second part of the data analysis and findings is presented and discussed in Chapter 7. This chapter explores the relationships between aggregate housing affordability and different socio-economic groups and tenure groups within the study area and the impact of household income, non-housing and housing expenditures on such relationships. The spatial or locational dimension of the aggregate housing affordability across states and regions in Nigeria is also examined.

Having completed the data analysis and presentation of findings of the study, the final Chapters 8 and 9 of the study are largely devoted to exploring the policy implications of findings. While Chapter 8 is devoted to discussing the specific housing policy implications of specific key findings of the study, Chapter 9 focuses on bring together the various strands of findings in the study to discuss their broader implications for the current Nigerian national housing reforms in the country. Finally, a brief summary of the entire study is presented in Chapter ten, which also articulates the conclusions that can be drawn from the study.

## **THE NIGERIAN NATIONAL HOUSING POLICY CONTEXT**

### **2.1 Introduction**

This chapter is intended to “contextualise” the motivation for the study by discussing the current national housing policy dilemmas in Nigeria in more detail. This dilemma can be traced to the country’s desire to reform its housing policy in conformity to the Habitat II Agenda housing enablement framework on one hand and at the same time satisfy the external demands for extensive pro-market reforms. This dilemma has consequently exposed the urgent need for housing affordability to be considered in the current housing reform. Efforts have been made to place in historical context the current housing policy reform, the nature of the public and private housing sectors and the contradictions, challenges and dilemmas in framing the current national housing policy to achieve the goal of ensuring adequate housing for all in the country. In examining the Nigerian housing experience in order to better understand the current housing policy reform dilemma, it will be necessary to briefly discuss the geo-political structure and urbanisation trends in Nigeria

### **2.2 Geo-political Structure and Urbanization Trend in Nigeria**

Nigeria is a vast country of some 923,768 square kilometres made up of three regions (the eastern, western and northern regions) at its Independence from the British in 1960. By 1963, the fourth region – the mid-western region was created out of the western region. In 1967 at the onset of the Nigerian civil war, twelve states were created out of these four regions for political and military reasons. By 1976 seven additional states were created and two more created in 1987 to make a total of 21 states. These was followed by another nine and six states created in 1991 and 1996 respectively bringing it to the current total of 36 states and Federal Capital Territory (FCT) Abuja. Currently, these states and the FCT are sub-divided into 6 geo-political non-administrative regions namely South-South, South-East, South-West, North-

Central, North-East and North-West as shown in table 2-1. The map of the current 36 states and 6 regions are presented in fig. 2-1.

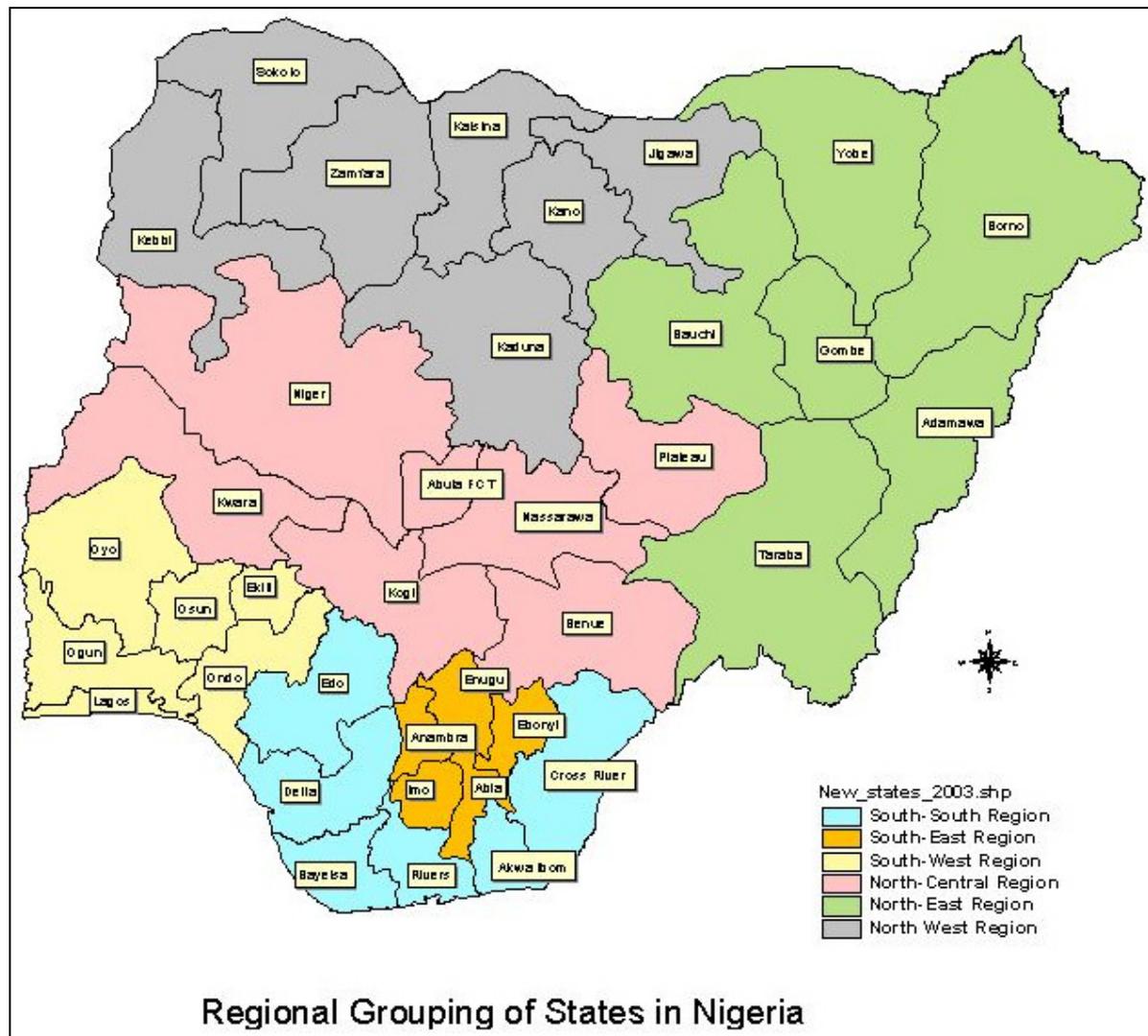
**Table 2-1 Showing the Classification of the States into Six Non-administrative geopolitical regions of Nigeria**

<b>REGIONS</b>	<b>STATES</b>
South South	Akwa Ibom, Rivers, Cross-River, Bayelsa, Delta, Edo
South – East	Enugu, Anambra, Ebonyi, Abia, Imo
South- West	Lagos, Ogun, Osun, Ondo, Ekiti, Oyo
North – Central	Abuja (FCT), Benue, Kogi, Niger, Nassarawa, Kwara, Plateau
North East	Adamawa, Bauchi, Borno, Gombe, Taraba, Yobe,
North West	Jigawa, Kebbi, Katsina, Kano, Kaduna, Sokoto, Zamfara

The number of local government areas (LGAs) in the country has also been on the increase in recent years. Following the decentralisation policy and the periodic increase in number of states, the government created 145 new LGAs 1989 that brought the total number of LGAs in the country to 449. Additional 325 more LGAs have been created since then to bring the total current number of LGAs in the country to 774. While the capitals of many states are being developed into medium-sized cities, the headquarters of these local government areas are being upgraded and developed as centres of small scale manufacturing and commercial activities, in addition to their traditional administrative and service functions (Nwaka, 2005).

Thus, there has been an increasing urbanisation trend in the country. Census figures in 1952 estimated that about 10.6% of the total population lived in these cities. By 1963, it had increased to 19.1% and to about 36.3% in 1991. According to the provisional 2006 census results, the country's total population is about 140 million showing an overall population growth rate of about 3.2% over the 1991 census. The urban growth rate is normally more than the rural growth rate with such city as Abuja growing at the rate of 9.3% (Ajanlekoko, 2001; Federal Office Of Statistics Nigeria, 2006a; Federal Republic of Nigeria, 2007).

Figure 2-1 Showing the Six Non-administrative Geo-political Regions of Nigeria



The increase in urban population has also been dramatic with respect to geographical spread. According to the 1963 census, there were 24 cities with over 100,000 people, 55 with over 50,000, and 183 with over 20,000. Of the 183 cities with 20,000 and above, seventy were located in the northern parts of the country, seventy-eight in the west, twenty nine in the east and six in the mid-western region. The vast middle-belt region and parts of the deep north have much lower levels of urbanisation (Nwaka, 2005). By 1992, the number of settlements in Nigeria with a population of at least 20,000 has risen to about 359 settlements compared to 183 settlements in 1963. According to the UK Department for International Development

report on Urban and Rural Development in Nigeria, about 18 cities had a population of more than 500,000 in 2002. In that report, it was estimated that as at the year 2000, Nigeria had more than 450 settlements with a population of at least 20,000 (the details of the recent census on the current size of settlements have not yet been released). Therefore, unlike most African countries where one or two cities dominate the urban network, almost all corners of the Nigerian land space have large centres of human agglomeration (DFID, 2004). However, the pattern of increasing urban agglomeration has remained uneven following the growth of certain distinct zones of urban concentration. These includes the Lagos-Ibadan cluster to the south-west region, the Onitsha-Owerri-Aba-Umuahia-Enugu group of cities to the south-east region, the chain of urban centres in the Benin-Sapele-Warri-Port Harcourt region of the South-south, the Kano-Kaduna-Zaria axis of the north-west, and emerging Abuja-Minna-Jos cities of the North-central. The largest of these cities estimated to have population of over 1 million people includes Lagos, Kano, Ibadan, Kaduna, Port Harcourt, and Benin City. Lagos is the largest city in sub-Saharan Africa, which according to the 2006 census has a population of about 9 million. While the speed and extent of urbanisation helps to explain the increase in urban housing problems, in order to understand the current housing policy reform dilemma in Nigeria, it is also necessary to understand the changing thinking in the international housing policy discourse which has influenced housing programme and policy in Nigeria.

### **2.3 The Changing Thinking in the International Housing Policy Discourse**

In both relative and absolute terms, the global urban housing conditions of the majority of urban dwellers have continued to decline (UNCHS, 2001). Over the last four decades, this worrisome trend has continued to influence and challenge ideas around different housing provision approaches. As a result, once dominant housing development approaches have successively given way to new ones within the housing policy consensus of the international community. This has led to marked and profound changes and shifts in housing policy orientation of nations in many parts of the world. In an historical context, the 1960s and early

1970s were dominated by the idea of modernization and urban growth. Official attention was focussed on physical planning and the production of housing by public agencies. This period emphasized very strong state dominance in physical development and encouraged the extensive use of master plans, direct construction of housing and the eradication of informal settlements. By the mid 1970s to mid 1980s the notion of redistribution of growth and provision of basic needs became dominant. This phase ushered in a new thinking that urged the support of self-help ownership on a project-by-project basis through the recognition of informal settlements, squatter upgrading, site and services and increased subsidies to land and housing. At this stage, the idea of the '*minimal state*' where the role of government would be limited to providing essential environmental and public services, while allowing the people to incrementally improve their housing and livelihood, began to dominate the global housing policy discourse with the major influence of the Habitat I Conference (Vancouver Declaration) in 1976. Other major influential sources to expound this new thinking included; the book *Housing by People* (Turner, 1976) and *Shelter Poverty and Basic Needs* (World Bank, 1980). The late 1980s and early 1990s saw the enablement approach and Urban management taking centre stage in global housing policy discourse with the Global Shelter Strategy for the year 2000 organized by U.N. Centre for Human Settlements in 1988. This time, the focus moved to the idea of securing an enabling framework for action by people, the private sector and market through private/public partnership, community participation, land assembly, housing finance and capacity building. Notable key sources that influenced the enablement approach included *Urban Policy and Economic Development* (World Bank, 1991), *Cities, Poverty and People* (United Nations Development Programme, 1991), *Agenda 21* (United Nations Conference on Environment and Development, 1992) and *Enabling Markets to Work* (World Bank, 1993). From the mid 1990s onward, increasing attention has been given to the idea of sustainable urban development where holistic planning to balance efficiency, equity and sustainability is being emphasized. The dominant thinking here, as developed by the Sustainable Human Settlement Development Implementing Agenda 21 (UNCHS, 1994), is to emphasise and

incorporate environmental management and poverty alleviation within the enablement approach framework. In 1996, these shifts in the global housing policy orientation culminated in the Habitat II (Istanbul Declaration) which attempted to integrate all the previous policy improvements based on the principle of “adequate shelter for all” and “sustainable human development.” Essentially the Declaration and the Agenda constitute “a reaffirmation of the commitment to better standards of living and increased freedoms for all mankind, as well as the improvement of the quality of life within human settlements and the progressive realization of the human rights to adequate housing” (UNCHS, 1997a, p.ii). Nigeria was a signatory to that declaration and has made effort to adapt its housing reform in accordance to the Habitat II Agenda. Some of the growing contradictions and dilemma in that effort are discussed in this Chapter below. To understanding the dilemmas, it is important to comprehend the historical housing policy evolution in the Nigeria as well as the nature of public and private housing sector.

## **2.4 The Nigerian Housing Sector**

This section will briefly discuss the main components of the Nigerian housing sector - public sector housing and private sector housing. The historical trend of the major housing programmes and policy evolution in the country is presented to set the context within which both the private and public housing sectors operate and are shaped.

### **2.4.1 Brief Historical Trends of Housing Programme and Policy Reform in Nigeria**

Over the years, huge resources have been committed to the housing sector in Nigeria. The national effort towards modern housing could be traced to Sir Fredrick Lugard's cantonment proclamation of 1904 followed by the township ordinance No. 29 of 1917. These created the European and Government Reserve Areas with different planning standards and management structures from other urban districts where the *natives* (i.e. Africans) lived. It could be argued that the ordinance was an attempt to attain spatial orderliness in the land use pattern within the

cities, despite its underlying discriminatory character. A decade later, in 1927, another township ordinance was signed into law. This time, the new township ordinance remarkably contained for the first time, elaborate building regulation bye-laws geared towards enhancing housing standards within the urban areas.

By 1946 however, the worsened urban housing problem had drawn government attention to the need for a concerted and systematic planning effort. The Ten-Year Plan Development and Welfare for Nigeria 1946 – 1956 (Nigerian Crown Colony, 1946, p.27) stated that "...steps should be taken to ensure that the provision of proper amenities and the improvement of housing and living conditions should be given simultaneous attention." Ten years later (in 1956), the Nigerian Building Society was established to provide mortgage loans to investors. The African Staff Housing Fund was also created that same year to cater for the housing finance needs of native public servants and encourage urban homeownership within the class. During this period, Regional Housing Corporations were also established by various Regional Governments to provide direct housing to the general public. Despite these developments, Nigerian urban housing conditions worsened and the Third National Development Plan 1975-1980, lamented the fact that prior development plans gave scant attention to housing. Up until then, housing was treated as a town and country planning issue, while planning itself was considered a low priority sector.

All that changed with the new National Development Plan 1975-1980. In that Plan, the government stated that it:

"...accepts it as part of its social responsibility to participate actively in the provision of housing for all income groups and will therefore intervene on a large scale in this sector during the plan period. The aim is to achieve a significant increase in the supply and bring relief especially to the low income groups who are the worst affected by the current acute shortage" (Federal Government of Nigeria, 1975, p.308).

Prior to this period, the government had traditionally tended to leave the burden of providing adequate housing for urban dwellers to the private sector, having restricted itself to the limited provision of housing for government officials, and some skeletal re-housing

schemes occasioned by intermittent slum clearance projects. This bold intervention engendered an elaborate National Housing Programme especially at the federal government level and the state government level. In 1975, a new federal Ministry of Housing, Urban Development and Environment (which later became the Federal Ministry of Works and Housing) was created to initiate and coordinate policies in housing and related areas. A year later (in 1976), the Nigerian Building Society was reconstituted to form the Federal Mortgage Bank with a capital base of ₦20 million (Naira), which was later increased to ₦150 million (Naira) in 1979 with a view to increasing its capacity and effectiveness. However, two decades after this ambitious and continued effort by the public and private sector respectively, housing problems in the urban centres worsened given rapid population increases, accentuated by a high rate of urbanization (Federal Republic of Nigeria, 1991; Achunine, 1993; Federal Republic of Nigeria, 1997; Ikejiofor, 1999; Ogu and Ogbuozobe, 2001).

By February 1991, the government launched the National Housing Policy 1990 as the first and only consolidated housing policy in the country. The ultimate goal of the National Housing Policy was to ensure that all Nigerians would own or have access to decent housing accommodation at affordable cost by the year 2000 (Federal Republic of Nigeria, 1991, p.5). Given that the goal of the policy was supposed to be achieved by the year 2000, it could be argued that end of that year marked the technical end date for the policy. In 2002, the government set up the Presidential Committee on Urban Development and Housing (PCHUD) to review existing Urban Policy and articulate a new National Housing Policy for the country. That move ushered in the current National Housing Policy 2002 with a Government White Paper based on the report of PCHUD that year. The overall goal of the new national housing policy thrust is similar with perhaps even loftier rhetoric than the previous policy in its promise *“to ensure that all Nigerians own or have access to decent, safe, sanitary housing accommodation at affordable cost with secured tenure”* (Federal Government of Nigeria, 2002, p.7). It should be mentioned that the government (as shown in the White Paper) accepted the

proposal of the Committee to embark on a housing programme of constructing 40,000 housing units per annum nation-wide on the condition that it must be private sector-led with “government encouragement and involvement” (Federal Government of Nigeria, 2002, p.7). This is a marked departure from the past where such programmes have consistently been government-led. Following the new policy, the Federal Government created a new Ministry of Housing and Urban Development (from Ministry of Works and Housing) in 2003 as part of a renewed resolve to grapple with the complex problems of housing and urban development in the country. Some of the key public institutions under the new Housing Ministry are: the Federal Housing Authority (FHA), Federal Mortgage Bank of Nigeria (FMBN) and Urban Development Bank of Nigeria. In December 2006, the new Housing Ministry was merged with the Environment Ministry following a Federal Executive Council (FEC) meeting where the Federal Government pruned the number of ministries under its purview from 27 to 19. There are concerns that the move to subsume housing into the environment ministry will once again relegate housing to the second fiddle status it had under the former Ministry of Works and Housing which does not portend well to achieving the ambitious goals of the housing policy (Ojenagbon, 2007).

To provide an additional perspective into the history of housing in Nigeria, the nature of public and private housing sectors will be briefly discussed.

#### **2.4.2 Public Sector Housing**

There are two major types of public sector housing. The first type of public housing consists of Government owned housing which is provided for civil servants, public officers and government officials and the other type is the mass public housing which government provides to the general public.

##### **a) Government owned housing**

These are residential houses owned by the Federal or State Government or rented by them for their employees. They are usually allocated to Civil Servants and government employees or

certain grades and category of staff at a small fixed rent which are deducted monthly from their salaries. About 25% of civil servants are provided accommodation through this type of housing (Talba, 2004). There are essentially two distinct type of government owned housing namely the government residential areas (GRAs) and the low income staff housing for workers in government parastatals.

The government residential areas (GRAs) are found in virtually all major Nigerian cities. They originated in the British colonial administration culture of building European Quarters to accommodate the increasingly large number of colonial administrators and executives of key commercial firms coming into the country during the late 1920s. House types within the GRAs often consist of western styled single family housing with generous plot sizes and open spaces. The GRAs easily have the lowest urban housing density with about one housing unit per two hectares with slight variations between cities (Mba, 1993). With the departure of many of the British on Nigerian Independence, the GRAs have provided a highly subsidized luxurious housing for high ranking government officials.

The other type of government owned housing is those that were provided to lower/middle cadre workers by many government corporations and parastatals in pursuit of providing basic affordable housing to their employees near their places of work. This type of housing is far less glamorous than their GRAs counterparts. There are often made up of one or two bedroom apartments in detached, semi-detached or row-houses on much smaller plot sizes. Although these types of housing often result in high density neighbourhoods, they are provided with adequate basic facilities and utilities and often offer comparatively better accommodation than other high density / low income neighbourhoods at more affordable subsidised costs to workers lucky enough to benefit from such housing.

However, with the policy shift to minimise the role of the federal government in housing provision and in keeping with the on-going pro-market civil service reform, the government is currently implementing the residential housing monetisation policy in the Federal Civil

Service where the fringe benefits (such as subsidized housing) being enjoyed by Civil Servants as part of their remuneration package and conditions of service are converted into cash benefits. This policy involves selling-off to the highest bidder by public auction all government-owned quarters and government-rented quarters that it provides to about 25% of Civil Servants at subsidised rates. Under this policy, every single Civil Servant in the Federal Civil Service is now to provide for his own accommodation but will be paid between 50% and 75% of Annual Basic Salary as an accommodation allowance, depending on seniority level (Talba, 2004). While the federal government has argued that such a policy represents a more efficient allocation of resources and equity in the provision of amenities for Public Officers, it directly corresponds to substituting direct housing supply subsidy with a pro-market oriented housing demand subsidy. One of the major criticism and reservation with the policy is that the Government's desire to sell these houses at current market rates makes such houses unaffordable to the civil servants who used to occupy them prior to this policy, thereby forcing them to look for sub-standard accommodations in less desirable locations and neighbourhoods (Talba, 2004). While it remains to be seen how such policy will represent a more significant efficient allocation of resources, it is clear that for most civil servants that benefited from the erstwhile subsidised housing programme, the present monetisation policy would in fact worsen their housing conditions.

**b) Mass Public Housing**

The mass public housing which the government provided for the general public is the other type of public sector housing. This type of housing is the most contentious and the most discussed type of public sector housing. This is often designed and built by designated government agencies at both the federal and state levels. The actual construction of such housing is undertaken by private construction companies and building contractors who have won such contracts from the appropriate government agency. Under this type of housing programme, completed houses are rented or sold to the general public at subsidised price. A

wide range of housing catering for households of different income levels is usually provided under such programmes. Beneficiaries are usually drawn from the wide pool of applicants through public raffle. Such allocation processes are often abused and manipulated which often results in such housing being occupied by households other than those who were meant to benefit. This type of housing programme remains a symbol of the failed attempt by government to directly intervene in the urban housing market and provide affordable housing to majority of Nigerians.

The history of the mass public housing experiment is worth discussing in more detail, given the direct intervention in housing processes that it represents. For about three decades, the Nigerian government was committed to the idea of direct public housing provision. Although different housing strategies such as slum clearance and resettlement, public housing schemes, sites-and-services, settlement upgrading, core-housing schemes, low-income housing, and staff housing schemes have been emphasized during this period, the direct production of housing by the public sector remained a common feature of these strategies. Even the National Housing Policy (Federal Republic of Nigeria, 1991, p.22) resolved to “encourage private and public involvement in the direct construction of housing for letting and for sale in the urban areas” despite articulating the new enabling approach in housing delivery for the country.

Direct public housing provision in the country was executed within a three-tier institutional framework. The first tier consisted of housing units built under the auspices of the Federal Housing Authority (F.H.A), which was created in 1973. Its responsibilities, amongst others, included the execution of housing programmes as were approved by the Federal government. The next tier consisted of housing units built by the State Housing Corporations under the state government housing programmes. The third tier at the local urban level consisted of housing projects of Government quarters that are located in various urban capital such as the GRAs and staff quarters of government parastatals. From the foregoing, it was apparent that efficient and effective coordination of responsibilities between the different tiers were crucial

ingredients in guaranteeing a reasonable level of success in the implementation of the programme. However, a combination of factors and diverse political interests at different levels of government in Nigeria scuttled any chance of nurturing the unanimity of purpose and political will that could have provided the basis for proper coordination of these programmes. With these vital components lost, the programme was doomed to failure. As a result, the grand vision of improving the housing conditions of the people through massive direct public construction by both central and state governments in the country has been met with little success. Their impact in resolving the existing housing problems and shortages in the country has been at best minimal despite enormous financial resources that have been invested in these programmes as suggested in table 2-2.

**Table 2-2 Housing schemes by the Federal Government of Nigeria: Intended and Actual Number of Units, 1971-1995 Compared**

Period	Intended number of housing units (A)	Number units Produced (B)	Percentage (%) (B) compared to (A)
1971-1974	59,000	7,080	12.0
1975 -1980	202,000	28,500	14.1
1981-1985	200,000	47,234	23.6
1994 -1995	121,000	1,136	0.9
<b>Total</b>	<b>582,000</b>	<b>82,815</b>	<b>12.7</b>

*Source:* Compiled by author from various sources. The 1994/95 programme continued to 1996/97.

For instance, from 1971 to 1995, a total of about 582,000 housing units were expected to be collectively produced under these various programmes, but only about 82,815 of these units were actually built. Many of these programmes did not move beyond their initial first phase. In the first national housing program of 1971-1975, the military government proposed to provide about 59,000 housing units, 15,000 for Lagos (the then national capital) and 4000 units for each of the then 11 states in the federation. Only about 12% of the proposed housing units were built by the end of the programme (Okpala, 1986). The second 5-year housing programme implemented during the Third Development Plan period (1975-1980) proposed a

total of 202,000 units. Of these, 46,000 units were to be built in Lagos (national capital) and about 8,000 units in each of the then 19 states of the country. At the end of the programme, only about 8,500 units of the proposed total of 46,000 dwelling units were built in Lagos while only 20,000 units of the proposed total of 152,000 were provided in the rest of the country.

The third national housing programme initiated by the civilian administration under the fourth national development plan (1980-1985) did not produce any better result. In the programme, over 80% of the total proposed units were meant for low-income households. A total of about 40,000 (of which 90 per cent were to be one-bedroom, 10 per cent three-bedroom) housing units were proposed to be constructed annually nationwide with 2,000 allotted to each state of the Federation including Abuja. Of the ₦1.9 billion (Naira) that was earmarked for the programme to produce about 200,000 housing units, by June 1983, about ₦600 million (Naira) was spent on completing only 32,000 units, yielding an overall achievement level of just 20 per cent (Federal Republic of Nigeria, 1991, p.3). This programme which was particularly marred by a high level of political bickering between the federal government and many state governments came to an abrupt end in December 1983 with the toppling of the civilian government in a military coup d'état.

In 1994, a new direct public housing programme was again launched by the then military government despite repeated failures of previous governments in this regard. This time the programme proposed the construction of about 121,000 housing units. The scheme was fraught with so many problems that thirteen months later the Federal Ministry of Works and Housing (FMWH) review committee admitted that the scheme had failed and needed to be fundamentally restructured. Yet the civilian government that came to power in 1999, the FMWH and a number of state governments continued to embark on direct (albeit limited) housing programmes. Contracts for sites and services schemes involving 7730 plots in parts of the country were awarded by the federal government and the FMWH initiated a small-scale direct housing scheme aimed at producing 20,000 dwelling units by the year 2003.

Many studies and scholars have attempted to present a detailed analysis and arguments on the different reasons that led to the failure of public housing in Nigeria. Some of these reasons borders on excessive politicisation and elite corruption that festered fraudulent practices during implementation of the programme (Aina, 1990; Ogunshakin and Olayinwole, 1992; Morah, 1993; Ikejiofor, 1999); while others have emphasised the issue of inept contractors taking charge of projects, poor project supervision due to insufficiency of supervisory technical staff at building sites (Osuide, 1988; Agbola, 1993; Agbo, 1996). Some others studies identified issues of excessive costs of completing such public housing; problems of targeting beneficiaries and sharp housing allocations practices that limited the possibility of such housing reaching the poor for whom they were built in favour of higher income households (Salau, 1985; Cheema, 1987; Agbola, 1990b; Ogunshakin and Olayinwole, 1992; Mba, 1993). There was also the problem of poor, indiscriminate and uncoordinated location of housing projects were such housing were often sited in isolated areas outside the precinct of viable existing communities (Onibokun, 1990; Mba, 1993; Ikejiofor, 1999).

It is not the intention of this paper to discuss or present these problems in details here. Suffice it to state that the ambitious dream of directly providing adequate public housing in the country was an agenda that has never been realised. The current official thinking is that such programmes should be private sector-led instead of government-led. This represents a major shift in the way the government intends to currently pursue the implementation of a mass housing programme in Nigeria. It is however noteworthy that various states in Nigeria could still embark on the direct housing delivery given the housing policy provision that each state shall “provide low income housing through appropriate designated Ministry/Agency” (Federal Government of Nigeria, 2002, p.20). A good example is the current proposal by Lagos State Government to provide about 2000 housing units through direct labour/contract by the State Ministry of Housing (Ehingbeti, 2008). Another is the 1000 housing units project at Workers Estate being carried out by Ogun State government to house the civil/public servants in the state (Ayeyemi, 2007).

### **2.4.3 Private Sector Housing**

In spite of the previous mass public housing policy emphasis of the government, the private sector has remained as the dominant sector in Nigerian housing development. Even at the height of its implementation, the volume and type of public housing were too limited to impact on the size and structure of urban housing demand, affect rents or propel any filtering-down process in the country (Ozo, 1990). In fact, the Nigerian National Housing Policy acknowledged that the private sector accounts for over 90% of the housing stock in the country (Federal Government of Nigeria, 2002). The private sector as broadly referred to here is the amalgam of individuals, small-scale builders, commercial estate developers/agencies, banking and non-banking financial intermediaries, and industrial and commercial organisations that invest in housing with a view to making profit. Therefore its usage here essentially covers most other forms of housing provision that are not delivered by the government agencies. The housing role of major private sector actors is discussed below.

#### **a) Individuals and Households**

Individuals and households constitute the most dominant sub-sector within the private sector in the provision of urban housing in the country. In fact, more than 70 per cent of the total urban housing stock (which includes both owner-occupier and rental housing) in Nigeria is provided by individuals (UNCHS, 1993b). Although this sub-sector accounts for delivering the bulk of rented housing in the urban area, self-interest is the over-riding motive. In so doing, the type of housing provided cuts across different income groups from the higher-end of luxurious owner occupied housing to the lower-end housing including the informal sub-standard ones. Given that the bulk of urban households consist of mostly low-income and middle-income households, it is within the housing sub-markets for these groups that they are most visible. Many of these house owners rent out extra apartments and rooms within their houses in order to recoup their housing investments and augment

their household income. There are many cases where such land/property owners further build and rent out additional house(s) on a purely commercial basis. This is usually the case in many low-income housing neighbourhoods and informal housing settlements where many landlords have earlier lived before moving to better higher income neighbourhoods. This culture of financing home ownership through personal savings and effort is firmly rooted in the traditional rural housing provision system, which to a large extent has strongly influenced this practice in the urban areas.

#### **b) Private Profit-oriented Firms**

The role and scale of this sub-sector in housing provision within the country is growing especially in recent years. The sub-sector comprises of three categories of developers namely the more traditional large-scale construction firms, multi-national co-operation corporations including major Nigerian banks and the small and medium-scale property development firms. Making up the first group are construction outfits, many of which have been based in the country for a long period of time that dates back before national independence in 1960. They are traditionally involved in large-scale housing construction including urban residential housing and they include such firms as G. Cappa, Julius Beger, Bobygues, and Taylor Woodrow, etc. Their ranks are gradually swelling with new entrants such as HFP Engineering Nigeria Ltd, Alma Beach Estate Developers, and Seagate Estate Developers. However, most of the large-scale activities of these property developers have always tended to be concentrated in developing prime high end exclusive residential housing in and around places like Lagos, Abuja, Port Harcourt etc. on sites mostly provided and serviced by government. Thus, they mostly cater for the high-income private housing sub-markets. They are also involved in staff housing programmes.

The next group of developers is made up of big multi-national corporations such as: Shell Oil Company, ELF Oil Company, United African Company, SCOA, British American Insurance Company PLC, NICON Insurance, and large Nigerian commercial banks such as First bank,

United Bank for Africa and Union Bank of Nigeria. All of these have mostly engaged in staff housing programmes and (in some cases) other sort of commercial rental housing ventures. Many of these firms participate in the employees' housing schemes that were established by the Special Provisions Decree No.54 of 1979 (as amended), which was meant to encourage these firms to provide adequate housing for their staff. However, in practice the housing efforts of these corporations have in most cases tended towards providing for mostly middle and high level staff and other high-income households that can afford these houses rather than to lower level staff in these corporations and banks.

The last group of developers include the small-scale property developers. Currently, there has been a dramatic up-surge both in their numbers and in their residential housing development activities. They are usually engaged in providing housing for high and upper-middle income groups within the urban areas in the country. They presently constitute the most dynamic group within this sub-sector, although there are no official data to actually determine the level of their impact.

Generally, the increase in small and medium-scale gated residential estates in the big cities such as Ancestors Courts in Abuja, Mayfair Gardens in Lagos and Ogbondah layout in Port Harcourt bear testimony to the increasing prominence of the sub-sector. With regard to current activities, the most dynamic of these firms include such firms as Property Development Company (UPDC) Plc, Grant Properties, Crown Realities Plc and Cornerstone Construction Nig. Limited (Ojenagbon, 2004). To date, the housing development activities of the sub-sector and the houses they provide are clearly beyond the reach of most Nigerians. This constitutes a major policy challenge that needs to be addressed considering the fact that there is no evidence of better quality housing *filtering* down to the lower income households at affordable costs through the development of higher-end housing in most Nigerian cities. This contention will be elaborated later.

### **c) NGOs, CBOs and Cooperatives**

It is generally believed that the primary role of NGOs is not only to complement the effort of the government, but also to assist vulnerable target groups in the development process. NGOs provide information on specific subjects, contribute to standard setting, procedural progress and also generate creative innovations. These organizations that are increasingly seen as the 'viable alternative vehicle' in providing non-profit housing especially for the lower income groups have yet to make any significant impact in Nigerian housing sector development.

The country has a varied collection of voluntary agencies under the NGO umbrella. Most of these NGOs are no more than social clubs that provide ambulance and rudimentary social services (Agbola, 1994). However in recent years, there has been an increasing rise in the role and activities of these organizations, which has led to their growing relevance in the country. However these NGOs are mostly concerned with human and gender rights advocacy, urban and rural poverty alleviation schemes for example rural cooperatives and micro-credit, social care and rehabilitation, capacity building and manpower development schemes. Organized civil-society institutions are barely emerging in Nigeria especially in terms of participating in urban housing delivery and very little has been done to encourage them in this direction. For instance, such programmes as cooperative housing schemes have scarcely received the attention they deserve within official circles beyond mere supportive declarations in favour of such ideas. It is important to bear in mind that the concept of cooperative housing is not new in Nigeria. In fact, cooperative and self-help housing are very traditional means of providing housing in many rural areas. The major challenge is how to transform it into an effective urban housing delivery tool. Not much has been done towards creating a more favourable environment for the growth of cooperative housing within the urban housing delivery framework. There is a current lack of solid institutional framework to support urban cooperative housing activities. For instance, there are yet to be collective guarantee schemes that would enable cooperative societies to participate in urban housing

development support collateral for individual members or joint applications for housing loans schemes in the country.

However there are pockets of effort being made by NGOs to expand their activities into housing delivery programmes. For instance, Better Life Programme for Rural Women (BLPRW) – a defunct popular NGO under the military regime (1986-97) was one the earliest NGOs that attempted to incorporate housing delivery into their major objectives. During this period, in addition to facilitating the engagement of its members in diverse economic ventures, the BLPRW also expanded their activities into the provision of housing for destitute widows and orphans. Although their success was limited, it has been seen as a significant pioneering effort.

Of all the groups in this sub-sector, community-based organisations/associations (CBOs), which constitute the ‘most local’ of these grassroots organisations, have played the most prominent role in contributing to housing delivery. Given the high level of community cohesion in the rural areas, the CBOs have been more effective in these areas, where they have significantly contributed in provision and maintenance of community infrastructure and services through self-help and public/community partnership arrangements. Within the urban areas, the CBOs have been active in promotion and maintenance of security in many neighbourhoods/streets through neighbourhoods/streets citizen watch groups. Some have also been involved in neighbourhood upgrading programmes through self help housing activities. Existing CBO structures at the grassroots offer great opportunity towards forging veritable partnerships to the benefit of communities in the initiation and development of housing programmes.

In concluding this brief discourse of the private sector in Nigerian housing delivery, it is pertinent to note that government policy has correspondingly done little to encourage private sector housing development except perhaps the provisions within the 1990 and 2002 housing policies that grant some capital allowances and tax exemptions to corporate developers. There were no substantial extra investment incentives for the private sector under the new current

2002 housing policy, when compared with the previous policy with the exception of removal of rent control measures in the current housing policy. It is doubtful if these incentives are sufficient enough to engender the massive enthusiastic response and participation of the private sector which the policy intended to stimulate.

## **2.5 Contradictions and Challenges in Framing the Nigerian National Housing Policy**

The Habitat Agenda and the “Istanbul Declaration” marked a new era of cooperation, an era of partnership and solidarity in pursuing a common agenda of ensuring adequate shelter to all and sustainable human settlement development. About 171 countries (including Nigeria) signed the Istanbul Declaration document. In ratifying the Declaration, these countries and all other parties involved committed themselves to the challenge of “ensuring adequate shelter for all and making human settlement safer, healthier and more liveable, equitable, sustainable and productive” (UNCHS, 1997b, p.1). This agenda reconfirmed the legal status of human rights to adequate housing as set forth in the relevant international instruments and stressed that the right should be progressively but fully realized. The Declaration in paragraph 8 reaffirms this commitment and states that “...we shall seek the active participation of our public, private and non-governmental partners at all levels to ensure legal security of tenure, protection from discrimination and equal access to affordable, adequate housing for all persons and families” (UNCHS, 1997a, p.3). In order to achieve these laudable objectives, the Habitat II Agenda in 1996 sought to provide an integrated framework to implement the Global Shelter Strategy and enhance national housing policies to pursue the goal of providing adequate shelter for all. In fact, it is made up of a mix of broad and specific ideas that seek to ensure coherence between different levels, sectors and instruments in international, national, regional and local housing development efforts. The attempt to reform the Nigerian housing policy in conformity with the key provisions the Habitat II Agenda, under the framework of the enablement approach has exposed some basic contradictions and challenges that need to be addressed.

### 2.5.1 The Enabling Approach to Shelter Provision

The first Habitat conference in 1976 marked a gradual but significant shift from ‘supply’ towards an ‘enabling and participatory’ approach to housing provision. This new thinking fostered the need to integrate housing policy strategies into national economic planning framework while emphasizing a decentralized, broad-based, community focused orientation in housing delivery efforts. It was based on the “realization that inappropriate government controls and regulation discourage the scale and vitality of individual, family and community investments in housing, which forms the backbone of housing provision in cities” (UNCHS, 1997b, p.24). The influential view of Turner (1976) was that satisfactory goods and services including good housing can only be sustainably provided within such a framework that guarantees its local production through network structures and decentralising technologies. However, the enabling approach was elaborated and formalized in the ‘Global Shelter Strategy for the year 2000’ organized by U.N. Centre for Human Settlements in 1988. With the backdrop of the limitations in the quality, appropriateness and acceptability of direct public housing provision by governments, two complimentary views underlie the Global Shelter Strategy realizations are increasingly being accepted. One of them is the notion that implementing national policies, which influence housing delivery, requires a centrally co-ordinated action at the highest levels of government based on a broad range of issues other than just direct housing provision by governments. The other is the need for government to include and indeed rely on a multiplicity of actors (private sector, non-governmental organizations, and individuals) in the housing delivery and improvement process. It is pertinent to note that that the shift in thinking coincides with the end of 20<sup>th</sup> century shift towards ascendancy of the market-led economic growth; and sub-ordination of social welfare to market ideas and the shift towards the idea of *rolling back the state*, increasing decentralisation and pluralism in local governance, the shift towards public sector reforms and new public management (Wolman, 1995; Atkinson, 1999; Self, 2000; Awortwi, 2003).

Consequently; the enablement approach advocates that governments should withdraw from direct housing provision and rather “enable” other actors in a supportive legal, financial and regulatory framework to facilitate housing development. By so doing, it is expected that the full resources and potentials of all stakeholders in the housing delivery system would be mobilized while “ the final decision on how to house themselves is left for the people concerned” (UNCHS, 1990, p.8). Underlying this enablement concept therefore is the radical redefinition of the role of government to that of a *facilitator* in the housing delivery process and the centrality of stimulating people’s collective and individual capacity to satisfying their housing needs and priorities as defined by them. This is largely based on the belief that not only can ordinary people adequately determine their housing needs and priorities but that a lot more could be achieved when government, through the right incentives and controls, actively encourages the release of the immense creative capacities and resources of ordinary people in delivering their own housing. This perception implies active stimulation of the supply-side of the housing market through measures that expand housing supply inputs through the rationalization of subsidies, price controls and building regulations etc. It is important to emphasize that this does not mean any “diminution of governmental responsibility for the housing production and distribution process. What it means is a redistribution of production components, i.e., that the public and private sectors share roles in the most efficient possible way” (UNCHS, 1993, para 33).

The enablement approach also advocated moving towards private sector and market-driven housing delivery, but with an important caveat that it must be pursued *within a framework that addressed those areas where the private and unregulated markets do not work*” (UNCHS, 1996, p.337). Thus, it is crucial to clearly articulate and determine those areas where the private and unregulated markets do not work in the country. Understanding the limits of the market is therefore a critical factor in the successful implementation of the enablement approach.

Currently there is no consensus on who and what should be enabled; and who actually benefits. Should enablement be conceived as liberalization (with government roles cut back to the bare minimum) or be conceived as a more active and interventionist strategy dedicated to specific policy goal? Is the goal to ‘enable’ markets to work, to ‘enable’ poor people to participate more effectively in the markets, or to ‘enable’ government and civil society to reshape market processes and balance economic considerations with social justice? These are some of the major issues that must be confronted in the application of the approach (UNCHS, 1997b).

In contrast, and contrary to the enablement approach that advocates withdrawal of direct government involvement in housing provision, the previous housing policy provided for the continuation of direct public housing by the government at all levels. Two types of direct public housing were advocated by the policy, namely; profit oriented public housing for the middle and high-income groups and subsidised housing especially for low-income households. This could be seen as a direct contradiction of the enablement approach depending on how one argues it. Those that favour this type of direct government intervention in housing delivery would argue that through these provisions, the housing policy was merely attempting to mitigate the problems of market failure in housing provision. Responsible policy intervention demands the factoring in of social considerations of the local realities where the poor could not be left to the vagaries of the market.

During the duration of the 1990 housing policy, as has been discussed above, there were half-hearted attempts by government to continue with the provision of direct housing with dismal results. The continuation of direct public housing provision seemed to support the contention that little or no lessons have been learnt from past mistakes; Nigerian government is indeed “insisting on doing what it does badly. In fact the majority of the housing programmes and projects that were initiated under the housing policy such as Gwarimpa and Lugbe Housing projects (located in Abuja) witnessed contractual agreement problems that are reminiscent of the public housing efforts of the 70s and 80s. These problems have led many FHA contractors

to abandon construction of many housing units at various levels of completion. Obviously, the government has not been able to deliver on direct public housing policy provision despite recent efforts to restructure some aspects of its housing delivery mechanisms. There is no doubt that these weaknesses and poor performances fit into the notion that the government can not provide direct public housing efficiently – a key argument of those institutions exacting pressure on the government from outside to embrace wholesale pro-market reforms. The current Nigerian National Housing Policy 2002, similar to the previous housing policy, can be described as an “enablement” housing policy. It recognises the need to encourage a multiplicity of other actors (corporate private sector, civil society organisations, and individuals) in housing delivery and improvement process. It has attempted to create a favourable investment climate for the private sector through reforming the housing finance structure, tax incentives, financial grants, redefinition of institutional roles, advocating vital legislative instruments and reforms, and encouragement of site and service schemes. With the adoption of the 2002 Nigerian National Housing policy that emphasised private sector-led housing provision, the Nigerian government seem to have fully embraced the market option. The government seemed to have acquiesced to the idea that it can neither deliver direct public housing effectively nor efficiently. However, there are indications that the present pro-market housing policy provisions as presently constituted cannot guarantee or ensure adequate housing delivery for all households in the country (Aribigbola, 2008).

There is the overwhelming need to start considering other more effective means of moderating the negative impact of housing market failures especially for low-income households in the country. It is also not clear to what extent government is living up to its responsibilities to grant various credits and tax incentives to corporate housing investors or the impact of any such incentive as rent de-control on property development. However, it must be conceded that the current corporate private sector housing investment climate is improving as evidenced by the dramatic increase in housing development activities of private corporate developers in the country. However, their pre-occupation with high-end exclusive housing for

the wealthy is an indication that the current housing markets are still very far from working *effectively* for over-whelming majority of Nigerians.

### **2.5.2 Private - Public Partnerships**

Another major feature of the Habitat II Agenda is the emphasis on establishing genuine public/private partnerships in shelter provision. In fact the central element in redefining the role of government in shelter provision is based on the need to link the private (commercial), the non-governmental non-profit sector and the public sector in new ways that would ensure that their respective strengths and capabilities are taken full advantage of and brought to bear on the shelter development effort.

The envisaged principal role of partnerships in housing provision is based on the, perhaps, optimistic notion of the immense ‘comparative advantage’ which public/private partnership offers. It is assumed that the mechanism would enable each sector to use its ‘comparative advantage’ in a complementary manner, which would ensure overall capital gains and spillover within the housing sector and beyond. In providing access to each other’s skills and resources, it is expected that the arrangement would provide a viable mechanism to mutually minimise and share risks and thus not only guarantee return on investments but also maximise them. It is also assumed that this sort of partnership would provide the framework “for resolving the ‘needs/demand gap’ in shelter provision between what people can afford and what the market can provide” (UNCHS, 1993, p.viii). It is expected that the non-governmental non-profit sector (NGOs and community organizations) would within the housing market mediate between the profit-oriented private sector interest and the interest of the low-income and other vulnerable groups in the society and serve to link low-income borrowers to formal financial systems. It is however expected that government would have the central role of ensuring that there is in place an adequate legal, regulatory, and fiscal framework, which would drive and facilitate this mechanism. Although the housing policy set out amongst other objectives to stimulate private sector participation in

housing, it did not really emphasize private/public partnership in housing development. There was no mention of private/public partnership in any of the policy objectives or strategies. It could however be argued that there are some policy provisions that would indirectly involve this type of arrangement such as encouraging the establishment of Housing Co-operatives for direct construction and distribution of building materials and the provision and maintenance of low income housing in decent and sanitary environment (Federal Government of Nigeria, 2002, p.35).

Similar provision could also include the following strategy to enhance private sector participation that commits to “encourage non-profit making organisations by facilitating easy access to land and provide matching grants to building hostels and accommodations for the unemployed young school leavers, students, the aged, destitute, the infirm, the motherless and the widows” (see Federal Government of Nigeria, 2002, p.40). However, it is very clear that private/public partnership in housing development receives very little attention in the policy document. This omission constitutes a major weakness of the policy. However, it is important to recall that some forms of private/public partnership in housing development have been instituted in Nigeria prior to the housing policy with some measure of success especially in the provision of employee housing as provided by Decree 59 of 1979. Various programmes under the scheme have seen the participation of major corporate entities and government establishments in providing housing for their respective employees as noted above. Under the Olusegun Obasanjo administration (1999-2007), the Federal Government instituted a private – public partnership programme outside the framework of the housing policy document. As a result, there are many on-going housing projects being pursued under various forms of private/public sector partnership arrangement. As at 2003, the federal government has gone into partnership with private developers to complete about 1,127 units in Abuja and Port Harcourt under the Federal Government’s public–private sector partnership in housing development projects that covers all States in Nigeria (Kwanashie, 2003). Under that scheme, HOB Nigeria Limited received approval to develop about 1074 housing units in Ondo State.

Another example is the current joint mass housing partnership by the estate firm FHT Ventures Limited (promoters of Blue Royal Sites and Services) and various Northern State Governments that includes Abuja, Nasarawa and Bauchi (Nmeje, 2007). Very recently, the Lagos State government announced an ambitious proposal plan to construct over 20,000 housing units in partnership with the private sector within a deliver period that ranged between 6 months to 36 months (Ehingbeti, 2008). Within this plan the role of the State Government is stipulated as follows;

- To provide suitable land for the project at a premium that will be subject to location and size.
- Hand over the land to the Developer.
- Give planning approval/permit for the approval of His Excellency.
- Give necessary support to facilitate the smooth execution and success of the project.
- To have a share of the profit from the project.

The role of the Private Developer Partner(s) are in turn are stipulated as follows;

- Responsible for the proposal
- Design of all drawings (Architectural, Structural, Mechanical & Electrical and Bill of Quantities).
- Arranging and providing finance for the Project
- Construction of the buildings and infrastructure.
- Market and sell the property.
- Management of the property

Given the increasing number of successful private/public sector partnership housing projects being delivered, it is becoming evident that this type of housing delivery arrangement could work in the country. More importantly, these ‘little islands of successes’ tend to suggest that this housing provision option holds great potential that should be more readily exploited by policy/decision makers to improve the overall housing delivery system in the country. It was therefore disappointing that explicit private/public sector partnership strategies and programmes was not elaborated under the current housing policy. As presently constituted, one of the major weaknesses of the current private/public sector partnership arrangements is that they are geared towards the provision of higher-end housing for upper-middle and high income earners. Given that the provision of low-income housing is yet to receive any

consideration under this arrangement, there is the need to move beyond the present profit-oriented high-income housing focus of these partnerships, and to creatively expand the role of private/public partnerships arrangements in low-income housing delivery.

### **2.5.3 Enabling Markets to Work**

The consensus of enabling markets to work is based on the notion that it is more efficient to deliver adequate housing through a properly functioning housing market than through the public agencies or the non-profit non-governmental agencies. The Habitat conference (UNCHS, 1997a, p.42) observed that:

“In many countries, markets serve as the primary housing delivery mechanism; hence their effectiveness and efficiency are important to the goal of sustainable development. It is the responsibility of Governments to create an enabling framework for a well-functioning housing market. The housing sector should be viewed as an integrating market in which trends in one segment affect performance in other segments. Government interventions are required to address the needs of disadvantaged and vulnerable groups that are insufficiently served by markets.”

It then declared in paragraph 9 that "we shall work to expand the supply of affordable housing by enabling markets to perform efficiently and in a socially and environmentally responsible manner." This provision in itself encapsulated the central problem of relying on market mechanisms to pursue an egalitarian goal as housing for all. Markets have never been known to function in *a socially and environmentally responsible manner*. And they are not fundamentally designed to do so. The situation is even worse within the housing market with its inherent and embedded large scale market imperfections largely driven by supply constraints and sustained speculative tendencies. This problem is arguably worse in developing countries with a high incidence of poverty, massive levels of unemployment, highly-skewed income distributions, restricted purchasing power and huge gaps between what most people can afford to pay and the market price that could attract private initiatives to invest in, especially, in the lower-end of the housing market. It is common experience that the fundamentally profit-driven formal housing market has always been attracted to much bigger return on investment prospects of

higher-end housing that satisfy only the privileged few. Thus, the contention is that government and civil society must actively mediate the often-detrimental consequences of both 'market efficiency' and 'market failure' on the low-income and other less privileged vulnerable groups in society who often cannot compete effectively within formal housing market framework.

The obvious major implications of the consensus to 'enable markets to work' are that the housing markets must be managed; security of tenure should be guaranteed; action on the supply side of markets should be emphasised; and easy entry into the housing market should be guaranteed. However, these provisions have been used increasingly by influential and dominant pro-market international institutions (such as the World Bank and the International Monetary Fund - IMF) to justify sustained pro-market housing reform campaign especially in developing countries. In its major housing policy paper, *Enabling Markets to Work* (World Bank, 1993, p.38), the World Bank insisted that;

“If the interests of all participants in the housing sector are to be served, and if the interest of the broader society are to be served, housing policies must be crafted in a way that draws on and uses knowledge about the way markets work and that address the causes rather than symptoms of policy failures. Too often housing policies are based on either misunderstanding or wishful thinking about the market”

According to this pro-market perspective, government interventions are seen as 'distortions' that impede market efficiency and since it is the poor that are most disadvantaged in a poorly functioning housing market, limiting government interventions to the barest possible minimum to ensure its 'market efficiency' actually serves the housing interest of the poor (World Bank, 1993). Accordingly, the World Bank developed its key operational instruments of housing policy reforms along the perspective of enabling the market to work efficiently. The hope is that these operational instruments will stimulate housing demand (through developing property rights, developing market rate mortgage finance systems and rationalising housing subsidies) and will facilitate the process of housing supply (through private sector provision of infrastructure for residential housing development on cost

recovery basis. Allied to the reform of the regulation of land and housing development and organising the building industries along lines that insures greater competition and market efficiency), thus will create an overall institutional framework for managing the housing sector. Given the fact that housing sector operations need to be integrated into the overall macroeconomic framework, adopting these active pro-market housing policy instruments could have huge implications for countries.

Given the enormity of the housing problems in Nigeria, the country is confronted with the dilemma of allocating limited resources, not only for the immediate improvement of the social and physical environment, but also for investment in productive projects to achieve long-run social and economic gains. Thus there is a challenge of how to maximize housing benefits with available limited resources. In fact, it is the need to make housing delivery more effective and efficient that has led to the contention that it is better to deliver adequate housing through a proper functioning market than through public agencies or the 'third' sector. Conventionally, this implies housing provision through the private sector. The private sector already dominates the housing sector in the country providing over 90 % of the total housing stock as noted above. The poor housing situation in the country is in itself indicative of the poor performance of the private sector in delivering adequate housing so far. In blaming the private sector for much of Nigeria's housing problems, Agunbiade (1983) contends that private decision making in market economies has been essentially a response to effective demand only, which tends to marginalize sizable proportions of the total population and thus had created a mounting backlog of unmet housing needs. The nature of the problem is exacerbated by the fact that the supply of housing does not respond efficiently to market signals even where demand is effective. As the World Bank (1993, p.2) points out, "the poor are most disadvantaged by poorly-functioning markets." In fact, it was this reality that provided the justification for direct government intervention through provision of direct public housing. Experience so far has equally shown that direct public housing programmes of the government have neither lived up

to the vision of filling the housing gap created by the ineffective private sector housing nor have they shown the capacity to significantly satisfy the overall housing needs in the country. Until recently, the government pursued a two-pronged strategy of encouraging direct public housing provision and simultaneous stimulation of the private sector housing to improve housing delivery as shown in the Nigeria National Housing Policy 1990. In other words, while the Nigerian government accepted the need to encourage the private sector to play a more effective role in housing it did not give up the on market intervention through direct public housing provision. However, under the current housing policy 2002 that has changed. The Federal Government no longer has appetite for direct housing provision although the policy still leaves that option open for other lower tiers of government. There is no doubt that the current housing policy is more market-oriented than the previous one by adopting a more minimalist approach to housing market intervention. The policy, even argues the pro-market contention that relieving the current pressure on both the medium and high income groups is bound to have a beneficial run-off effect on the lower income sector of the market (Federal Government of Nigeria, 2002, p.39).

In all, it is not clear to what extent policy provision (such as review of rent controls and various credit and tax incentives/packages to developers) has worked to encourage more effective private housing delivery or galvanised the private sector. It is also not clear if the current housing policy has significantly affected the housing market in the country. However, the current housing policy clearly leans towards the more drastic market efficiency position of the World Bank than the responsible market intervention position of the UN-Habitat. And it appears to be yielding less than satisfactory results. According to Aribigbola (2008) there are indications that housing produced under the new housing policy is out of reach of majority of households as well as the fact that the level of income of the majority of Nigerians cannot support mortgage financing as proposed by policy. It does appear that the present move or tendency on relying wholly on the market and leaving housing to private initiatives will not solve the problems of housing shortages and sub-standard housing in the country (Aribigbola,

2008). The goal of ensuring adequate housing for all cannot be achieved if the issue of housing affordability is not effectively dealt with in such way that guarantees equitable housing access for low income households.

The need to make the Nigerian housing market perform efficiently in a socially and environmentally responsible manner is in fact more pressing than ever given the increasingly dire housing situation in the country. In a situation where about 58% dwellers live in poverty (Federal Office Of Statistics, 2004), active government intervention is required to mediate the market as provided for by the Habitat II Agenda. However, as direct intervention of government through direct public housing has repeatedly proven to be a wasteful adventure, the real issue is how best to intervene effectively in order to ensure the development of a more equitable housing delivery system. Determining better and more viable means of market intervention is indeed paramount in any effort to develop the Nigerian housing sector and guarantee the housing interest of the poorer social economic groups.

#### **2.5.4 Improving Access to Housing Inputs**

Unless there is an adequate availability of housing inputs (such as land, finance, construction materials, labour and basic infrastructure) to aid housing production, it will neither be possible to create a thriving housing market nor to provide adequate housing for the less well off. The real challenge therefore is how to ensure adequate supply and access to these housing inputs within a framework that guarantees the supply of decent housing at costs affordable to all households (UNCHS, 1991; , 1994b; , 1995; , 1996; , 1996b). Experience has repeatedly confirmed the disconcerting paradox that the lower-income groups often have to pay more in real terms for poorer-quality inputs because they are often excluded by formal housing markets and exploited by informal market that can accommodate them (UNCHS, 1996; , 1996b). This anomaly underscores the need for an active and forceful government intervention and involvement in the supply and distribution of housing inputs in these countries. The key areas where these interventions are needed include land market, housing finance, infrastructure and

access to cheap building materials. However, the discussion here will be focused on the first two - land market and housing finance.

### **a) Land**

Creating an adequate and equitable urban land market has remained a most difficult problem in Nigeria. The current NHP 2002 observed that the main problem of availability of land for housing in Nigeria is that of accessibility, ownership and use. The chronic difficulties in making urban land easily accessible to potential developers have entrenched systemic urban land speculation, which often drives up land prices beyond the reach of an average household. It was to resolve these problems and provide a coherent uniform framework for land regulation and management in the country that necessitated the promulgation of the 1978 Land Use Decree (LUD) in the country. After three decades, the failure of the LUD to create easy accessibility to urban land for development is increasingly apparent with prohibitive costs of serviceable urban land, difficulty of government acquiring urban land for development, ineffective identification and inventory of urban land systems and the increasing growth and expansion of informal settlements. These problems are not unconnected with such the continued resilience of customary land tenure system, prevalent scarcity of serviced urban land, increase in urban land speculation, the difficulty in securing urban land tenure and cumbersome, time-consuming and expensive land titling and registration procedure etc. The literature assessing the performance of the LUD within the context of existing and emerging urban lands problems in Nigeria is quite extensive [see for example (Okpala, 1982; Udo, 1990; Okolocha, 1993; Rakodi, 2002; Ikejiofor, 2005; Aribigbola, 2007)]. Given both that the LUD is intrinsically part of the Nigerian Constitution and that there are deep political cum ethnic tensions and disputes surrounding the rights to access and use of land resources; attempts to review the LUD, despite continued and prevalent calls to do so has remained intractable. In cognisance to the demands of the new housing policy, the proposed amendments of the LUD by the PCHUD

were rejected as unconstitutional by the government. Indeed, it has been very difficult to expunge the LUD or parts of it from the National Constitution to allow for its amendment or review. The task of facilitating the proper review the LUD has been given to the Nigerian Law Reform Commission and is assumed to be in progress.

Beyond the legal and bureaucratic bottlenecks of the LUD, the effort to facilitate urban land accessibility through site and services programmes at both the Federal and State levels has been less than satisfactory. Under these schemes, government usually acquires large tracts of land, subdivides it into individual plots, and provides essential utilities (such as roads, electricity and water) before allocating the serviced plots to individual/developers. This programme has in the past been seen as a viable way of making serviced urban land more readily available for housing development. Issues such as rationalization of housing subsidies, cost-recovery considerations and land sharp practices in land allocation have tended to stifle the proper implementation and effectiveness of such schemes. It was estimated that between 1986 and 1991, less than 1% of the plots provided under this scheme were actually developed (UNCHS, 1993b, p.48). The housing policy provides for the continuation of site and service schemes to facilitate the access of low income group to serviced plots at reasonable cost (Federal Government of Nigeria, 2002). The limited success of the scheme and their insignificant impact seem to reinforce the challenge of how best to deal with the need for government intervention in a key housing input as land.

## **b) Housing Finance**

Housing finance is another major housing input that is crucial in any housing development programme. Hence, the NHP 1990 extensively restructured the housing finance system in the country with the view to making it more effective. The policy created a two-tier housing finance structure. The Federal Mortgage Bank of Nigeria (FMBN) became the apex institution with monitoring and wholesale (i.e. bulk lending to other mortgage institutions) portfolio while the Primary Mortgage Institutions (PMIs) at the lower-level were responsible

for retail mortgage lending portfolio. It was expected that these changes would make the mortgage banking services more accessible. In furtherance of this objective, the Federal Mortgage Finance Limited (FMFL) was established in 1993 to inherit the retail portfolio of FMBN and to provide credible and responsive housing finance services. The housing policy also created the National Housing Fund (NHF) with the aim of creating and making cheap and long-term housing finance more readily available for individuals and corporate developers who participate in the programme. However, the central question is to what extent have these reforms succeeded in creating the anticipated multiplication of housing finance institutions, enhancing mobilization and growth of long-term funds and making loans affordable to more borrowers? There is no doubt that these policy provisions have the potential to improve the housing finance market in the country but their implementation has been fraught with debilitating problems that have severely limited their impact.

Although NHF was quickly instituted with the enabling Decree No. 3 of 1992, it is yet to enjoy the full support of all interest groups and institutions that were supposed to participate in it. Thus, the Fund is yet to benefit from huge investment funds expected from the commercial and merchant banks that were supposed to invest 10% of their loans and advances with FMBN at an interest rate of 1% and the insurance companies that were supposed to invest a minimum investment of 40% of life funds and 20% of non-life funds in NHF under the NHP 1990 (Bichi, 1998). Recently, the current NHP 2002 rescinded these mandatory investment requirements for these financial institutions. However, the policy stated that such institutions as Banks, Insurance Companies, Pension Funds, and Nigerian Social Insurance Trust Fund should be encouraged to fund housing development by investing in the Federal Mortgage Bank of Nigeria through tax incentives and exemptions from withholding tax.

Beyond the poor participation from institutions, the problem of non-contribution also extends to the expected mandatory individual contributions. Available data shows that the number of contributors to the NHF has been relatively small compared with the national work force of which there are about 9 million workers who are yet to be registered and are therefore not

making any contributions. There are also alleged cases of diversion of workers contributions to the fund by employers to other investment purposes. In fact, it is the contributions of mostly government workers (whose salaries are deducted from source) and some self-employed workers that constitute the source of funds currently available to the NHF. As a result, the NHF has at November 2000, only 1.8 million registered contributors and a fund of only ₦5.8 billion (about US\$58 million) contrary to the several hundreds of millions of dollars that were initially expected to tackle the huge housing challenge in the country. In 2000, these problems led the Nigerian Labour Congress (the umbrella labour union with membership of virtually all Nigerian workers) to start lobbying for the scrapping of the scheme in order to stop the compulsory deduction of 2.5% of their monthly salary (Obayuwana and Ayeoyenikan, 2000). The survival and success of this scheme depends on how effectively it could muster and disburse commensurate funds to match demand and significantly moderate the existing distorted and skewed housing finance market.

The current NHP 2002 sought to correct some of the observed weakness of the previous policy (Federal Republic of Nigeria, 1991). Some of the key changes include the extension of the amortization period for NHF loan repayment from 25 to 30 years, while recommending a 24 months loan repayment period for developers, the reduction of interest rates charged on NHF loans to PMIs from 5% to 4% while loan lending rates to contributors have now been reduced from 9% to 6%. Contrary to the previous policy, the new housing policy currently permits a graduated withdrawal of contributors who may not obtain loan under the scheme and also makes contribution into the scheme optional for persons earning less than the national minimum wage (Aribigbola, 2008). There seems to be a growing consensus that the Nigerian housing finance market is on the decline. As attested by the Governor of Central Bank of Nigeria, Sanusi (2003) at 9th John Wood Ekpenyong Memorial Lecture:

“...there is evidence of declining activities in housing finance generally. The average share of GDP invested in housing declined from 3.6 percent in the 1970s to less than 1.7 percent in the 1990s. In addition, between 1992 and 2001, the volume of savings and time deposits with the banks and nonbank financial institutions grew by 604.94 percent from N 54 billion to N 385.2 billion. However, the proportion held by the

housing finance institutions declined from 1.4 percent to 0.22 per cent in 1998, indicating a fall in the flow of funds into the housing finance sector.”

In a bid to promote security of investments in administering the Fund, the FMBN set out rigorous procedures for securing money from the Fund by contributors, which inadvertently had a backlash effect of severely restricting the access of contributors to securing mortgage loans. For instance, from the commencement of the fund in 1992 to 2000, only about 631 contributors have been able to secure mortgage loans of about N375 million through 20 PMIs from the Fund (Bichi, 2000).

The continuous devaluation of the country’s national currency against major international currencies has also impeded the effectiveness of the Fund as its loan ceiling has routinely been subjected to upward review. Given the high inflation rate in the country, the initial N80,000 loan ceiling that was stipulated by the housing policy (Federal Republic of Nigeria, 1991) has been progressively increased to N250,000, N500,000 and is currently pegged at N1.5 million. Given the present cost of building materials and labour, the sum of N1.5 million is still inadequate to finance the construction of an average low-income dwelling in any urban area within the country. However, given the current low wage levels in the country, further upward increases of the loan ceiling to accommodate high construction costs would only serve to alienate not just the low and lower-middle income groups from the fund but crucially the majority of workers whose contributions constitute the bulk of the money within the Fund. It is however noteworthy that the new housing policy introduced the establishment of a secondary mortgage market to allow for the trading of mortgage instruments in the possession of the PMIs in order to increase liquidity in the primary market (Federal Government of Nigeria, 2002, p.28).

Without doubt, some of the problems discussed above have negative implications on the operations of the PMIs. Findings of Ojo (2005) on mortgage borrower’s assessment of lenders requirements indicate that collateral / title deed, affordability criteria, and repayment schedules and criteria constitute the most difficult requirements for borrowers. Other major problems

facing the mortgage finance market include, the low interest rate offered by the NHF, the macroeconomic environment, the non-vibrancy of some PMIs, a cumbersome legal regulatory framework for land acquisition and the structuring of bank deposit liabilities around current short term lending practice (Sanusi, 2003).

### **2.5.5 Supporting Small-scale and Community-based Housing Production**

It has been recognised since Habitat I conference in Vancouver that informal, small-scale, community-based housing initiatives are indispensable component of any successful sustainable lower income housing. As has been observed in (UNCHS, 1998), supporting small-scale producers and community organizations makes sense both as a pragmatic response to state and market failure, and as a creative response to the ability of other actors to produce housing at lower economic cost and higher social benefit. It is well known that over half of existing housing stock in most cities of most in developing countries has been built by the owner-occupiers themselves, serving mainly the lower-income population (UNCHS, 1996b; , 1997a; , 1997b). The possibility of unlocking and channelling the immense potent creative energy of communities and people at the local level into community development process may yet be the most important lesson of involving community organizations in housing delivery.

Supporting small-scale, community-based and social housing production received little attention in the NHP 1990, yet the current NHP 2002 is even less generous. Supporting this sector was not in any of the policy objectives or strategies nor directly referred to in any the provisions in the policy. However, there were some policy provisions that could be interpreted as an indirect support towards to community-based social housing. There was considerable housing policy support for co-operative housing, which could be a form of community-based housing (Federal Government of Nigeria, 2002, p.35 and 40). With respect to rural housing, the policy also stipulated that the Federal Government would direct financial and mortgage

institutions to recognise collective guarantees schemes under the aegis of co-operative societies as collateral support for individual member or joint application for facilities for housing.

However, these provisions are yet to be actualised. Currently, existing co-operative societies do not have the capacity to develop their own housing. Most co-operative societies pool individual members' resources together from where soft loans are advanced to their members. Although there has been a long tradition of co-operatives in most rural areas in Nigeria, forming viable co-operatives that could embark on housing projects within the urban areas has been difficult. However, the concept of housing co-operatives is gradually becoming popular particularly in semi-urban areas where their activities have so far been restricted mostly to land purchase and in some cases been involved in the provision of credit for housing to their members. Policy in this area also supported the idea of upgrading and urban renewal, but did not elaborate any broad framework for such strategy, which could have emphasized the need to incorporate small-scale, community-based initiatives. In the past many urban renewal programmes lacked active local participation with very limited gains. However, given the increasingly dominant perspective that incorporating communities is an indispensable component of any urban renewal and regeneration initiative, it will be difficult to continue to ignore such initiatives in the country.

#### **2.5.6 Social Housing Production**

Beyond the indirect references to supporting some form of social housing, it is increasingly evident that social housing is at the periphery of the Nigerian housing policy concerns, especially as it is emphasising more market driven housing delivery. The previous NHP 1990 in fact had similar but more generous social housing provisions than the current housing policy but failed to improve social housing conditions in the country. In his critique of the current housing policy, Aribigbola (2008) argued the need for more policy effort towards social housing as a necessary component towards achieving policy objectives. His study revealed that the current policy is lacking in not embracing principles of affordability, community

participation and equity and social justice that are the hallmark of sustainable housing development. However, for a move towards supporting social housing production to be successful (particularly at the small scale and community level), there should be an adequate information system that would facilitate the proper design of such programmes. Amongst others, it would be important to have an in-depth knowledge on affordability levels of different socio-economic groups and households living in different places and cities. More importantly, it would not only be necessary to understand what factors influence housing affordability but also how they could be beneficially moderated and manipulated.

## **2.6 The Current Dilemma**

It can be argued on the basis of the foregoing that the Nigerian housing policy reform is beset with the major dilemma of how to strike a balance between market liberalization, government intervention, and social mechanisms in the housing process to achieve the desired goal of ensuring adequate access to decent housing for all. For almost two decades (within the current and immediate past housing policy regimes), the country has embarked on an enablement approach that emphasise the stimulation of private sector participation in its housing policy thrust. While the overall lofty policy goal of ensuring adequate access to decent housing for all has remained essentially the same, the current housing policy that came into inception in 2002 is remarkably more pro-market and private sector-driven than the previous policy. By its nature, the enablement approach is subject to different interpretations by different interest groups and stakeholders. For instance while the World Bank interpretation of the enablement approach stressed the need to enable markets function more efficiently through non-intervention by States, the UN-Habitat stressed the need to enable markets function more effectively for poor people, through frameworks that addressed those areas where the private and unregulated markets do not work. Thus, while some conceive the enablement approach as underlining the efficacy of the market, some others conceive it as a mechanism to mediate markets in ways that accommodate and satisfy the housing needs of all households. The

enablement housing policy in Nigeria seems to be moving in the direction of former while holding on to the envisaged goal of the later.

In giving-in to the external pressure to pursue pro-market structural and economic reforms, it is evident that such reforms are being accelerated in recent years. For instance, the government began deregulating the energy sector and the privatization of the country's four oil refineries despite stiff labour and mass opposition within the country in 2003. That same year it created the National Economic Empowerment Development Strategy modelled on the IMF's Poverty Reduction and Growth Facility for fiscal and monetary management. In 2004, it started implementing the monetisation policy in the Federal Civil Service.

On 30<sup>th</sup> May 2007, the new President of the country Umar Musa Yar'Adua in his inauguration speech pledged to accelerate *“economic and other reforms in a way that makes a concrete and visible difference to ordinary people”* thus suggesting that he will continue with pro-market policy reforms of his predecessors (Yar'Adua, 2007). It was therefore no surprise that the current housing policy has strongly shifted towards a more stringent pro-market emphasis than the previous enablement policy that it succeeded. This was demonstrated when the Presidential Committee on Urban Development and Housing (PCHUD) recommended an immediate housing intervention programme that should deliver 40,000 housing units per annum into the urban housing market (in the draft national housing policy 2002), the government accepted it only on the condition that it would be private sector-led and driven.

Thus, the current housing policy orientation in the country seems to have at its heart a conflict between entrenching market efficiency in housing and ensuring adequate housing for all. Even if it is rolling back direct state intervention in housing delivery, it is very clear that ensuring adequate access to decent housing for all households through market mechanisms, must necessarily require supportive frameworks that the addresses the need of those with little market power. This essential component is clearly missing from the current NHP 2002.

## **2.7 The Policy Dilemma as A Motivation for the Study**

In summary, these considerations underscore the need for more active and rigorous housing studies at both the household and aggregate level of cities. Research findings at the micro-level of the households, neighbourhoods and groups within cities need to be integrated into city-wide studies in order to build up and strengthen our understanding of the forces that shape housing sector development. Therefore, defining housing policy reforms in any country should be based on concrete and sound knowledge. Assumptions and contentions must be thoroughly and continuously subjected to rigorous tests to verify their credibility. Hence, the current dearth of housing research studies in such areas within Nigeria is indeed a major source of concern. Equally worrying, is the current drive to continually embark on housing policy reform options without their fundamental premise appearing to be thought through both in terms of import and implications. These problems and weaknesses are reflected in the NHP 2002.

Given the long history of housing policy failures in Nigeria, it may be tempting to dismiss the housing policy goal of ensuring that all Nigerians have access to decent, and sanitary housing accommodation at the affordable costs with a secured tenure as mere political posturing which the country has neither the intention to honour nor the will to achieve. However, this goal is in keeping with the current thinking within the international housing community. While a cynical view of the national policy approach may not be entirely out of place, it is certainly less constructive than exploring ways of developing more effective housing policy and implementation processes that will improve housing condition for all households. This is the option that guided this study. The fact that Nigeria has embarked on a pro-market housing reform that is private sector driven has placed affordability concerns at the forefront of the Nigerian housing policy discourse. This study is an attempt to contribute to that discourse. Having attempted to establish the contextual motivation for this study in this chapter by discussing the Nigerian housing policy reform, the next two chapters will explore the

theoretical developments which provided further motivation for the study – the state versus market debate in housing provision and improving how housing affordability of households is measured.

## **THE DEBATE ON STATE VERSUS MARKET IN HOUSING PROVISION**

### **3.1 Introduction**

Policy is essentially a means of achieving specific ideological ends (Burke, 1981). Thus the current housing policy reforms and dilemma in Nigeria can be understood within the context of their underlying ideological implications as to in which direction the country is moving or is to move. Discussing the suitability of such policies would require dealing with some fundamental normative issues such as fairness, justice and rights. Hence, this chapter, attempts to explore the normative justification for government intervention in the housing market; the inherent housing characteristics that make it susceptible to market failures and the pro-market versus non-market debate all of which are important for understanding the policy options for improving housing affordability. At a conceptual level, the dilemma and tension in the current Nigerian housing policy reform can be traced to competing paradigms of state and market in housing provision. It is the intention of this study to contribute to the current debate from the housing affordability perspective, with respect to the Nigerian context. Inquiry into housing affordability of households is also essentially normative in nature because it often seeks to ascertain how it should be; what is the right, fair or just for households. Hence the beginning of this chapter is focused on closely related normative concepts and theories that also provided the some underlying motivation for this study. The concepts examined are public interest economic theory of regulation and theory of distributive justice. An attempt is made in this chapter to present the major aspects of these theories relevant to housing and in so doing elaborate on the major theoretical insights that shaped this study. The need to explore this debate in the housing affordability context and its wider significance for housing policy is an important demand and a major motivation for undertaking this study. Chief among these are the inherent characteristics that make housing more susceptible to market failures than many other commodities and the current debate on the suitability of the market

as an effective means to providing adequate housing. These ideas underpin the examination of housing affordability within the current housing policy reforms in Nigeria. The public interest economic regulation theory (PIERT) is first examined in what follows.

### **3.2 Public Interest Economic Regulation Theory**

Public interest economic regulation theory sometimes referred to as the normative theory of market-failure is one of the group of economic regulation theories. Its distinct characteristics is that it is based on the idea of an existence of common interest (public interest) of which governments are more suited to provide and protect through regulation. Regulation in this discourse refers to legislative and administrative restraints on market actors' behaviours to influence prices, production, and market entry including government intervention in form of quotas, tariffs, subsidies and taxes. Public interest here represents conditions and processes that guarantee best allocations of scarce resources for individual and common goods in the society. Theoretically, it could be shown that under certain conditions (perfect competition) the market mechanism ensures the optimal allocation of resources. This fact is evident in the theorem that if there is a competitive market for all resources used in production and for all commodities valued by individuals, the economic outcome will be efficient (Arrow and Debreu, 1954; Marlow, 1995). However, in practice this is usually not so. Many forces in the real world often influence the market to allocate resources less efficiently than the ideal competitive market and thus provide the justification for exploring other alternative resource allocation methods.

Thus, this public interest regulation theory is essentially built around contentions on competitive market conditions and deviations from socially efficient use of scarce resources, in an attempt to set a scientific foundation for *social engineering*. Although, it is difficult to trace the origin of this theory to specific authors, the theory was ironically consolidated by some of its ardent critics such as George Stigler and Richard Posner who conceive regulation as seeking to

protect and benefit the public at large (Hantke-Domas, 2003). The theory grew out of the welfare economics tradition which ironically is concerned with promotion and protection of individual utility or welfare. Within this tradition, the aggregation of individual utilities or welfare in the society is taken to represent social welfare or the public interest. However, there remained a major problem of making interpersonal utility comparisons and determining what constituted marginal increase in individual utility (in other words how best to meaningfully operationalise public interest). A major breakthrough was provided by Vilfredo Pareto (1848-1923) who developed two criteria for measuring or verifying public interest – Pareto optimality and Pareto Superiority. Pareto reasoned that since it is difficult to compare the individual utilities, one can only be sure that a given change would increase social welfare if at least one person is made better off by that change without anybody being made worse off (Bator, 1957; Greenwald and Stiglitz, 1986). Thus, any change cannot be certainly taken to be in the public interest if it made some people better off while it made others worse off. According to this view, a situation is optimal if no one can be made better off without making somebody worse off. Thus, it is generally accepted that most appropriate resource allocation mechanism is the system that guarantees Pareto efficiency or optimality where no individual can be made better off without another being made worse off. Pareto efficiency was later complemented by the Kaldor-Hicks criterion that postulates that an outcome is more efficient if those that are made better off could in theory compensate those that are made worse off and still be better off, which would result in a Pareto optimal outcome. It is thus assumed that Pareto optimality would occur when both productive efficiency and allocative efficiency are simultaneously achieved (a change in which gains would exceed losses). However, given the fundamental requirement of ideal competitive market, it is recognised that any Pareto efficient allocation of resources can only be achieved as a competitive equilibrium with an appropriate initial distribution of factor endowments. Thus, the free market system can achieve Pareto efficiency under the following set of conditions: a) that there are complete set of markets for all possible goods; b) all markets are in full equilibrium; c) markets are perfectly competitive; d) transaction

costs are negligible; e) there must be no externalities; and f) market participants must have perfect information; g) no problems of enforcing contracts (Arrow and Debreu, 1954; Mookherjee, 2003; Kleiman and Teles, 2006). While Greenwald and Stiglitz (1986) have demonstrated that outcomes will always be Pareto inefficient in the absence of perfect competition or complete markets, it should however be noted that Pareto optimality can also be achieved outside a perfect competitive market in systems that replicate the outcomes of such markets such as ‘perfect’ central planning or ‘market socialism’.

It is however evident that in the real world, most markets rarely operate within such ideal conditions. This leads to inefficiency in the allocation of goods and resources due to ‘market failures’ in the form of for example natural monopoly, incomplete markets, externalities, public goods and imperfect information. In taking market failure as a point of departure, the public interest regulation theory argues that market failure is principally caused by self-seeking behaviour of agents and lack of incentives to act co-operatively or take account of social costs of their actions within market process. This situation justifies a third party (usually government) coercive enforcement or intervention to mediate, remedy or enhance co-operative behaviour among agents within the society (Hägg, 1997; Mackaay, 1999; Hertog, 2003). The theory predicts that regulation will be instituted to improve economic efficiency and protect social values by correcting market imperfections. If the benefits of government regulation outweigh their costs, then the allocation of resources here would be considered as efficient. Thus, the affirmative view of governments’ and other public agencies’ ability to ameliorate identified market failures at low cost, or adjust inequitable market practices by means of regulatory techniques, has been coined the *public interest theory* (Hägg, 1997, p.399). Underlying the theory is the implicit presumption of the existence of “the public interest”, that the government officials act in accordance of public interest and that the separation of policy making and policy implementation has no effect on maximizing efficiency (Hertog, 2003, p.43) Applying this theory to housing would mean that governments are indeed

expected to ameliorate housing market failures and indeed moderate such markets through appropriate intervention that delivers adequate housing to its citizens. Under this theory, intervention in the housing market will be considered as economically efficient if the benefits of providing such housing outweighs the costs of such intervention.

In this light, government regulation could be seen as an efficient instrument to correct imperfect competition, unbalanced market operation, missing markets and undesirable market results (Hertog, 2003, p.10). Thus, regulation/intervention is seen within this theory as a *corrective interference* to socially inefficient market mechanisms. This thinking provided the rationale for regulation and intervention as a means of achieving social goals and objectives.

It should be noted that in the 1960s and 70s the notion of government intervention increasingly acquired a negative outlook and criticisms especially in the United States by counter views which suggest that even though regulation may be conceived to serve public interest, they do not protect the public at large but rather tend to serve only the private interests of groups (Bernstein, 1955; Kelko, 1965; Olsen, 1965; Stigler, 1971; Peltzman, 1989). As a result, regulation began to be primarily conceived as “matter of redistribution” that negatively effect market efficiency (Hantke-Domas, 2003). However, from the 1980s onwards, the negative and pessimistic view of regulation came to be questioned (Mackaay, 1999). For instance, Becker (1983; , 1986) argued that the fact that politicians may tend to favour particular interest groups does not imply that government cannot correct market failures. He argued that in striving to enhance their own welfare through political means, pressure groups cannot neglect social waste affecting them. He was of the view that privileges sort by interest groups would stimulate their own counterweight for other interest groups and concluded that enduring forms of regulations benefit all actors not just specific interest group (Hägg, 1997; Mackaay, 1999).

Many authors have often seen regulation theory as a normative theory that is presented as a positive theory (Joskow and Noll, 1981; Aranson, 1990; Viscusi et al., 1995); the next section will discuss a more generally accepted normative theory - the theory of distributive justice.

### 3.3 Theory of Distributive Justice

The concept of *justice as fairness* was first developed by Emmanuel Kant in 18<sup>th</sup> century. This concept has in turn given rise to theories of social justice, which are increasingly being used to evaluate social policies (Burke, 1981). Distributive Justice generally refers to justice in assigning benefits (and burdens) as if from a common source and the challenge here is how to fairly allocate scarce resources among diverse members (individuals, groups, sectors etc.) that make up any given society. Often, the fair allocation of resources is less concerned with the total amount of goods to be distributed and more with the procedure of distribution and the resultant outcomes and pattern of the distribution mechanism. It is a common consensus that resources should be distributed in a reasonable manner which guarantees each individual a *fair share* of the distributed resources, but what actually constitute fair share has remained a very contentious matter. As has been contended by Michael Strevens, (Forthcoming) there are deep conflicts embedded in our way of thinking about distributive justice, so that in certain kinds of cases, we are internally divided about the guidelines we should follow to decide who deserves what. Common criteria in the resource allocation consideration in many societies include such principles as; equality, equity, and need. Each of these criteria suffers considerable limitations. If the equality criterion is adopted, goods will be distributed equally among all persons giving each person the same amount of resources. The problem of fairness would thus arise about those with significant differences in needs receiving the same amount of resources, which results in an unequal distributive outcome. If the equity criterion is adopted which would ensure that benefits are in proportion to the individuals' contribution, those who make a greater productive contribution to their group would receive greater benefits irrespective of needs. This consideration not only raises the problem of 'resource allocation-needs mismatch' but also tends to reinforce and perpetuate inequality within the society. The richer members of the society, who normally make greater productive contributions to the economy, would continue to enjoy greater proportion of

benefits, which tends to reinforce social inequality while undermining the ability of the less privileged to compete within the same economy. If the needs criterion is applied and resources distributed according to needs of individuals that make up the society, an equal distributive outcome would result as those who need more would receive more. However, this raises the problem of 'production-allocation mismatch' ignoring differences in talent and effort which could serve as a dis-incentive to production and efficiency. Inherent in this criterion also is the problems of distinguishing between real needs and manifested needs. If we choose to distribute resources according to a social welfare utility criterion where consideration of what is in the best interests of society as a whole is paramount, the distributive outcome would be shaped and influenced by the limits of the social utility definition employed.

In their discourse on equity, equality and need, Folger, et al. (1995) have suggested that these criteria are not principles adopted for their own sake but are rather endorsed to advance some social goal. For instance, equity tends to foster productivity; principles of equality stress the importance of positive interpersonal relationships and a sense of belonging among society members while the needs criterion tends to ensure that everyone's basic and essential needs are met (Maiese, 2003b). It has been observed that given that these (equity, equality and need) principles are often in tension with one another, one of them is usually taken as the central criterion of resource distribution. This choice often results in an economic system characterized by equality or competition, or an extensive social welfare safety net depending on which criterion that is adopted over the others (Maiese, 2003). However, Titmuss (1970) suggested that social policy should be a powerful tool for achieving social justice with *need* as the only criterion. Some others including Burke (1981) have emphasised the importance of looking beyond *need* itself to its causes. She argued that while there will always be an unequal distribution of mental and physical attributes among people, but that other forms of scarcity and inequality are not inevitable facts of life. They are the products of particular social and economic structures (Burke, 1981, p.163).

There are two major aspects of distributive justice namely the outcomes and the procedure. While some (e.g. John Rawls) believe that what makes a distribution just is the final outcome, while limiting the influence of luck so that goods might be distributed more fairly and to everyone's advantage, others (such as Robert Nozick) tend to believe that what matters are the rules followed in determining that distribution, insisting that the aim of distributive justice is not to achieve any particular outcome of distribution, but rather to ensure a fair process of exchange. Being mindful that an unjust procedure in resource distribution can result in fair outcomes just as a fair resource distribution procedure can produce unjust outcomes, there are those who maintain a mid-ground contention that both process and outcome matters in any distributive justice considerations. They believe that the processes of distribution must be fair in order for people to feel that they have received a fair outcome (Maiese, 2003).

There are many reasons why ensuring distributive justice matters in a society. Given that the principles of distributive justice are principally built around the concerns of sustaining the well-being of members of the society as well promoting effective production systems within such societies, given the need to maintain social stability. The fundamental relationship between social instability and social justice has been expounded by the theory of relative deprivation formulated by W. G. Runciman in 1966. This theory which explores the causes of political and social discontent, asserts that people are aroused to political action as a result not of absolute change in their material condition but of changes relative to the circumstances of those with whom they compare themselves (Runciman, 1966). Thus, a sense of injustice is aroused when individuals come to believe that their outcome is not in balance with the outcomes received by people like them in similar situations (Deutsch, 2000). It has been aptly observed by Maiese (2003, p.1) that;

“when people have a sense that they are at an unfair disadvantage relative to others, or that they have not received their fair share, they may wish to challenge the system that has given rise to this state of affairs. This is especially likely to happen if a person or groups' fundamental needs are not being met, or if there are large discrepancies between the *haves* and the *have-nots*.”

This assertion inexorably connects issues of distributive justice to such social concerns such as systemic poverty, racism, affirmative rights/action, and social exclusion. Thus, the discontent arising from relative deprivation has been used to explain radical politics (whether of the left or the right), messianic religions, the rise of social movements, industrial disputes and the whole plethora of crime and deviance (Young and John, 1993). It could therefore be inferred from a social deprivation perspective that societies in which resources are distributed unfairly can become quite susceptible to social unrest and instability which serves to limit growth, progress and development of the society, and the well-being of individual members of such societies. In such a situation, redistribution of benefits can help to relieve tensions and allow for a more stable society. In an attempt to grapple with the challenge of how best to develop a fair and just distributive system, several specific or material principles of distributive principles have been developed from different traditions.

The principles of distributive justice are very distinct from other types of moral relationship because “they refer to that to which people are entitled” (Caney 2005, p.104).

However, there is one general or fundamental principle of distributive justice and it stipulates that in assignment of benefits and burdens, those who are equal in relevant ways should be treated equally, those who are unequal in relevant ways should be treated unequally in proportion to their inequality. In explaining this general principle, Fleischacker (2005, p.19) noted that distributive justice represents a norm of equality which insists “that everyone is rewarded in proportion of his or her merit, such that it is unjust for unequals in merit to be treated equally or equals in merit to be treated unequally.” Of several specific or material principles that have been developed within different traditions the Rawls difference principle of distributive justice and welfare-based principle are identified for further

discussion to support the underlying conceptual argument for government intervention in housing.

### 3.3.1 Rawls Difference Principle of Distributive Justice

The objective of Rawls' theory is to resolve the problem of political obligation and explain within which context the citizen is obliged to comply with the laws of the state and in so doing determine the principles of a just society. Under his hypothetical construct of the *original position* where social contract is ratified in condition of perfect equality, coercive use of state power is justified. Guided by this social contract the state would take the form which everyone would consent to under conditions of freedom. This theory which Rawls equated justice as fairness is based on a conception of justice which holds that all social primary goods such as liberty and opportunity, income and wealth and the basis of self-respect are to be distributed equally unless an unequal distribution of any or all of these goods is to advantage of the least favoured (Rawls, 1996, p.33). This theory rests on two basic principles which were not intended to define what a *just* action is but to establish the framework from within which just actions can be evaluated. Rawls reasoned that within the hypothetical construct of the *original position*, where everybody is placed under the *veil of ignorance*, (rational) individuals well informed about human nature and functioning of society and driven by self-interest, will opt for the *difference principle* on the following three grounds. First, they do not know anything about their characteristics and circumstances that might influence impartiality of the decision-making. Second, they are afraid that they might discover that they lack such a talent (and be among the least advantaged) after the veil is lifted. Third, they at the same time want to secure as good position as possible for themselves. From this, the first principle states that *each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others*. The second principle (on wealth) states that *social and economic inequalities are to be arranged so that they are both: a) they are to be of the greatest benefit to the least-advantaged members of society (the difference principle) and b) offices and positions must be open to everyone under conditions of fair*

*equality of opportunity* (Rawls, 1971; , 1996; , 1997). The contention here is that rational individuals in the ‘original position’ who did not know the precise position in society to which they were to be allocated would choose such distributive principles to protect their interest and that such a view of distributive justice is compatible with commonsense notions of justice (Walker, 1980). Of particular interest to this study is that part of the second principle— known as the *difference principle* of distributive justice - which is in some sense is an egalitarian model, which advances the paramount interest of the least advantaged by justifying as fair distributive system that maximises the index of primary goods going to the worse-off group (Roemer, 1996; Fleurbaey, 2004). While this principle is not opposed to the principle of strict equality *per se*, it is largely concerned with the *absolute* position of the least advantaged group rather than their *relative* position as pursued by strict egalitarian tradition. Thus, if strict equality maximizes the absolute position of the least advantaged, then the difference principle would agree with such strict equality. However, if the absolute position of the least advantaged could be raised further by having some inequalities of income and wealth, then the difference principle prescribes inequality up to that point where the absolute position of the least advantaged can no longer be raised. Thus, differences or inequalities are allowed only to the extent that they benefit the least disadvantaged (Lamont, 2002). Hence, to apply this to housing policy, such a policy cannot be considered to be fair or just if it does not improve the housing conditions of poorest groups in the society. The *fair equality of opportunity principle* is equally very interesting because it requires not merely that offices and positions are distributed on the basis of merit, but that all have reasonable opportunity to acquire the skills on the basis of which merit is assessed. This principle along with the first principle of justice advocates even greater equality than the difference principle, because large social and economic inequalities, even when they are to the advantage of the worst-off, will tend to seriously undermine the value of the political liberties and any measures towards fair equality of opportunity (Rawls, 1997). If the quality of housing influences the opportunities of households, these principles tend to support the goal of ensuring adequate housing for all.

Rawls theory calls for authoritative redistribution to address inequalities within societies. Thus, a just society would initiate housing programmes that could lead to inequalities of differences in social status, wages, and jobs only on the condition that such programmes make life better off for the people who are now worst off by for example, increasing living standards of everyone in the community and empowering the least advantaged persons to the extent consistent with their well-being. It could be seen that the difference principle also has elements of other familiar ethical theories such as the socialist contention that responsibilities or burdens should be distributed according to ability and benefits according to need (if it is assumed that those in greatest need are the least advantaged) while at the same time recognising the merit principle of rewarding those with special skills and talent. Rawls theory of distributive justice has also been criticised by different schools of thought (Nozick, 1974; Barry, 1989). However, a discussion of such criticisms is outside the scope of this section.

### **3.3.2 Welfare-Based Principles**

The welfare-based principles are so named because they are based on the contention that the level of welfare of people provides the only moral justification and basis to redistribute resources within any society. Thus people's welfare is of primary moral importance within the society. Welfare theorists contend that the concerns of other theories such as equality, the position of the least advantaged, resources, desert-claims, or liberty are mere derivative concerns. According to this perspective, such concerns are in reality only valuable to the extent to which they increase welfare; hence, their actual value lies in their potential to increase welfare. Therefore, the sole criterion for resolving all distributive questions should be that which maximizes welfare. Given that the term *maximises welfare* is nebulous, several welfare functions are defined to represent welfare. These welfare functions often vary both in terms of what will count as welfare and also the weighting system for that welfare. For almost any distribution of material benefits there is a welfare function whose maximization will yield that distribution (Lamont, 2002). Economists within the welfare-based principle school, have

understandably shown more willingness to advocate that distribution should be based on the explicit functional form of wide variety of welfare functions (that have been mostly developed by them) while the others within the school such as philosophers have tended to shun these explicit functional forms in favour of small subset of the available welfare functions. The preference of the later has tended to congregate around utilitarianism to characterise welfare-based principles. Utilitarianism can thus be used to explain the main characteristics of Welfare-based principles (Lamont, 2002).

There are basically two types of utilitarians namely preference utilitarians and welfare utilitarians. While preference utilitarians hold the view that public interest can be defined by the sum or the mean of individual private interests, the welfare utilitarians recognize that individual interests may not always lead to public interest or could in fact actively conflict with collective good; thus it is good to realize public interests which transcends individual interest. The view that only the individual can really define their own interest tend to imply that government cannot guarantee to always act in public interest of its citizens, thus leading to a preference for a minimalist state or government (Campbell and Marshall, 2002). However, early proponents of Utilitarianism such as Jeremy Bentham and John Mills recognized the need for government intervention and regulation in mediating between various different individual interests to maximize overall public benefits of the society. For instance, Bentham recognized that in addition to self-regarding interest, each individual has social interest and other forms of interests. He was of the opinion that it is wise for government to persuade and coerce the individual (through a system of reward and punishment) to act in the interest of common good given that the majority of individuals always prefer to act in accordance to self-regarding interest if left on their own. John Stuart Mill was more definite in arguing that government could take a long-range view of individual interests to discern and synthesize their *real interest* in a way that the individuals cannot (Pitkin, 1967; Sugden, 1989). Campbell and Marshall (2002, p.175) offered an insight into this thinking with their observation that;

In theory, the individual stands at the centre of utilitarianism. It is the sentient human being who experiences pain or pleasure. In practice, the utilitarian principle, at least as a means of determining public choice questions, recognizes the conflict between public and private interests and that the state has a necessary role in ensuring that the individual's pursuit of private pleasure is consonant with the collective good as represented by general welfare. It falls to the enlightened 'expert' to determine what constitutes the best nexus of private utility and public interest.

The thinking that trading-off one individual's utility against another's is an ethical judgment made by someone who is assigned the role of defining the common good marks a transition in utilitarian tradition from a subjective view of interest towards an objective view. This thinking implies and expects government to regulate certain practices and activities for the overall good of the society even when such action(s) do not conform to current practices or trend.

Within welfare-based principle school, *utility* which traditional Utilitarians define variously defined as pleasure, happiness, or preference-satisfaction is taken to represent *welfare*. Advocates of this view believe that certain goods tend to be of less value to someone who already has a lot of it, than to those who have little of such goods (for instance one extra dollar would likely means much less to a millionaira than to a beggar). Thus, a beggar would likely derive more happiness with additional one dollar to his purse than the millionaira. Based on this premise, it could be argued that the loss of happiness of the rich is much smaller than the gain of happiness of the poor, if some reasonable amount of goods is taken from the rich and given to the poor. This thinking therefore suggests that redistribution of resources increases general happiness of a society, providing the justification for welfarism. Accordingly, the welfare function for such a principle in its theoretical form is simple – to choose the distribution maximizing the arithmetic sum of all satisfied preferences (unsatisfied preferences being negative), weighted for (or adjusted by) the intensity of those preferences (Lamont, 2002). It is the need to overcome the problem of comparing individual subjective preferences (utility) that lead such economist such as Bergson (1938), Samuelson (1947), Arrow (1951) and others in developing the social welfare functions that state in precise forms the value

judgments required for the derivation of the conditions of maximum economic welfare in a society. In conceiving such social welfare functions, any variable considered to affect welfare of the society are taken as inputs (Sen, 1970). This approach, which marked the emergence of 20<sup>th</sup> century welfarism, is really based on the argument that *it was still permissible for someone to make judgments about the common good provided it was made clear that the determination is made on the basis of value judgments*. This thinking holds the view that economic welfare is increase when welfare is maximized according to *Pareto improvement* (which has been discussed earlier). And thus modern welfarism was borne on the thinking that it is good to realize public interests which transcends individual interest. Sen (1979) has gone further to argue the need to incorporate such non-utility information as overriding ethical principles. Such overriding ethical principles include such norms as rights, equality and human dignity.

To relate this principle to housing, it could be argued that the maximisation of the utility households derived from their housing is seen as being morally important and as well as a means of improving the economic welfare of society. It is indeed desirable for government to intervene to improve housing conditions of households provided it does not as a consequence decrease the housing conditions of anybody else or result in situation where losses are greater than gains. The same principles should also apply to basic non-housing consumption goods. Having discussed the public interest economic regulation theory and the theory of distributive justice, the next section will discuss some inherent characteristics of housing that encourage market failure when such markets are not regulated and some other social and economic concerns that also add to the case for government intervention.

### **3.4 The Inherent Need for Government Involvement in Housing Delivery**

This section attempts to abstract the implications of theories of public interest economic regulation and distributive justice to housing provision. It will attempt to discuss some of the inherent qualities and attributes that make housing susceptible to market failures especially when such markets are unregulated. As have been argued by Lansley (1979), there are two

basic elements that justify government intervention in housing. First, is the distinctive nature of housing that makes it susceptible to market imperfections which undermines a socially optimal housing delivery through unregulated housing markets. Secondly, is the view that even if intervention were to correct such imperfections, the market would still produce inequitable and unacceptable housing resource distribution due to such factors as externalities and income inequalities (Lansley, 1979, p.21). These issues and other important societal concerns and considerations that advance the case for government intervention in housing will be discussed in this section.

### **3.4.1 The Distinct Nature of Housing**

There are a number of characteristics inherent in the nature of housing that impair the efficiency of the price mechanism and prevent optimal resource allocation through the market (Lansley, 1979). These imperfections hamper the smooth functioning of the housing market in a market system. Some of these characteristics of housing will be briefly discussed to create the background for the subsequent case for state intervention.

a) Housing as a product is not standardized. It is as diverse as the needs of those occupying them; hence housing comes in different ranges of size, age, quality, repair condition, amenities, location and tenure system. This has necessitated the development of a range of multiple and diverse housing sub-markets. Therefore, contrary to many consumption goods, there is no homogenous housing market. Any reference to a general housing market in an area often refers to the complex mosaic patch work of different sub-markets often segmented and interconnected with each submarket representing a set exchange possibilities in their operation (Galster, 1996). This situation makes it difficult for such market(s) to achieve full equilibrium or perfect information.

b) Housing as a product is also distinctively durable and often lasts much longer than many other consumption goods and even many goods that are considered as consumer durables. Although houses vary in construction quality, the normal life span of an average house ranges

between 60 years and 100 years with many houses being able to last much more beyond if adequately maintained (Lansley, 1979). Given the fact that it is also tied to land, which tends to increase rather than depreciate in value over time, it represents different things for the person that consumes it through outright purchase, mortgage or just rent. While the household that pays rent only consumes housing services, it also represents a means of saving for an owner through outright purchase. And for the household on mortgage, it represents an acquisition of capital asset after they have repaid their loan.

c) Housing as a product is very expensive often much more expensive than other consumer goods. In most cases, housing cannot be purchased outright from household income (or household savings) given the often high capital cost involved. The cost of housing is thus the biggest item in most families' budgets (Smith et al., 1988; Stone, 1993). Hence, the finance of housing is often done through different arrangements from different sources such as outright purchase or mortgage with money borrowed from banks or other finance sources, or through renting from private or public landlords who finance the capital cost of the dwelling. Thus, the delivery of housing services is closely tied to the availability and supply of adequate finance in the finance market. As a result, changes in the finance market often have dramatic impact on the housing market. Coupled with the fact that housing is a basic human need, poorer households often subject themselves through different sorts of deprivations in satisfying their need for shelter. Intervention in the market is often needed to offer market stability and ameliorate the adverse impacts of inadequate housing on households and by extension the larger society.

d) Consuming housing services involves relatively high transaction cost relative to other consumption goods. For instance, buying or selling housing often involves for example advertising costs, agent's commission, and legal fees. Reconstruction or modification of existing housing (especially in the urban areas) attracts additional approval costs and fees. There are also the emotional costs in form of spiritual and emotional ties people often develop with where they live and their housing. These costs often add to the transaction cost, which

often discourages mobility and tend to slow down the response in market conditions (Lansley, 1979).

e) Inelasticity in the housing supply is one of the major factors that hinder the proper functioning of the housing market. The supply of housing responds slowly to changes in the determinants of demand thus housing delivery would therefore take a long time to reach housing consumers who need them if delivery mechanism is left solely to the market (Lansley, 1979). This often results in perennial market disequilibrium especially in situations where the overall demand for new housing keeps on growing. Thus, a key reason for direct market intervention through public provision of subsidised housing is largely to ensure that available resources are directed to increase the supply of housing rather than simply bidding up rents or land prices (Hills, 2001). A more detailed discussion on inelasticity of housing supply is presented in the last chapter given that shortage in housing supply was identified as a major problem and housing policy challenge in the study area.

f) Other distinctive characteristics of housing make its acquisition a unique experience for any household. Being large, durable and tied to location, it is often purchased as a complete dwelling unit, not as a shopping basket of separately selected items (rooms, facilities, amenities, location) in the way that food and clothing are purchased. Unlike food it is not purchased anew on a regular and frequent basis, once a household occupies a particular dwelling it is hard to alter the amount and type of housing services consumed (Stone, 1993). Due to its bulkiness of housing, its immobility, and its attachment to land, when people obtain housing they are not just purchasing the services of the dwelling, but the advantages and disadvantages of the location: physical characteristics, neighbours, accessibility, municipal services, and so forth. These attributes of housing makes it a unique complex product and process, inherently susceptible to externalities and other attributes that leads to market imperfections more than any consumption good. As a result, the housing sector in many countries is marked by pronounced market failures, which justify government intervention as argued by the regulation theory.

### 3.4.2 Housing Externalities

Inherent in the nature of goods and services is the distinction between private and social costs and benefits as has been expounded by principles of modern economic theory. There are goods that are essentially private as their benefits are exclusively enjoyed by the consumer without any 'spillover' or 'externality' to others (Goldin, 1977; Kalt, 1981; De Jasay, 1989; Cowen, 1992; Grigsby and Bourassa, 2003). There are other types of goods - public goods that have indivisible 'spillovers' that are external to the consumer. Some goods such as housing have both private and public characteristics. Private in the sense of the actual dwelling space where the consumer can close the door on others and public in the sense of net external costs and benefits that also accrue to the consumer, is embedded in the immediate social and physical neighbourhood of the dwelling and other wider city services and functions (Pugh, 1980). Early attempts to evaluate portions of private and public benefits associated with urban housing include the works of Wilkinson (1973) and Richardson, et al (1974). These works showed that factors such as distance from city centre, social class, physical characteristics of the area surrounding the dwelling amongst others significantly contribute in the value of housing, as well as its inherent characteristics-size, number of rooms, installed facilities, parking and garden space. Thus, housing is valued for its built form and for its relationship to surrounding social space and urban services as well as for rights of tenure and its role as an economic asset. As Pugh (1980, p.3) succinctly puts it, housing "is one of the few social and economic assets, which 'internalises' the value of its externalities into its price. Put another way, we can say the economic value of housing includes the resources built into its form, and the net balance of external costs and benefits from the social and physical environment." It follows therefore that the cost of a given house is inextricably influenced by external costs and benefits of its social and physical environment. It is this public good element that usually justifies why the legal framework for private property rights is normally provided by governments rather than by private institutions.

It has been argued that the inherent 'externality' attributes of housing itself is another distinctive character of housing that is inimical to free-market response. This is due to the fact that 'externality' implies an allocative distortion because it is an 'unearned benefit' generated for a third party by actions of others. In general, free-markets respond only to private costs and benefits. Thus, the free-market does not lead to optimal allocation of resources where externalities are involved, as in housing – i.e. where private activity of people would generate social costs and social benefits for others. In such situations, state intervention is justified even on purely economic considerations to ensure optimal allocation of resources. Government intervention through subsidies is required to overcome the effects of externalities by either directly providing the goods and services whose supply is suboptimal or creating incentives for private provision (Mayo, 1999). These contentions can be briefly discussed in relation to the three major aspects of housing where its externality attributes are most significant, namely: context of urban decay; impact of housing on wider aspects of family life and community; and type and location of housing.

**a) Context of Urban Decay**

Neglect or poor maintenance of individual private properties in an area can have adverse affect on immediate neighbourhood and lead to imposition of costs on residents living in the area. If such a situation deteriorates to the point where more affluent households start to move out of the area and be replaced by poorer households, that would likely mark the onset of urban decay in such neighbourhoods. This situation often leads to decline in property prices and lack of investment within the area as property value is partly determined by condition of the surrounding area. Private free markets would not be able to deal with the situation given that at the root of the problem is the uncertainty and interdependence in decision making process which the property owner faces. A property owner has the choice (in this case) to either maintain or allow his property to deteriorate further but his choice is only influenced by what he thinks other property owners in the area would do. Individual property owners would

hardly improve their properties unless they are sure that others would do the same, given the fact that high proportion of properties in the area would need to be rehabilitated if they are to recover the required cost of further investment in their properties within the area. This uncertainty is often compounded by the limited resources and access to resources of households that often live in such areas leading to further decline. In such a situation, public or state intervention is required to stem the decline by reducing the uncertainties and investment risks confronting property owners through simulating property improvement activities via urban renewal policies of the government. Urban renewal tools that could be in form of property improvement loans and grants, tax credit or abatement incentives, power of eminent domain to compulsory acquisition and improvements, and area improvement strategies are often employed in diverse ways to reduce uncertainty, reduce social costs, increase confidence, improve resources allocation and generally improve the neighbourhood. There are however, rare cases where semi-independent private market has been able to stem neighbourhood decline through the process of gentrification. Gentrification entails the displacement of lower income households by more affluent families who take advantage of attractive lower price properties to invest in neglected neighbourhoods, which for peculiar (locational or historical) reasons have investment potentials. This process often initiates economic and social pressures that drive out lower income families from such areas. While this could have a positive impact of improving the neighbourhood, critics have pointed out that gentrification often exacerbates the poor housing situation of the lower income households (Smith, 1986; Lees et al., 2007).

**b) Impact of Housing on Wider Aspects of Family Life and Community.**

Another major externality attribute of housing lies in its inextricable link with wider aspects of family and community life. People often tend to make their housing their home. They want to conceive of their dwelling units as a place to retreat from the stress and problems wrought upon them by the demands of daily living. And as such they want it to be safe and

comfortable; a place to relax and happily entertain friend and visitors alike; a special space where they can fully express themselves – a place they can find fulfilment. Clearly, to many, a dwelling is much more than just ‘roof over head’. A dwelling tends to satisfy individual social, behavioural, cultural and environmental needs and desires beyond basic shelter needs (Bratt, 2002). It is in recognition and in the consideration of these embodiments of housing that provides the justification for state intervention in the housing process.

Hoek-Smit and Diamond (2003) asserted that in countries where large segments of the population, particularly in urban areas, live in substandard housing and neighbourhoods deprived of adequate services, the foremost reason to subsidize housing is to make sure that housing conditions, including water and sanitation quality, will not cause outbreaks of disease. The concern for poor housing and its associated link with poor health and disease has over the years extended to wider issues of social concerns such as educational opportunities, labour and employment opportunities, crime and anti-social behavioural tendencies, family stability, social exclusion, and other areas of societal concerns. Some of these have been discussed in the earlier chapter. Poor housing conditions here refers not only to inadequate facilities (such as electrical, plumbing, carpentry etc.), bad walls, floors, roof or ventilation within individual houses but also refers to the whole neighbourhood which may be characterized by incessant noise, excessive traffic congestion, pollution and unsanitary conditions, lack of basic utilities and social amenities.

Thus, state intervention to ensure adequate housing is made available for its citizens could be seen as an economical way of reducing the overhead costs it would incur as the alternative poor housing of citizen would invariably lead to increase health costs, crime preventions costs, and safety and security costs (Olsen, 2001). Thus, intervention in housing is a practical means of ensuring that the society reaps social and economic benefits associated with good housing. As these associated costs, benefits and relationships are in form of externalities, private free-market is structurally incapable of responding to these concerns. To the extent that consumer

ignorance or lack of information about these external benefits will prevent them from making informed decisions about the desirable level of housing to consume, governments often intervene in the housing process through the granting of subsidies to prevent under-consumption of housing (Lansley, 1979; Angel, 2000). In justifying this view as an important reason for intervention, Hills (2001, p.1888) stated that ;

“The aim of minimum housing standards is the main reason why we do not simply redistribute cash via the tax and social security systems and leave people to buy their own housing in the free market. Faced with a market choice, some people with constrained resources would opt for a very low standard of housing (overcrowded, low-quality) and higher consumption of other kinds. Implicitly this justification involves some form of paternalism: to protect other household members (for example, children), neighbours and the neighbourhood, or people’s own future interests, we are prepared to support a different consumption pattern with higher housing costs than people would have chosen for themselves given the cash.”

**c) Type and Location of Housing.**

Unimpeded free-market allocation of resources based on market demand and overriding profit maximization motivation of private developers might lead to unacceptable design and location of housing with little thought to issues as access to amenities, jobs, transportation, recreation, safety, aesthetics and environmental considerations. As has observed by Hills (2001) the justification for government intervention in housing is to ensure a minimum standard of housing and to avoid the deep area polarisation which would be thrown up by the unfettered market.

Thus, there is the need to mitigate undesirable consequences of excessive land and house price speculation and excessive exploitation of the overwhelming majority in search of housing. Therefore, in order to ensure that there is an orderly physical development in the location and design of housing, government usually intervene in the housing process through *preventive measures* like the enforcement of building byelaws, subdivision regulations and zoning ordinances, which serve as guides for future development. Such intervention is largely concerned with the character, appearance and arrangement of buildings and the provision of

facilities for the comfort, convenience, amenity and safety of the inhabitants of the settlements (Gana, 1996). As has been argued, only the government that can provide the necessary basic infrastructure, legal and regulatory framework, oversight and enforcement required in creating an enabling environment for urban and housing development (Okpala, 1999). Government intervention in housing is therefore to broaden locational choice in housing development and consumption within a given area (Grigsby and Bourassa, 2004).

### **3.4.3 Income and Wealth Inequality**

The need to recompense for poverty and inequality in the distribution of income and wealth lies at the heart of the argument for government intervention in housing market within a given society as reflected in the Rawlsian difference and welfare-based principles of distributive justice that have been earlier discussed. In a situation where there are significant income differences between different groups, free-market mechanisms would produce skewed preferences and corresponding skewed resource allocation and consumption in favour of the high income group. In a market system, the capacity of the poor to mount and sustain an effective demand is severely limited especially in the housing sector. Thus, there is the need to moderate this tendency through intervention in order to ensure a more equitable distribution of resource. As acknowledged by Lansley (1979, p.31) argued that;

In a free market, the extent to which housing need would be met depends on the population's capacity to pay and its preference, and hence the relationship between the level and distribution of income and cost of housing. The higher cost of housing and the unequal distribution of income have meant that significant sections of the population would have been unable, without assistance, to afford the full economic price of decent accommodation.

Private market system would always produce a very unequal distribution of housing resources, since available housing space would always be allocated on the basis of preferences determined by effective demand. For a given set of housing preferences within a market system, it is obvious that the more affluent would always outbid his 'neighbour' at the lower rung of the income ladder. It does mean that the poorer households will virtually get nothing if there

income is very low and/or minimum housing standards are set relatively too high to mitigate possible negative externalities. Thus, in a situation where there is an unequal distribution in income, fair market competition does not exist and the virtues of market are severely limited. Housing inequality often tends to reflect income inequality. The need to minimize major consequences of wide housing disparity between income groups; mitigate the social and economic consequences of poor housing; minimise the influence of housing on household poverty are amongst the reasons that provide the justification for government intervention. As observed by Lansley (1979) such intervention is an acknowledgement that the social needs of housing differs markedly from economic demand based on ability to pay to which the market forces respond.

Thus, housing subsidies are used as tools to improve the income or wealth distribution in society by attempting to redress the sources of societal inequality given the immense effect of housing on people's lives especially in terms of inherent life opportunities and possibilities that could be derived from good housing. Housing subsidies can be used to ensure that people have equitable opportunities to improve their lives (Hoek-Smit and Diamond, 2003). A closely related contention is that housing-related poverty exacerbates and multiplies other inequalities as it has been observed that housing shortages and bad housing conditions multiply and exacerbate such negative societal attributes as ill health, vandalism and crime, racial prejudice, loneliness, mental illness, family break-up etc. (Hills, 1991). Thus it stands to reason that any direct action to mitigate poor housing conditions within a broader framework of poverty eradication with a society would significantly assist the poor in combating other associated social ills (Angel, 2000).

#### **3.4.4 Fairness and Social Stability Considerations**

Related to the issue of income inequality is the associated issue of fairness which often are less attractive to economists despite their very important political justification. This view insists that housing is a *'merit good'* which should be made accessible to all despite individual station in

life. More often than not the public tend to identify with this perspective and tend to support redistribution to the poor as can be seen from analysis of public attitudes to public spending (Hills and Lelkes, 1999). In a sense it advances the need to create more equality in social opportunities available to everyone and advance social justice within the society. Grigsby and Bourassa (2003, p.978) made a distinction between social justice and equality of opportunity with a society, arguing that;

“...societal injustice relates to the degree of inequality in economic and social outcomes that a society perceives to be acceptable within its different arenas of activity. Given the varying contributions and needs of individual citizens, nearly all societies encourage unequal outcomes, but only within limits—limits that change over time and differ across cultures. In contrast to societal justice, equality of opportunity is about the rules under which individuals and groups compete for a share of the total pie that members of society together produce. Are opportunities to acquire and utilise skills necessary for a productive life reasonably equal for everyone in society, or do they unacceptably favour some people over others? The more equal the opportunities, presumably the more equal the outcomes and the smaller the required social safety-net.”

The social consensus regarding the right or desirability of universal access to some minimum level of housing provision make it necessary to subsidize housing when private incomes are too low or preferences are such that many households do not opt for or are incapable of affording minimal service levels (Mayo, 1999). There is also the social inclusion perspective that has argued that an increasingly important objective is the need to combat social exclusion by creating and sustaining communities and areas which include a social mix. It is no longer acceptable to meet the aim of affordability through supporting housing which is only in low-income ghettos or only in certain parts of the country, even if physical building standards are high (Hills, 2001). This often provides the justification to address inequality in society through improving housing outcomes for underserved poor households through such means as designing slum improvement programmes to alleviate poverty and workers housing schemes to compensate for low wages etc. (Hoek-Smit and Diamond, 2003).

Another related issue is the concern to maintain social stability and cohesion within the society. According to this view there is the need to subsidize housing in order to *prevent destabilizing*

*social effects of poor housing and neighbourhood conditions.* This is often based on the inherent political fears that poor living conditions often lead to debilitating social tension and destabilization (Hoek-Smit and Diamond, 2003). Within the context of relative deprivation theory, these fears are well-grounded given the relationship between social justice and social stability. Housing inequalities between groups is a source of social discontentment and tension as evident in the Glasgow housing riots of 1919 which incidentally contributed to the creation of Council Housing Programme in the UK in 1920 (Grigsby and Bourassa, 2003).

#### **3.4.5 Stimulate Economic Growth**

Home ownership is usually the single greatest source of wealth for city-dwellers throughout the world. Consequently, support for the housing sector promotes opportunities for the generation of income and accumulation of wealth (Mayo, 1999, p.ii). Thus, the need to stimulate the economic growth provides another major justification for government intervention in housing. In discussing government subsidies, Schwartz and Clement (1999) assert that similar to the argument of justifying intervention to offset market-imperfection by changing existing incentive structures, government subsidies could be used to boost economics of scale in production. Thus, it could be used as a tool to support local productive capacities with the view to making them stronger and more competitive. In relation to the housing sector therefore, some types of intervention such as direct provision of mass housing could be seen as a way to boost the building materials and construction industries along with their attendant multiplier impacts in the economy while improving housing conditions within the society. It has been observed that housing creates employment not only in the housing construction industry but in industries that provide building materials and furnishings for the house. It is often argued that the employment multiplier effect that could be generated by intervention in the housing sector can stimulate the economy relatively more than other forms of government spending, hence the use of housing sector in some countries to jumpstart the economy after a recession or depression. It is for this reason that most of the housing

institutions in the US were created by government during the depression years (Hoek-Smit and Diamond, 2003). Mayo (1999, p.17) in agreeing to this view, observed that;

...it is possible to accelerate both output and the rate at which the housing stock expands by subsidizing housing over modest periods of time. Indeed, it is just this possibility that justifies the claim that housing can be a leading sector or a major element in government programs to stimulate the economy. That is, if private housing output is depressed because of a decline in economic activity, it is apparent that both the sector and the economy as a whole can be jump started by infusions of resources that take the form of housing subsidies.

Recently, the US government was compelled to take-over the Federal National Mortgage Association (Fannie Mae) and the Federal Home Mortgage Corporation (Freddie Mac) – the two largest mortgage finance lenders in the US that control about 90 percent of that nation's secondary mortgage market (Alford, 2003). The move was to help them recover from massive losses; shore-up existing mortgage equity and prevent catastrophic economic melt-down which the complete collapse of these institutions would have triggered in the country. The root cause of the problem which has triggered a global financial crisis is the lack of regulatory oversight by government which was exploited by finance firms to engage in sharp unscrupulous mortgage lending practices that have over-heated the mortgage market (Aston, 2008). The current US economic crisis (and global financial crisis) has exposed the weakness of deregulating the mortgage finance market.

Particular types of interventions have other beneficial macroeconomic justifications. For example, housing investment can be used as a means of reflation without sucking in imports or subsidies can be used as a way of keeping down inflation (Hills, 2001).

Having explored some of the reasons why government should intervene in housing, it is necessary to also examine the arguments of those who share different view and favour housing delivery through unregulated market in order to provide deeper insight into the issues the contentious pro-market versus non-market arguments in the provision of housing.

### 3.5 Market vs. Non-Market Contention in Housing Provision

The view that housing should be left to the free market and price mechanisms with the government playing an *'enabling role'* is increasingly dominant within the international housing policy reform discourse (Pugh, 2001). The central assumption underlying pro-market policy argument is based on the logical construct of the 'free and virtuous market' that would ensure the most efficient allocation of resources within the housing sector. In its most simplistic form, the assumption holds that resources are allocated in an optimally efficient manner through the impersonal play of supply and demand; and that the roots of crisis lie in the systematic 'distortion' of market signals through inappropriate government interference with free market forces.

The free market orientation is built around the neo-classical economics that was developed in the later part of 19<sup>th</sup> century by English economist William Stanley Javons along with the Austrian economists Carl Menger and Bohm-Bawerk as a reaction to the classical economics of Karl Marx and David Ricardo. Neo-classical economics shifted the emphasis in economic analysis away from the *circumstances and condition of production* towards the *preferences and needs of individual consumers* (Bassett and Short, 1980). In its elementary form, it assumes that it is the satisfaction of the preferences of the individuals who make the society that shapes the economy and the nature of the society. Thus, two sectors are of primary consideration – the individual (or household) who demands goods and services in amount that satisfies its preference and the producer (or the firm) who satisfy demand in amount that maximises his profits.

There is a general contention that in a scarce resource situation, any given society faces three choices. Choice one – what goods and services to produce? Choice two – what quantities to be produced and how to produce them? Choice three – how to distribute the produced goods and services? The first two choices are allocative considerations while the third is a distributive consideration. The pro-market arguments are mainly based on allocative considerations in the production of goods and services within any given society with focus on maximizing

efficiency. The view here is that the market mechanism ensures an efficient allocation of (scarce) resources by channelling productive factors into the supply of most demanded goods and services within any given market. Lansley (1979, p.19) aptly noted that;

“Advocates of the free market are usually particularly concerned with the efficient allocation of resources which is said to occur when resources are being used to produce goods and services most preferred by the society and it is not possible to reorganise production so that more goods and services can be produced with the available resources. Proponents of the free market argue that, under certain conditions, the price mechanism leads to efficient production in the sense of maximum output for a given resources, to an optimum distribution of resources between outputs and to an optimum allocation of outputs between consumers.”

It is thus the argument of neo-classical economists that under perfect market competition conditions, the market maximises social welfare of citizens by ensuring efficient allocation of resources between different outputs and also allocation of outputs between individuals to ensure maximum utility. Under the market system, individuals within a given income, in satisfaction of their preferences buy goods and services in a manner that ensures that the benefits derived from the last unit purchased equals the price paid for it. Thus, consumers maximise their benefits within their income and budget constraints. On the other hand, in order to maximise profit, producers usually supply to the market in a manner that ensures that the prices paid for any additional unit of output they produce is at least equal to the additional cost of produce such output. Thus, the market system mutually satisfies the interest of the consumer and the producer through the price mechanism, which also serves as an indicator for each group to rationalise or increase consumption or production (Stafford, 1978). Thus, it is argued that the market price mechanism maximises the use of scarce resources by ensuring that they are distributed into productive activities in such a way that satisfy consumer’s preferences and in so doing satisfies a particular view on equity. However, the framework for these propositions, which are predicated on perfect equilibrium conditions are built upon four major underlying assumptions; a) production of goods and services reflect the preference of consumers at all times; b) all the individuals and firms in the market have perfect information at all times; c) all the individuals and firms in the market

maximise their utility and profit respectively; d) production of goods and services are assumed to be flexible with each of the factors of production easily interchangeable (Bassett and Short, 1980). Thus, such common problematic issues as unemployment, excess profit, and inflexibility of production are seen as a short-term aberration which the market always tends to correct.

Proponent of free housing market have maintained that the housing sector would immensely benefit from the market system price mechanism, which would ensure that scarce resource outlays for housing is allocated in the most efficient manner. This would not only mean maximizing housing output in relation to the input but also to ensure that quantity of resources allocated to housing in relation to other goods corresponds with the distribution of the consumption preferences of housing in relation to other goods - to satisfy the supply objective. Furthermore, as it is the individual consumer that decides on what to consumer and level of such consumption, the distribution of the housing stock under the market system would also correspond to the preferences individuals – thus satisfying the equity objective (Lansley, 1979). In advocating this view, Pennance and Gray (1968, p.9-10) stated that;

“Advantages accrue to consumers when it is possible to organise a competitive market for a commodity. If there are no restrictions on the price, consumer choice, or entry of new producers or sellers, a strongly competitive market will ensure that the size, quantity, and quality of houses that are built, and the distribution of the existing stocks, will be dictated by the taste, incomes and preferences of households.”

This underlies the pro-market neo-liberal contention that direct government intervention limits market efficiency and consequently limits housing possibilities and should be discontinued in favour of an unregulated market where private sector should be encouraged to provide housing at prevailing market rates (Husock, 1997; Oliver, 1999; Staley et al., 2000). Thus, government interventions in the housing sector such as direct public housing delivery, provision of price subsidies of any sort (including rent controls), and acquiring dominant control in the use of land are seen as *distortions* that mitigate against the functioning

of the free market and therefore should be minimised as much as possible or removed (where possible).

This school of thought is of the view that these *distortions* should be discouraged both at the sectoral level and at the wider national inter-sectoral level, thus there is the need to accordingly harmonise pro-market national economic reforms with sectoral pro-market reforms. This view argues that housing sector is connected to the broader economy through the real (investment, output, employment and prices), fiscal (taxation and subsidization) and financial (housing and related infrastructure finance via financial intermediaries) sides of the economy. Therefore the operations of the sector have inextricable and mutually re-enforcing relationship and impact on macro-economic performance, hence must be rid of 'market distortions' to ensure its *efficiency* (World Bank, 1993). As relative prices constitute the basic instrument of market regulation, removal of factors (like fixed exchange rates, price controls and subsidies, restrictions on imports, export taxes and so forth) impeding the automatic adjustment of these prices constitutes, in this view, the single most important step which can be taken to revive economies and increase opportunities (World Bank, 1986).

In reacting to the contention of many analysts that consider low income (or poverty) to be the central cause of housing affordability problems, the neo-classical economics perspective has argued that policy responses should focus principally on restoring income, not on subsidising or regulating housing production and distribution (Smith et al., 1988). To the extent that adherents of this general perspective acknowledge any affordability problem, it is attributed to low income, and perverse public policies that impede the ability of the private market to provide more and cheaper housing (Salins, 1980). Following this thinking, serious arguments have sometimes been made that rent control is a major cause of homelessness.

There is a moderate perspective that also believes in the fundamental efficacy of the housing market (as well as the labour market). However, its adherents also realize that affordability problems are due, in part at least, to "imperfections" in real markets, not merely impediments to their optimal operation. They recognize that the labour market, left to its own, will leave

some people too poor to obtain housing and other necessities at the barest social minimum, no matter how many hours such people work and even if the housing market were to work at peak efficiency. They acknowledge that, given the nature of housing (its durability, bulkiness, indivisibility, locational fixity and land consumption, long construction time, and credit dependency), the housing market is inherently incapable on its own of providing an adequate supply at affordable prices for a substantial portion of the population (Bourne and Hitchcock, 1978; National Housing Preservation Task Force, 1988). This perspective thus supports considerable government intervention—primarily fiscal but to some extent regulatory to compensate for imperfections and enhance the private market. Direct subsidies, tax incentives, and risk reduction for investors are seen as necessary supply-side policies to stimulate housing production and reduce, to some extent, the direct cost of housing to consumers. On the demand side, housing vouchers and certificates, as well as homeowner tax benefits, are regarded as acceptable ways of increasing households' effective purchasing power in the private market. Anti-discrimination, tenants' rights, and homebuyer disclosure measures are viewed as ways of overcoming barriers to equitable bargaining in the market place. Zoning and codes are intended to contain and correct for certain externalities or neighbourhood effects, in on small measure to protect property values. From this perspective, problems of affordability, while rooted in the housing and labour markets, are seen as capable of being resolved, with assistance, within the existing mechanisms of housing financing, ownership, and production. The spectrum of market-based perspectives assumes essentially a trade-off between efficiency and equity. Those at the conservative end of the spectrum argue that the loss of efficiency resulting from public intervention in housing and labour markets is unacceptably costly in economic terms and ultimately counterproductive in social terms. The liberal end argues that social peace and distributive justice require some careful and limited sacrifice of efficiency as long as the basic institutions and incentives of the market are preserved.

However, there are the market-sceptics camp who have argued that housing is distinctively different from other consumer goods and do not respond to the market the way other

consumption goods do. This often results in very imperfect competitive market structure – very different from the perfect competitive market conditions on which the market theory is built upon. Some of these concerns have influenced some sceptical views on the ability of the free-market to ensure adequate housing access to all groups in the society. Many of these free-market sceptics have identified many major inherent flaws and weaknesses in some of the fundamental arguments of the free-market contention. For instance, according to pro-market perspective every household is by definition paying just what it can afford for housing, having evaluated rationally the manifold housing and non-shelter choices available to it and then allocated its available financial resources in the way that maximizes its satisfaction or utility. This thinking suggests that the homeless are people who choose to spend all their money on things other than housing, or, in slightly more sophisticated terms, that the homeless do not place sufficiently high personal priority on housing in comparison with other necessities to allocate enough of their (admittedly limited) resources to obtain even the cheapest available housing (Stone, 1993). It could therefore be seen that the conclusion of pro-market economist that the ‘market’ ensures social equity because the distribution of outputs are determined by individual preferences is basically weak for two reasons. First, the logic of individuals expressing their preferences through the market is wholly based on the existing income distribution that is inherent in a given society. As effective demand which determines preferences hinges *on ability to pay*, it therefore means that the free market would not be able to recognise the ‘actual need and preference’ of anyone who do not have money to make his demand effective. Thus, the free-market is structurally unable to guarantee or provide socially-acceptable housing for the lower income households who do not have enough ‘voting power’ within the market. This fact seems to indicate that resource allocation and distribution of output within the framework of the free-market is inherently skewed in favour of the higher-income individuals/households. Furthermore, as been suggested by Lansley (1979, p.21) that “even if the distribution of income could be made less unequal, there are other views of equity than that contained in the consumer-sovereignty outlook which would emphasise the

importance of housing resources being distributed less unequally than the ability to pay.”

Pro-market advocates have also been criticised for taking the ‘market’ as given – as almost ‘natural’, or metaphysical institution, which any tampering with will inevitably mar the optimal outcomes they produce, thereby generating undesirable ‘inefficiencies’. The view of the economy as an harmonious self-regulating mechanism that rationally allocates and distribute resources fails to reflect the actual conflicts that are generated between workers, owners of business, landowners and landlords operating within such economy (Bassett and Short, 1980). Thus, the idealization of market mechanisms ignores the behaviour of powerful actors, the defining force of legal and financial arrangements, and the role of the ideology of individualism and private property in shaping both the experience and the meaning of housing affordability. The critical institutionalist perspective identifies the interests, power, and interaction among landlords, developers, realtors, lenders, local politicians, and their most influential constituencies in structuring the choices and constraints that define the housing cost side of the affordability relationship (Gilderbloom and Applebaum, 1988). In sharing this view, UNCHS (1997b, p.5), has observed that;

“...part of the reason why low-income housing markets are more complex and less predictable is that they serve interests which are not solely economic: land and housing have political as well as economic, and even social and cultural significance, and are used for speculation as much as for exchange. Politicians and commercial developers, landowners and community organizations, landlords and other intermediaries, are involved in complex and ever-changing sets of negotiations over who benefits from the housing markets. Real markets are permeated by power relations of various kinds – class, gender, culture and politics – which are exacerbated by the potentials land and housing have for patronage and short-term gains.”

However, the critique provided by radical political economy goes beyond the institutionalist approach in arguing that the agents who shape local housing markets and the households whose residential experiences occur in such markets are all situated within a larger context of the dynamics of capital accumulation, the reproduction of the social order, and the prevailing ideology. This context determines the institutional mechanisms within which the major actors

in the housing, land, and mortgage markets shape the objective housing choices, constraints, and conflicts confronting individual households. It also shapes the perceptions people have of their housing situations, the relative desirability of the available alternatives, and the likely consequences of opting for one or the other (Stone, 1993). As contended by Hewitt (1993, p.3), the market;

“...is not as it is hypothesized to function in neo-liberal economics, but as it is substantiated or made operative through the interaction of real social groups. Markets are culturally and politically specific institutions: the significant difference in the way they function, even within the relatively narrow field of highly developed capitalist economies, is surely a telling illustration of this basic point. Societies even when formally lumped within the same taxonomic category have different histories and values. The balance of power among major groups within each country is peculiar, and principal players adhere to historically specific rules of the political game. A varying degree of vulnerability to external forces (or capacity for external alliance) affects the capacity to manoeuvre in innumerable concrete cases. All of this makes for distinct allocative priorities and forms of regulations, and thus for qualitatively different ‘real markets’.”

This perspective contends that the affordability problem is the inevitable result of real (not abstract) labour and housing markets. It is a problem that cannot be resolved through the "natural" workings of these institutions, nor even through social adjustments to temper excesses, sustain profits, and assure social stability. It is therefore a common consensus within this perspective that market-oriented analytical and policy framework prevents recognition of the nature, causes, and implications of the housing affordability problem, and inhibits thinking about the possibility of a housing system based instead on social principles in which market concepts might at most have a useful but subordinate role in the identification of housing preferences and the allocation of housing (Gilderbloom and Applebaum, 1988; Stone, 1990; , 1993; Davis, 1994; Murray, 1997; Andrews, 1998).

Attempts to deal with affordability problems have compelled governments to institute various interventionist measures (some of which have been discussed in the previous chapter). Despite the seemingly limited recorded successes, many housing scholars (such as the ones mentioned above) have continued to maintain their belief in direct and effective government intervention as part of the solution to the affordability problems of the society. Stone (1993) has even

advocated for housing to be removed from the marketing system and be made a non-profit goods in United States, while recognizing that in the current global economic system, housing affordability reflects the tension between the labour market and the housing market. According to him, most people have to work for wages or salaries in order to obtain the necessities of life. But the inescapable pressure on employers to hold down costs in order to compete and maximize profits means that the labour market do not guarantee any household sufficient income to pay for adequate shelter and other necessities.

It could therefore be seen that at the heart of this raging debate is the contentious issue of housing affordability of households. What paradigm would make housing more affordable to households? And at what social and financial costs to the society? Therefore, it will be particularly difficult to begin to comprehend the various dimensions of this challenge without understanding the complex nature of housing affordability. Hence, the next chapter will attempt to examine the concept of housing affordability. The review of existing literature will also attempt to establish existing gaps and weaknesses which the study intends to fill.

## **HOUSING AFFORDABILITY: A REVIEW OF LITERATURE**

### **4.1 Introduction**

Having discussed the contextual and conceptual motivations for the study that underscores the relevance of examining housing affordability in housing policy reform, this chapter will be devoted to presenting a concise review of existing literature to identify some of the existing gaps and considerations which justified this research study. This chapter discusses the definition of housing affordability, the various concepts of housing affordability, the significance of affordability, the existing different approaches of measuring housing affordability and the proposed new composite approach to measuring it. An attempt has been made here to also discuss the existing housing affordability and related literature in Nigeria. A summary of review findings is provided at the end of the chapter to recapture briefly the major weaknesses, gaps and considerations identified in the review.

### **4.2 Defining Housing Affordability**

The term housing affordability has come into popular usage in the last two decades replacing '*housing need*' at the centre of debate about the provision of adequate housing for all (Whitehead, 1991; Swartz and Miller, 2002). According to Fallis (1993), this move could be attributed to the increasing adoption of more market-oriented reforms within the housing sector in many countries. Consequently, increasing concerns over rising levels of homelessness, housing costs, mortgage defaults and foreclosures, 'negative equity' experienced by households, declining neighbourhoods, and over-heated housing markets have concertedly pushed housing affordability into the centre of housing policy discourse since the early 1990s (Maclennan and Williams, 1990; Whitehead, 1991; Boelhouwer and van der Heijen, 1992; Linneman and Megbolugbe, 1992; Lefebvre, 1993; Bramley, 1994; Freeman et al., 1997; Katz et al., 2003). This has increasingly become evident in Nigeria with the current national housing

policy emphasis on the market and private sector driven housing provision (as has been discussed in chapter 2).

The term (housing) affordability simply implies the ability to afford housing. However, beyond this point, any attempt to precisely define and grapple with the concept becomes slippery. Linneman and Megbolugbe (1992, p.371) conceded, “talk of housing affordability is plentiful, but the precise definition of housing affordability is at best ambiguous.” A survey of literature reveals a lack of consensus among academics and housing development experts on how it should be defined and measured. This may be attributed to the fact that housing affordability is a contested issue in which different groups struggle to impose their own definition and solution to the problem (Gabriel et al., 2005). The ambiguous nature of affordability was aptly captured by Quigley and Raphael (2004, p.191-2) in stating that;

Affordability...jumbles together in a single term a number of disparate issues: the distribution of housing prices, the distribution of housing quality, the distribution of income, the ability of households to borrow, public policies affecting housing markets, conditions affecting the supply of new or refurbished housing, and the choices that people make about how much housing to consume relative to other goods. This mixture of issues raises difficulties in interpreting even basic facts about housing affordability

It has been suggested that this ambiguity is not unconnected to the different understandings and contentions of the root causes of housing affordability problems especially the extent to which it can be attributed to inadequate household income or inadequate housing. Indeed the challenge of conceptualising and measuring housing affordability is as complex as understanding its causal factors. One of the most helpful definitions of housing affordability was offered by MacLennan and Williams (1990, p.9) as being “concerned with securing some given standard of housing (or different standard) at a price or a rent which does not impose, in the eye of some third party (usually the government) an unreasonable burden on household incomes.” Bramley (1990, p.16) further specified that “households should be able to occupy housing that meets well established (social housing) norms of adequacy (given household type and size) at a net rent which leaves them enough income to live on without falling below some poverty standard.” As observed by Hancock (1993, p.129) these two definitions are concerned

with standards of housing consumption and more importantly, they capture the notion of opportunity cost, which she regarded as the essence of housing affordability: i.e. what has to be foregone in order to obtain housing and whether that which is foregone is reasonable or otherwise excessive in some sense. Hancock further observed that in these definitions, housing and basic non-housing goods are taken as merit goods, i.e. goods whose consumption has a socially desirable minimum within the society. According to her, “any rent would be affordable, which leaves the consumer with socially-acceptable standard of both housing and non-housing consumption after rent is paid” (Hancock, 1993, p.144). Differently put, affordability implies the ability of households to pay the costs of housing without imposing constraints on living costs (Stone, 1993). Putting these elements together, Freeman, et al (1997, p.2) asserted that housing affordability concentrates on the relationship between housing expenditure and household income and defines a (relative or absolute) standard in terms of that income above which housing is regarded as unaffordable. Affordability considers not just housing but also what quality of housing is consumed and whether the household has enough income remaining for other necessities of life after offsetting the cost of housing.

At the level of national policy, despite the common use of such terms as “affordable housing” and “provision at affordable costs” most governments have often been reluctant to explicitly define affordability within a policy context, which could in part be attributed to inherent ambiguities with the concept and in part to political caution and expediency (Bramley, 1994, p.10). However, in some countries, some policy definitions of affordability are similar to those above. For instance, as cited in DTZ New Zealand (2004), the Australian Government’s National Housing Strategy (ANHS) defines affordability as “the notion of reasonable housing costs in relation to income: that is, housing costs that leave households with sufficient income to meet other basic needs such as food, clothing, transport, medical care and education” (Berry and Hall, 2001, p.10). In New Zealand, housing affordability is defined as the “ability of households to rent or purchase housing in an area of choice at a reasonable price, the capacity

of households to meet ongoing housing costs, and the degree that discretionary income is available to achieve an acceptable standard of living” (Working Party on Affordability Issues, 2003, p.66).

Generally, these definitions tend to invoke, with different levels of emphases some or all of the three standards on socially acceptable housing, housing cost and quality of life (King, 1994). Within these contexts, adequacy of shelter and residual income (i.e. remaining income after all personal debts including house rent or mortgage have been paid) are considered the core components of the definition of housing affordability. Such definitions inherently involved value judgments about not only the quality and merit-goods attributes of housing but also about the relationship between housing expenditure and housing income and acceptance of the view that housing should represent no more than a given element within that income (DTZ New Zealand, 2004). In order to operationalise these definitions, the standards are usually defined in a relative way (when defined in relation to the existing situation of households in general) or in a normative way (when defined by an independently defined value). The use of normative standards, which are often defined in terms of ratios, has been subject to a wide range of criticisms (Baer, 1976; Marks, 1984; Hancock, 1993; Stone, 1993; Bramley, 1994; Hulchanski, 1995; Glaeser and Gyourko, 2003). The problem is that there is hardly any consensus around *need-type* standards (such as living standards) on which many definitions of housing affordability are based. Therefore, there is a lack of consensus on how best to quantify the extent of discrepancy between the housing expenditure of households and what they are expected to spend given their consumption needs. There are different perspectives on the maximum percentage of income that households of different sizes, compositions, and incomes should be expected to have to pay for housing, or whether it even makes sense to specify a maximum, given the role which individual taste and preferences play in the choice of both housing and non housing consumption. It should be noted however that the scepticism over such issues is not recent. In his study titled *Houses for Canadians* Carver (1948, p.86) critically observed that;

...any attempt to reduce family needs to a classified budget is a denial of the manifold varieties of human nature. ...The idiosyncrasies, vanities, pleasures, and generousities that make life worth living cannot be accounted for in scientific budgets and economic formulae. But even these cold examinations of minimum family needs has shown the many variable factors that must be entered into household plans; it is clear that simple generalisations and rules-of-thumb for calculating a family's capacity to pay for housing may be quite misleading. [Quote cited in (Hulchanski, 1995)].

Furthermore, the difficulty to precisely operationalise the concept in the way that is generally acceptable is directly linked with the imprecise and changing definitions of housing cost and income and by a lack of easily analytical and computable techniques that could be readily applied. Sharing some of these scepticisms, Hulchanski (1995) asserted that popular simplified conjectures around affordability were based on earlier notions of household consumption, which had a history of conceptual, theoretical, empirical and methodological errors. He questioned the ability of the housing affordability concept to bring structure and organisation to our observation of reality, given that household consumption patterns and means by which households meet their needs are as diverse as the individuals and the unique life circumstances of the household they make up. However, the contested nature of housing affordability and the solutions to address housing affordability problems have perhaps guaranteed that the term can never be defined in any objective sense as it will always be subject to reinterpretation and critical analysis.

### **4.3 The Significance of Housing Affordability**

Central to the achievement of adequate provision and distribution of housing is the *issue of managing the relationship between the price of housing and the capacity of the household to pay for their housing* (Malpass and Murie, 1994). It is hardly possible to justify the relevance of housing affordability without being tempted to discuss the importance of housing and its centrality in our day-to-day life. Stone (1993, p.1) succinctly noted that;

“Housing is not only a necessity of life; it has a pervasive impact on all aspects of our existence. Housing – if it is adequate - provides privacy and security against intrusions, both physical and emotional. It is the principal locus of personal and family life. It defines the community and determines access to jobs, to services, to stores, and to

significant other people in our lives. It contains not only our material possessions, but our dreams and despair.”

According to Swartz and Miller (2002, p.1) “it is a key factor in determining a family’s access to economic and educational opportunities, exposure to violence and environmental hazards, and ability to accumulate financial assets’. However, the importance of housing affordability considerations goes much beyond the personal troubles experienced by individual households. As contended by Gabriel, et al. (2005, p.2) housing affordability has “implications not just for housing but also for employment, health, labour market, aged care, finance, community sustainability, economic development and urban and regional development.” According to Baker (2003, p.1), it also affects our national economic well-being: the rate of economic growth and our prosperity; and influences the distribution of resources between regions, individuals and generations.

As mentioned earlier, the increasing focus on housing affordability is to some extent necessitated by the need to prevent and deal with the increasing evidence of housing crises (housing market failures) that have been exacerbated by current pro-market reforms within the housing sector in many countries. It is however significant to note that the current interest in housing affordability cuts across different ideological and intellectual divides. For proponents of pro-market housing reforms, minimising housing affordability problems would make the current market-driven reforms in the housing sector more acceptable. For the market-sceptics who do not share the optimism of the “virtuous market”, exploring issues of housing affordability problems would logically lead to questions of how incomes and housing costs are determined and the underlying tension between them. Such inquiry will highlight the fundamental systemic stress and tension between the housing market and the labour market inherent in a market economy and would expose the innate contradictions of market reforms and advance contentions of their unsuitability as a platform to building an equitable and egalitarian society (Stone, 1993).

As has been contended by Yates et al (2007, p.27) “housing affordability is important not just because of the costs borne by the individual households experiencing high housing costs, but also because it imposes costs on the wider economy and society.” Thus, an increase or decrease in housing affordability often has significant impact on a household’s budget, with far reaching implications especially if there is a downward shift in affordability (Stone, 1993; Quigley and Raphael, 2004; Stone, 2006). When a household obtains or moves into a house, they invariably buy into the advantages and disadvantages of its location, including: physical characteristics, neighbours, social relations within the neighbourhood, accessibility to community services and facilities, possibilities and opportunities offered by the neighbourhood. To many households, their level of housing affordability often determines the entire environment in which they live and is therefore decisive in determining the living standard of these households (Stone, 1993). There is a wide range of studies that have consistently correlated an increase in housing costs, with housing problems and poverty (Stone, 1993; Karmel, 1998; Saunders, 1998; Nordberg, 2000; Mitlin, 2001; Priemus, 2001; Burke and Ralston, 2003; Public Research Initiative, 2005).

At the level of the household, reduced affordability could force a household down the housing ladder or indeed trap such a household in a poor housing environment indefinitely. This exposes such households to all the dangerous and undesirable (physical, health, emotional, mental) consequences often associated with living in sub-standard, overcrowded and derelict housing environments. There is a clear pattern of association between substandard living conditions and reduced performance in school and at work place, which limits employment, career potential and opportunities within such affected households (Biggar, 2001; Lawrence, 2004; Nair and Rekha Radhakrishnan, 2004). These situations further serve to undermine and weaken the often fragile income base and tenure security of households with destabilizing effects on normal family life. These frustrations and backlashes could find expression in anti-social behaviour and violence in homes, and family breakdowns (Affordable Housing National Research Consortium, 2001; Working Party on Affordability Issues, 2003; DTZ New Zealand,

2004; Gabriel et al., 2005). It is also evident that housing affordability could have far reaching implications for community life and development. In supporting this viewpoint the Affordable Housing National Research Consortium (2001, p.19) observed that;

There is evidence that permanent, secure housing provides the necessary base for 'social capital' (i.e. the mutual trust and social behaviour) that facilitates civic engagement. Neighbourhood stability, in the sense of low resident turnover, is associated with high levels of social capital and good, basic, housing standards. Conversely, where that social capital disintegrates, so does social cohesion. Where this occurs, segments of the community will experience social exclusion; in effect they will be prevented from full participation in the life of the community. When social cohesion fades, then so does the attractiveness of an environment as a place in which to live and do business. Adequate and affordable housing is a necessary ingredient in the achievement and maintenance of an inclusionary, innovative and productive society. [Quote cited in (DTZ New Zealand, 2004, p.30)]

This could lead to a reduction in spending power of a household which could trigger a decline or discourage investments in such areas or neighbourhoods. Consequently, such communities could degenerate into blighted neighbourhoods with a poor social infrastructure (Stegman, 1998). This ability to give a spatial character to such social problems that bears further negative impacts was recognised by Gabriel, et al. (2005, p.4) who observed that "the sifting and sorting of households in response to differentials in relative affordability across large metropolitan areas can create spatial polarisation and impair economic and social sustainability." Increased polarisation in cities tends to reinforce defensive behaviours not only in the depressed areas of the cities but also in the affluent areas as can be seen in the increasing phenomenon of gated-neighbourhoods (Blakely and Synder, 1999). These tendencies tend to undermine wider social integration in such urban areas with consequent and associated socioeconomic and political impacts, greatly increasing the difficulties and undermining the ability of government to address issues of housing and urban planning in a coherent manner (Blakely and Synder, 1999; Gabriel et al., 2005). Recognition of these relationships and problems, and the need to minimise them, provides the justification for many governments to intervene in the housing market and often to finance the social housing sector. Thus, most housing affordability studies and measures, especially those dealing with rental affordability, are ultimately concerned with

how to improve policy on social housing finance, housing assistance, social security assistance and other interventions.

Berry (2003) has gone further to show how housing affordability impacts local economic development and regional competitiveness. High housing costs in a city could frustrate and alienate young, creative workers at the beginning of their careers who actually drive innovation at workplaces. Thus, this critical innovative workforce could be forced to move away from such areas in search of more favourable housing markets elsewhere. The emigration in search of more affordable housing and a sustainable lifestyle can also affect low and medium paid workers, which could shrink the available labour pool in an area. Labour shortages obviously limit the viability and the competitive edge of any area and economic zone. Furthermore, high housing costs have always been known to drive local wages and salaries upward, which tends to undercut the competitive position of local producers. More often, high housing costs also tend to crowd-out other non-housing consumption to the detriment of non-housing sectors of the economy. These factors could have a severe impact on investment opportunities and options of an area or region, thereby limiting economic growth and development (Swartz and Miller, 2002; Berry, 2003; South East England Development Agency, 2003; Gabriel et al., 2005; Yates et al., 2007). It should also be noted that the value of residential land and properties are often higher in cities since they capitalise the net benefits of urban life - higher wages and incomes, better community services and infrastructure, and greater access to employment opportunities.

In most countries, the bulk of the national wealth is in form of residential housing investment and assets. For instance, in 1998, mortgage lenders in United.States originated an estimated \$1.5 trillion in new mortgages for purchase of new homes and re-financing of existing ones while mortgage backed up securities stood at a staggering \$2.4 trillion (Greenspan, 1999). In the United.States, the market value of the residential property stock is approximately equal to the annual average GDP in 2001 (Davis and Heathcote, 2005). In the United Kingdom, Demark, the Netherlands, Sweden and Germany, the ratio of mortgage to GDP exceeds 50%

(Merrill et al., 1999). In many countries, the value of the residential capital stock is often greater than that for business capital, and usually, the annual market value of residential investment is larger than that for business capital investment (Greenwood and Hercowitz, 1991; Skinner, 1994).

As a result, the influence of housing affordability (especially home ownership affordability) on the national economy cannot be over emphasised. There is an evident increase in the interest which the housing sector elicits within the overall framework of the national economic management. Beyond the traditional benefits of the housing industry in stimulating diverse sectoral employment and multiplier effects, there is a growing interest among housing, urban and macro economists in the significant influence of the housing sector on the national economy and how housing markets could be used to stimulate economic growth. Much has been written about the important ways in which macroeconomics and housing economics overlap, the interplay of housing taxation with the macro-economy and the vibrant sub-fields of housing markets dynamics and cycles (Leung, 2004). National economic management tools such as interest rates have huge implications for mortgage markets and the household budgets of homeowners especially those with adjustable rate mortgages without caps. Adverse rates could lead to a decrease of mortgage equity as a result of increased credit-financed consumption and lower household savings. This could push up the volume of mortgage loans against housing assets; lead to drastic increase in mortgage debt; a decline in the housing market turnover; and depress consumption with dire consequences for the economy. On the other hand, adjustments in the mortgage and housing markets could be used to curb inflated demands and borrowing and stave off possible over-heating of the economy (Bramley, 1994). The growing understanding of this crucial link between the operation of the housing market and the behaviour of the national economy ought to sustain the central government's interest in housing affordability.

Beyond the social and economic implications of housing affordability, there are also environmental considerations. The incidence of housing affordability problems tends to

dampen the enthusiasm towards consumption of environmentally sustainable housing due to the high housing cost implications. Given the need to minimise housing prices within the context of declining affordability, the building and development industries are often reluctant or unable to undertake the necessary innovations required in creating greater and more desirable environmentally sustainable housing (Gabriel, et al., 2005). There are some exciting budding *green* innovations in construction and consumption of housing some of which include the use and reuse of grey water; use of renewable and recycled resources and building materials; insulation and heating efficiency; integrated household usage of alternative energy sources in homes; development of energy efficient building materials and appliances; more appropriately laid out neighbourhood designs that guarantee optimal orientation of building; greater use of multi-unit housing and others. Many of these environmentally-friendly innovations are expensive and tend to increase housing costs. The inability of households to afford existing non-environmentally friendly but comparatively cheaper housing indicates that they will be less likely to afford greener more expensive housing. Such a situation makes the environmental challenge of encouraging more responsible household consumption of both renewable and non-renewable energy more daunting, and thus will tend to exert negative overall impact on the environment. In capturing the negative costs of housing affordability problems of households, Gabriel, et al., (2005, p.4) noted that;

“These economic, social, spatial and environmental costs are not just incurred by individual households or firms as internal costs. Collectively the unintended side effects of a lack of affordable housing and/or the spatial divides between areas of high and lower affordability potentially create major expenditure implications for government in terms of increased health, aged care, homelessness, criminal justice and policing costs. In addition there are the potential costs of forgone investment, environmental clean-up and economic instability. More subtly, these outcomes can lead to a loss of public faith in both market and government decision-making. All these costs are contingent on the form, scale and duration of the affordability problem.”

As avoiding these costs would no doubt be of immense benefit to any society, the importance of housing affordability considerations cannot be over-emphasised. Therefore, as long as housing affordability remains a major barrier that prevents families from realising their dreams

of securing adequate housing, it will always be of prime importance to the households; to the developers who provide housing; to the interest groups who influence and manipulate the housing market; to the government who is expected to ensure housing access to all and to all those who want to make a difference.

#### **4.4 Measures of Housing Affordability**

Given the lack of common consensus on how best to conceive and define various elements of housing affordability and the differing circumstances of individual households, there is no common generally accepted method to measure it. As a result, different approaches emphasising different elements of the concept have been developed over the years. No single standard of affordability is accurate for all situations. As Marjorie (1998) contended, policy analysts and scholars often devise housing affordability indices based on a combination of indicators, assumptions and analytical methods. He therefore suggested that “when it comes to assessing housing affordability, scholars need to determine which indicators and methods best suit their research needs” (Marjorie, 1998, p.11). Attempts will be made in this sub-section to present the major approaches and key measures of housing affordability. These are the Housing Cost Approach, The Non-Housing Cost Approach, Quality-Adjusted Approach and Affordability Mismatch / Gap Approach. Afterwards, the conceptual basis for a new composite approach, developed and applied in this study, is presented.

##### **4.4.1 Housing Cost Approach**

The housing cost approach popularly referred to as the housing expenditure-to-income approach is the most common measure of housing affordability. This approach has its origin early in the turn of 20<sup>th</sup> century in North America when mortgage lenders began to use it and later decades when private landlords adopted it as part of their assessment and selection criteria (Feins and Lane, 1981; Gilderbloom, 1985; Hulchanski, 1995). This approach simply conceives housing affordability as the measure of the ratio between what households pay for

their housing and what they earn. A 'rule of thumb' standard of no more than 25% (or sometimes 30% and higher) of household monthly income being spent on housing costs is deemed appropriate and affordable. Contrary to any technical or scientific justification, the 25% affordability bench-mark was gradually developed and accepted over time based on elements of social values and existing historical and institutional structures. In tracing the historical review of its origin, Feins and Lane (1981), observed that this tradition was rooted in common wisdom and experience in America where by the end of the 1930s the notion was generally accepted as a way to describe actual family housing expenses and a standard for the maximum proportion of income that should be devoted to mortgage payments. Although many people recognise that the rule is not an accurate statement of all household budgets, they found it a convenient way to simplify a complex issue (Feins and Lane, 1981, p.15). However, there is an increasingly critical contention in the continuous use of the 25% rule of thumb as a standard in measuring affordability (Gilderbloom, 1985; Stone, 1990; Hancock, 1993; , 1993; Hulchanski, 1995; Freeman et al., 1997; Thalmann, 2003; , 2006; , 2006b). In commenting on the inadequacy of the 25% rule of thumb standard, Hulchanski (1995), observed that what has occurred over the decades was the translation of observations about what some households were spending to assumptions about what a household *ought* to spend. Later, the summary of these observations and assumptions took the easy-to-use format of a ratio of expenditure-to-income ratio. As such, the 25% housing expenditure-to-income ratio became a rule of thumb about how to minimise risk in renting an apartment or granting a mortgage to a particular household. Hulchanski was of the opinion that no valid absolute law can be put forward about the relationship between incomes and housing. There are two variations of expenditure-to-income approach namely house price-to-income ratio (for assessing the housing affordability of homebuyers) and rent to income ratio (for assessing the housing affordability of rental households).

### a) **House Price-to-Income Ratio**

House price-to-income ratio is a widely used affordability ratio, which specifies the level of the median free-market price of a dwelling unit relative to the median annual household income. As housing expenditure tends to rise with house prices, many analysts have relied directly on this ratio as a measure of housing affordability. This is generally based on the fact that house price is a key determinant of home ownership affordability. Therefore it is assumed that rising house prices not only impede the ability of prospective buyers to accumulate the required down payment (which is usually a specified percentage of the house price) but also push up the monthly mortgage payments on a loan. As a result, buyers must have higher income to meet the qualifying criteria, which in the United States is about 3.5 to 4.0 multiple of the mortgage payment (corresponding to about 29% and 25% expenditure to income ratio respectively (Linneman and Megbolugbe, 1992). Most mortgage credit institutions rely mostly on this type of measures in their risk assessment of potential customers. The increasing use of this ratio in the World Bank/UNDP/UNCHS in their Urban Management Programme, 1986-99, has contributed to its wide recognition as a major measure of affordability. Beyond giving an indication on how much a dwelling might reasonably cost consumers if they were to live elsewhere, the house-price-to-income ratios are used principally to provide insight on the level of access to homeownership in an area. It is generally regarded as the “best measure of pressure on the housing market and ratios of 3 to 5 are regarded as *normal* (Flood, 2001). However, based on calculations converting 25% income into selling prices of a house, the standard rule of the thumb here is that this ratio should not be more than 2.0 to 2.5 of household annual income, and monthly carrying cost not exceeding 1% of house’s value (Feins and Lane, 1981, p.14).

Is it worth also mentioning that its increasing usage is also based on policy presumption that households have a preference for ownership and will seek this first, relying on other rented tenures if and only if they can’t own. In this sense the house price to income ratio seems to be particularly suited to advanced capitalist economies with developed financial mortgage

markets, high levels of ownership and distinct effective policy support for it.

Generally, home ownership affordability is difficult to measure and interpret due to the fact that the tax and investment elements of homeownership weaken the relationship between ongoing cash outlays and housing expense in a true economic sense. Beyond the limitation of the rule of thumb, a number of limitations have been observed in the use of this ratio. It has been observed that this ratio does not control for changes in housing quality and the impact of expected appreciation in cost of housing (over time). The ratio does not also account for the actual financial constraints that may be faced by home-buyers. It also ignores the other components of housing costs such as mortgage interest rates and down payments both of which fundamentally determine monthly mortgage payments. The ratio does not account for locational variations in median incomes and mix of homes available for sale. Neither does it discern cases of high house price-to-income ratio that may be due to a preference for high housing consumption (Lerman and Reeder, 1987; Linneman and Megbolugbe, 1992; Hancock, 1993; Hulchanski, 1995; Bourassa, 1996; Freeman et al., 1997; Burke and Ralston, 2003; DTZ New Zealand, 2004).

However, there are also some advantages in the use of this ratio, which have sustained its popularity over the years. The ratio is easy to calculate and understand. The data required for calculating the ratio are also readily available from official sources in many countries. The ratio is also amenable to use in comparative studies across different areas and over different periods. As has been asserted by Bogdon and Can (1997, p.481), if used in conjunction with other affordability measures, the house price-to-income ratio has the potential to provide a useful starting point to examine housing affordability problems.

#### **b) Rent-to-Income Ratio**

Similarly, rent-to-income ratio measures rental-housing affordability. It is the most conventional of all housing affordability indicators especially in those circumstances where the

interest of the analyst or policymaker is in what might be termed the very margins of affordability – e.g. where other than renting is not an option; or where not being able to rent shuts you out of the residential market altogether. Based on the rule of thumb, it is a proportional measure, “wherein affordable housing costs are set as a fixed proportion of income” (Landt and Bray, 1997, p.1). In other words, it measures the ratio of the median annual rent of a dwelling unit in relation to the median annual household income of renters. The model presupposes that affordable rental-housing should cost no more than a certain percentage (usually about 25-30%) of household's monthly income. Despite its seeming simplicity and uncomplicated outlook, there has been considerable debate about the exact formula that should be used in calculating the ratio, given that it behaves differently in different empirical contexts. Debates have largely revolved around the use of gross income, net income, equivalent income, equivalent-after-tax income; the addition of any housing allowance to rent or to net income; the use of actual expenditure and expected expenditure. This has resulted in the development of many variations of this ratio and different countries adopt different measures in relation to their particular housing subsidy or social housing benefit systems (Hulchanski, 1995; Boelhouwer and Menkveld, 1996; Freeman et al., 1997; Landt and Bray, 1997). There is also the issue of ‘service charges’ or non-housing costs that are a necessary part and parcel of the monthly housing-related payment. Often these are not optional – and they muddy the distinction between ‘housing’ and ‘non-housing’ costs. It is a particular issue in the UK where tenants need to also make contributions towards general maintenance and facilities, security, play facilities, and others.

In a responsive and efficient housing market, the range of housing prices and rents have to be such that they respond to all sections of the population and reach the lowest segments. Thus, these indicators are based on the assumption that, for households, access to adequate housing means that housing expenditures do not take up an undue portion of their income. Conventionally, this ‘undue portion of the income’ in various countries may range between 25 to 35 percent of household income (Freeman and Whitehead, 1995; Landt and Bray,

1997; Marjorie, 1998). An extensive literature review showed that this ratio has been used extensively to analyse the regional and national housing affordability situation in virtually all the countries where such studies have been done especially in North America, Europe, Australia and New Zealand. In these countries, its wide but differing application has been useful in a number of ways, which includes; application as a tool for national housing analysis and policy definition; rent setting in social housing; selection of tenants for public housing, setting of housing allowances and determination of housing grant levels (Freeman et al., 1997; DTZ New Zealand, 2004).

Burke (2003) noted that the underlying assumption of this ratio is that housing is not the key component in any income security system, and that income supplements are the appropriate way to ensure an adequate standard of living, not housing. In other words, if after paying for housing, a household does not have enough money for other essential non-housing expenditure, then the household should be considered to have an income problem not necessarily a housing problem – a view shared by many mainstream pro-market economists. In his criticism of the ratio, Hulchanski (1995) contended that the ratio can be a valid and reliable way to administratively describe housing expenditures of households and to analyse trends and define eligibility criteria and subsidy levels for public housing purposes. He however maintained that the ratio cannot be used as a scientifically justifiable basis to define eligibility levels for housing allowance, tenant selection or rent setting and housing needs of households as it does not effectively capture the household's ability to pay for housing.

Identifying a common weakness of the rent-to-income ratio, Hancock (1993) observed that the ratio has a tendency to record as *affordable* when a household consumes less than the minimal socially accepted standard of housing in favour of more non-housing consumption. Conversely, the ratio tends to show as *unaffordable* situations where a household chooses to consume a higher than expected standard of housing while still able to consume more than the minimum standards of non-housing consumption. Thus, there is a problem with this

ratio where a given household chooses freely to consume less than the minimum standard of housing in favour of having and enjoying more non-housing consumption.

Many have criticised the ratio for its arbitrary benchmark that lacked scientific justification including Marks (1984); Stone (1993); Freeman, et al. (2000); Burke, et al.(2004); and Kutty (2005). In his study of *housing affordability and rent regulation in Canada*, Marks (1984) criticised the use of this ratio for its arbitrary rule of thumb origin. The limitations he identified with the ratio are the failure to account for the influential factor of household size in household expenditure, difficulty in reflecting changes in the relative prices of household expenditure; inability to adjust to either the actual amount of housing services being consumed or alternative substitutes available to households; and its cyclical sensitivities due to its reliance on current income than permanent income of households. According to Hulchanski (1995) the ratio fails to account for the diversity of household types, stages in family cycle of each household, the great diversity in consumption patterns and suffers the problem of defining income based only on cash income. It could also be a poor measure if used as a measure of hardship to assess either a household's ability to pay or those that should qualify for a targeted housing assistance (Thalmann, 2003) and it does not take housing quality into consideration in its measure of housing affordability (Gabriel et al., 2005).

To minimise some of these shortcomings, some researchers have advocated separate standards for different income groups in the application of the ratio (Marjorie, 1998). However, the ratio also has some peculiar advantages and benefits. It shares all the advantages of its variant house price-to-income ratio that have been earlier discussed in simplicity, comprehensibility, availability of required data and amenability to spatial and trend comparative housing studies. It also makes very limited subjective assumptions about the household consumption. In spite of its obvious limitations, it has continued to enjoy popular usage largely due to a lack of comparable alternatives that can be calculated and interpreted and understood with as much ease (Hulchanski, 1995; Thalmann, 2003).

#### 4.4.2 Basic Non-housing Cost Approach

This is an alternative approach that conceives housing affordability from a basic non-housing consumption perspective. It has developed over the years with variants of different names, such as the 'residual income' based approach, 'shelter poverty' approach, 'after-housing poverty' approach, and 'market-basket' approach. Initially, this approach was developed from debates and discussions around social security systems and household budget standards, which were essentially outside housing. It has ever since drawn the attention of many academic commentaries particularly in relation to merit goods discourse (Freeman et al., 1997). The approach attempts to address some of the basic problems of rule of thumb measures by making precise calculations of the impact of housing costs on the residual income of households with the view to assessing their ability to meet minimum standards of living. Underlying this approach is the fundamental assumption that housing consumption plays a critical role in any social security system and should therefore be used to address income problems (Grigsby and Rosenberg, 1975). In other words, it is not income alone but housing cost along with income that determines the overall standard of living for households (Stone, 1993). While the expenditure-to-income model is concerned with *what is actually paid*, this approach focuses on a household's *ability to pay* due to its sensitivity to the impact of housing cost on the capacity of the household to meet essential non-housing costs. In supporting this type of approach in measuring affordability, Maclennan and Williams (1990) argued that the use of a single ratio of house cost-to-income across all tenures, locations, and house types over simplifies actual housing costs, which vary by tenure, location, socio-economic characteristics of households and household income. In the same vein, Bramley (1990) observed that the most coherent normative concept of affordability is the one that links normative judgments about housing needs and standards with judgments about minimum income requirements for housing consumption. It therefore implies that housing affordability is closely tied with the definition of the poverty line, with key ratios expressed in residual income terms relative to

that line. Examined from first economic principles, Hancock (1993) confirmed that the use of residual income is more logical than the house cost-to-income ratio.

The earliest variation of this approach is usually calculated from net income of household less rent, and a minimum income for provision of non-housing consumption as laid out in the welfare system. Conceived as a tool to set rent levels within the public housing system, it presupposes that housing cost (rent) should be residual i.e. dependent on the amount of money left over for a given household after all its necessary non-housing needs have been met. Over the years, various variations of measuring residual income have been developed. These variations differ mainly with respect to a multiple of the minimum income embedded in the social welfare system (Freeman et al., 1997). To operationalise this approach into an affordability scale requires specifying what constitutes a minimum level of adequacy for non-housing necessities, which is usually based on either the poverty line method or the budget standard method. While the poverty line identifies that level of income necessary to afford a certain minimum standard of living, the budget standard determines that acceptable minimum standard of expenditure consistent with a modest budget (Burke, 2003). According to Saunders et al. (1998b) a budget standard for a country sets out to represent what is needed in a particular place at a particular point in time, in order to achieve a specific standard of living. Hence it offers a more sophisticated measure compared to the poverty line approach.

Studies that have adopted the poverty line approach would include the works of Randolph (1992), Maher and Burke (1993), Harding and Szukalska (2000) and Kutty (2005). In her study, Kutty (2005) developed a new affordability measure referred to as housing-induced poverty model by using the official poverty thresholds as published by the United States Bureau of Census 2000, which was based on the 1999 American Housing Survey database. In this study, she defined housing-induced poverty as a situation that arises when a household, after paying for housing cannot afford the poverty basket of non-housing goods. The study assumes the poverty basket to be two-third of the poverty line in order to measure what it termed as “severe form of housing affordability problems” (Kutty, 2005, p.118). This implies that a

household at poverty line would be classified as being housing-induced poor if its household expenditures exceed one-third of its income. Thus a household above the official poverty line could be considered to be in housing-induced poverty if the cost of their housing is so high that it leaves them with less than two-thirds of the official poverty line for a family of their size. These types of studies have to obviously contend with the criticisms of the validity of such poverty line measures which are often based on assumptions that may not entirely reflect the contemporary living standards and associated costs for households (Burke and Ralston, 2003). However, despite its limitations, poverty line thresholds constitute the official yardsticks for poverty assessment and are often the most used standard measure in policy and academic discourse on poverty.

Some notable studies that have used the budget standard approach would include that works of Stone (1990; , 1993) and Burke and Ralston (2003). In his seminal work titled *Shelter Poverty: New Ideas on Housing Affordability*, Stone (1993) employed the Lower Budget developed by the US Bureau of Labour Statistics (BLS) to develop the shelter-poverty model of affordability. The shelter poverty measure challenges the notion that every household can afford to pay a certain fixed percentage of income for housing. Rather, it offers a sliding scale of affordability that takes into account the differences in household composition and income. The measure suggests that some low-income and large households could pay less than rule of assumed thumb standard (say 25%) of their income but nonetheless have a housing affordability problem if it does not have enough (residual) income to obtain minimum levels of non-shelter necessities. By the same token, high income households and many small households of middle income can pay more than 25% - 30% of their income on housing and still be able to obtain adequate levels of non-shelter necessities and therefore would not be shelter poor. This means that expenditure to income ratios understate the housing-cost burden of larger households relative to smaller-sized households whilst overstating the affordability burden of higher income households. Stone (1993) criticised

the logic of conventional wisdom that there is some percentage of income that every household reasonably can be expected to pay for shelter without hardship. He argues that since housing costs generally makes the first claim of a household's disposable income with non-housing expenditure having to be adjusted to whatever remains of the income, the most a household should be required to pay for housing is that which leaves it able to meet non-housing basics at a minimum level of adequacy. A household is therefore, paying more than it can afford for housing if after paying for housing, they cannot afford a minimum level of adequacy in non-shelter consumption. Where the shelter poverty model has been applied, it has been particularly striking to observe that the model may not reveal a more extensive housing affordability problem than the conventional housing-price-to-income ratio model. Rather it tends to suggest a different distribution in the housing affordability problem among low-income households and larger households (Stone, 1993).

The budget standard is more sophisticated and robust than the poverty line standard (Saunders, 1998) but whereas many countries have poverty line measures, only very few countries have official budget standards, which is a limiting factor. By their nature, the poverty line thresholds often reflect a lower level of consumption than the budget standards. Consequently, the poverty line methods yield an underestimate of economic deprivation after housing payments have been made in the same way that official poverty line thresholds are believed to underestimate the true extent of economic deprivation. Thus the poverty line method has a tendency to underestimate housing affordability problems relative to the budget standards method (Kutty, 2005).

The non-housing cost approach more effectively addresses the contentious issue of the rule of thumb ratio, which was the most significant shortcoming of the housing expenditure-to-income ratio. It builds upon more explicit judgements and assumptions and thus gives a more accurate and realistic affordability measure for especially the neediest households than the housing expenditure to income ratio (Gabriel et al., 2005; Stone, 2006). It is also more beneficial in small area studies than the housing expenditure-to-income ratio.

However, the shelter poverty approach shares some of the shortcomings of the expenditure-to-income ratio such as the inability to control for the housing quality or the influence of locational preference on housing cost. Other major disadvantages of this model as noted by Gabriel et al (2005) include the fact that they depend on subjective judgements as to what counts as necessary household expenditure; rely on a wider range of variables than ratio measures, which are not always readily available, such as data on non-housing costs of households; and the fact that they are more complex, so creating such models are more difficult and time-consuming.

#### **4.4.3 Quality Adjusted Approach**

Housing affordability is also essentially concerned with the quality of housing and its appropriateness to the households living in it (King, 1994; Karmel, 1995). In studying housing cost within an area, it is common to compare houses of similar conditions and amenities, size, numbers of bedrooms and location. It is also known that households looking for or moving to new housing are forced to make trade-offs between what they actually desire and what they can afford to pay (especially if they are of limited income). This could at times lead to *high* ratio associated with households with strong preferences for housing. In order to address this limitation of expenditure-to-income ratio (the inability to distinguish between cases with *high* ratios), Lerman and Reeder (1987) developed the quality-based housing affordability measure. The measure was developed based on the cost of appropriate (decent, safe and sanitary) housing as available in the housing market using a hedonic market cost (rents) rather than actual rents. The quality-based measure attempts to distinguish households that have too little income to rent minimally adequate but decent safe housing for less than the specified (30%) of income from households whose income is adequate to bear such costs. Thus, in attempting to quantify those that have quality-based affordability problems, the magnitude of those that have been *misclassified* as *having* or *not*

*having* affordability problems using other affordability ratio could be determined and examined.

The quality-based measure approach implies determining the income levels that distinguish households capable of maintaining an adequate standard of living from those that cannot, thus it could be viewed as an alternative to poverty income threshold. However, Thalmann (1999) and Kutty (2005) have pointed out that this approach is of limited use when the cost of appropriate housing varies greatly across different sub-markets and location due to market imperfections and complex regulatory regimes. This is also the case when a lot of households secure housing services at bargain prices when others pay much more. In order to account for these variations in the price of particular types of housing within market, Thalmann (1999) builds on Lerman and Reeder's model to develop an affordability measure that combines quality-based, rent-to-income ratio and a measure of housing consumption while disentangling insufficient income, excess consumption and non-market prices as factors behind *high* ratios. He proposed using the ratio of average rent in the market for an appropriate bundle of housing services and household income. This affordability model employs hedonic price estimates for various housing attributes in computing the average rent for an appropriate bundle of adequate housing services within a particular market. Thus the derived measure could be used to calculate a housing consumption metric that can isolate an apparent affordability problem (where the households consumes more than the standard appropriate housing) from the real affordability problem (where the household either pays above-average rent or has little income to pay for the standard bundle of services). In her own study, Kutty (2005, p.17) observed that although the measures proposed by Lerman and Reeder (1987) and Thalmann (1999) improve the conventional expenditure-to-income affordability measure, they do not consider the actual financial constraint faced by low-income households, many of which cannot afford to spend even 25% or 30% of their income on housing. In a more recent study, Thalmann (2003) attempted to address this problem by replacing the expenditure-to-income ratio used in his former model with a residual income measure. There are other

limitations of the quality-based approach as developed by Lerman and Reeder. According to Bogdon and Can (1997), the model proposed by Lerman and Reeder does not control for location and neighbourhood quality and uses transitory rather than permanent income. This model is also more difficult to compute and requires a data set that contains a sufficient number of sample points and housing quality measures.

#### **4.4.4 Housing Affordability Gap / Mismatch Approach**

This approach attempts to measure and highlight housing *shortages*, or *mismatch* or *gaps* within the housing market by comparing the number of a given group of housing consumers with the number of housing units they can afford. In considering both housing demand and supply of housing, the approach compares existing cost distribution with distribution of household incomes. In so doing, it identifies what the housing consumers can afford to pay not in relation to the housing they currently occupied but in relation to overall housing stock (Dolbear, 1991; Lazere et al., 1991; Joint Center for Housing Studies, 1992; Nelson, 1994; Bogdon and Can, 1997). To develop this ratio, households are classified into several relative categories based on their income and size. Housing units are also classified into different affordability categories, by assuming that household of a certain size would occupy the unit, paying no more than specified (30%) or determined amount of their income for rent. Thereafter, these categories are matched against the categories of housing units with the derived ratio taken as the housing units potentially affordable to households of a certain income to the number of households in that income range. A less than 1.0 ratio suggests that there are fewer housing units affordable to households in a given income group than there are households in that group. Given the fact that some units within a given group would likely be occupied by some higher-income households, a ratio of slightly more than 1.0 tend to indicate that those in such income group may have difficulty in finding adequate and affordable housing (Bogdon and Can, 1997, p.52). According to Stone (1994, p.445), this approach involves a mental experiment of imaging the (rental) housing stock being reallocated in a manner that matched a

particular household with the units potentially affordable to them. Thereafter, assesses whether there would be a deficit or surplus of housing units affordable to each of the isolated groups after reallocation. There are different variations of this approach, which usually revolves around the choice of criteria in defining what is *affordable* within a given income group and the number of categories or groups isolated for study. While some studies use few broad ranges of income categories some other studies used more a substantial number of categories to achieve detailed distributional analysis (Nelson, 1994; Stone, 1994). Therefore, the housing affordability gap/mismatch approach is essentially hypothetical in nature and apart from those living in subsidized housing, in reality there is no *best fit* to match housing consumers and housing units on the basis of affordability. The only feasible way of approaching such a match would be through (a sort of) low-income housing entitlement programmes (Dolbeare, 1989; Stone, 1994).

There are a number of limitations with this approach. It is based on a fixed percentage usually 30% (rule of thumb) income standard and therefore shares all the implied limitations inherent in the use of a fixed benchmark, which have been discussed. There is also a discernable methodological weakness in this reallocation technique when considering the fact that many existing units potentially affordable to households in a given income class are in reality occupied by households of higher income or households at the top of an income range. This therefore implies that some households at the lower end need to pay more than 30% of their income for some units classified as affordable by the method. Another limitation is that this approach is best suited within a local housing market rather than a very large geographic area. Its results tends to be less meaningful and robust if there are significant income differentials between different places and affordable units may be located very far away from households that are in need. It also bears the inherent limitations of most cross-sectional studies that always imply a snap-shot approach. For instance, households that may temporarily occupy *too expensive* housing due to the fact that their current income is lower than their permanent

income, or occupy *too cheap* housing because their current income is above their permanent income are not adequately captured and reflected by the mismatch approach. Another weakness of the approach is that it really does not make allowance for housing preferences of households.

Nevertheless, this approach has also a lot of advantages. Apart from not being very complicated to apply where adequate data exists, the mismatch ratio improves on earlier measures by incorporating a housing supply dimension for different rent and income categories. It can be used to determine the extent of the limitations in using sheer housing quantity to meet housing demand within a given market (as it highlights distributional gaps in housing supply). It can also be used to identify households likely to have most difficulty in finding decent and affordable housing.

#### **4.5 Towards a Composite Approach**

Given the complexity of the housing affordability concept, no single standard of housing affordability is accurate for all situations. As a result, a lot of efforts have been made by many researchers, academics and policy makers to develop housing affordability indicators and measures that capture this concept better. This has led to the development of many housing affordability indicators and measures emphasising different aspects of affordability with varying limitations. However, given the complex nature of housing affordability, it is increasingly becoming evident that a more integrated approach to using different housing affordability measures could provide a better platform in housing affordability research. For instance, distinctions between the expenditure-to-income ratio and residual income methods of measuring affordability have been discussed in the earlier parts of this chapter and a closer look at both methods would suggest that using the two together would give a more holistic picture of affordability than they do separately. Some other credible sources share this opinion. The UK Housing Corporation (1992) observed that there are some desirable benefits and

value in combining the two measures but expressed concern about the complexity of using them together.

In his insightful work, Fallis (1993) argued that the focus on the ability of households to afford housing is an irrelevant diversion that entirely misses the point of what should be the real issues – i.e. the ability of low-income households to consume sufficient quantities of *all necessary* goods (housing and non-housing). Grappling with such issue requires a framework that will simultaneously address both housing consumption and income redistribution – adequate housing and adequate basic non-housing consumption (Hughes, 1996). In making a case for the integration of the two models, Fallis (1993) aptly observed that it is remarkable how little has been done to integrated these two policy fields (of housing consumption and income redistribution) despite the recognition of their complementarity and even substitutability; and how little the housing literature has been penetrated by the concerns raised by the income assistance literature.

Based on this contention, Chaplin et al (1994) suggested a combined approach of using both the expenditure to income ratio and the residual income methods based on recognition that each measure provides a different but valuable perspective on the fundamental interplay between rents, incomes, and housing allowances. However, these sources noted the consequent difficulty of interpreting the two measures together. In recognising the complementary relative strengths of both measures, (Freeman and Whitehead, 1995) suggested that residual income is better at comparing housing affordability situations of two household types whilst the expenditure-to-income ratio is better in comparing the affordability of one household type across different areas and over time. Recent support for housing affordability studies to move in this direction would include Bramley (2005, p.3) who suggested that both income ratios and residual income “criteria are relevant and should ideally be combined” as a way to move forward in the housing affordability debate. He suggested that a household’s situation should be deemed as “unaffordable” if “they *both* face a ratio of housing cost to income above certain norms *and* face a ratio of residual income to household requirements

which is below a certain other norm (a wider definition could substitute *either ...or* for *both ...and*).”

Very few studies have so far attempted to combine multiple affordability indicators in a complementary manner to explore housing affordability issues. The list would include the inspiring works of Bogdon and Can (1997) and Thalmann (1999; , 2003). Bogdon and Can (1997, p.48) agreed that although the expenditure-to-income ratio is conceptually flawed in terms of determining the ability of households to pay for housing, if used in conjunction with other affordability measures, it could provide a very useful starting point for examining housing affordability problems. They employed the ratio along with housing stock measures and a rental housing affordability mismatch ratio to develop measures of spatial distribution of affordability problems for low-income households in the US. In his own studies, Thalmann (1999) combined the three affordability indicators of rent-to-income ratio, quality based measures and housing consumption measures to study rental housing affordability in Switzerland. Later in a recent study in 2003, he replaced the rent-to-income ratio with the residual income method and computed it along with quality-based measure and housing consumption measure to identify and quantify those over-consuming and over-paying for housing services in his study area.

This study draws inspiration from these earlier attempts to employ an integrated methodology in housing affordability research. It attempts to capture and filter as much as possible the varied dimensions of housing affordability specified in the various indicators /measures that have been discussed especially the housing cost approach and non-housing cost approach. The composite approach brings together the expenditure-to-income ratio and shelter poverty method while adjusting for housing quality to develop an aggregate measure of housing affordability. The composite approach underlines the need to integrate in the housing affordability discourse both the emphasis on what a household should pay for housing and their capacity to pay it. The housing expenditure-to-income model has a distinct emphasis on what the a household pays for housing relative to their income hence focusing on what a

household should pay for their housing, while the shelter poverty method has a distinct emphasis on the basic (consumption) needs of the household, hence focusing on their ability to pay their housing cost. Collectively, these models should express more fully the diverse aspects of housing affordability than any single housing affordability measure that are currently in use. The need to capture these distinct advantages in each of these measures into a composite measure in such a way that would limit their inherent weaknesses provided the motivation for conceiving the approach as outlined in this study. Beyond the need to capture the major elements of these contemporary housing affordability measures, there was equally an important need to ensure that the derived aggregate measure or index would provide a more functional and better measure of housing affordability than any of the conventional housing affordability indicators. These considerations necessitated the application of some measure of quantitative analytical rigour in the study.

Housing affordability is a complex concept. It has remained difficult to measure in a generally acceptable manner with various simplified housing affordability models precisely due to its nature of complexity and the lack of consensus on any one measure. As Gabriel et al (2005) have observed, there is the growing recognition of the need for a broad and more encompassing understanding of housing affordability, rather than a simple ratio measure based in income and housing cost. A composite approach to measuring housing affordability has the potentials to offer fresh insights in ways to develop more satisfactory measures of residential housing affordability.

#### **4.6 The Focus of Existing Housing Affordability Research**

Existing housing affordability research covers very wide and diverse areas of study. From works that were focused on examining the concept and measurement of housing affordability such as Hancock (1993); Lerman and Reeder (1987); Hulchanski (1995); and Freeman et al (1997) to studies that are concerned with exploring the causes, trends and solutions to housing affordability problems such as Bramley (1994); Yamada (1999); Feldman (2002); and

Skaburskis (2004). From nation-wide country assessment studies such as DTZ New Zealand (2004); Harding et al (2004); and Belsky (2005) to studies that relates housing affordability to broader issues of planning, environmental regulation, Health protection, economic growth, sustainable community development etc. such as Austin (2000); Braconi (1996); Hammitt et al (1999); Memery (2001); Blair et al (2003) and Mostafa et al(2006).

However, a closer look at existing literature, suggest that some areas and aspects of housing affordability, have not been adequately explored. For instance, over the years, there has been a growing consensus that housing affordability in many urban areas has in reality remained a growing problem of the poor; lower income single-parents and families with young children; increasingly young and middle-income households buying their first homes or renting in the private market; and groups that need special housing such as the elderly; people with disabilities (Bramley, 1994; Monk and Whitehead, 2000; Hulchanski and Shapcott, 2004; Bramley, 2005; Gabriel et al., 2005). In particular, many studies have been devoted to the housing affordability of low-income group some of which include the work of Dolbear (1989); Stone (1990); Bray (1995); Murray (1997); Andrews (1998); Oliver (1999); Aboutorabi and Abdelhalim (2000); Olsen (2001); Thalmann (2003) and Quigley and Raphael (2004).

Beyond the focus on especially low-income households, there has been little effort to analyse housing affordability of other group classifications that could offer valuable insights into identifying and targeting all those with housing affordability problems (including those who may not be readily captured if such analyses are just focused on income-based group categorisation of households). For example, there are hardly any housing affordability studies that have focused on the range of socio-economic groups. Given that different socio-economic groups may have different consumption pattern and characteristics; and in cognisance of the fact that issues of employment, labour and wages are critical to understanding affordability; such studies would provide beneficial insights into understanding the nature of housing affordability problems. Not only would it offer valuable insights into understanding the problem better, it will provide more information on the nature of those that

are burdened with affordability problems such as their employment status, occupation, level of education, that could be of vital importance for effective policy design and implementation.

Many studies have been devoted to examining the housing affordability of different housing tenure groups especially the ownership tenure and the rental tenure groups. Such studies include the works of Bramley (1992); Murray (1997); Ming et al (2002); Yi Tong (2004); Yates and Wulff (2005) and Yang and Shen (2008). However, little effort has been made towards providing an in-depth comparative analysis of housing affordability across various housing tenure groups. The dearth of such studies could be partly attributed to methodological limitations - limitations in the application of housing cost-to-income ratio make such comparisons difficult. The housing affordability of the ownership tenure group and that of the rental tenure group had often measured differently under the house cost-to-income ratio. The composite approach that has been developed in this study would offer more flexibility in carrying out such a comparative study.

There are a few works that have been focused on regional level analysis of housing affordability such as BERL (1999); Bramley (2003); and Austin et al (2004). Fewer still have attempted to draw comparative analysis of the regional housing affordability of differences in their various countries of study, exceptions being as Barker (2003); Katz et al (2003); and Government of New Zealand (2008) There is a need for more comparative regional studies of housing affordability in various countries especially those with significant regional disparities in income, consumption, employment, socio-economic development, and the size and population of settlements. Such comparative studies will beneficially contribute to the understanding of housing affordability problems in the country of study. In order to explore the geographical relevance of this study, the review will now examine the existing body of housing affordability and related studies on Nigeria.

#### 4.7 Review of Existing Housing Affordability and Related Literature on Nigeria

Despite the fact that the concerns which propelled housing affordability into the limelight of international housing policy discourse are in fact more pressing in the developing countries, much of the growing debate surrounding it is taking place as well as being shaped in the developed countries of Europe and North America. This is not surprising given that the debates about winding back Keynesian-welfarism of the State institutions started in these countries. Consequently, it triggered the move towards a more market-oriented housing sector which inevitably led to the shift of focus from *housing need* to *housing affordability* within international housing debate (Whitehead, 1991). As a result, the overwhelming proportion of relevant academic research and policy materials around housing affordability are concentrated in these countries. Currently, some other countries are beginning to take the initiative in this direction such as Australia and New Zealand via the Australia Housing and Urban Research Institute (AHURI) and the Centre for Housing Research, Aotearoa respectively.

Extensive search for recent relevant housing affordability or related literature in Nigeria reveals only a handful of studies. Most of the existing works that examined various aspects of Nigerian housing and housing policy orientation especially in the 1980s and 1990s were largely influenced by housing need considerations (not affordability) and therefore were not considered relevant to this review. There are some housing studies works with related affordability concerns but cannot be really classified as housing affordability studies per se. These consist of works that focus on the supply of low-cost housing, public/private partnership and sustainable housing delivery, and private sector housing delivery. They include; the studies by Ajanlekoko (2001) which deliberated on the financial and infrastructural implication of sustainable housing development in the country; Ogu and Ogbuozobe (2001) that discussed the implications of housing enablement policy for private sector housing development in the country; UNCHS, (2001b) that gave a abroad assessment of sustainable urban development and good governance within the context of achieving the Habitat Agenda II in Nigeria; and Ibagere (2002) which examined the policy goal of housing for all within the

context of current democratic governance in Nigeria. Others include Oruwari, et al. (2002); which, in focussing on the housing cost implications of building materials supply problems, discussed the role of local raw materials in the acquisition of building technological capability and factors which debilitate performance in the building materials industry; Murtala (2002) that proposed a generic model of procurement system and project organisation mechanism for implementation and development of low-cost housing in the country and Daramola (2004) that examined private /public participation in housing delivery in the country.

Other set of recent related works consist of those that explored the urban residential land accessibility problems and the interface between formal and informal land development processes and its implications for housing policy reforms. These include the works of Omirin (2002) who dealt with various issues associated with urban land accessibility in Nigeria; Ikejiofor, et al. (2004) that examined the informal land delivery processes and access to land for Nigerian urban poor using Enugu as a case study; Oruwari (2004) that focused on what happens at the interface of the formal and informal land markets in Port Harcourt; Ikejiofor (2005) who discussed land issues in the new national housing policy based on lessons drawn from existing informal land delivery processes in the country and Fasakin and Ogunmakin(2006) that focused on analysing characteristics of land which were alienated for residential development in Akure between 1999 to 2003.

Such works as Nubi (2001); Elili (2002); Federal Mortgage Bank of Nigeria (2002); Sanusi (2003) and Vuyisani (2003) fall into the category of related recent works with underlying housing affordability and credit accessibility concerns while focusing on housing finance in Nigeria. While Nubi (2001) examined the reasons behind the passive response of the Nigerian housing finance system in the effort towards adequate housing delivery in the country, Elili (2002) discussed the role of primary mortgage institutions in accessing the National Housing Fund (NHF) in Nigeria. While Vuyisani (2003) carried out a comparative analysis of Nigerian housing finance system with three other African countries (South Africa, Ghana and Tanzania), Sanusi (2003) elaborated on the issues and challenges of mortgage financing in the

country. Ojo (2005) examine borrowers' perception of the degree of cumbersomeness of lenders' requirements in housing finance in south-western Nigeria. He found that borrowers identified three factors as the most prominent, namely; collateral /title deed, affordability criteria and the repayment schedule criteria. Other relevant works that have offered a critique of the current National Housing policy with respect to making housing more affordable include Okewole and Aribigbola (2006) and Aribigbola (2008). Using the evidence gathered from Akure, Ondo State, Aribigbola (2008), argued the need for policy initiatives and interventions to assist low income households if the issue of affordability in housing is to be properly and adequately address in cities of developing countries.

Of the entire literature survey, Chatterjee (1979; , 1980; , 1982); Agbola (1990a); Oruwari (1994); Adedeji and Olufemi (2004); Aribigbola (2006); and Onyike (2007) were among the very few works that have been directly devoted to housing affordability in Nigeria. In his work, Chartterjee (1982) developed a quantitative framework to support the contention for targeting of housing strategies for the poor and moderate income households. He conceived a housing affordability model that analyzes the dynamic relationships among income and income distribution, changes in family size, urbanization, housing, consumption, and cost of and access to credit. The model attempted to not only allow a housing planner to identify the volume and types of housing affordable by different income group but also to determine how the volume and types of affordable housing vary with demographic change and economic growth, changes in income distribution, and housing finance. His work emphasised the importance of spatial aspects of effective targeting of shelter provision. In all, this work showed a high level of rigorous quantitative analysis.

Agbola (1990a) was largely concerned with the debilitating effect of ineffective cost recovery on the sustainability of public housing projects using Lagos, Ogun and Oyo states as reference points. His study indicated that there is no significant relationship between housing affordability and level of default in mortgage repayment by beneficiaries of public housing,

while showing high repayment default rates and weak cost recovery mechanism within the public housing framework. However, his use of income as surrogate for housing affordability in his analysis underscored a weak methodology that undermines the validity of the work as a bona fide housing affordability study.

Oruwari (1994) dealt with the issue of the increasing housing affordability problems facing low income households in Port Harcourt. She provided a comparative analysis of housing cost and housing standards by comparing rent levels for different forms of accommodation as well as construction costs and reasonable rates of return between 1980 and 1992. Her analysis showed that it is more economically attractive for private sector developers to provide apartment buildings (i.e. blocks of flats) which are beyond the affordability of low income households than single room tenement housing that overwhelmingly constitute the bulk of low income housing. Thus, whilst the demand for lower income housing was on the increase, the actual low income housing supply within the formal housing market was on the decrease with the study period in Port Harcourt. Consequently, the resultant escalating pressure on low income housing increased occupancy ratio per room, encouraged overcrowding and exacerbated housing affordability problems within low income housing.

In their work, Adedeji and Olufemi (2004) attempted to discuss the relationship between planning policies and affordable housing in Nigeria based on their analysis of Abuja master-plan scheme and the re-validation of certificate of occupancy in the city. It argues that planning policies such as revocation of Certificates of Occupancy (CO) in Abuja would worsen housing problems and make housing increasingly unaffordable in the city. Although the paper supports the involvement of private developers in housing delivery, it emphasised the crucial role of direct government intervention and involvement in the site and services schemes, if the current housing affordability problems in the country are to be contained. This is especially so when it is considered that the cost of acquisition of serviced urban land is sometimes higher than the construction costs of residential buildings.

In his study, Aribigbola (2006) used the city of Akure to examine the growing problems of housing affordability and the negative impact it has on developing sustainable built environment. The study indicated that a significant proportion of households are faced with housing affordability problems especially with regards to provision of adequate quality of housing. While applying the expenditure to income ratio with 30% rule of thumb, he estimated that about 57 percent of the residents of the city have housing affordability problem. The study argued for policy initiatives and interventions to assist especially low income if affordability in housing is to be properly and adequately addressed.

Onyike's (2007) recent work was focussed on assessing the housing affordability of basic occupier housing by public servants in Owerri, Nigeria against the backdrop of the new monetisation of fringe benefits policy for public servants in Nigeria. In this study, he analysed the new allowances and salary structure of public servants in Owerri against the market value survey of 66 bungalows and houses in the city, along with their corresponding estimated annual mortgage premiums at 6% and 8% respectively over 25-year period. He showed that as the January 2007, within the existing 17-point scale salary structure only public servants on level 13 and above in the Federal civil service and those on 16 and above in the State civil service can afford the cheapest bungalow at 6% rate in Owerri. He concluded that the average civil servant in the city cannot afford adequate housing without substantial assistance. The last section of the chapter will now attempt to summarise the major findings of this review.

#### **4.8 Summary of Major Findings from the Review of Existing Relevant Literature**

This extensive literature review has attempted to cover the broad aspects housing affordability that defines the study reported here. Some pertinent weaknesses and gaps from existing literature and knowledge in these areas have been identified and discussed. The literature review has identified some weaknesses in the conventional measures of housing affordability that needs to be improved. For instance, the housing expenditure-to-income model tends to misclassify those households that choose to over-consume or under-consume housing in

relation to their income; and also ignores the importance of non-housing consumption needs of households in measuring housing affordability. The conventional housing affordability models (i.e. the housing expenditure to income model and the shelter poverty model) ignore the pertinent issue of housing quality in the housing affordability considerations; and there is also the issue of the significant disparity in the housing affordability classification of households when comparing the two models. Thus, a move towards a composite approach to measuring housing affordability has the potential to offer fresh insights and more flexibility towards evolving more satisfactory measures of residential housing affordability.

The review also identified some gaps in existing literature. Some of the gaps relevant to this study include the lack of existing rigorous comparative analysis of housing affordability across such socio-economic groups and housing tenure groups in countries. More often, housing affordability analyses have mainly focused on the low income group and various categories of low income households to the neglect of other social and economic group classification. Such rigorous comparative studies have also been lacking with respect to the determining the housing affordability gaps between the various housing tenure groups. However, the review also recognised that methodological limitations of existing conventional housing affordability models may have hindered such level of analysis.

Also identified, is the disconcerting dearth of housing affordability studies on African countries despite the enormity of housing problems in the continent, Nigeria being a valid case. In fact, there were only few of such studies in Nigeria, with some merely appending the word *affordability* to their title without substantial housing affordability content. In most of these studies, the conception of housing affordability and how they were measured were generally very weak. Hence, the weak analytical sophistication that was brought to bear on such works, which often tends to undermine the validity of such studies. It is worth mentioning that of all the housing affordability studies in Nigeria reviewed, the pioneer works of Chatterjee (1980; , 1982) that was carried out over quarter of a century ago stands out from the rest with respect to its conception of housing affordability and analytical rigour. Hence, not

only is there dearth of housing affordability research studies on Nigeria, most of the few existing housing affordability studies (with the exception of Chatterjee's works) were lacking in methodological rigour in their articulation of housing affordability. Again, with the exception of Chatterjee's works, none of the existing studies had a nationwide coverage as they were only limited to the use of one or few cities as case studies to mirror the state of housing affordability in Nigeria. Neither has there ever been any housing affordability study that compared housing affordability across the all the states and regions to highlight the nature of spatial housing affordability differences and regional disparities that should elicit a more articulate housing policy construct in the country.

It should also be noted that although the pioneering works of Chatterjee commendably applied impressive level of sophistication in modelling housing affordability, the work suffered from limited data availability given that it was published over a quarter century ago. In fact the non-existence of required data may have been the major reason that has stunted research initiative into this branch of housing studies, resulting in severe dearth of meaningful and rigorous analysis on housing affordability in the country. The above weaknesses, knowledge gaps and considerations provide the rationale for this study, which aims to not only contribute towards filling some of these identified gaps but to also contribute to the current policy debate on how best to provide adequate and affordable housing to all in many countries of Sub-Saharan Africa and Nigeria in particular. The next chapter will discuss the basic research methods and procedures that guided this study.

## RESEARCH METHODS AND PROCEDURES

### 5.1 Introduction

The discussion up to now (from the previous chapters) has been to make a case for this research study and to justify why it should be carried out. This chapter will focus on how it was carried out, explaining the basic methodology that guide the study. The chapter will define the detailed research questions and hypotheses that provided the analytical framework for the study; discuss the research method employed and the nature of the data that was used in the study. It will also attempt to present in a concise manner how the major secondary variables used in the data analysis were derived and how they characterise the study area.

This study made intensive use of quantitative research method to cover the range of the research objectives and questions being addressed. Quantitative techniques were employed to deal with the methodological challenge of developing more appropriate measures of housing affordability and applying such measures to the Nigerian housing context. As the study was based on a cross section (snapshot) survey and was essentially concerned with micro level analyses to determine the nature of residential housing affordability of households across different social and economic groups, a horizontal (cross-sectional) research design was used in this study. If the study is concerned with establishing causal relationships where panel data and longitudinal research design would have been more appropriate, then basing the study on cross-sectional data would have been a limitation. Rather, since the focus of the study is determining the *current* housing affordability of households within the context of the *current* housing policy framework, a cross-sectional research design based on a recent detailed cross-sectional database (as the NLSS database 2003-04) is very appropriate.

## 5.2 Detailed Research Questions

The following core research questions have been defined to guide the study based on the stated broad research question in the introductory chapter, and the context of this study as presented and argued in the preceding chapters.

**Research Questions One:** How best can existing conventional housing affordability indices be improved to capture more effectively the actual level of housing affordability within the study area?

**Research Questions Two:** To what extent do household income, housing expenditure and household size influence aggregate housing affordability in the study area?

**Research Questions Three:** a) Are there significant aggregate housing affordability differences between the socio-economic groups in the study area?

b) To what extent do household income, non-housing expenditure and housing expenditure influence the aggregate housing affordability differences between these groups?

**Research Questions Four:** a) Are there significant aggregate housing affordability differences between the housing tenure groups in the study area?

b) To what extent do household income, non-housing expenditure and housing expenditure influence the aggregate housing affordability differences between the tenure groups?

**Research Questions Five:** Are there significant aggregate housing affordability differences between States in the study area?

b) What is the magnitude of housing affordability problems of households in the various states of the country?

**Research Questions Six:** What are the specific and broad housing policy implications of these findings in the study area?

### 5.3 Detailed Research Hypotheses

More detailed hypotheses were derived from the broad hypothesis raised in the introductory chapter to complement the above-stated research questions. Stated in the null form, the following three hypotheses will be tested in the study.

**Null Hypothesis 1 ( $H_0$ ):** *There is no significant difference in the residential housing affordability of different socio-economic groups, including when controlling for such factors as household income, non-housing expenditure and housing expenditure in the study area.*

\*The socio-economic groups referred to in the above hypothesis consist of the following groups; Managerial and professional occupations, Intermediate occupations, Small employers, Own account workers (Self employed without employees), Lower supervisory and technical occupations and the Semi-routine and routine occupations group as identified in the study. The later section of the chapter will detail how these socio-economic groups were derived.

**Null Hypothesis 2 ( $H_0$ ):** *There is no significant difference in the residential housing affordability of different tenure groups, including when controlling for such factors as household income, non-housing expenditure and housing expenditure in the study area.*

\*The housing tenure groups referred to in the above hypothesis consist of the following; the Ownership tenure group, Rent-free tenure group, Subsidized tenure group and the Rental tenure group.

**Null Hypothesis 3 ( $H_0$ ):** *There is no significant difference in the residential housing affordability of housing in different States in the study area.*

\*The States referred to in the above hypothesis consist of all the 36 States of the Federal Republic of Nigeria and the Federal Capital Territory.

#### 5.4 Data Type and Source

The quantitative aspect of the study was based on secondary data. The bulk of the data used in addressing the first three research questions of the study were based on secondary data types and sources. Availability and accessibility to a detailed Nigerian household survey database (Nigeria Living Standards Survey 2003-2004) was the major component that facilitated this study.

This Survey, which had national coverage, included the 36 states of the Federation including the Federal Capital Territory was a joint project between the Nigerian Federal office of Statistics, the National Planning Commission and the World Bank European Union, DFID and UNDP. Ten enumeration areas were studied in each of the 36 states every month while 5 were covered in Abuja, the Federal Capital Territory Abuja. The scope of the of the survey covered the following topics, namely; demography, education, health, employment and time use, migration, housing, social capital and community participation, agriculture, household expenditure, non-farm enterprise, credit, assets and saving, income transfer and household incomes. The sample design for the study was a two stage stratified sample design. The first stage was a cluster of housing units called Enumeration Areas (EAs), while the second stage was the housing unit. One hundred and twenty (EAs) were selected for a state while 60 EAs were selected for the Federal Capital Territory for the twelve months survey duration. Ten EAs with five housing units were surveyed per month. This implied that fifty (50) housing units in a state were canvassed in each month. The monthly samples were referred to as *replicates* in the official survey documentation. This brought the overall sample size to 21,900 households (Federal Office Of Statistics, 2004). The survey employed interviewer visits to each selected household at a minimum of four-day interval in a cycle of 30 days. Dairies of daily consumption and expenditure were used to support the interviews during the survey. The urban households consisting of 4,662 households of 19,679 persons were isolated and used in the study analyses.

## 5.5 Initial Generation and Presentation of Relevant Data

In using quantitative analytical techniques to address the first three research questions of the study, the following procedures were followed sequentially in analysing the acquired data;

- Identification of Initial Variables
- Preliminary Data Exploration
- Generation of Secondary Variables
- Generation of Key Affordability Indices
- Hypothesis Testing
- Analysis of Findings

The initial processes of extracting required information and data from the Nigeria Living Standards Survey 2003-2004 (NLSS) database involved preliminary identification of relevant variables and data exploration. This was done with the view to achieving the study objectives. As a result, many of the relevant variables that were initially identified were modified, standardised, transformed and recombined with other variables to generate required secondary variables for the study. These secondary variables were subsequently used to develop the housing affordability indices for the study along with other relevant analyses carried out in the study. This subsection attempts to identify these initial variables and discuss how the secondary variables were developed. Some relevant technical considerations in understanding the NLSS Database as officially documented such as derivation of weights and the application of price deflators were attached as appendix 5-1. For details see (Federal Office of Statistics Nigeria, 2005). It is necessary to mention that the data summary and analysis of some key variables in some cases were reported in their unweighted and weighted forms (where necessary). Given that the data being reported were collected from a sample survey of households that were drawn as representatives of many enumeration areas of different population sizes, the size of these respective enumeration areas must necessarily be used as weights to adjust derived results in order to reflect true population estimates. Where such

estimates are reported, they are referred to as ‘weighted’ estimates. Therefore, while the unweighted values reflect the data estimates of just the sampled households, the weighted values reflect the data estimates of the entire Nigerian population.

### **5.5.1 Generation of Secondary Variables**

Key secondary variables were developed in the initial phase of data analysis, to enable the generation of appropriate housing affordability indices. These secondary variables will be presented and discussed, under the following subheadings; Rent/Housing Expenditure, Household Expenditure, Income, Socioeconomic Status, Housing Quality and Housing Tenure. Although this analysis was carried out at the micro level of household units, some procedures in developing the secondary variables necessitated the need to generate some variables at more macro level units of analysis, involving the 36 states (and the Federal Capital Territory - FCT) and 6 geo-political zones in the country. A brief reflection on the quality of data and the copy of the relevant sections of the survey questionnaire that generated all the primary variables used in the study is shown in appendix 5-2.

### **5.5.2 Rent / Housing Expenditure Variables**

The initial relevant variables identified in the NLSS database were as follows:

- Payments in cash for rent - ***S7CQ1***
- Time unit for payments in cash for rent (daily, weekly, monthly, quarterly, half yearly and yearly) - ***S7CQ1T***
- Value of goods and services in place of cash rent - ***S7CQ3***
- Time unit for value of goods and services in place of rent- (daily, weekly, monthly, quarterly, half yearly and yearly) - ***S7CQ3T***
- Type of dwelling - ***S7AQ1***
- Number of rooms - ***S7AQ2***

- Occupancy status (dwelling owned by head, dwelling owned by his spouse, dwelling owned by head and spouse, household rents the dwelling, plays nominal/subsidised rent, used without paying the rent and nomadic/temporal housing) - **S7BQ1**
- Construction maintenance expenditure - **S7CQ6**
- Expenditures paid for utilities, including water, electricity, fuel, gas, etc. – **NFDUTIL**
- Furnishing and routine household maintenance, tools and equipment for house and garden, and goods and services for routine household maintenance - **NDFMTN**
- Regional food price deflators - **FPINDEX**
- Regional non-food price deflator - **NFPINDEX**

These variables were considered relevant in determining the different forms of housing expenditure, along with the total housing expenditure of households across various housing tenures in Nigeria.

#### a) Updated Annual Rent Variable

To do this, a variable **cashrent** (annual rent payment in cash) was generated from the following variables: payments in cash for rent - **S7CQ1**, time unit for payments in cash for rent (daily, weekly, monthly, quarterly, half yearly and yearly) - **S7CQ1T**.

Another variable **ncashrent** (annual rent payment in goods and services) was generated from value of goods and services in place of cash rent - **S7CQ3** and time unit for value of goods and services in place of rent- (daily, weekly, monthly, quarterly, half yearly and yearly) - **S7CQ3T**.

Summation of these two variables **cashrent** and **ncashrent** generated a new variable **annualrent** (annual rent of households), which was derived for those on normal market rental housing and subsidised rental housing. Of the 4,662 observations surveyed, 2,170 of them consist of home ownership tenure group; 552 consist of the subsidised rental tenure group; 328 were of the rent-free tenure group; the rental tenure group were 1,586 while 7 others made

up temporal (nomadic) tenure group. After deriving the annual rent variable no missing values were recorded for the rental tenure group, 31.9% of the subsidised rental group had missing values while 10.4% of the rent-free housing tenure group had missing values. The temporal (nomadic) tenure group recorded high incidence of missing values from several key variables that prompted eliminating them from the study. A detailed description of the housing tenure groups will be presented at the later part of the chapter.

However, in order to update this variable for missing values, two variables; annual rent per room *-rperroom* and subsidised annual rent per room *-srperroom* (nominal/subsidised rental tenure) were generated for different house types. Then, the respective means of these variables across various zones in the country were derived and used in conjunction with the variable - *SZAQ2* (number of rooms occupied by households) to update the *annualrent* variable for missing values. This updated variable was renamed Updated annual rent - *UPDANNRENT*. It is worth mentioning that the study considered the alternative idea of using hedonic function based on market rent observations to update the missing values of both annual rents or imputed rents of various households. Often, the major weakness in using hedonic price index is the unavailability of the data required to derive such index. Hedonic model estimation requires not only the price and date is at which each dwelling/property was transacted but also the hedonic characteristics of such properties, locational, and neighbourhood characteristics that are relevant in determining the market price of such property (Arnott and McMillen, 2006). Such level of data that coincides with the period and urban areas covered by the NLSS database across the states in Nigeria was unavailable - making it impossible to use such hedonic function in updating for missing rent values.

#### **b) Imputed Annual Rent Value for Ownership, Free Rental and Subsidized Rental Variables**

The next step was to estimate or impute the annual market rental value of housing occupied by households with ownership, free rental and subsidized rental tenures. The variable *-rperroom*

(annual rent per room) was again employed to estimate these values. The respective means of *rperroom* for different house types across the zones were similarly multiplied by variable - *S7AQ2* (number of rooms) occupied by households with ownership, free rental and subsidized rental tenures to generate a new variable – *irentofs* (imputed annual rent value for ownership, free rental and subsidized rental). For those with subsidised rental tenure, *irentofs* represents the actual market rent of their subsidised housing (i.e. the estimated rent which the households living in such subsidised housing would have been paying if they were on normal free market rental tenure).

#### **c) Updated Construction Maintenance Expenditure Variable**

From the existing construction maintenance expenditure variable - *S7CQ6*, construction maintenance cost for ownership tenure variable – *conexpown* and construction maintenance cost for rental tenure variable – *conexprent* were generated respectively.

Afterwards, *conexpown* was updated for missing values with its median values for various house types across the six zones in the country to generate updated construction maintenance cost for ownership tenure variable – *updconexpown*. Missing values were generated for only the ownership housing tenure. The *updconexpown* was then recombined with *conexprent* to generate updated construction maintenance expenditure - *UPDCONMEXP*

#### **d) Frequent Housing Maintenance Expenditure Variable**

This variable includes basic costs incurred by households in routine household maintenance. These include repair expenditures to basic furniture and fittings; basic tools for house and garden such as soap and washing powder, insecticides, disinfectants and household cleaners; and goods and services for routine household maintenance such as matches, toilet paper, light bulbs and candles. Existing variable *NDFMTN* was identified as the key variable and was duly updated for missing values. Within each of the housing tenure groups, median values of housing maintenance expenditure of households were derived for each zone to update

*NDFMTN* for missing values. The derived updated variable was named Frequent Housing Maintenance Expenditure Variable - *FHMENEXP*

**e) Annual Household Expenditure on Utilities Variable**

Annual Household Expenditure on Utilities Variable was derived from the existing variable for expenditures on utilities – *NFDUTIL*. As in the previous case, median values of *NFDUTIL* were generated for each housing tenure group within each of the zones to update for missing values. The variable generated was named Annual Household Expenditure on Utilities – *UTILEXP*.

**f) Total Housing Expenditure of Household Variable**

Total housing expenditure of households in the study area was generated by combining all relevant basic household expenditures on housing such as expenditures on rent, housing maintenance and utilities. Total housing expenditure of household's variable - *THOUEXP* was generated by the summation of the following four variables: Updated Annual Rent; Updated Construction Maintenance Expenditure; Frequent Housing Maintenance Expenditure and Annual Household Expenditure on Utilities. Thereafter, the total housing expenditure of household's variable – *THOUEXP* which was in local price was adjusted to regionally deflated current prices using regional non-food price deflator – *NFPINDEX*. There was no specific housing costs deflator available, hence the use of a broader non- food price deflator to adjust this variable. The adjusted variable was named *THOUEXPDDR* (total housing expenditure of household in regionally deflated current prices). The table 5-1 below shows the summary of this variable. From the table, it could be seen that while the unweighted mean housing expenditure stood at ₦50619.82 (Naira), the median household housing expenditure is about ₦41455.82 (Naira). While the maximum housing expenditure of household in the 10<sup>th</sup> percentile is about 18,338.82, that of their counterparts at the opposite end of the spectrum the 90<sup>th</sup> percentile is about ₦81,2170.12 (Naira). While the lowest housing

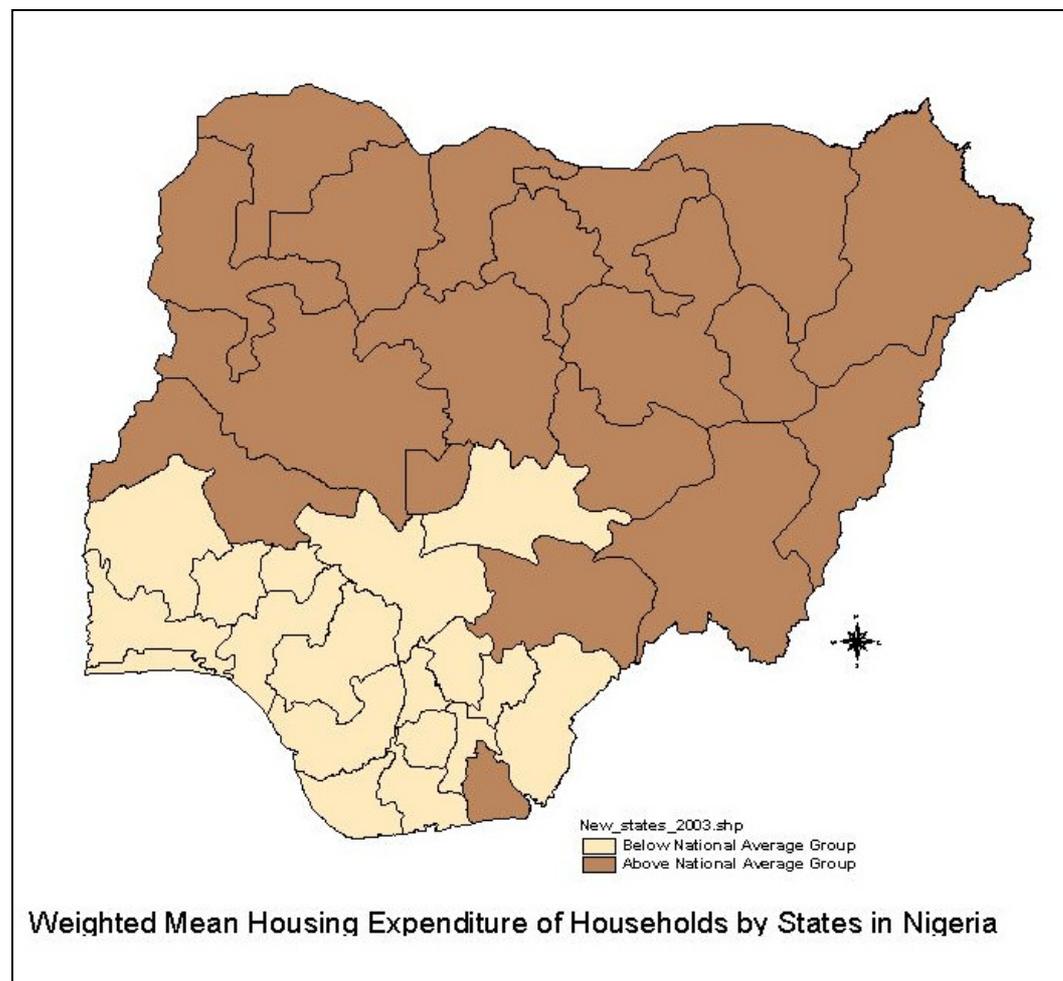
**Table 5-1 Showing The Summary of Total Housing Expenditure of Households Regionally Deflated in Current Prices.**

<b>Percentile</b>	<b>Household Income (Naira)</b>
10 <sup>th</sup> percentile	₦18338.82
25 <sup>th</sup> percentile	₦27741.01
50 <sup>th</sup> percentile	₦41455.82
75 <sup>th</sup> percentile	₦59508.83
90 <sup>th</sup> percentile	₦81217.12
Mean	₦50619.82
Overall minimum	₦126.41
Overall maximum	₦905966.25

expenditure of households is a little more than just ₦100.00 (Naira), the highest is a little less than ₦1,000,000.00 (Naira). These features suggest a highly segmented residential housing market with huge disparities between households. The fact that this survey covers both the formal housing market and the informal housing market may have also contributed this observed disparity between households. The housing expenditure estimates that were recorded, in which the weighted national mean housing expenditure is about ₦50,545.55 (Naira) was generally conservative.

The fig. 5-1 below shows groups of states whose weighted mean housing expenditure of households are below and above the national average. From fig.5-1, it is easily observed that while most states in the Northern parts of the country recorded housing expenditure levels that are higher than the national average, most states in the southern parts of the country maintained lower levels of housing expenditure than the national average. The detailed housing weighted mean housing expenditure of households regionally deflated in current prices by states is shown in Appendix 5-3.

**Figure 5-1 Map Showing Classification of States based on their Weighted Mean Housing Expenditure of Households Regionally Deflated in Current Prices**



### 5.5.3 Non-Housing Household Expenditure Variables

The initial relevant variables identified in the NLSS database were as follows:

- Total number of residents in the household - *HHSIZE*
- Total annual household food expenditure in regionally deflated current prices - *FDTOTDR*
- Total annual household non-food expenditures in regionally deflated current prices, including both frequent and infrequent non-food expenditures - *NFDTOTDR*.
- Total annual household expenditure in regionally deflated current prices - *HHEXPDR*
- Regional food price deflators - *FPINDEX*

- Regional non-food price deflator - *NFPINDEX*

**a) Total Annual Non-Housing Expenditures Variable**

The existing variable - total annual household expenditure (*HHEXPDR*) was derived by summing up of the total annual household food expenditure (*FDTOTDR*) and total annual household non-food expenditures, including both frequent and infrequent non-food expenditures (*NFDTOTDR*). Variables were used in the regionally deflated form in order to remove price distortion on aggregate household expenditure due to inflation including seasonal, locational, economic status and other differences that characterise the study area.

It is important to note that *NFDTOTDR* excluded direct housing expenditure such as rents, mortgage payments etc. However, in order to generate a variable to reflect the total non-housing expenditure of households, the variable *HHEXPDR* was freed of all other housing expenditures such as routine frequent maintenance and utility expenditures. Therefore all other housing expenditures such as utilities costs, (water, electricity, gas, etc.) and routine household maintenance expenditures (tools and equipment for house and garden etc.) were removed from total annual household expenditure (*HHEXPDR*). To do this, both *NFDUTIL* and *NDFMTN* were deflated accordingly with *NFPINDEX* to derive *NFDUTILDR* and *NDFMTNDR* respectively. Afterwards, *NFDUTILDR* and *NDFMTNDR* were subtracted from total annual household expenditure (*HHEXPDR*) to generate a new variable - total annual non-housing expenditure in regionally deflated prices (*TNNHOUEXPDR*).

From table 5-2 below, it can be seen that the national mean total annual non-housing expenditures is about ₦148,195.90 (Naira). While the minimum overall non-housing expenditure is about ₦1,866.54 (Naira), the recorded over all maximum is about ₦3,452,623.00 (Naira). The recorded highest annual non-housing expenditures of households in the 10<sup>th</sup> percentile and the 90<sup>th</sup> percentile are ₦38,872.66 and ₦296,302.90 (Naira) respectively. This represents a non-housing expenditure gap of approximately 662% between the two groups.

**Table 5-2 Showing the Summary of Total Annual Non-housing Expenditures (in Regionally Deflated Prices)**

Percentile	Total annual non-housing expenditures in regionally deflated prices (Naira)
10 <sup>th</sup> percentile	₦38872.66
25 <sup>th</sup> percentile	₦65153.97
50 <sup>th</sup> percentile	₦110414.40
75 <sup>th</sup> percentile	₦180592.10
90 <sup>th</sup> percentile	₦296302.90
Mean	₦148195.90
Overall minimum	₦1866.54
Overall maximum	₦3452623.00

For households in the 75<sup>th</sup> and 25<sup>th</sup> percentiles, there is a non-housing expenditure gap of about 177% with estimates of about ₦180,592.10 and ₦65,153.97 (Naira) respectively. The recorded national median non-housing expenditures is about ₦110,414.40 (Naira).

#### **b) Non-housing Consumption Threshold Variable**

The primary interest here was not in what a given household spends per annum but on how much they need in order to meet their basic non-housing needs. Thus, the challenge was to estimate the amount of money or expenditure required by a household to satisfy its basic non-housing needs based on the existing actual household expenditure as contained in the NLSS database. As has been earlier stated in the previous chapter, the use of household budgets standard data (where they exist) is often thought to be superior to using the poverty line measure and therefore better in deriving the shelter poverty index due to the inherent weaknesses of most poverty line measures. However, in the absence of a consolidated household budget standard databases in Nigeria, the study adopted the poverty line approach, given that it is possible to derive the poverty line standards from available NLSS 2003-2004 database. There are essentially four different types of poverty line measure that are often

reported in official documents in Nigeria namely: the relative poverty measure; the objective/absolute poverty measure (food energy intake); adjusted dollar per day standard and the subjective poverty measure which is based on self-assessment of individual respondents (Federal Office Of Statistics, 2004; Federal Office of Statistics Nigeria, 2005). Of these four poverty line measures, the relative poverty standards was chosen and adapted to this study due to the fact that it is the most sophisticated of the four methods. It is also important to note that the relative poverty standards is the preferred and foremost official benchmark for determining poverty levels in Nigeria as shown in the following official reports that includes the Federal Office Of Statistics (1999), Federal Office Of Statistics (2004) and the Federal Office Of Statistics (2005).

The relative poverty standards establishes a threshold for defining poverty based on an evaluation of an average poverty line set at *two-thirds of the average national household per capita expenditure. This threshold represents the moderate poverty line while one-third of the average national household per capita expenditure represents the core poverty line* (Federal Office of Statistics Nigeria, 2005, p.39-40). This standard was applied to non-housing expenditure of households to determine what constitutes the non-housing consumption poverty threshold of households. The threshold represents the estimated amount required by a household to meet its basic non-housing needs - below which the household will be considered to be poor.

In cognisance to the fact that there are different consumption levels of individuals based on their ages and sex, the country equivalent adult household size variable was used to determine the non-housing consumption threshold of households instead of the ordinary household size variable. This is to account for consumption cost disparity across different age and sex distribution (adults and children; males and females) within any given household; and also to avoid such pitfalls as understating the consumption per capita (welfare) of people who live in households with high fraction of children (Deaton and Zaide, 2002).

To do this the variable total annual non-housing household expenditures in regionally deflated prices (***TNNHOUEXPDR***) was divided with country equivalent adult household size –

(*CTRY\_ADQ*) to generate a new variable – per capita non-housing expenditure (*nhouexppc*). Afterwards, the relative poverty measure standard, two-third of the mean was applied to this new variable (*nhouexppc*) for each of the 36 Nigerian States and the FCT to derive the per capita non-housing consumption threshold of households or the consumption poverty line (*copovlinepc*) in each of the State. Generating this variable at the level of the state was necessary in order to capture major location differences and variations in consumption and expenditure within the country. In order to compare the non-housing consumption threshold of households across the States, the estimated state’s weighted per capita non-housing consumption threshold of households were compared with the national average.

**Figure 5-2 Map Showing Classification of States based on Estimated Weighted Per Capita Non-housing Consumption Threshold of Households (Regionally Deflated in Current Prices).**

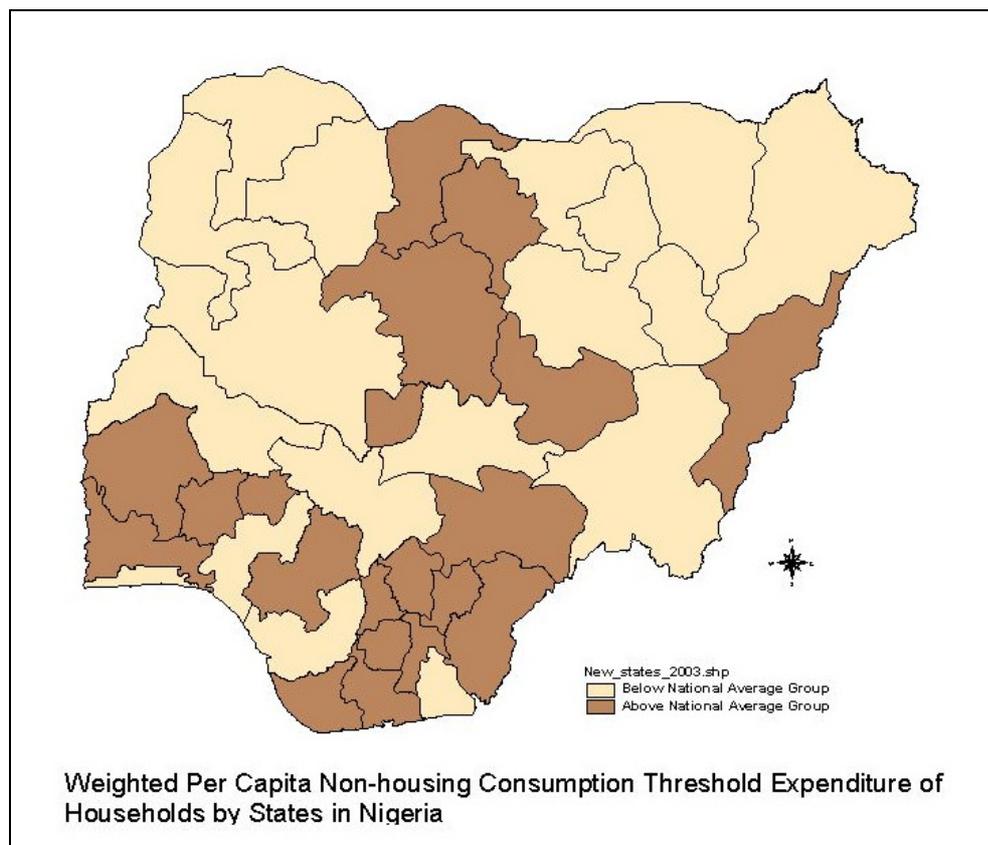


Fig 5-2 shows the group of states that have above National average estimates and those whose per capita non-housing consumption threshold of households are below the national average.

Most of the states in the southern part of the country recorded per capita non-housing consumption threshold estimates that are above the National average estimate of ₦30,360.57 (Naira) with the exception of Lagos, Ondo, Delta and Akwa-Ibom states. Conversely, most of the states in the northern parts of the country recorded estimates that fell below the national average with the exception of Katsina, Kano, Kaduna, Plateau, Benue, Adamawa and Abuja (FCT). This pattern tends to suggest that the cost of living is generally higher in the southern states with the exception of the identified states whose per capita non-housing consumption threshold estimates are below the national average. Conversely, the data tends to suggest that the cost of living is generally lower in most northern states giving that households living those states require lower levels of per capita non-housing consumption threshold that are below the national average to maintain the same non-housing consumption standards with other states. However, it should be borne in mind that the per capita non-housing consumption threshold needs to be considered in conjunction with the income distribution of states in order to have a more realistic picture of the actual cost of living in such states.

In order to derive the total estimated amount required by a household to meet its basic non-housing needs, the per capita non-housing consumption threshold (consumption poverty line – *(copovlinepc)*) was multiplied with the size of each household (*CTRY\_ADQ*) to generate the new variable – non-housing consumption threshold (*NHCOMPOVTHDR*).

Therefore, a household will be considered to be under-consuming its basic needs or to be in poverty, if its actual non-housing consumption expenditure is below the estimated non-housing household consumption threshold (*NHCOMPOVTHDR*).

The table 5-3 shows the summary of *copovlinepc*, *NHCOMPOVTHDR* and *CTRY\_ADQ* variables by zones in Nigeria. From the table, it can be seen that there are major disparities between the per capita and the non per capita consumption thresholds of households with

**Table 5-3 Showing the Average Non-Housing Consumption Threshold of Households by Zones (in Regionally Deflated Prices).**

<b>Zones</b>	<b>Weighted Non-housing consumption threshold per Capita (Naira)</b>	<b>Weighted Non-housing consumption threshold in regionally deflated prices (Naira)</b>	<b>Country equivalent adult household size</b>
South-South	32945.40	111728.40	3.4
South-East	38072.60	133917.20	3.5
South-West	34943.34	102997.30	3.0
North-Central	27738.87	104064.10	3.7
North-East	29429.61	141615.10	4.8
North-West	33204.94	149603.20	4.6
<b>Overall Mean</b>	<b>33360.57</b>	<b>117352.40</b>	<b>3.6</b>

respect to their distribution across the 6 geo-political zones. While the per capita consumption thresholds are higher in the southern zones, the actual consumption thresholds of households (non per capita) in the north-east and north-west zones were generally more than those recorded in the southern zones. While the per capita consumption thresholds of the northern zones were below the national average of ₦33,360.57 (Naira), the actual consumption thresholds of households (non per capita) in the north-eastern and north-western zones were significantly more than the overall national average of ₦117,352.40 (Naira). Similarly, average country equivalent adult household size in each of the northern zones is more than the national average of 3.6. When compared with the southern zones, the higher household sizes in the northern zones considerably add to their non-housing consumption cost burden and increase their poverty line consumption thresholds. These findings tend to indicate very large disparities and variations in living costs within the study area. Being an indicator of living costs, the lower the estimates, the better for households; the narrower the disparity gaps, the better for households. The detailed non-housing per capita expenditures of households, per capita non-housing consumption threshold of households and weighted mean non-housing consumption threshold of states are shown in Appendix 5-4.

#### 5.5.4 Household Income Variables

The study recognizes the wide range of income sources and different types of income for urban households in Nigeria, which includes cash and non-cash incomes from regular and accidental sources. In the NLSS database, the income values for each household from the following sources were recorded (where applicable). They include;

- Total Basic income (from all members of the household as under-listed below)

- Wages/salary of head

- Commissions and bonuses

- Overtime

- Wages/salary of spouse

- Commissions and bonuses (spouse)

- Overtime (spouse)

- Wages/salary of members

- Commission and bonuses (males)

- Overtime (males)

- Wages/salaries of female members

- Commissions and bonuses (female)

- Overtime (female)

- Sales of Farm Product

- Profits from Trading

- Fees from prov. activities

- Rent received (property owners)

- Income from subsidiary group

- Dividend on shares

- Pension

- Pools winnings

- Sales of property

- Cash gift received

- Dowry received

- Remittance from within Nigeria received

- Remittance from outside Nigeria received

- Others - miscellaneous

Key indirect (non-cash) incomes that were also considered include;

- Imputed annual rental value (for households with ownership tenure, nominal /subsidised tenure and free rental tenure) - ***IRENTOFS***
- Annual total monetary value of self-produced foods and foods received as gifts – ***FDTOTPR***
- Total monetary value of self-produced non-foods – ***NFDTOTPR***

Other relevant complementary variables on basic household income include;

- money earned from employment - ***S4AQ8A***
- money earned from agricultural activities - ***S4AQ8B***
- money earned from agricultural/fish processing - ***S4AQ8C***
- money earned from non-farm businesses - ***S4AQ8D***

#### a) **Total Annual Cash Income of Household**

Given the cross-sectional of nature of the NLSS data, it was important to clearly determine what constitutes regular/planned incomes and accidental incomes in order to appropriately deal with them when computing household income estimates. In order to calculate the annual cash income of households, two variables were developed to reflect these different types of incomes. There were; regular monthly household income variable (***regmoninc***) and incidental household income variable (***inccincome***). The incidental household income variable (***inccincome***) was computed from the following sources; pools winnings, sales of property, cash gift received, dowry received, remittance from within Nigeria received, remittance from outside Nigeria received and others – miscellaneous.

The regular monthly household income variable (***regmoninc***) was computed from the following sources; total basic monthly income, rent received (property owners), income from subsidiary group, dividend on shares and pension received. This variable was later converted to the regular annual household income variable (***reganninc***). From this, the regular annual incomes of about 72% of the household were derived. Income values of about 28 representing about 1,305 households were found to be missing.

Considering the centrality and sensitively of this key variable to the entire analyses, no attempt was made to update the missing values with any derived secondary values. The underlying and

compelling need to maintain utmost accuracy and minimise possible distortion in presenting household income values necessitated that the income analyses be solely confined to cases recorded in the NLSS database. Complimentary household wages/incomes were computed from relevant data recorded in the Employment Section (4A) of the NLSS database. These data were - money earned from employment (*S4AQ8A*), money earned from agricultural activities (*S4AQ8B*), money earned from agricultural/fish processing (*S4AQ8C*) and money earned from non-farm businesses (*S4AQ8D*). From these variables, a complimentary annual regular household income variable was generated and used to update the *inccincome* variable forming the updated regular annual cash income variable (*updreganninc*). Through this measure, missing values in this variable were reduced from 28% to about 8% which represents a total of 387 households. Next, the total annual cash income of household (*TOTCASHINC*) was generated by combining the updated regular annual household income variable (*updreganninc*) and incidental household income variable (*inccincome*). After this, there were still missing values for 19 observations. These observations with missing values were eliminated from subsequent analysis. The total annual cash income variable was a gross income as they were very scanty data on income tax to allow for any meaningful derivation of net cash income of households.

**b) Total Annual Household Income (cash and non-cash)**

The study adopted the methodology used in the Nigerian Living Standards Survey, where the total household income was made up of both cash income and non-cash income. Two basic non-cash income variables were identified, namely consumption of own production and imputed rent. To generate the total monetary value of consumption of own production (food and non-food) variable (*TOTOWNPR*), the annual total monetary value of self-produced foods and foods received as gifts (*FDTOTPR*) and total monetary value of self-produced non-foods (*NFDTOTPR*) variables were aggregated together. Thereafter, the variable total annual household income (*TOTAHHINC*) was generated by combining the annual

household cash income (*TOTCASHINC*); imputed annual rental value for households with ownership tenure, nominal / subsidised tenure and free rental tenure (*IRENTOFS*); and total monetary value of consumption of own production (food and non-food) (*TOTOWNPR*) variables. The summary variable is shown in table 5-4.

**Table 5-4 Showing the Summary of Total Annual Household Income (Cash and Non-cash)**

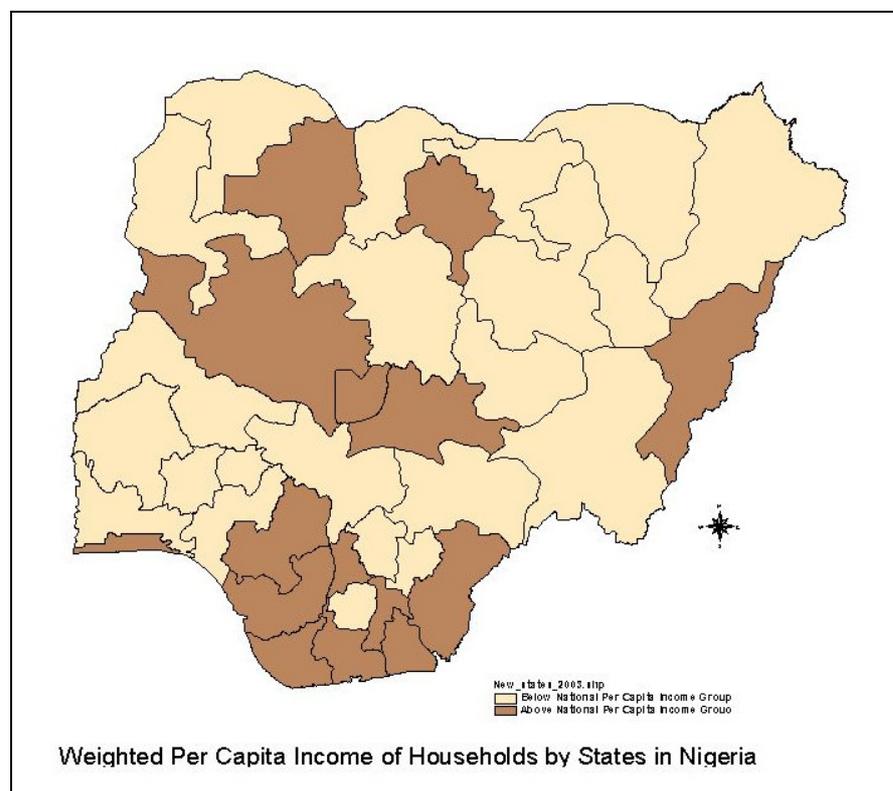
Percentile	Household Income (Naira)
10 <sup>th</sup> percentile	₦36120.50
25 <sup>th</sup> percentile	₦74530.75
50 <sup>th</sup> percentile	₦142699.10
75 <sup>th</sup> percentile	₦250000.00
90 <sup>th</sup> percentile	₦407646.50
Mean	₦206460.50
Overall minimum	₦1866.54
Overall maximum	₦4913150.00

From the above table, the National mean of the total annual household income is about ₦206,460 (Naira) while the median estimate stood at ₦142,699.10 (Naira). There is thus a discernable low level of income amongst overwhelming majority of households in the study area. The highest total annual household income of the 75<sup>th</sup> and 25<sup>th</sup> percentile is about ₦250,000.00 and ₦74530.75 (Naira) respectively. The 90<sup>th</sup> and 10<sup>th</sup> percentile household earn a maximum of about ₦407,646.00 and ₦36,120.50 (Naira) respectively. While within the poorest 1% the highest income is about ₦12,838.22 (Naira), within the richest 1% the lowest income is about ₦1,200,000.00 (Naira) - emphasising the huge income disparity between households.

In order to determine the income groups of the households, the annual per capita income of households (*TOTAHHINCpc*) was derived from the total annual household income (*TOTAHHINC*). Fig 5-3, shows the grouping of states that earn above the ₦60,271.14 (Naira) national average per capita annual household income and those that earn less. Comparatively, it does appear that households living in the southern part of the country

recorded more per capita household income than their counterparts in the northern parts of the country. Of the 17 states in Southern Nigeria, average per capita household income in nine

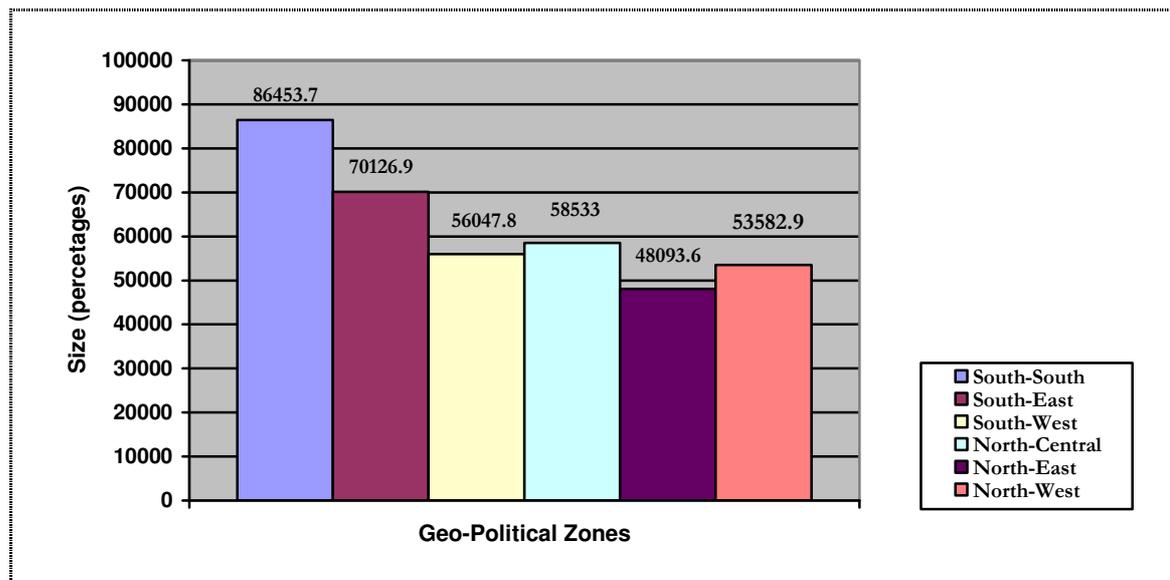
**Figure 5-3 Map Showing Classification of States based on Weighted Annual Per Capita household Income**



of them were above the national average namely; Lagos, Edo, Delta, Bayelsa, Rivers, Anambra, Abia, Akwa-Ibom and Cross-River States. However, of the 19 states and the FCT that make of the northern part of the country, only six of them recorded above national average per capita household incomes namely; Niger, Nassarawa, Adamawa, Zamfara, Kano and Abuja (FCT).

When the per capita household income distribution is considered along the geopolitical zones (shown in Fig.5-4), the average households in the South-South zone recorded the highest per capita income, with about ₦86,453.7 (Naira), while the lowest of about ₦48,093.6 (Naira) was recorded in the North-East zone.

**Figure 5-4 Showing Per Capita Annual Household Income by Zones in Nigeria**

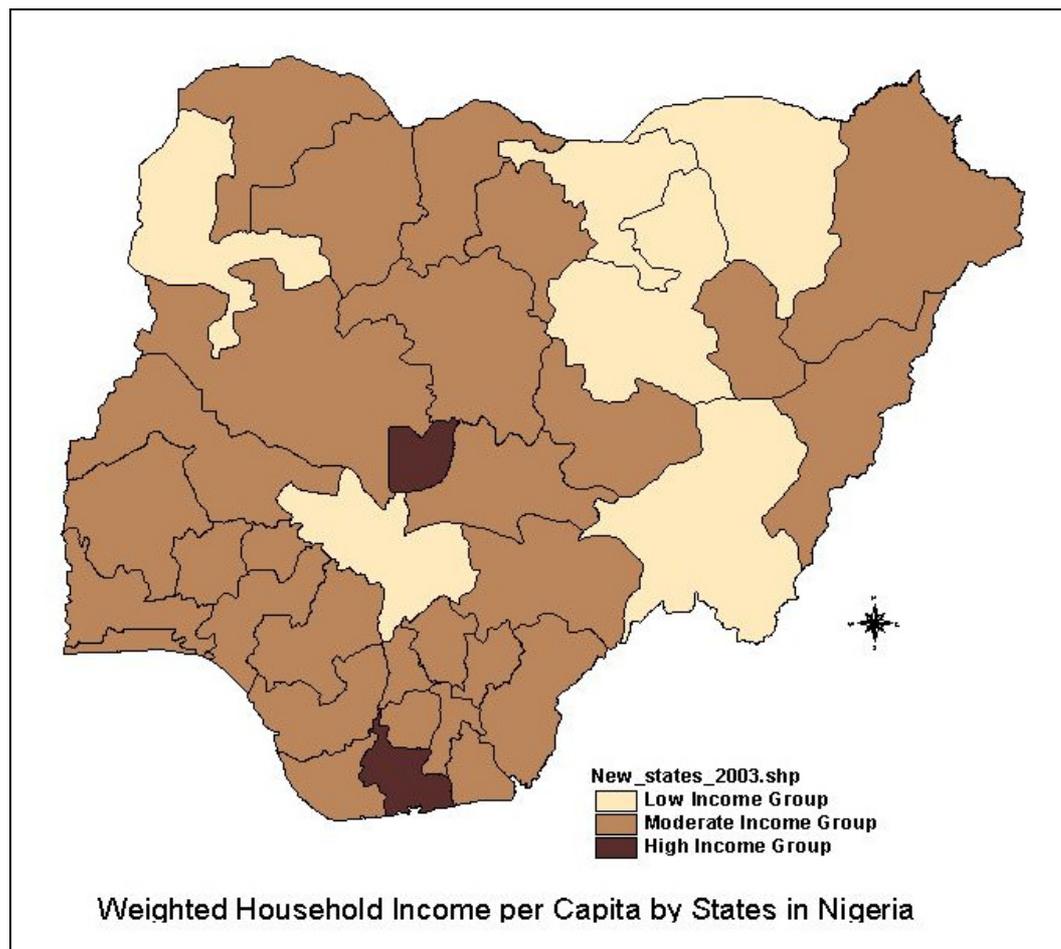


The South-East zone recorded the second-highest per capita income, with about ₦70,126.9 (Naira), followed by the North-Central zone with about ₦58,533.0 (Naira), which is the highest among the northern geo-political zones of the country. The details of household income by states in Nigeria are shown in appendix 5-5.

### c) Income Groups Classification

In order to identify and classify the income group of households, the same criteria was used in developing the relative non-housing consumption poverty line was applied. This criterion specifies the middle income - low income cut off datum at two-third of the national per capital household income. While the high income – middle income cut off datum is at two-third above the national average. With the national per capita household income at ₦60,271.14 (Naira), the low income group were identified as those households whose per capita income are below ₦40,180.76 (Naira) while the high income were identified as households with per capita income earnings above ₦100,451.00 (Naira). These estimates are based on weighted values. The classification of States based on these criteria is shown in Fig 5-5.

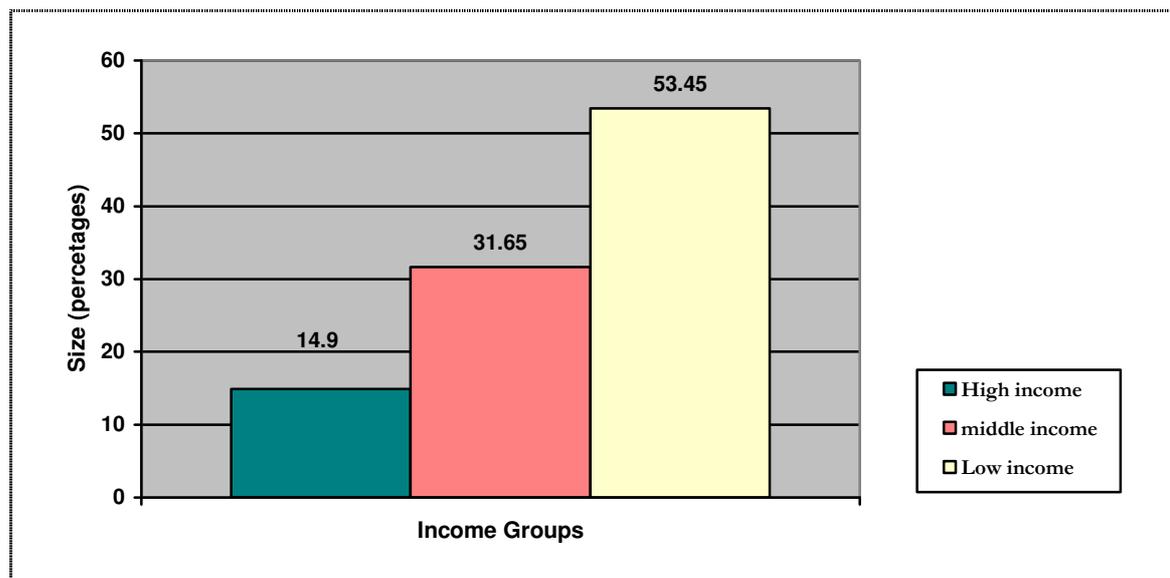
**Figure 5-5 Map Showing Classification of States based on Relative Income Criteria**



Of all the states in Nigeria, only Rivers and Abuja (FCT) recorded per capita household incomes that were two-third above the national average with per capita income of about ₦112,000.00 and ₦110,558.9 (Naira) respectively constituting the high household income group. Six states that recorded per capita income levels that were one-third below the national average were identified as the low per capita household income group of states. They include the following; Kogi, Kebbi, Jigawa, Yobe, Bauchi and Taraba States. Jigawa and Kebbi states recorded as low as ₦26,587.53 and ₦27,037.6 (Naira) respectively.

This relative income criterion was also used to determine the general income group distribution in the study area, as shown in fig. 5-6. It can be seen in fig. 5-6 that the low income group, make-up of about 53.45% of the total households with the middle income and the high income groups constituting about 31.65% and 14.90% households respectively. It is

**Figure 5-6 Showing General Distribution of Income Groups based on Weighted Relative Income Criteria**



important to emphasise that the above classification is a relative classification rather than an absolute classification of the income status of households.

### 5.5.5 Urban Residential Housing Quality Variable

Housing quality was one of the key secondary variables required in the study. Its usage in this study is one of the major unique elements of the technique of measuring housing affordability developed here. It was based on the recognition that a more appropriate housing affordability measure must necessarily take into consideration the quality of the housing involved. The approach was especially necessary in the study, given the diverse range of housing of different qualities from both formal and informal housing market contained in the database. And even more so, when such housing affordability measures are to be used, analysed and interpreted in a comparative sense. A more detailed case will be made to justify this contention and how it has been developed in the study to modify the housing expenditure-to-income model in the next chapter.

It is however important to note that in determining the housing quality index developed here; only the most basic relevant physical characteristics of the household dwelling criteria were

used. Other criteria that are more often considered relevant in determining the housing quality such as facilities and services available within the dwelling, location and the quality of neighbourhood within which the dwelling is located were not used. It is necessary to emphasise this distinction between the general broad notion of housing quality and the 'limited' measure of housing quality as applied in this study. Beyond the constraints of reliable data accessibility on wide range of neighbourhood quality and character considerations, it is crucial to eliminate the influence of subjective neighbourhood location preferences of households in the derived housing quality index. Therefore, use of the broader general housing quality concept would have otherwise distorted the derived housing quality index in such a way that makes its application and underlying justification in this study problematic. The use of only the quality of construction materials to measuring housing quality serve to contrast and disaggregate the most fundamental and basic housing condition differences of households (irrespective of location) in the study area.

Therefore, the following basic variables were used in developing the housing quality index;

- Material of outside wall (Mud, Stone, Burnt bricks, Cement of concrete, Wood or bamboo, Iron sheets, Cardboard and Others) - - ***S7EQ1***
- Main flooring material (Earth or mud, Wood or tile, Plank, Concrete, Dirt or straw and Others) - ***S7EQ2***
- Main roofing material (Mud or mud bricks, Thatch grass or straw, Wood or bamboo, Corrugated iron sheets, Cement or concrete, Roofing tiles and Other) - ***S7EQ3***

Having identified the construction material variables (***S7EQ1, S7EQ2 and S7EQ3***) as reliable indicators of housing quality in the study area, the next step was to recode the construction material variables into ordinal data as follows.

Outside Wall construction material variable - ***S7EQ1***

	Recode	Recode value
Stone, burnt bricks	Excellent	5
Cement of concrete	Very Good	4

Mud	Fair	3
Wood or bamboo, iron sheets	Poor	2
Cardboard	Very Poor	1

Main flooring material variable - *STEQ2*

	Recode	Recode value
Wood or tile	Very Good	4
Concrete	Fair	3
Earth or mud	Poor	2
Plank, dirt or straw	Very Poor	1

Main roofing material variable - *STEQ3*

	Recode	Recode value
Concrete, roofing tiles	Excellent	5
Corrugated iron sheets	Very Good	4
Mud or mud bricks	Fair	3
Wood or bamboo	Poor	2
Thatch grass or straw	Very Poor	1

Next, these three recoded variables were aggregated together to form the housing quality variable using the principal component analysis (PCA). As a technique, principal component analysis (PCA) is a geometrical ordination method that can identify underlying structures characterising a set of highly correlated variables. Therefore it can be used to compress a set of variables into a smaller number of derived variables or components. It is used to pick out patterns in the relationships between the variables in such a way that most of the original data can be represented by new set of data within a reduced dimensional space (i.e. reduced number of new variables). The principal components are extracted in such a way that the first component accounts for the largest amount of total variation in the data, the second accounts for the second largest amount of total variation in that order until the last principal component is extracted (Dillion and Goldstein, 1984).

To illustrate this in algebraic form, information in K variables,  $Z_1, Z_2, Z_3, \dots, Z_k$  can be re-expressed in terms of K components  $F_1, F_2, F_3, \dots, F_k$ . The first component  $F_1$  is the linear combination of original variables having the largest sample variance ( $\lambda_1$ ).

$$F_1 = a_{11}Z_1 + a_{21}Z_2 + a_{31}Z_3 + \dots + a_{k1}Z_k$$

This based on the constraint 
$$\sum_{k=1}^k a_{k1}^2 = 1$$

It is important to impose this constraint to avoid situations in which variance can be made arbitrarily large by increasing the magnitudes of the  $a_{kj}$  coefficients. The next component  $F_2$  is then the linear combination uncorrelated with  $F_1$  having the second largest variance ( $\lambda_2$ ).

$$F_2 = a_{12}Z_1 + a_{22}Z_2 + a_{32}Z_3 + \dots + a_{k2}Z_k$$

Given the constraint 
$$\sum_{k=1}^k a_{k2}^2 = 1$$

And the third principal component is the linear combination uncorrelated with  $F_1$  and  $F_2$  the next largest variance ( $\lambda_3$ ) in that order. In these equations the  $a_{kj}$  represents the coefficients from the regression of the  $j^{\text{th}}$  component on the  $k^{\text{th}}$  variable.

The detailed result of principal component analysis used in generating the housing quality variable is shown in the Appendix 5-6. From the results of the analysis, the three variables of housing construction materials (***S7EQ1, S7EQ2 and S7EQ3***) loaded into the first component with an eigenvalue ( $\lambda_1$ ) of 1.937. The eigenvalues of the second ( $\lambda_2$ ) and third ( $\lambda_3$ ) component were 0.619 and 0.444 respectively.

In PCA, the number of eigenvalues equals the number of variables (i.e.  $\lambda_1 + \lambda_2 + \dots + \lambda_k$  where k is the number of variables) and they are usually calculated as fractions of the total variance. Given that standardized variables have variance of 1, it follows that the number of variables also equals the total variance of all variables. Thus, explained variance of the  $j^{\text{th}}$  component can be calculated as  $\lambda_j / K$ . Accordingly, explained variance of the first component is  $1.937/3 = 0.6456$ , which means that it accounts for about 65% of the total observed variance in the three primary variables. The second and the third components recorded about 20% and 15% of the

total variance respectively. Only the components that have eigenvalues of 1 and above ( $\lambda \geq 1$ ) are considered significant, hence it is the standard practice to disregard those with eigenvalues less than 1 especially when they are not close enough to be easily approximated to 1. However, a further confirmatory test was carried out with the use of a scree graph, which plots the eigenvalues against component numbers. This graph is usually a useful guidance that suggests more natural cutoffs in PCA. In the scree graph also shown in Appendix 5-6, each plot indicates a point where the eigenvalues begins to level off after a steep fall. In the analysis, that point begins after the first component to confirm it as the only significant component that contain the most useful information contained in the three variables of materials used for wall, floor and roof. From this result, the first component was the only component that could be taken to the represent the housing quality variable.

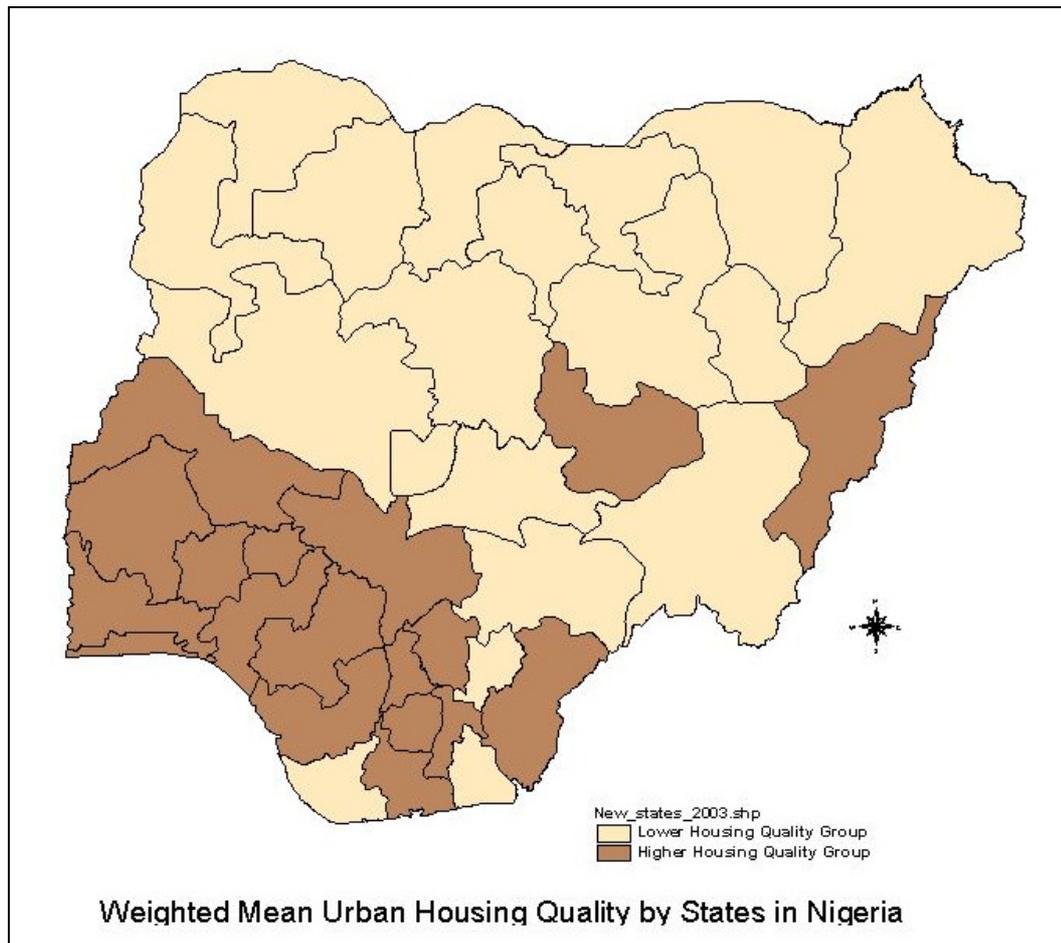
The factor scores of each of the original observations, on the first component were then generated to represent housing quality scores of households expressed as:

$$\tilde{F}_j = c_{1j}Z_1 + c_{2j}Z_2 + c_{3j}Z_3 + \dots + c_{kj}Z_k \quad \text{where } c_{ij} \text{ represents the factor score}$$

coefficients for the  $j^{\text{th}}$  component. As these factor scores could be interpreted in the same way as the original variables from where they were derived, the resultant index was taken to represent the housing quality index - **HQI**.

The housing quality factor scores were easily classified into two groups of higher and lower housing quality. The dwellings of households with negative factor scores were considered to be of lower quality, while those with positive factor scores were considered to be of higher quality as shown in fig. 5-7. Findings indicate that urban housing quality levels in the southern parts of the country are generally higher than the housing quality levels in northern parts of the country. All the states in the South-West zone of the country were shown to have higher housing quality levels. Of the five states in the South-East zone, only Ebonyi state recorded a lower housing quality level. In the South-South zone, only Bayelsa and Akwa-Ibom states recorded lower levels of urban residential housing quality.

**Figure 5-7 Showing the Housing Quality Classification by States**



It was particularly interesting to note that Abuja (FCT), recorded a lower level housing quality despite being the new federal capital territory. This finding may not be unconnected to the fact that giving the scarcity and high costs of residential accommodation within the planned and well laid out residential neighbourhoods in the actual city of Abuja, a much higher proportion of households within the territory are constrained to live in shantytowns surrounding the city from where they commute daily to the main city for work.

#### **5.5.6 Socio-Economic Group Variable**

The generation of the socio-economic group variable was one of the major undertakings of the study. Developing a reliable and valid socio-economic group classification was of utmost

importance, especially with respect to the test of hypotheses and interpretation of findings. Giving the crucial nature of social class as an explanatory concept in social science, there is the clear need for the classification to be based on satisfactory theoretical foundations. This is especially so in this sort of policy oriented study that focuses on the housing affordability of different socio-economic groups. Rose and Pevalin (2001, p.14) succinctly argued that;

“The lack of a clear conceptual rationale has important consequences in limiting the scope for influencing policy. If we do not understand the causal pathways which lead to the regular patterns revealed by research (that is, the processes which generate empirical regularities) then it is not apparent how recommendations can be provided on relevant policy actions to address these persistent variations.”

Currently, there is no standard socioeconomic group classification schema that is officially in use in Nigeria. Therefore, there was the need to develop a satisfactory socioeconomic group classification schema and apply it in the study. Furthermore, there was the need to ensure that the derived classification scale has a coherent theoretical basis and not based on an intuitive or *a priori* scale. Thus, the derived schema was based on the National Statistics Socio-economic Classification (NS-SEC) blueprint that is currently in use in the UK.

The NS-SEC, which was in itself based on the widely acceptable Goldthorpe’s social classification schema, is easily adaptable to any society that upholds the institutions of private property and a labour market such as Nigeria. This social classification schema emphasized employment relations in the context of occupations and defines class position in terms of the social relationships at work. This approach three distinct groups of workers - the *employers*, who buy the labour of others and assume some degree of authority and control over them; the *self employed (or ‘own account’) workers*, who neither buy labour nor sell their own to an employer; and the *employees* who sell their labour to employers and thus place themselves under the authority of their employer (Rose and Pevalin, 2001). It is generally recognised that any type of classification model that defines position in term of social relationship at work must recognise these three distinct groups or class of workers.

A further important distinction is made to differentiate the diverse employment relations of employees as implicitly or explicitly defined by the terms of employment contract. Thus, it is recognised that employees occupy different labour market situations, which directly determine their source of income, economic security and prospects of economic advancement, and different work situations, which directly determine their location in systems of authority and control at work. It has been argued that such classification that is based on different positions of workers in labour market and work situations implies that individuals that make up the different classes have different sources and levels of income; different employment stability; and different dispositions in assessing their economic futures and expectations. These factors are crucial in determining employee's life chances and many aspects of their attitude and patterns of action (Goldthorpe, 2000a). It is this variation in the employment contract of workers that establishes the construct validity of the Goldthorpe schema. Given that the Goldthorpe schema classifies different positions of workers based on their social relationship in the workplace, the approach distinguishes three forms of employment regulation – service relationship, labour contract and the intermediate or mixed form of employment regulation.

The service relationship typifies a situation where service is given in return for a short and long term reward. Such short term reward is often defined in terms of salaries and allowances, while the long-term benefits are often defined in terms of job security and career opportunities. More often, this relationship involves skilled employees needed to occupy positions where they could exercise delegated authority or those with requisite expertise knowledge needed to further the interests of the employer. Within such relationships, the employer often extends some level of autonomy and discretion to the employee, who is encouraged to make a moral commitment to the employer. This is typical in the employment of higher professionals, senior administrative and senior management occupations (Rose and Pevalin, 2001).

On the other hand, the labour contract often involves a relatively short term exchange of money for work done. Employees are closely supervised and monitored over discrete amount of labour for a wage. Often, employees' wages are calculated based on work done or the

amount of time required executing such a task. It often typifies the working class employment relationship. However, it should be recognized that there are some circumstances, where employees such as supervisors and skilled workers have opportunities to slightly better employment terms within the working class employment relationship (Rose and Pevalin, 2001). The third form of employment regulation is the intermediate or the mixed forms that combine aspects of service relationship and labour contract, often typical to clerical occupations, technical, sales and services occupations in large bureaucratic organisations (Rose and Pevalin, 2001).

Many studies have endorsed the basic validity of this ‘Goldthorpe’ approach. They include such works as (Evans, 1992, 1998; Evans and Mills, 1998; O’Reilly and Rose, 1998; Evans and Mills, 2000; Rose and Pevalin, 2001). Therefore, the Goldthorpe/NS-SEC approach was chosen for the study, because it has been subject to a full range of criterion and construct validation analyses, and has been shown both to be a good measure of employment relations and a sound predictor of life chances (O’Reilly and Rose, 1998; Rose and Pevalin, 2001).

The NS-SEC model is derived from occupation and employment status information, occupation being ideally coded to the most detailed level of the Standard Occupational Classification 2000 (SOC2000). Thus, this socioeconomic group classification technique requires the availability of data based on extensive occupation code classification and employment status variable that captures information on employment status and size of organisation. The employment status variable requires three key information on each of the household reference person (HRP); whether an employer, self-employed or an employee; the size of organization worked for; and supervisory status (Office for National Statistics, 2005).

The adoption of this type of approach in developing a socioeconomic group classification schema for this study was made possible by the detailed occupation codes (International Standard Classification) used in the NLSS (as shown in Appendix 5-7). Furthermore, the employment-size (*employsize*) variable was derived from the existing variables of organization size (*S4CQ21*) and the employment status variables (*S4BQ8*) and (*S4BQ9*)

respectively. In adopting this approach, the difference between the UK and the Nigerian employment structure was recognized and taken into consideration. For instance, the study developed an eight category framework in deriving the employment-size (*employsize*) variable, instead of seven, as was used in the National Statistics Socio-economic Classification (NS-SEC) model. This is to account for the differences in the nature of the self-employed workforce between Nigeria and the UK. While the self-employed workforce in the UK, are often small registered formal businesses synonymous with the *'heroic capitalists'* the majority of the self-employed without employees workforce in Nigeria are made up of *'survivalist'* group mostly involved in the informal sector. As many people are increasingly losing their jobs in the formal sectors of the economy due to the current economic structure and the shrinking of the formal sectors, they are increasingly swelling the ranks of the informal sector. In adapting this schema to the Nigerian context, it would have been better to separate the formal sector and the informal sector in this classification especially in relation to the small employers, and own account workers sub-group. This could not be carried out due to limitations in available data, which did not clearly identify and differentiate the formal and informal employment in the study area. Such a distinction would have been interesting, given that the operations of both sectors are guided by different sets of rules that affect their respective employment regulation. Therefore the self-employed group may represent a less privileged workforce than that envisaged by the Goldthorpe / NS-SEC model, hence the need to at least create a different category for the self-employed without employees workforce as distinct from those that have employees in the study. Although it is useful to differentiate between self-employed workers that have employees and those that don't, the fact that the two groups contains informal sector workers blurs the impact of such a distinction. However, it is still better to have the distinction than not. As a result, the employment-size (*employsize*) variable used the study was coded into eight categories namely;

<b>Codes</b>	<b>Label</b>
1	Employers - large organisations
2	Employers - small organisations
3	Self-employed with employees
4	Self-employed with no employees (own account)
5	Managers - large organisations
6	Managers - small organisations
7	Supervisors
8	Other employees

These employment-size variable codes were combined with the occupation codes to develop a socioeconomic status derivation table containing a ten-class code which is assigned for each possible combination. The resultant matrix table assigns households to the appropriate ten-class code, representing the different socioeconomic groups.

One of the groups included is the residual group (the economically inactive) made up of the retired, the unemployed and others. In this study, students were disaggregated within this residual group as 11th group (as in table 5-5).

However, it should be noted that the residual group are not included in the analytic socioeconomic group used in the main analyses in the study. This socioeconomic group classification is by no means rigid. It could be orderly collapsed into different, smaller analytical classes as shown in table 5-5. It is however important to emphasise that although there is a seeming perceptible hierarchy in the socioeconomic classification, it is not strictly arranged in a hierarchical unilinear order. This classification approach does not conceive of society as a layered model arranged along a single continuum. Despite the fact that this approach distinguishes between less advantageous and more privileged forms of employment relations; the employment status aspects of the classification and the different mixes of employment relations in each class negates any tendency towards ordering these classification in strict hierarchy.

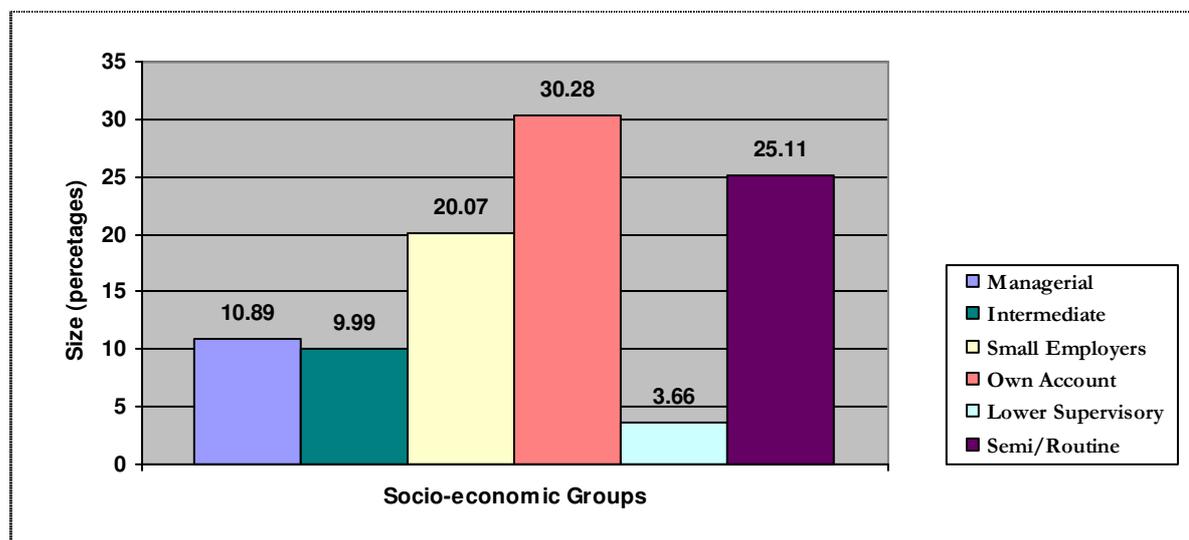
**Table 5-5 Operational Categories and their Relation to the Analytic Class Variables**

Analytic Class Variable / Socio-economic Groups			
Eleven categories	Nine categories	Six Categories	Three Categories
1.1 Large employers and higher managerial occupations	1.1 Higher managerial and professional occupations	1.0 Managerial and professional occupations	1.0 Managerial and professional occupations
1.2 Higher professional occupations			
2.0 Lower managerial and professional occupations	2.0 Lower managerial and professional occupations	2.0 Intermediate occupations	2.0 Intermediate occupations
3.0 Intermediate occupations	3.0 Intermediate occupations	3.0 Small employers	
4.0 Small employers	4.0 Small employers	4.0 Own account workers (Self employed without employees)	3. Lower Occupations
5.0 Own account workers (Self employed without employees)	5.0 Own account workers (Self employed without employees)	5.0 Lower supervisory and technical occupations	
6.0 Lower supervisory and technical occupations	6.0 Lower supervisory and technical occupations	6.0 Semi-routine and Routine Occupations	
7.0 Semi-routine occupations	7.0 Semi-routine occupations		
8.0 Routine occupations	8.0 Routine occupations	Retired, unemployed	Retired, unemployed
9.0 Retired, unemployed	9.0 Retired, unemployed	Students	Students
10.0 Students	10.0 Students		

However, it should be noted that the residual group are not included in the analytic socioeconomic group used in the main analyses in the study. This socioeconomic group classification is by no means rigid. It could be orderly collapsed into different, smaller analytical classes as shown in table 5-5. It is however important to emphasise that although there is a seeming perceptible hierarchy in the socioeconomic classification, it is not strictly arranged in a hierarchical unilinear order. This classification approach does not conceive of society as a layered model arranged along a single continuum. Despite the fact that this approach distinguishes between less advantageous and more privileged forms of employment relations; the employment status aspects of the classification and the different mixes of employment relations in each class negates any tendency towards ordering these classification in strict

hierarchy. Rather, this classification model recognizes that different socio-economic groups live and operate within overlapping interwoven social relations, where differences are more subtle and relational in nature. Of the different analytic classes shown above, only the three-category classification should be interpreted as a hierarchical social economic classification. For this study, a six analytic classes or groups shown in the third column of table 5-5 was used. These six socio-economic groups are sizable enough to give enough details and insights of the socio-economic groups in Nigeria and are not too many to obscure subsequent analysis and make presentation of analysis long and cumbersome.

**Figure 5-8 Distribution of Socio-economic Groups (Six Categories)**



The six are the managerial and professional occupations, intermediate occupations, small employers, lower supervisory and technical occupations, semi-routine and routine occupations and own account workers (self-employed without employees worker) as shown in fig. 5-8.

### 5.5.7 Basic Descriptions of the Detailed Socio-Economic Groups in Nigeria

This section will briefly describe each of the identified socio-economic group in the study area. Although these 10 socio-economic groups were collapsed into 6 analytic groups that were used

in further analysis, discussing each of them offers more insight into the constitution of different socio-economic groups in the country and the composition of the 6 analytic groups.

**Table 5-6 Showing the Distribution of Socio-economic groups in Nigeria**

<b>Socio-economic Groups</b>	<b>Percentages</b>
1. Large employers and higher managerial occupations	<b>0.52</b>
2. Higher professional occupations	<b>2.06</b>
3. Lower managerial and professional occupations	<b>7.24</b>
4. Intermediate occupations	<b>9.01</b>
5. Small employers	<b>18.02</b>
6. Own account workers (Self employed without employees)	<b>27.30</b>
7. Lower supervisory and technical occupations	<b>3.30</b>
8. Semi-routine occupations	<b>7.39</b>
9. Routine occupations	<b>15.04</b>
10. Retired, unemployed	<b>8.51</b>
11. Students	<b>1.61</b>
Total	<b>100.00</b>

**a) Large employers and higher managerial occupations**

This group consist of two sub-groups – the large employer and the higher managerial occupations. The large employers are people who employ others (and so assume some degree of control over them) in enterprises employing 25 or more people. They often tend to delegate some part of their managerial and entrepreneurial functions to paid employees. Higher managerial occupations refer to those who occupy positions that have a service relationship with the employer. These positions often involve general planning and supervision of operations on behalf of the employer. They are often charged with direction and coordination responsibilities to ensure proper functioning of organisations and businesses, including internal departments and sections, often with the help of subordinate managers and supervisors. This group consists of a band of small elites who represent about 0.52% of the households. The distribution of the derived socioeconomic groups is shown in table 5-6.

**b) Higher professional occupations**

This group consists of employers, the self-employed or employees, whose responsibilities cover all types of higher professional work. These professions often refer to occupations whose main tasks require a high level of knowledge and experience in the natural sciences, engineering, life sciences, social sciences, humanities and related fields. An occupation that has been designated as professional is professional regardless of employment status. Employees in these groups have a service relationship with their employer. In the study area, this group made up of about 2.06% of households.

**c) Lower managerial and professional occupations**

This group consists people in positions that not only cover lower professional and higher technical occupations but also those in the lower managerial occupations. Employees in these groups have an attenuated form of the service relationship with employer. They will generally plan and supervise operations on behalf of the employer under the direction of senior managers. An organisation size rule of more or less than 25 is sometimes used as an indicator of the conceptual distinction between higher and lower managerial occupations. However, some occupations are regarded as inherently lower managerial in nature regardless of organisations size. Included in this group are also those that occupy higher supervisory positions. These are positions (other than managerial) that have an attenuated form of the service relationship. They often involve formal and immediate supervision of others engaged in the intermediate occupations. These positions are often common in large bureaucratic organisations. Employees in these positions supervise the work of others and so exert a degree of authority over them. In the study area, about 7.24% of household heads make up this group.

**d) Intermediate occupations**

This group consist of those whose occupational positions involves clerical, sales, service and intermediate technical activities that do not involve general planning or supervisory powers.

This group has a distinguishing feature of mixed employment regulation that combines elements of both the service relationship and the labour contract. While they enjoy some features of the service relationship, they do not usually involve any exercise of authority (other than in applying standardised rules and procedures where discretion is minimal). They often tend to be subjected to quite detail bureaucratic regulation. About 9.01% of households belong to this group.

**e) Small employers**

Small employers consist of a group who are neither higher nor lower professionals but employ others and so assume some degree of control over them. More often, the majority of small employers have only one or two, or at most ten employees. These employers often do not delegate entrepreneurial and key managerial functions to employees and thus maintained full control of their establishments. Members of this group are often classified together with self employed or own account workers without employees as they share similar characteristics. In the study area, many members of this group would likely be involved in larger informal operations employing few workers. Given the lack of information to precisely distinguish between those in the formal and informal sector, an attempt has been made in the study to separate those who have employees and those who don't have into two different groups. The small employers group consists of about 18.02% of households.

**f) Own account workers (self employed, with no employees)**

This group which is made up of about 27.30% of household heads constitutes the largest of the socio-economic groups. They are basically made up of self-employed individuals who are engaged in any (non-professional) trade, personal service, or semi-routine, routine or other occupation but have no employees other than family workers. Hence, they neither sell their labour to an employer nor buy the labour of others. In the study area, many of these may belong to the informal sector. However, the self-employed enjoy a level of autonomy and

independence in their work. Given the current distortion in the economy, with the ongoing economic and structural reforms in the country, the current labour market tends to encourage the drive towards self employment. In many cases, there are comparatively more beneficial and short term financial reward associated with self employment (even within the informal sector). However, other long-term benefits associated with formal employments or working within larger organisations are often not guaranteed to this group.

**g) Lower supervisory and technical occupations**

The lower supervisory and technical occupations group enjoys some form of modified labour contract. Responsibilities of lower supervisory occupations involve formal and immediate supervision of others engaged in routine and semi-routine group. Therefore, they often have different employment relations and conditions from those in routine and semi-routine group and are distinguished by having a *foreman* or *supervisor* job title. For the lower technical subgroup mostly made up lower technical craft occupations and lower technical process operative occupations, they in addition to having modified labour contract, have some service elements in their employment relationship such as more work autonomy, when compared with their routine and semi-routine counterparts. The group constitute about 3.30% of household heads.

**h) Semi-routine occupations**

Semi-routine occupations which are common in such occupations as sales, services, technical, operative, agricultural, clerical and childcare occupations hold positions with slightly different labour contract. Although such a labour contract typifies short term and the direct exchange of money for work done by employees, it also inherently involves responsibilities that require some element of employee discretion. Thus, employers are necessarily required to slightly improve on the basic labour contract offer to this group. There is often no service relationship with the employer. About 7.39% of household heads belong to this socio-economic group.

### **i) Routine occupations**

Routine occupations which are common in such occupations as sales, services, technical, production, operative and agricultural occupations are made up of those employees with basic labour contracts. The position and responsibilities do not require employee discretion. It often requires the knowledge and experience necessary to perform mostly routine tasks, often involving the use of simple hand-held tools. In some cases, these responsibilities require a degree of physical effort. This group constitute of about 15.04% of household heads.

### **j) Retired, unemployed, students and others (residual group)**

This group constitutes the residual group, the economically inactive. They constitute about 8.51% of household heads in the study area. This group is not included in the analytic classes. That would not be used in the test of research hypothesis and further analysis.

## **5.5.8 House-Type Groups**

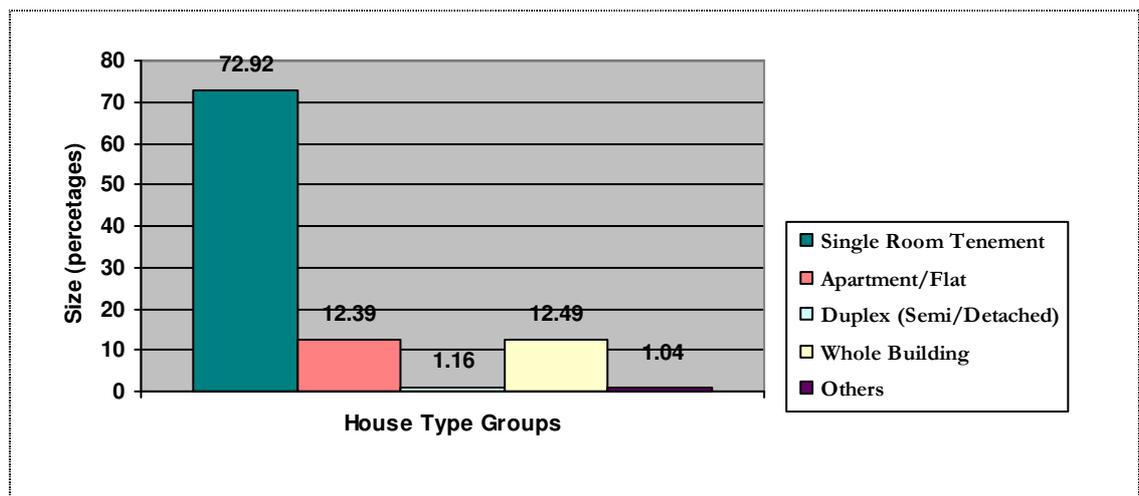
Four main house types were identified and used in the study analyses. They are; single room tenement house type, apartment/flats, detached and semi-detached duplex, and whole building house type as shown in figure 5-9. The remaining house types ambiguously categorised in the data as others make up about 1.04% of house types.

### **a) Single Room Tenement House Type**

The single room tenement house type constitutes the largest proportion of house types in Nigerian urban areas as indicated in the survey. They make up of about 72.92% of the entire urban residential housing stock in the study area. They are of two types-the bungalow type, and the storey building type. The typical bungalow tenements building has an average of eight to nine rooms, with a central corridor that leads into an inside courtyard defined by detached common kitchen, toilets/ baths. The storey building type does not have their kitchen, toilets/ baths detached from the main building. This building type is mainly prominent in high-density

neighbourhoods. Although they are designed to provide single room accommodation to households, it is also normal for households to occupy two/three rooms at the time in such housetypes depending on their level of affordability.

**Figure 5-9 Showing the Distribution of House Type Groups in Nigeria**



**b) Apartment/Flats**

This building type constitutes about 12.39% of the total house types in the study area. They are mostly made up of three / four floors of two self-contained apartments per floor with three or four bedrooms making up each apartment. The house types are mainly in the medium density neighbourhoods.

**c) Detached and Semi-Detached Duplex**

The duplex house types of two types -detached and the semi-detached. Mostly found in low density neighbourhoods, they make-up of about 1.16% of urban residential housing stock in the study area. The semi-detached type are basically 2-family buildings, usually constituting of adjoining twin structures, with each wing designed to be independent of each other while sharing a common compound, which (in some cases) may be partitioned with a low wall.

#### **d) Whole Building House Type**

This house type make up of about 12.49% in the entire urban residential housing stock in the study area. This typology has been used in this survey to describe single self-contained family bungalows. This category also refers to house types other than detached and semi-detached duplex that are occupied by a single family. They are mostly found in medium and low density neighbourhoods.

#### **5.5.9 Housing Tenure Group Variable**

The tenure groups used in subsequent analysis in the study were derived from the occupancy status variable as contained in the NLSS database. The variable occupancy status - *S7BQ1*, identified the following housing status of households; Owned by head of household, Owned by spouse, Owned by head and spouse, Household rents the dwelling, Pay nominal subsidized rent, Uses without paying rent and Nomadic or temporary housing. From this variable, four major housing tenure groups were recoded into a new variable *TENUREGRP* and subsequently used in this study. They are;

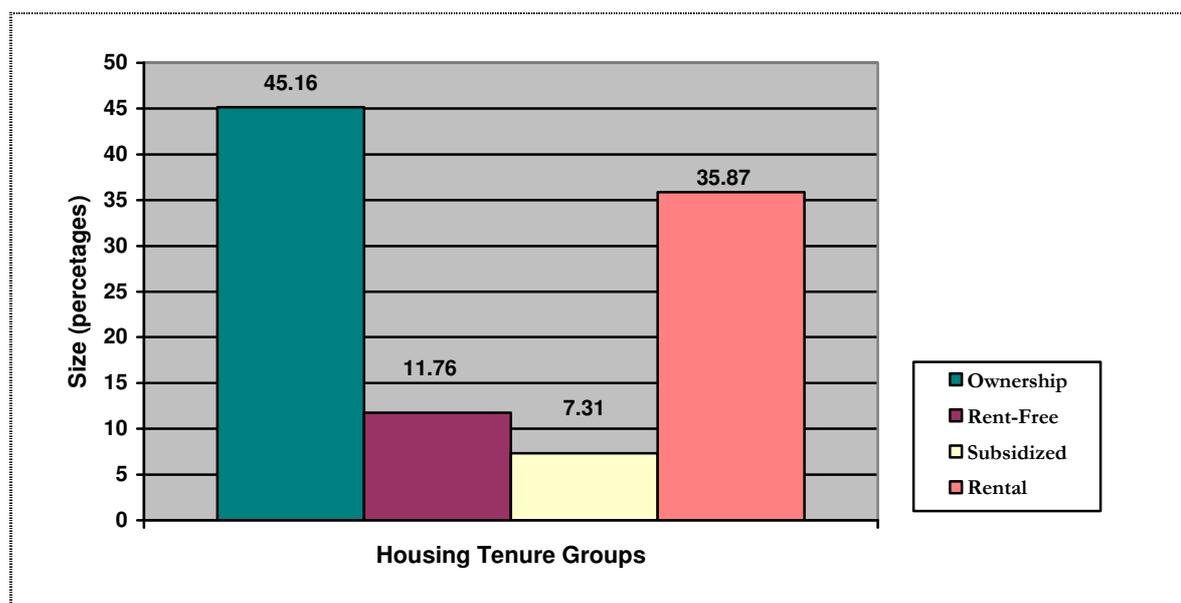
- Ownership tenure
- Rental tenure
- Nominal /subsidized rental tenure
- Free Rental tenure (Uses without paying rent)

#### **a) Ownership Tenure**

It could be observed from fig. 5-10 that the ownership tenure group constitutes the largest group in the study area making up about 45.16% of total urban households. The high proportion of the ownership tenure reflects the dominance of the small private sector housing delivery. The extent to which it reflects the continuous housing policy bias towards ownership remains unclear. The ownership tenure is usually prevalent in high income, low-density

neighbours. Whole building types make up as much as 22.68% of housing under the ownership tenure. The ownership tenure is also prevalent in low-income neighbourhoods with the tenement/ single room house types. It is particularly prevalent in informal housing sector where most residents provide their own housing. Hence, the tenement/single room house types make up as much as 65.89% of housing under the ownership tenure. Apartment/flats house type make up about 9% of housing under the ownership tenure. Apartment/flats house type make up about 9% of housing under the tenure as shown in table 5-7.

**Figure 5-10 Distribution of Housing Tenure Groups**



**b) Rental Tenure**

The rental tenure group constitutes the next highest in proportion of housing tenure in the study area. They make up about 35.82% of households. The rental tenure is particularly prevalent in low income and medium income as well as high and medium density neighbourhoods.

The tenement /single room house type is the most dominant housing type within the rental tenure group, with 79.66% of the total. The Apartment/Flats house type that is often found in medium density and higher income neighbourhoods makes up about 15.37% of houses under the rental tenure as shown in table 5-7.

**Table 5-7 Showing Weighted Cross Tabulation of Housing Tenure Groups and House Types**

House Types	Housing Tenure Groups (Percentages)			
	Ownership	Rent Free	Subsidised	Rental
Single Room/Tenement	65.89	83.08	67.45	79.66
Apartment/Flats	9.03	8.92	23.45	15.37
Duplex/Semi-detached	1.39	1.63	1.62	0.63
Whole Building	22.68	4.88	6.07	3.46
Others	1.00	1.50	1.41	0.88
Total	100.00	100.00	100.00	100.00

**c) Subsidised Tenure**

The subsidised tenure accounts for about 7.29% of all tenure groups in the study area. Most direct public housing and workers housing provided by the various tiers of governments and corporate employers are in this type of tenure. Of the total size of the subsidised tenure group, as much as 67.45% is of the tenement/single room house type. Apartment/flats house type make up about 23.45% of this tenure, while whole building house types make for about 6.07% of housing under the tenure. The reasonable proportion of these types of houses that are often found in higher income neighbourhoods tends to indicate that substantial proportion of higher income households live in subsidised housing.

**d) Rent-free Tenure**

Rent-free tenure constitutes about 11.72% of households in the study area. The tenure includes some special workers housing, social housing and other housing arrangements where members of family or friends are given access to housing without payment. They may also be in form of inherited family housing where family beneficiaries can live without paying rent. Under this tenure the tenement/ single room house type overwhelmingly dominate other house types with 83.08% while apartments/flats and whole building house types make up about 8.92% and 4.88% respectively. Details are shown in table 5-7.

With the derivation of all the key secondary variables for the study complete, the next step was to generate two housing affordability indices based on housing costs to income ratio approach and shelter poverty approaches. These two indices were then combined into an aggregate (composite) affordability index. The next chapter will present and discuss how the aggregate affordability index was constructed and its basic underlying characteristics.

## **5.6 Summary of Chapter**

This chapter has attempted to present the basic description of the research methodology employed in the study. It started by building upon the findings of the housing affordability literature review of the previous chapter to develop the detailed research questions and hypotheses, which the study intends to address. Given that the study is largely a quantitative one based on a secondary data source, a concise description of the database (NLSS 2003-04) used was given. Afterwards, the bulk of the discussion was focused on describing how the secondary variables used in the analyses were derived. These include relevant data of housing expenditure variables; non-housing expenditure variables and household income variables. The chapter also discussed how the key variables of housing quality and socio-economic groups were developed using principal component analysis (PCA) and the UK National Statistics Socio-economic Classification Schema (NS-SEC) respectively. Other pertinent variables that were also discussed include income groups, housing tenure groups and house types. The next chapter - the first part of data analysis and findings of study will focus on developing the composite approach to measuring housing affordability and examining the major characteristics of aggregate housing affordability in the study area.

## **SYNTHESISING AND EVALUATING THE AGGREGATE HOUSING AFFORDABILITY INDICES**

### **6.1 Introduction**

This chapter attempts to present and describe the actual construction of the composite approach to measuring housing affordability developed in this study. Therefore, how each of the separate conventional housing affordability indices were generated and combined into an aggregate index will be presented and discussed. An attempt is also made to fit a multilevel regression model of the aggregate housing affordability index using the household income, housing expenditure and household size variables in order to examine the general nature housing affordability in Nigeria. Having developed the aggregate model, the later part of the chapter is devoted to evaluating its performance against the conventional models. It was important to assess if it is indeed superior to the conventional models especially in dealing with some of the misclassification weaknesses that were inherent in those models. Up until this point, the perceived notion of the likely benefits or advantages of using the aggregate measure over the conventional housing affordability models are mainly based on conjecture, so the actual evaluation carried out in this section of the study attempted to provide substantive indication of its benefits based on results. This chapter provides answers to research questions one and two raised in the study.

### **6.2 Generation of Shelter Poverty (SP) Index**

The shelter poverty approach is a basic non-housing cost approach that has been discussed earlier in Chapter 4 above. Largely concerned with the impact of housing cost on the capacity of households to meet essential non-housing needs, this approach is focused on a household's *ability to pay* for their housing. Thus, it measures the extent to which a given household income can cover its non-housing expenses after deducting incurred housing expenses. It therefore

addresses the following principal question – *To what extent can a given household pay for their basic non-housing needs after deducting their housing expenditure?*

In carrying out this analysis, the poverty line threshold method has been used, due to non-availability of a consolidated family budget standard database in the study area. Gross household income has also been used instead of net after-tax income due to non-availability of a reliable after-tax household income database in the study area. Inevitably, the non-availability of these databases has to a great extent ensured that derived results would be very conservative in nature. It should also be remember that, in any event, using the poverty line approach usually yields conservative estimates in the number of household with housing affordability problems (Kutty 2005).

A two step approach was used in deriving this index. The first step was to derive the after housing expenditure “disposable” income by subtracting total housing expenditure from the total annual household income (as represented by the formula below).

$$\mathbf{DISANINCOME = TOTAHHINC - THOUEXPDDR}$$

where, *DISANINCOME* = After housing expenditure (disposable) annual income

*TOTAHHINC* = Total annual household income

*THOUEXPDDR* = Total housing expenditure of household (in regionally deflated current prices).

The shelter poverty affordability measure will therefore be defined as the extent to which the derived after housing expenditure (disposable) annual income of households covers their basic non-housing needs as measured by their respective non-housing household consumption poverty threshold. Thus, the second step is to subtract the non-housing household consumption poverty threshold estimates from the after housing expenditure (disposable) annual income.

Therefore,

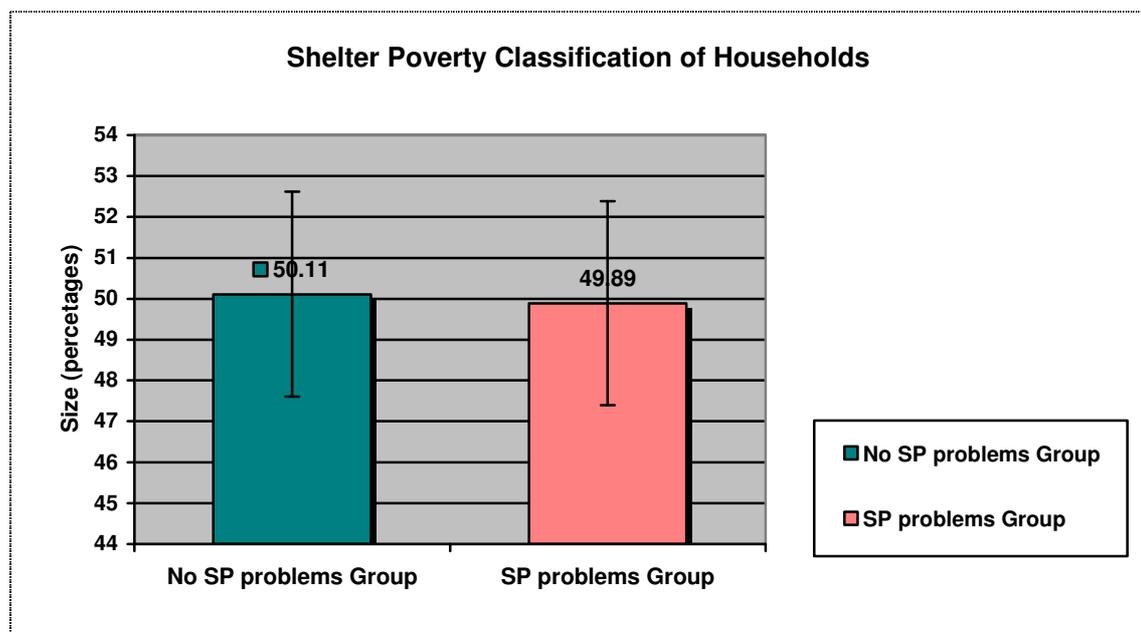
$$\mathbf{SHELPOVTY = DISANINCOME - NHCOMPOVTHDR}$$

where, *SHELPOVTY* = Shelter Poverty Affordability Index

*NHCOMPOVTHDR* = Non-Housing Consumption Poverty Threshold

Calculated in this way, 0 (zero) value would represent the neutral affordability point below which the housing of any given households would be deemed as unaffordable. Thus, negative values of the index identify households with housing affordability problems while positive values represent households without housing affordability problems. Next, the estimates of the results for the entire household population based on the survey sampling design were derived. From the estimation sample, the mean shelter poverty affordability value is about ₦48363.22 (Naira) while the median value is about ₦-3431.23 (Naira). Therefore, a representative mean household would have a surplus sum of about ₦48363.22 (Naira) after paying for their basic non-housing needs while the median household would incur a deficit of about ₦-3431.23 (Naira). In housing affordability studies, the median values are often more important than the mean values in assessing housing affordability levels because unlike the mean, using median values eliminates the undue influence of extreme unrepresentative house-

**Figure 6-1 Showing the Shelter Poverty Model Classification of Households**



holds thereby ensuring that the derived affordability levels of groups reflect the common

representative affordability of households in that group. However, comparing both values is also important, because they give an indication of the housing affordability disparity of households at opposing ends of the affordability scale. From Fig 6-1, it could be seen that the proportion of those that do not have shelter poverty problems and those that do are almost equal with the about 50.11% and 49.89% respectively. The situation where about half the population of a country experience shelter poverty is grave and unacceptable.

### **6.2.1 Intensity of Shelter Poverty**

While it is important to appreciate the headcount proportion of households with housing affordability problems and those who do not have such problems, it is equally important to appreciate the depth or intensity of these problems in the study area. In order to correctly measure the intensity of shelter poverty problems, the study applied the FGT (Foster, Greer, Thorbecke) statistic (Foster et al., 1984) to modify the derived shelter poverty index.

The FGT statistic modifies conventional housing affordability indices to ensure that the derived indices satisfy the three axioms of monotonicity, transfer and transfer sensitivity in order to capture the true intensity of housing affordability problem in the study area. The need for such an approach was strongly advocated by Chaplin and Freeman (1999). All things being equal, the monotonicity axiom refers to a condition where a reduction in the income of any poor household increases the poverty measure while the transfer axiom refers to condition where an income transfer between two poor households, from a poor to richer one results to an increase in the poverty measure (Sen, 1976; Foster *et al.*, 1984). The third axiom - sensitivity axiom refers to a condition where an income transfer between two poor households from the poorer to the richer one, will result to an increase in poverty measure but at a rate that is inversely proportional to the initial income of the two households (Kakwani, 1980). In poverty studies, these axioms serve as benchmarks for desirable descriptive statistic properties and it has been argued that housing affordability measures should also endeavour to satisfy

these axioms in order to properly reflect the depth or intensity of housing affordability problems of households (Chaplin and Freeman, 1999). When calculating the FGT statistic, the choice of a value for  $\alpha$  (alpha) is taken as the concern for the depth of poverty to be captured by the statistic. Chaplin and Freeman (1999) showed that when  $\alpha = 0$ , the derived result from the FGT statistic represents just the ratio of head count of those identified as being poor and does not satisfy any of the three axioms stated earlier. When  $\alpha = 1$ , the derived statistic satisfies only the first axiom (monotonicity axiom). When it is adjusted to 2, i.e.  $\alpha = 2$ , the statistic will satisfy the first and second axioms (monotonicity and transfer axioms) and when  $\alpha = 3$ , the statistic satisfies all three axioms (monotonicity, transfer and transfer sensitivity axioms). In this way, the FGT statistic provides the user a degree of flexibility with respect to what degree of the depth of poverty they may want the statistic to capture. However, it is often the case to set  $\alpha = 3$  to ensure that results from the statistic satisfy all the three axioms.

Focussing only on the households that fall within the group that has housing affordability problems, it was calculated using the following formula;

$$F(\alpha) = \frac{1}{n_{i(\text{unaffordability})}} \sum \left( \frac{g_i}{z} \right)^\alpha \quad \alpha \geq 0$$

Where,  $\alpha$  characterizes the ‘concern’ for the depth of affordability problems

$i$  represents the respective households within the unaffordable housing group

$g_i$  the absolute value of the affordability ratio gap for households  $i$  which in this case is the affordability index of the household  $i$

$z$  represents the ratio line, below which housing becomes unaffordable which in this case is represented by the Non-Housing Consumption Poverty Threshold variable.

while,  $n$  the equals the total number of households with housing affordability problems.

In order to ensure that derived index would satisfy all the three axioms in this analysis,  $\alpha$  value was set at 3 (i.e.  $\alpha=3$ ) thus given the cubic weighting to the gap between household

income and consumption poverty threshold of households within the unaffordable housing group.

Table 6-1 gives a concise view of shelter poverty affordability across various states in Nigeria. It shows the mean and median levels of shelter poverty affordability, headcount proportion of unaffordable housing households as well as the FGT statistic rating of the intensity of shelter poverty affordability problems in various Nigerian states. A closer look at the table, reveals the strength of the FGT statistic to show that the intensity of housing affordability problems may not be accurately reflected by just the mean and median values alone. For instance, Kogi and Zamfara states that recorded the highest intensity levels of housing affordability problems have comparatively high mean shelter poverty affordability of ₦53,150.95 and ₦105,961.80 as well as high median levels of ₦23,317.52 and ₦26,869.59 respectively. Thus, while the mean and median households in these States were able to pay for both their housing and basic non-housing needs without exhausting their income, it did not correspondingly translate into low intensity of housing affordability problems in such states; in fact the reverse was the case.

This picture contrast with the situation in such states as Bauchi and Gombe where the income of both the mean and median households was not enough to pay for their housing and basic non-housing needs. Even though both the mean and median households in these states seems to be shelter poor, the intensity of such deprivation were among the lowest amongst the states ranking 34<sup>th</sup> and 30<sup>th</sup> respectively. Similarly, there were also large variations between the headcount proportions of unaffordable housing households and their corresponding level of housing deprivation intensity as measured by the FGT statistic. For instance, while Niger and Delta states had the lowest headcount proportion of shelter poverty group with 27.27% and 21.19% respectively they were among the states with highest intensity of housing affordability problems ranking 8<sup>th</sup> and 11<sup>th</sup> respectively. It is interesting also to observe that while Bauchi,

**Table 6-1 Shows the Level of Shelter Poverty by States in Nigeria**

<b>STATE</b>	Mean Shelter Poverty Affordability (in Naira)	Median Shelter Poverty Affordability (in Naira)	Proportion of Households with Housing Affordability Problems (in percentages)	Intensity of Shelter Poverty (FGT Statistic)	Rank based on Intensity of Shelter Poverty Problems
<b>Kogi</b>	53150.95	23317.52	<b>35.24</b>	-0.002586	<b>1</b>
<b>Zamfara</b>	105968.1	26869.58	<b>43.4</b>	-0.001881	<b>2</b>
<b>Kwara</b>	32231.64	-6822.01	<b>52.71</b>	-0.001152	<b>3</b>
<b>Kaduna</b>	-7757.35	-19226.6	<b>56.81</b>	-0.001046	<b>4</b>
<b>Katsina</b>	1112.468	-37670.3	<b>61.56</b>	-0.000998	<b>5</b>
<b>Benue</b>	20108.4	-13518.7	<b>54.5</b>	-0.000758	<b>6</b>
<b>Kano</b>	30762.98	-21930.1	<b>55</b>	-0.00064	<b>7</b>
<b>Osun</b>	-2429.5	-22892.9	<b>62.97</b>	-0.000573	<b>8</b>
<b>Delta</b>	178102.5	122489.4	<b>21.19</b>	-0.000532	<b>9</b>
<b>Niger</b>	87567.7	43050.47	<b>27.27</b>	-0.00049	<b>10</b>
<b>Plateau</b>	-33186.3	-35055.8	<b>59.86</b>	-0.000467	<b>11</b>
<b>Jigawa</b>	23077.99	-5553.78	<b>51.43</b>	-0.00046	<b>12</b>
<b>Lagos</b>	95198.68	61084.25	<b>37.39</b>	-0.000385	<b>13</b>
<b>Borno</b>	23713.88	-27742.3	<b>55.24</b>	-0.000367	<b>14</b>
<b>Abia</b>	56033.63	22391.73	<b>41.57</b>	-0.000365	<b>15</b>
<b>Ekiti</b>	-19467.2	-39755.9	<b>65.67</b>	-0.000356	<b>16</b>
<b>Kebbi</b>	-19665.2	-44101.3	<b>66.67</b>	-0.000344	<b>17</b>
<b>Ogun</b>	-28887	-41357.8	<b>69.82</b>	-0.000335	<b>18</b>
<b>Adamawa</b>	150111	25199.44	<b>51.11</b>	-0.000302	<b>19</b>
<b>Cross_Rivers</b>	69712	19494.61	<b>45.25</b>	-0.000229	<b>20</b>
<b>Ondo</b>	10379.13	-5714.88	<b>52.78</b>	-0.000228	<b>21</b>
<b>Nassarawa</b>	86988.93	14137.97	<b>35.86</b>	-0.00021	<b>22</b>
<b>Yobe</b>	-13925	-32356.2	<b>68.38</b>	-0.00021	<b>23</b>
<b>Taraba</b>	-38899.4	-55538	<b>75.71</b>	-0.000208	<b>24</b>
<b>Oyo</b>	33140.63	-9743.42	<b>54.17</b>	-0.000201	<b>25</b>
<b>Akwa_Ibom</b>	105170.6	44050.37	<b>33.62</b>	-0.000182	<b>26</b>
<b>Sokoto</b>	11086.27	-16588.7	<b>53.41</b>	-0.000174	<b>27</b>
<b>FCT</b>	220598	43130.91	<b>38.8</b>	-0.000149	<b>28</b>
<b>Rivers</b>	230833.6	81820.96	<b>34.47</b>	-0.000143	<b>29</b>
<b>Gombe</b>	-3074.6	-18499.2	<b>62.12</b>	-0.000128	<b>30</b>
<b>Enugu</b>	52657.09	-2182.36	<b>51.53</b>	-0.000121	<b>31</b>
<b>Anambra</b>	140046.4	59589.75	<b>32.5</b>	-0.00012	<b>32</b>
<b>Imo</b>	23805.15	13232.89	<b>46</b>	-0.000117	<b>33</b>
<b>Bauchi</b>	-28616.1	-63835	<b>67.8</b>	-0.00011	<b>34</b>
<b>Edo</b>	65016.12	9297.223	<b>43.66</b>	-9.47E-05	<b>35</b>
<b>Ebonyi</b>	49710.89	-10048.7	<b>54.3</b>	-9.26E-05	<b>36</b>
<b>Bayelsa</b>	92167.94	67583.89	<b>32</b>	-7.52E-05	<b>37</b>

Gombe and Ebonyi States were among states with least intensity in housing affordability problems, such states had comparatively high proportion of shelter poor households recording about 67.8%, 62.1%, and 54.3% respectively.

### 6.3 Generation of House-Expenditure-to-Income (HEI) Affordability Index

House expenditure to income affordability index is the most traditional and widely used affordability measure. This affordability measure is conceived as the ratio of what household pay for their housing relative to their income. This ratio assumes a characteristic ‘rule of thumb’ standard of no more than 25% - 30% of household income to offset housing costs beyond which a given housing accommodation would be deemed as unaffordable. Contrary to the shelter poverty approach, the index is concerned with *what is actually paid* by households for their housing (details, have been discussed in Chapter 2). This ratio is usually derived by the

formula:

$$ER_i = \left( \frac{c_i}{y_i} \right) \times \frac{100}{1}$$

Where  $ER_i$  represents House Expenditure-to-Income Ratio of household  $i$

$c_i$  represents annual direct housing expenditure of household  $i$

$y_i$  equals the annual basic household income of household  $i$

In this study, 30% of gross household income was used to benchmark the affordability divide for households. In order to align it to shelter poverty affordability index at slightly different approach is needed. The principal question here was reframed as - ***To what extent would 30% of a given household's income be able to pay for their housing cost?*** Therefore, subtracting any given household's housing expenditure from 30% of their total annual income will reflect the level of their housing expenditure to income affordability. This perspective of housing expenditure to income ratio exposes the model's analogous similarity with the shelter poverty model. To satisfactorily derive this index, two major steps were taken.

The first step was to derive the 30% of income variable and thereafter derive the initial housing expenditure to income affordability index.

$$\mathbf{HHINCOME30p = 30/100 * TOTAHHINC}$$

Where,  $HHINCOME30p$  = 30% of annual household income variable

$TOTAHHINC$  = Total annual household income

The 30% of annual household income variable was then is used to derive the initial housing expenditure to income affordability index.

$$\mathbf{IHOUEXPDAFF = HHINCOME30p - THOUEXPDDR}$$

Where,  $THOUEXPDDR$  = Total Housing Expenditure of household (in regionally deflated in current prices)

$IHOUEXPDAFF$  = Initial Housing expenditure to income affordability index

Conceiving housing expenditure to income affordability index is in this way will also mean that the 0 (zero) value represents the neutral affordability point where incurred housing costs of a given household is exactly equal to 30% of their total annual income. Thus, households that spend more than 30% of their annual income on housing would record negative values to the extent to which they over spent. They would be deemed to have housing affordability problems while positive values would represent households without housing affordability problems. The second step was to modify the initial affordability index with the housing quality index. As has been noted in the review of literature, the inability of the housing expenditure model to reflect housing quality of households in its measure is one of the major flaws of the model. The study envisioned incorporation housing quality measure into the composite approach by adjusting the housing expenditure-to-income index with housing quality index. The need to make the housing expenditure-to-income index more sensitive to housing quality of households is an important way of improving the index.

There is something fundamentally flawed in the perspective that considers as equal the housing cost of two similar households, who paid the same amount of money on similar housing which is of very different quality. Even though the actual amounts being paid by the two households relative to their income may be the same, few would argue against the fact that the household living in the better quality housing enjoys more value for money when

compared with the other household living in the low quality one. In a strict sense, having lower quality housing for the same cost means that such households are *paying the same for less* while households in the higher quality housing are *paying the same for more*. However in a comparative sense, to derive lower value from lower quality housing at the cost of high quality housing means that such households absorb more intrinsic housing cost per comparable unit utility value they derive from such housing. Thus, accounting for housing quality in housing affordability analysis requires that housing affordability measures should appropriately take cognisance of this latent *cost* (wherever possible). This thinking actually captures the notion of integrating housing quality in comparative housing affordability analysis which is to modify actual cost of housing with the value derived from it. In simple terms, this idea has been used to analyse affordability with respect to comparable types of housing (i.e. comparing likes with like). However, it can be conceived also as comparing the affordability of different housing qualities if we assume that households derive higher utility value from higher quality housing than lower quality housing. Hence, we use the disparity in housing quality to approximate the differential in utility value derived by households. It implicitly requires imputing some measure of intrinsic cost of poorer quality housing into the overall cost. Since the embedded intrinsic costs of lower quality housing, translates into ‘real’ higher housing costs for households living in such housing, there is a need to adjust the housing expenditure-to-income index with the housing quality index.

In order to use the housing quality index as weights to adjust the housing expenditure to income affordability model, the index was converted into an inverse form. In this way, housing with lower quality will have higher affordability adjustment weights since they comparatively exert more latent cost burden on households. This ‘Transformed Housing Quality’ variable was derived by the following simple formula;

$$tHQI = (1 - HQI)$$

where ,  $tHQI$  represents Transformed Housing Quality Index

$HQI$  represents Initial Quality Index

The modification of the initial housing expenditure to income affordability index was carried out using the following formula;

$$tER_i = iER_i \times \left[ 1 + \left( \frac{tHQI_i}{10} \right) \right]$$

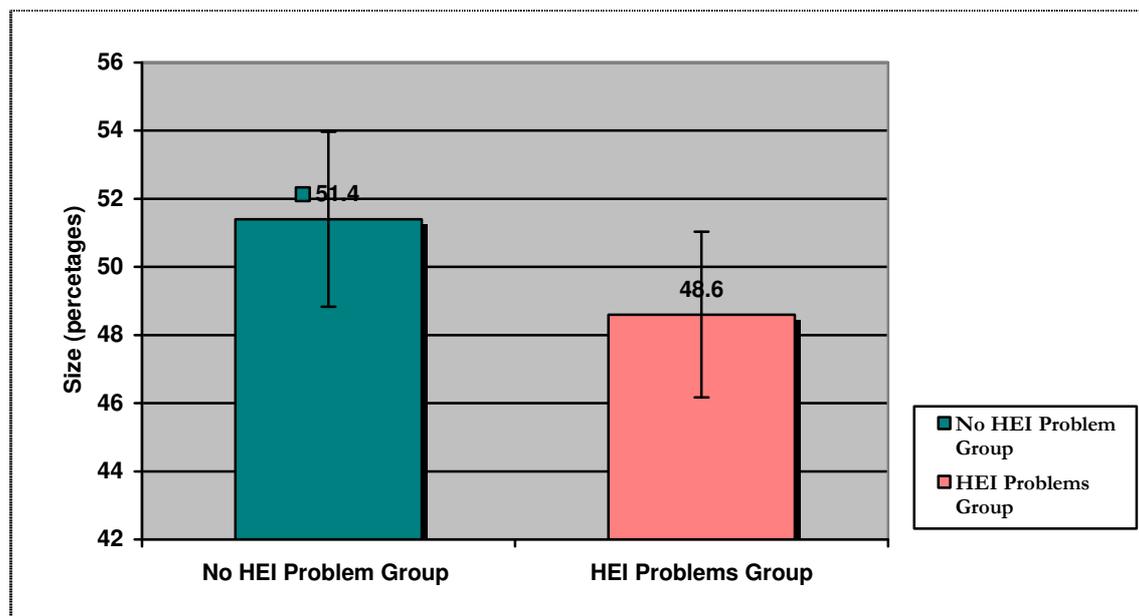
Where,  $tER_i$  represents Transformed House Expenditure-to-Income Ratio of household  $i$

$iER_i$  represents Initial House Expenditure-to-Income Ratio of household  $i$

$tHQI_i$  represents Transformed Housing Quality Score of household  $i$

After transforming this index, it was then estimated for the entire household population based on the survey sampling design. From the estimation sample, the mean housing expenditure to income affordability value is about ₦9,740.96 (Naira) while the median value is about ₦-545.06 (Naira). In other words, a representative mean household would have a surplus sum of about ₦8471.44 (Naira) after paying for their housing, while a median household would have a deficit of about ₦-545.06 (Naira) respectively.

**Figure 6-2 Showing the Housing Expenditure to Income (HEI) Model Classification of Households**



A headcount all the housing affordability status using this index indicated that about 51.4% of households have no HEI affordability problems while about 48.6% experience such problems

(see Fig. 6-2). This result is similar to the shelter poverty index results. Slightly less than half the population of households in the study area seemed to have housing affordability problems. To have a more detailed picture of housing affordability based on this index, mean values, median values, the proportion of households with HEI affordability problems and the intensity of such problems were derived for each of the states in Nigeria as well as the intensity ranking of their HEI affordability problems (as shown in table 6-2).

### **6.3.1 Intensity of Housing Expenditure to Income (HEI) Affordability Problems**

As with the shelter poverty index, FGT Statistic was also applied to the housing expenditure to income affordability index to derive the intensity of its problems within households. There were interesting disparities and variations between the mean values, median values, and headcount proportion of the unaffordable housing group on the one hand and the level of intensity of housing on affordability, as measured by FGT statistic, on the other. Closer examination of the table 6-2 shows that even though there are comparatively lower proportion of households in Lagos and Benue states that have HEI affordability problems (recording about 41.2% and 37.5% respectively), they were among the states with the most intense housing affordability problems ranking 5<sup>th</sup> and 9<sup>th</sup> ranking respectively. It is also interesting to note that both states also recorded positive mean and median housing expenditure to income affordability values. Even though the mean and median households in the states were able to pay for their housing with less than 30% of their total annual income, the level of intensity of affordability problems in these states were very severe when compared with many other states. Conversely, although such states as Bauchi, Taraba and Awka-Ibom were among those with the less severe HEI affordability problems, while the headcount proportion of those within the group in these states were very high - about 71.2%,79.3% and 54.6% respectively. Furthermore, all three correspondingly recorded substantial negative mean and median values. Even though the majority of urban households in these states have HEI affordability problems

**Table 6-2 Shows the Level of Housing Expenditure to Income Affordability by States in Nigeria**

STATE	Mean HEI Affordability (in Naira)	Median HEI Affordability (in Naira)	Headcount proportion of Unaffordable Group (in %)	Intensity of HEI Affordability Problems (FGT Statistic)	Rank based on Intensity of HEI Affordability Problems
Plateau	-825.035	6435.118	<b>50.42</b>	-0.4973001	<b>1</b>
Kaduna	-11980.1	-7024.2	<b>58.19</b>	-0.3922677	<b>2</b>
Katsina	-13525.6	-6542.18	<b>55.94</b>	-0.2728874	<b>3</b>
Kwara	-16930.8	-26306.1	<b>69.11</b>	-0.2242953	<b>4</b>
Lagos	20082.59	14226.22	<b>41.18</b>	-0.1889126	<b>5</b>
Jigawa	-28546.7	-21443	<b>65.71</b>	-0.1698496	<b>6</b>
Zamfara	3097.945	-6002.74	<b>56.6</b>	-0.1280471	<b>7</b>
Kano	1001.705	-9527.64	<b>59.23</b>	-0.117567	<b>8</b>
Benue	8335.181	4310.633	<b>37.5</b>	-0.0726008	<b>9</b>
Ogun	-8389.86	-10476.5	<b>63.66</b>	-0.06819	<b>10</b>
Kogi	6312.428	3205.405	<b>47.62</b>	-0.0663447	<b>11</b>
Yobe	-24536.6	-29750.3	<b>79.49</b>	-0.0590755	<b>12</b>
Borno	-9801.26	-17462.2	<b>64.38</b>	-0.058113	<b>13</b>
Osun	4310.66	2088.647	<b>48.35</b>	-0.0510675	<b>14</b>
Sokoto	-16925	-21992.1	<b>65.33</b>	-0.0507655	<b>15</b>
Nassarawa	30620.2	15186.74	<b>29.91</b>	-0.046705	<b>16</b>
Kebbi	-40416.4	-47583.4	<b>83.33</b>	-0.033189	<b>17</b>
Abia	27538.27	21420.82	<b>26.57</b>	-0.028648	<b>18</b>
Oyo	11872.65	4876.944	<b>44.15</b>	-0.0227438	<b>19</b>
Gombe	1622.457	-13446.9	<b>54.55</b>	-0.0225604	<b>20</b>
Niger	10061.58	5135.728	<b>48.3</b>	-0.0176728	<b>21</b>
Ekiti	-9980.25	-13746.7	<b>68.66</b>	-0.0173909	<b>22</b>
Adamawa	28225.54	5744.163	<b>53.33</b>	-0.0155932	<b>23</b>
Delta	48000.36	35120.78	<b>21.55</b>	-0.0144617	<b>24</b>
Ondo	-1231.66	-5587.92	<b>56.73</b>	-0.0133366	<b>25</b>
Taraba	-35704.1	-40964.2	<b>79.29</b>	-0.0104789	<b>26</b>
Edo	25475.86	12562.12	<b>34.63</b>	-0.0096166	<b>27</b>
FCT	62991.34	18455.93	<b>36.48</b>	-0.0095191	<b>28</b>
Bauchi	-22286.2	-28674.7	<b>71.19</b>	-0.0074951	<b>29</b>
Imo	30696.48	23374.36	<b>19</b>	-0.0069663	<b>30</b>
Cross_Rivers	22850.33	10797.89	<b>42.83</b>	-0.0062999	<b>31</b>
Akwa_Ibom	13426.72	-133.461	<b>53.62</b>	-0.0038706	<b>32</b>
Rivers	70263.56	29773.73	<b>28.03</b>	-0.0035925	<b>33</b>
Ebonyi	35001.12	21349.07	<b>31.25</b>	-0.001859	<b>34</b>
Bayelsa	26843.46	18839	<b>32</b>	-0.0009104	<b>35</b>
Enugu	31320.81	20436.77	<b>16.94</b>	-0.0008393	<b>36</b>
Anambra	58387.26	35595.46	<b>13.75</b>	-0.0007644	<b>37</b>

the level of intensity of such housing deprivations were comparatively less severe. These variations brings to the fore the need to simultaneously assess housing affordability problems from broader perspective of magnitude - in terms of the size of the proportion of households with housing affordability problems and the intensity of such affordability problems.

### **6.3.2 Comparing the Housing Affordability Classification of Households of the Shelter Poverty and the Housing Expenditure to Income Affordability Index**

A cursory look at the housing affordability classification of households based on both the shelter poverty index and the housing expenditure to income affordability index seems to suggest that they are quite similar. It has been often supported by literature that the shelter poverty model does not often reveal more extensive housing affordability problem than the conventional housing expenditure to income model (as can be seen with above results). However, the important difference between these two models lies in how they capture the distribution of housing affordability problems within different social and economic groups (Stone 1993).

A pairwise correlation analysis reveals that the two variables have a correlation coefficient ( $r$ ) of 0.8685, which indicates that they share about 87% positive linear dependency with each other. This suggests a very strong underlying relationship between these two models. However, the correlation result also indicates about 13% discrepancy/ differences between these two models. A close look at affordability group classification of households, based on these two models is also interesting (as shown in table 6-3). In order to give more detailed information, table 6-3 is organised into two parts. The upper part summarises the column percentage while the lower part summarises the row percentage. Their respective classifications of households that fall into affordability problem / non-problem groups were in agreement within a range of 77.73% and 80.39%. The difference in their classification lies within the range of 19.61% and 22.27%. Thus, the use of either of the models as housing affordability

measure would tend to exclude about 20% of households which would have included by the other and vice versa.

**Table 6-3 Cross-tabulation of the Level of Housing Expenditure to Income Affordability and Shelter Poverty Affordability Index**

		Shelter Poverty Affordability			
		No-Problem group (%)	Affordability Problem group (%)	Total	
<b>Housing Expenditure-to-Income Affordability</b>	No-Problem group	<b>80.39</b>	<b>22.27</b>	<b>51.40</b>	column percentages
	Affordability Problem group	<b>19.61</b>	<b>77.73</b>	<b>48.60</b>	column percentages
	<b>Total</b>	100	100	100	column percentages
		Shelter Poverty Affordability			
		No-Problem group (%)	Affordability Problem group (%)	Total	
<b>Housing Expenditure-to-Income Affordability</b>	No-Problem group	<b>78.38</b>	<b>21.62</b>	100	row percentages
	Affordability Problem group	<b>20.21</b>	<b>79.79</b>	100	row percentages
	<b>Total</b>	<b>50.11</b>	<b>49.89</b>	100	row percentages

The policy implications of these measurement discrepancies between these two housing affordability measures are too significant to leave unaddressed. For instance, given the fact that as at 2006, the Nigerian population was about 140 million comprising of 30.3 million households, the use of either model to assess and measure housing affordability in the country would likely mis-specify the housing affordability levels of about 6.06 million households comprising of 28 million people. Therefore, the need to develop a better and more integrated approach to measuring housing affordability cannot be over-emphasized. It is this need that justifies developing an alternative composite approach to measuring housing affordability of households that have been developed in this study.

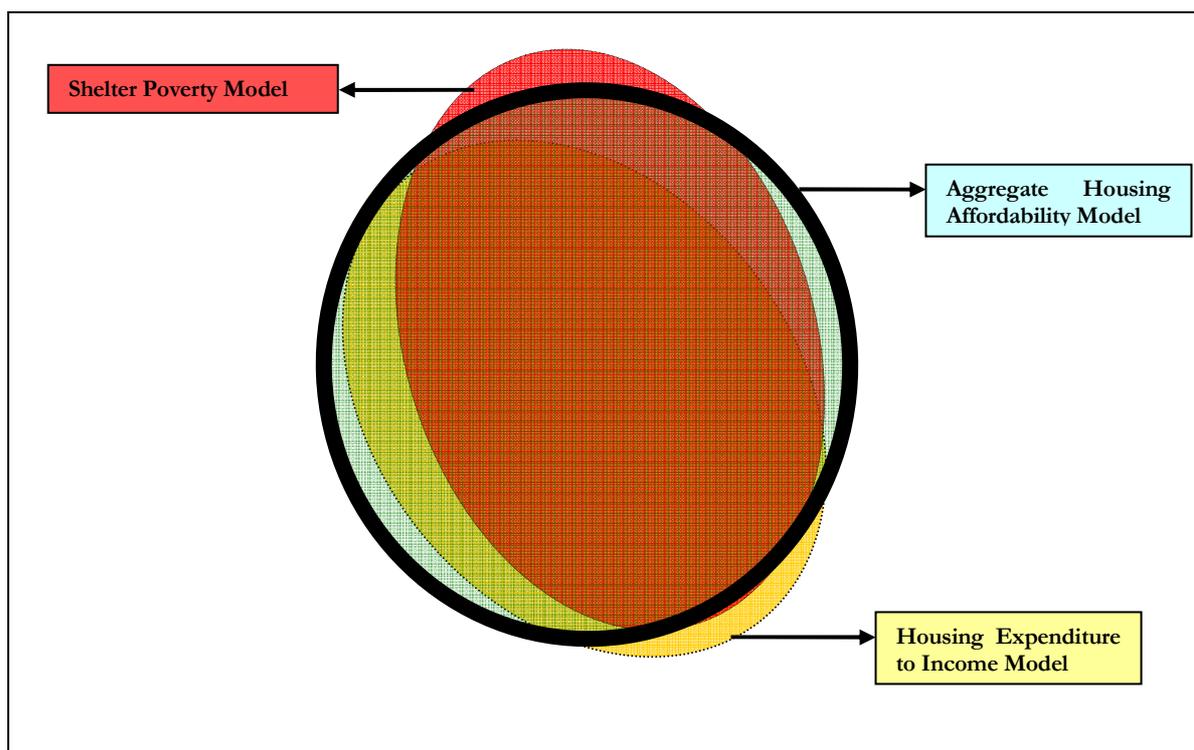
#### **6.4 Generation on Aggregate Housing Affordability Index**

Having decided on a composite approach as a more effective way to measuring housing affordability, the challenge was to develop an aggregate index, which will not only capture the

essential elements of both shelter poverty and housing expenditure to income affordability models but will also moderate their inherent weaknesses. Hence, the study considered types of techniques that can be used to combine the shelter poverty and housing quality adjusted expenditure-to-income ratio into one aggregate variable that will capture the essential elements of both models as well as have the capacity to overcome some of their major weaknesses. Fig. 6-3 illustrate the conceptual thinking behind the aggregate approach of bringing together existing indices to form a new one.

The aggregate model is conceived to define a better conceptual housing affordability space than either of the conventional models in a more balanced and logical way. It is necessary to

**Figure 6-3 Shows the Conceptual Drawing of the Aggregate Housing Affordability Index in Relation to the Shelter Poverty and Housing Expenditure-to-Income Indices.**



mention that in combining the two conventional models, the aggregate model captures more space than either of the conventional models while also trimming off some extreme parts of the two models. To do this, two inherent weaknesses of the respective affordability models

were especially considered. As has been noted earlier, one of the major problems of housing expenditure to income affordability model is the inherent tendency to mis-classify households who deliberately over-consume and under-consume housing by choice. More often, households, who tend to be higher income households, are erroneously classified into the unaffordable housing group when they spend beyond the generally acceptable ratio, e.g. 30% of their income on their housing. Higher income households can usually pay for their non-housing needs even when they over-consume housing. Conversely, poorer households who under-consume housing because they want to enjoy more non-housing goods are often classified as having affordable housing if they live in substandard housing but spend below the generally acceptable ratio. Further, the shelter poverty model in being more responsive to the influence of household size on living standards of households tend to exaggerate the non-housing needs of some large families based on standard of living / poverty line estimates. The linear projections of households needs based on their size tend to set higher consumption thresholds than absolutely necessary in reality. The marginal cost burden of an additional member of a large household is not often as linear as inherently assumed in the shelter poverty approach. In some especially large households therefore, measuring levels of housing affordability solely on the ability to afford these threshold estimates after deducting housing cost irrespective of their actual income and what they pay for housing could be misleading. The study envisioned a new aggregate index that would be able to moderate these measurement discrepancies of more traditional affordability models.

Another major issue that was considered in determining the appropriate methodology to develop the aggregate affordability index is the issue of the internal quantitative properties of the new index. Not only should the new index be able to effectively capture the multi-dimensional perspectives of the traditional models being combined, it is also envisioned to be quantitatively valid, robust, explainable and flexible enough to be employed in the widest range of possible further (statistical) analyses without its fundamental methodological premises being compromised.

Consequent to the initial assessment, two techniques - the principal component analysis (PCA) and partial least square (PLS) regression analyses were isolated for further considerations due to their robust data reduction capabilities. Given that these techniques can be used to reduce multiple variables into fewer composite dimensions based on the underlying properties of original variables, they can be used effectively to combine the two measures of housing affordability into one aggregate housing affordability measure. After due consideration, the partial least square regression (PLS) methods was adopted as the most suitable technique to generate the aggregate housing affordability index that will appropriately satisfied these preconditions (brief discussion of these techniques have been discussed in the last chapter). There were some inherent limitations in PCA that could be avoided by the use of PLS regression technique in deriving the intended aggregate index. For instance, while the principal component analysis (PCA) technique offers an attractive option in developing aggregate indices due to its excellent data reduction capability and the ability to discover the underlying structure characterising any given set of highly correlated variables, it has some drawbacks, which could limit the use of aggregate variables derived from it. Some empirical purists such as Zuccaro (2007) have cautioned against the prevalent uncritical analysis of the mathematical properties of component/factor analysis which has often led to their inappropriate use in some statistical analysis especially the way they are often integrated into regression analyses. Critical of what he called “the misguided reliance on statistical analysis practices contained in articles published in respected academic journals” (p.13-14), he convincingly argued that the inherent properties of component/factor scores limit their capacity to be appropriately used in such analysis as multiple linear regression modelling. For instance, when the principal component scores, which are standardised linear compounds of the original variables, are introduced in a linear equation and regressed against an unstandardised dependent variable, it is mathematically futile to interpret derived slope due to asymmetry in the nature of data used. The standardized slope or beta derived from such equation do not fare any better either because it would mean that such beta was derived through double standardisation given that

the principal component scores has already been standardised. This would render such beta impossible to interpret. Arguing along these lines, he asserted that the use of component/factor scores “in multiple linear regressions produce statistical artefacts which have no mathematical or ontological properties. Attempting to interpret the results of such regressions is an act of pure statistical fiction” (Zuccaro, 2007, p.11) Such views underscore the need to ensure that the aggregate index is flexible enough have versatile analytical application. Using the PLS in developing such an index should help to guarantee such an objective. Another advantage of using PLS is that whereas other techniques treat the relationship between predictors and dependent variables as symmetrically, the main originality of PLS regression is that it preserves their natural asymmetry (Abdi, 2007). Thus the variables being combined could exact their original weight within the component that jointly defines them.

#### **6.4.1 Application of the PLS Regression Model in Developing the Aggregate Housing Affordability Index**

The Partial Least Squares Regression (PLS) was developed in the 1960’s by Herman Wold as an econometric technique, but became popular first in chemometrics due in part to Herman’s son Svante Wold and in sensory evaluation. The success of PLS in chemometrics resulted in a lot of applications in other scientific areas including bioinformatics, food research, medicine, pharmacology, physiology including such areas as monitoring and controlling industrial processes; a large process can easily have hundreds of controllable variables and dozens of outputs. The tool is also becoming a tool of choice in the social sciences as a multivariate technique for non-experimental and experimental data alike (Tobias, 1998; Rosipal and Kramer, 2006; Abdi, 2007). This technique is a computationally efficient technique that combines and generalises features from principal component analysis (PCA) and multiple regression (MR) to predict or analyze a set of dependent variables from a set of independent variables or predictors. PLS goes beyond the restrictions imposed on other multivariate

methods where the underlying the  $\mathbf{Y}$  and  $\mathbf{X}$  variables are extracted from the  $\mathbf{Y'Y}$  and  $\mathbf{X'X}$  matrices. Its prediction functions are represented by factors extracted from the  $\mathbf{Y'XX'Y}$  matrix. Its ability to extract a set of orthogonal factors with best predictive powers from a given set of variables makes the functions an attractive robust technique to employ in building aggregate indices. In this study, PLS application is mainly focused on developing an appropriate  $\mathbf{Y}$  component variable, which could be interpreted as an aggregate housing affordability variable. Whereas in PCA, components are derived from the set of  $\mathbf{X}$  variables, PLS regression finds components from  $\mathbf{X}$  that are also relevant for  $\mathbf{Y}$ . Specifically, PLS regression searches for a set of components or latent vectors that perform a simultaneous decomposition of  $\mathbf{X}$  and  $\mathbf{Y}$  with the constraint that these components explain as much as possible of the *covariance* between  $\mathbf{X}$  and  $\mathbf{Y}$  (Abdi, 2007). Normally such a  $\mathbf{Y}$  component would be the line of best fit for the data points that minimises the sum of squares of input  $\mathbf{X}$  variables. While the component loadings represent angle cosines of the direction of the best fit line, the factor scores derived from the component represent projections of the sample points along the principal component direction. Both the PCA and the PLS produce orthogonal factor scores as linear combinations of the original predictor variables. The distinction between the PCA and the PLS implies that both models differ in the way they extract factor scores. Whereas PCA produces the weight matrix  $\mathbf{W}$  reflecting the covariance structure between the predictor variables in extracting its component/factor scores, the PLS produces the weight matrix  $\mathbf{W}$  reflecting the covariance structure between the independent (predictor) and dependent (response) variables.

After deciding on the appropriate statistical technique to be used, the first step is to determine a set of common predictor variables that explains as much of the variation as possible in the two housing affordability index that are to be combined. To do this, a series of preliminary exploratory correlation and survey data regression analyses were carried out to determine the most significant independent variables that explained most of variance in the shelter poverty affordability index and the housing expenditure to income affordability index respectively.

Three key variables were selected namely: total housing expenditure of household in regionally deflated current prices (*THOUEXPDDR*); total annual household income (*TOTAHHINC*) and Household Size in Country Equivalent Adult (*CTRY\_ADQ*).

The variables used the PLS regression analysis were therefore as follows;

Dependent Variables –  $y_1$  (*SHELPOVITY*) and  $y_2$  (*MHOUEXPDAFF*)

Independent Variables -  $x_1$  (*HOUEXPDDR*),  $x_2$  (*TOTAHHINC*) and  $x_3$  (*CTRY\_ADQ*).

From the regression results shown in Table 6-4, it can be seen that collectively these variables were significant in explaining the variance in both housing affordability models accounting for about 98.66% and 99.22% of the total variance in the shelter poverty model and housing expenditure to income affordability model, respectively. It is however important to note that the recorded total explained variances between these set of independent variables and the HEI and Shelter Poverty (dependent) variables may on cursory glance appear unusually high especially with respect to the cross-sectional nature of data used. However, it should be borne in mind that the dependent variables are not primary variables but rather secondary variables that were developed from the same database and from the same sets of variables that included the above independent variables. Hence, such very high  $R^2$  should be expected. It merely indicates that the aggregate housing affordability index would likely be well specified. It is important to select variables that will explain as much as possible each of the housing affordability index to be aggregated in order to ensure that the derived composite index will contain as much as possible the character of the original housing affordability models. Therefore, the very high significant  $R^2$  recorded in the regression results of table 6-4 confirms the complementarity of the three independent variables in both shelter poverty index and housing expenditure to income index and therefore their appropriateness for use in the partial regression analysis that follows.

**Table 6-4 Showing Regression Results to Select Significant Independent Variables**

Shelter Poverty Affordability Index (SHELPOVTY)				Housing Expenditure to Income Affordability Index (MHOUEXPDAFF)		
	coefficients	t	P> t	coefficients	t	P> t
CTRY_ADQ	-31498.82	-90.27	<b>0.000</b>	-235.3871	-2.95	<b>0.003</b>
TOTAHHINC	.9949	548.85	<b>0.000</b>	.301867	252.77	<b>0.000</b>
THOUEXPDDR	-1.000	-86.06	<b>0.000</b>	-1.05167	-122.88	<b>0.000</b>
To cons	-3685.808	-3.80	<b>0.000</b>	-1543.039	-4.25	<b>0.000</b>
<b>R<sup>2</sup></b>	<b>0.9866</b>			<b>0.9922</b>		

The application of PLS regression in this study is quite different from the way the technique is traditionally used since the goal is just to derive Y component scores that will effectively capture the attributes of both the shelter poverty affordability index and housing expenditure to income affordability index and be interpreted as an aggregate housing affordability index.

#### 6.4.2 The Actual PLS Regression Analysis and Results

In PLS, the SCORE matrix is used to represent the DATA matrix. This done by deriving the factor score matrix:  $T = XW$  where  $W$  is the matrix coefficient whose columns defines the PLS factor as linear combinations of the independent variables ( $X$ ). This means that the columns of  $W$  are weight vectors for the  $X$  columns producing the corresponding factor score matrix  $T$ . These weights are computed so that each of them maximizes the covariance between responses and the corresponding factor scores.

After this procedure, the model is then fitted. Taking  $Y$  and  $X$  to denote matrices of dependent and independent variables the basic PLS model is bilinear in form:

On the X block, the model equation is expressed separately as

$$X = TP' + E = \sum t_h p'_h + E$$

$T = X$  - Scores

$P'$  = X - Loadings

$E = X$  - Residuals

$t_b$  are the scores for the X block

$p'_b$  are the loadings for the X block

While on the Y block, it is expressed separately as

$$Y = UQ' + F^* = \sum u_h q'_h + F^*$$

$U = Y$  – Scores

$u_h$  are the scores for the Y block

$Q' = Y$  – Loadings

$q'_h$  are the loadings for the Y block

$F^* = Y$  – Residuals

When all the components are extracted, then:  $E = F^* = 0$ , i.e.  $E$  and  $F^*$  becomes a null matrix. The intention of PLS is to describe  $Y$  very well and minimise  $||F^*||$  and still get a strong relationship between  $X$  and  $Y$ . In fact, the technique chooses successive orthogonal factors that maximize the covariance between each  $X$ -score and the corresponding  $Y$ -score. In order to predict the responses in the population,  $T$  and  $U$  are extracted from  $x_1 \dots x_n$  and  $y_1 \dots y_n$  respectively.  $T$  is first extracted and used to predict the  $Y$ -scores  $U$ , and then the predicted  $Y$ -scores are used to construct predictions for the responses. As the focus of this analysis is not to extract components that would be used to predict response from the population but rather to decompose variables  $Y_1$  and  $Y_2$  into a single robust  $Y$  component with assistance of identified  $X$  variables, the presentation of analysis results would also be limited to this objective. Refer to appendix 6-1 for more detailed results of the analysis.

This PLS model characteristically produced five components for both the  $X$  and  $Y$  blocks respectively and components scores which could be interpreted as the original variables derived for each household in the study area. Table 6-5 details the sum of squares for each of the component into the  $X$  and  $Y$  blocks scaled to unit variance. While the proportion of sum of squares of components relatively even out within the  $X$ -block suggesting that all the components are relatively important, the  $Y$ -block indicates that the first component overwhelmingly accounts for most the weights in the block with about 84.28% of the total.

This is an indication of a dominant component explaining about 84% of the total variance in  $Y$  block. A breakdown of the whole variance in the  $Y$  block, showing that of the 84.28% variance accounted for in the first  $Y$ -block component, indicates that the housing expenditure

**Table 6-5 Showing the Sum of Squares Explained for Y and X blocks (PLS Regression)**

<b>For Y Block</b>				
	no model	+Dimension 1	+Dimension 2	+Dimension 3
s.s.	0.00	7824.86	911.26	420.21
% s.s.	0.00	84.28	9.82	4.53
Cum s.s.	0.00	824.86	8736.12	9156.34
% Cum s.s.	0.00	84.28	94.10	98.62
<b>For X Block</b>				
	no model	+Dimension 1	+Dimension 2	+Dimension 3
s.s.	0.00	4765.31	5455.64	3705.04
% s.s.	0.00	34.22	39.18	26.61
Cum s.s.	0.00	4765.31	10220.96	13926.00
% Cum s.s.	0.00	34.22	73.3948	100.00

to income variable (MHOUEXPDAFF) and shelter poverty variable (SHELPOVTY), mutually have strong share of 80.0% and 88.5% respectively (see table 6-6).

**Table 6-6 Showing the Percentage of the Y variances explained (PLS Regression)**

Dim	MHOUEXPDAFF	SHELPOVTY
1	80.0	88.5
2	17.1	2.5
3	2.0	7.1

Therefore, it can be seen that both variables contribute highly to the overall variance accounted for in the first Y component. Interestingly, as this technique allows for asymmetric relationship to be defined between the predictor and response variables in defining any given component, the shelter poverty variable is shown to account for slightly higher variance than the housing expenditure to income variable in the first Y component. This is different from such techniques as the principal component analysis (PCA) where equal symmetrical variance are usually extracted from the original variables.

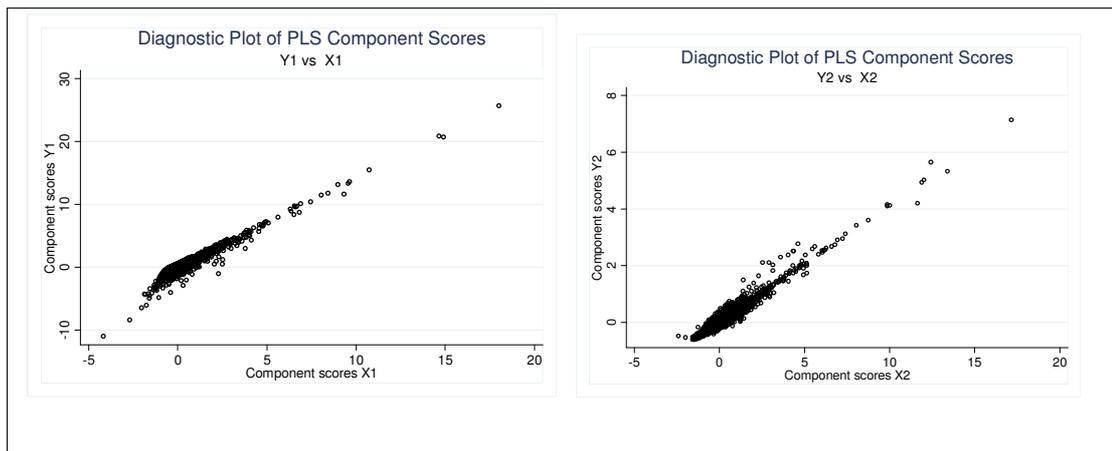
Table 6-7 shows the regression coefficients of the bilinear model. It is particularly interesting to observe its striking similarities to the results of the earlier exploratory regression results used to choose the dependent variables shown in table 6-4.

**Table 6-7 Showing the Estimates of PLS regression coefficients**

YLAB	MHOUEXPDAFF4	SHELPOVTY4
CXLAB		
Constant	-1529.3676	-5434.7744
CTRY_ADQ	-305.6589	-30588.7820
TOTAHHINC	0.3031	0.9899
THOUEXPDDR	-1.0563	-0.9850

The above results indicate that the first Y component is the most likely component that will capture as much as possible of the various attributes of the shelter poverty variable (y1) and the housing expenditure to income variable (y2).

**Figure 6-4 Showing the Diagnostic Plots of the Component Scores**



Diagnostic assessment of the components scores was carried out to check the quality of the PLS model. This requires plotting the first two PLS components of the Y-block (Y1 and Y2) against the X-block (X1 and X2) respectively. A good-quality model is expected to show a high correlation between the Y component scores and the X component scores. The two graphs shown in Fig. 6-4 confirm the reported PLS model is of good-quality showing a very high correlation between the respective component scores. With this confirmation, the first Y component was chosen as the aggregate housing index component. Its respective component scores derived for each household is taken to represent their level of housing affordability within the study area. Having derived the aggregate index, the next step was to assess the

extent to which it captures the respective housing affordability indices of shelter poverty and housing expenditure to income models. To do this, correlation analysis and survey regression analyses between the new aggregate index (AggHaffdindx) and the respective affordability indices were carried out. Both housing expenditure to income index (HOUEXPDAFF) and shelter poverty index (SHELPOVTY) to record very high correlations of 0.9683 and 0.9648 with the new aggregate housing affordability index respectively.

**Table 6-8 Showing Result of the Regression Analysis of the Aggregate Index and the Affordability Shelter Poverty Index / Housing Expenditure to Income Index**

Shelter Poverty Affordability Index (SHELPOVTY)					Housing Expenditure to Income Affordability Index (MHOUEXPDAFF)			
AggHaffdindx								
	coefficients	Jackknife Std. Err.	t	P> t	coefficients	Jackknife Std. Err.	t	P> t
	5.53e-06	3.99e-08	138.66	<b>0.000</b>	.0000167	3.56e-07	46.84	<b>0.000</b>
<b>cons</b>	-.2117269	.006769	-31.28	<b>0.000</b>	-.1065536	.0078957	-13.50	<b>0.000</b>
<b>R<sup>2</sup></b>	<b>0.9450</b>				<b>0.9371</b>			

The survey regression analysis result shown in Table 6-8 indicates that there is a stronger significant relationship between the aggregate affordability index and these other traditional housing affordability indices. The aggregate housing affordability index has a coefficient of determination ( $R^2$ ) of 0.9450 and 0.9371 with shelter poverty index and housing expenditure to income index respectively. In other words, both indices respectively account for about 94.50% and 93.71% of the total variation in the aggregate housing affordability index as explained by the model. These results tend to suggest that the aggregate index effectively captures most of the attributes of the two indices. It is noteworthy to observe that the aggregate housing affordability index derived from the PLS regression technique as applied in this study was very similar to the index that would have been derived if PCA had been used in combining the HEI and Shelter Poverty indices. Correlation between the two was in fact 1.0 while the correlation of their respective housing affordability group classifications was as close as 0.9999.

### 6.4.3 Fitting the Aggregate Housing affordability Model

Having derived the aggregate Housing affordability index with satisfactory results showing its close relationship with the shelter poverty index and the housing expenditure to income index, the next step was to fit the aggregate housing affordability model. Multilevel modelling technique was used for this purpose due to the need to account for location-effects (or neighbourhood-effect) on the aggregate housing affordability model. *Multilevel analysis* is a general term referring to emergent statistical methods appropriate for the analysis of data sets comprising several types of unit of analysis (Snijders, 2003). The *levels* in the multilevel analysis represent different types of unit of analysis such as households, neighbourhoods, cities, and states. Many kinds of data, including observational data collected in the human, biological and social sciences have a *hierarchical* or *clustered* structure. Multilevel techniques and models help to advance a proper recognition of these natural hierarchies and thus allow us to seek more satisfactory answers to important questions (Goldstein, 1994). This study made use of the *MLwiN* software developed by the Centre for Multilevel Modelling, University of Bristol. In this study, the multilevel modelling technique takes advantage of the two-level hierarchical structure within the survey data, where the sampled households are nested within the enumeration areas, and the fact that location influences the nature and consumption of any given housing. It allows for two-level simultaneous modelling of aggregate housing affordability - at the level of households, and at the level the enumeration area (EA) of the households. In so doing, the total variance in housing affordability can be desegregated and partitioned into a between-EA component (the variance of the EA-level residuals) as well as a within-EA component (the variance of the household-level residuals). This is very important because the location-effects represent the unobserved location characteristics that affect the housing affordability of households. It influences the observed correlation between households within a given location. The standard multilevel regression model equation is expressed as follows;

$$Y \sim N(XB, \Omega)$$

Where,  $Y$  is the dependent variable assumed to be normally distributed,  $XB$  is the fixed part of the model and  $\Omega$  represents the variances and covariances of the random term

The model can be functionally written as;

$$y_{ij} = \beta_{0j} + \beta_1 x_{1ij} + \beta_2 x_{2ij} + \beta_3 x_{3ij} + e_{ij}$$

$$\beta_{0j} = \beta_0 + u_{0j} \text{ and } \beta_{1j} = \beta_1 + u_{1j}$$

with both the random residual matrix and the fixed residual matrix represented as follows;

$$\begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{bmatrix} \sigma_{u0}^2 & \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix} \text{ and } [e_{0ij}] \sim N(0, \Omega_e) : \Omega_e = [\sigma_{e0}^2]$$

Following the general equation, the aggregate affordability model can be expressed as follows;

$$\text{AggHaffdindx}_{ij} = \beta_{0j} + \beta_1 \text{TOTAHHINC}_{ij} + \beta_2 \text{THOUEXPDR}_{ij} + \beta_3 \text{CTRY\_ADQ}_{ij} + e_{ij}$$

Where  $j$  refers to the level 2 EA unit and  $i$  to the level 1 household unit.

In order to make the interpretation of the intercept term in the model easier and more meaningful, the independent variables (i.e. household income, housing expenditure and household size) were centred. The centring of the independent variables was done by subtracting the respective mean of each of the independent variables from each case's value of that variable (as recorded for each household). The resultant centred-variables, also known as deviation scores were then used to model aggregate housing affordability as presented here. Therefore in this analysis, the derived intercept term can be interpreted as the predicted value for the dependent variable (aggregate housing affordability) when the values of the independent variables are fixed at average values. This is a better interpretation of the intercept term than its conventional mechanical interpretation (when the variables are neither centred nor standardized) as the response value for the dependent variable when the values of the independent variables are fixed at zero. The derived coefficients for each of the independent variables can also be interpreted in the same way to represent the estimate of the relationship between such an independent variable and the dependent variable when the values

of other independent variables equal their respective average values instead of zero as would have been the case if the variable were not centred. This is important in this analysis because a variable such as household size used in the analysis cannot be conceived to equal zero under any probable circumstances.

The next important step in the analysis was to determine if there is a significant difference between a single regression model and multilevel model of housing affordability within the study area in order to justify the use of multi-level modelling analysis. It required testing the deviance - which is the difference between the respective  $-2 \times \log$ likelihoods of the respective single level and multi-level models for statistical significance with chi square at one degree of freedom. In the analysis, the household unit makes up the first level (Level 1) while the EA unit constitutes the second level (Level 2). Therefore, a single and multi-level aggregate housing affordability (Y) models were compared by testing the derived deviance of 267.74, which showed a highly significant difference between the two models and consequently justified the need for a multi-level modelling analysis as presented here (refer to table 6-9).

Having confirmed the need for such a multilevel modelling approach, the next step was to determine how much of the variability in aggregate housing affordability is attributable to EA-level (neighbourhood-level) factors and how much to household-level factors. In partitioning the total variance in aggregate housing affordability index, the between EAs explained variance was shown to be 18.47% while the between household explained variance constituted the remaining 81.53%. Therefore, as much as 18.47% of the total variability in housing affordability is driven by location (neighbourhood) effects while 81.53% is driven by household level effects. The result of the analysis is shown in Table 6-9, detailing the sequential introduction of the independent variables (Xs) into the model so that their individual impact that both the between EA-levels 2 and the within EA-level 1 can be recorded and assessed. While all three variables of household size, household income and housing expenditure were highly significant in explaining the total variation in aggregate housing affordability, they recorded varying degrees of significance individually. Of the three,

household size made the least but yet significant contribution. It accounts for about 2.43% of the total housing affordability variation at the household level (within EA-level) and about 4.48% of the

between EA-level variation. It was also observed in the preliminary analyses that household size is a variable that tends to make more impact on housing affordability in the company of other variables such as household income and expenditure than just on its own. Household

**Table 6-9 Showing the Results of the Multi-level Model of Aggregate Housing Affordability**

Parameter	Y (single level)	Y (multi-level)	Estimate (s.e.)	Estimate (s.e.)	Estimate (s.e.)
	A	B	C	D	E
<b>Fixed</b>					
constant $\beta_0$	0.05578 (0.00000)	0.04354 (0.02917)	0.00338 (0.01387)	0.00026 (0.00496)	-0.00232 (0.00286)
Household Income ( $x_1$ )			4.1e-006 (1.1e-007)	5.41e-006 (2.94e-008)	5.59e-006 (9.01e-009)
Household Expenditure ( $x_2$ )				-1.26e-005 (1.36e-007)	-1.20e-005 (6.09e-008)
Household Size (country equivalent) ( $x_3$ )					-0.0991 (0.00119)
<b>Random</b>					
<b>Level 2</b>					
$\sigma_{u0}^2$ (between EAs intercept)		0.36869 (0.05612)	0.10346 (0.01293)	0.01327 (0.00124)	0.00706 (0.00049)
<b>Level 1</b>					
$\sigma_e^2$ (between HHs intercept)		1.62757 (0.26660)	0.32477 (0.03990)	0.04363 (0.00205)	0.00412 (0.00027)
$\sigma_{e01}$ (single level variance)	2.1563 (0.00000)				
% of between EAs variance explained		18.47	71.94	22.46	4.48
Cumulative % of between EAs variance explained			71.94	94.40	98.88
% of between HHs variance explained		81.53	80.05	17.27	2.43
Cumulative % of between HHs variance explained			80.05	97.32	99.57
-2*loglikelihood	16127.670	15863.930	8553.033	-492.862	-9770.080

income variable accounted for most of the housing affordability variation at both the household (HH) level and enumeration area (EA) level with about 80.05% and 71.94% respectively. Hence, of the three variables, it is the most important at explaining the total variation in aggregate housing affordability. The model also showed that housing expenditure variable explained about 17.27% and 22.46% of the remaining total variability in housing affordability at both the household level and between EA-level respectively. In interpreting this high degree of explained variability in housing affordability, it is important to bear in mind that apart from these variables, there may be other underlying variables that correlate highly with both aggregate housing affordability index, and any of these independent variables that are driving the size of explained variance.

Collectively, these three variables explain 98.09% of the total variation in aggregate housing affordability at the household level and about 99.75% of the total variation in aggregate housing affordability at the EA level. Beyond returning very high  $R^2$  (total explained variance), more important is the model's conformity to logical theoretical expectations. The total household income variable has, as expected, a positive relationship with aggregate housing affordability. Conversely, total housing expenditure, also as expected, has a negative relationship with aggregate housing affordability. The model also confirmed that household size has a negative relationship with aggregate housing affordability. In other words, larger households are likely have more housing affordability problems than smaller sized households. The detailed results for the fixed part of the model show that the recorded intercept term ( $\beta_0$ ) value is -0.00232 with standard error of (0.00286), which means that if the values of household income, housing expenditure and household size were to be fixed at average values, the aggregate housing affordability score would be about -0.00232, which almost approximates to 0 (zero) the neutral affordability mark. Therefore any household of average household size, with an average household income and average housing expenditure would almost be at the neutral housing affordability datum.

Household income variable had a (partial regression) coefficient of  $5.59e-006$  with standard error of  $(9.01e-009)$ . Therefore if the influence of housing expenditure and household size are held constant at average values, a unit increase of (one Naira) in the income of an average household would lead to a corresponding unit increase of about  $5.6e-006$  in aggregate housing affordability. In other words, if household income increases by 10,000 (Naira), on average the aggregate housing affordability of the household increases by ₦0.0559 affordability unit provided housing expenditure and household size are held constant at average values. If it is assumed that the median aggregate housing affordability household whose current housing affordability status is below the neutral affordability mark with  $-0.2089$  affordability scores maintains a constant housing expenditure and household size, the household will therefore require an income increment of about ₦37,366.73 (Naira) per annum on top of its current income of ₦186,057.80 (Naira) in order to resolve its housing affordability problems. This translates into about 20.1% income increase for this household and will lower its current housing expenditure to income ratio from 26.7% to about 20.1%.

Conversely, the housing expenditure variable had a negative (partial regression) coefficient of about  $-1.20e-005$  with standard error of  $(6.09e-008)$ . Therefore if the influence of housing income and household size are held constant at average values, a unit decrease of (one Naira) in the housing expenditure of an average household would lead to a corresponding unit increase of about  $1.20e-005$  in aggregate housing affordability. Thus, if household expenditure decreases by ₦10,000 (Naira), on average the aggregate housing affordability of the household increases by 0.120 affordability unit provided housing expenditure and household size are held constant at average values. If therefore the median aggregate housing affordability household with  $-0.2089$  affordability scores maintains a constant household income and household size, they will require a housing expenditure decrease of about ₦17,407.50 (Naira) per annum from its current estimate of ₦49,765.46 (Naira) in order to push up its housing affordability status into the neutral housing affordability mark. This would mean about 35% decrease in the

housing expenditure of this household, which will reduce its current housing expenditure to income ratio from 26.7% to 17.4%.

In the same way, household size variable recorded a coefficient of -0.0991 with a standard error of about (0.00119). It would therefore require a decrease of about 1.98 (approximately 2) persons in the size of the same median aggregate housing affordability household from its current 4.45 persons if they are to come up to the neutral affordability datum of 0 (zero), provided they maintained constant household income and housing expenditure values. This translates into a 44.5% decrease in household size for this median affordability household.

Given that the model is a simple *variance components* model, it assumes that the only variation between EAs is in their intercepts. Each EA has its own intercept ( $\beta_{0j}$ ) and a common mean intercept term ( $\beta_0$ ). The model amounts to fitting a set of parallel straight lines to the data from the different EAs. The slopes of the lines are all the same, and the fitted values of the common slopes are represented by the partial regression coefficients of the independent variables. The intercepts for the different EAs are the level 2 residuals ( $u_{0j}$ ) and these are distributed around zero with a variance of 0.00706 and a standard error of (0.00049). As would be expected, the actual data points do not lie exactly on the straight lines; they also vary in proportion to the value of level 1 residuals ( $e_{ij}$ ) and these are also distributed around zero with a variance estimate of 0.00412 and a standard error of (0.00027). Both between EAs intercept variance ( $\sigma_{u_0}^2$ ) and the within EAs intercept variance ( $\sigma_e^2$ ) were significant. In order to check for the adequacy of the model, the tests for residual normality was carried out.

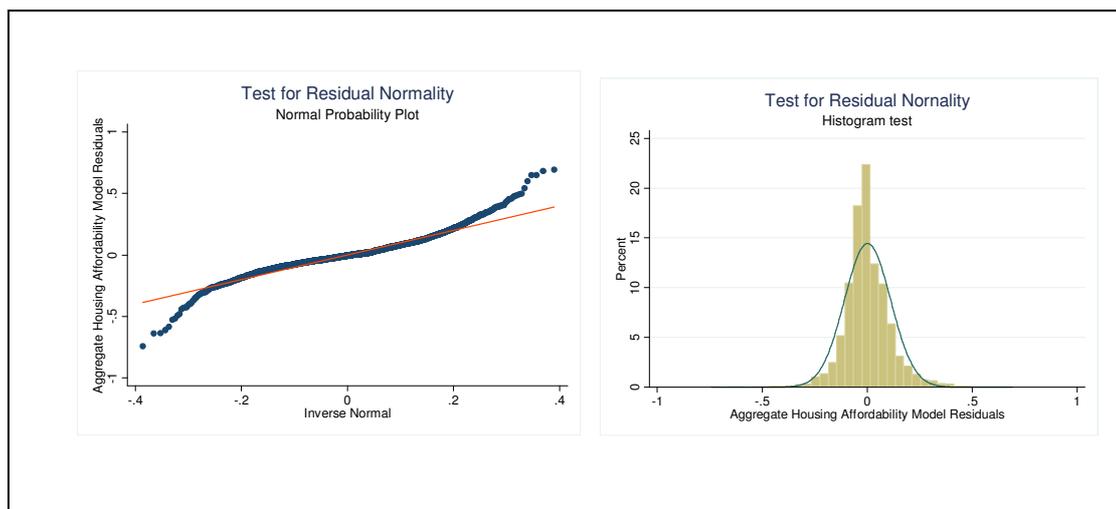
#### **6.4.4 Diagnostics Plots (The Normal Probability Plot and the Histogram Test).**

Residuals are the difference between an observed value of the response (dependent) variable and the value predicted by the model. Plotting these residuals provides a very good tool in assessing model assumptions. Thus, they are often examined to assess the extent to which the model satisfies the normal distribution assumption. In a robust and well specified regression

model, they are usually expected to be (roughly) normal and (approximately) independently distributed with a mean of 0 and some constant variance.

It is evident that from figure 6-5 that the probability plot of residuals produced an approximate straight line with actual values lining up along the diagonal that goes from lower left to upper right. Although there are residual deviations from the straight line at the bottom right and top left part of normal distribution line, the overall shape approximates linearity. This tends to indicate a normally distributed residuals in the aggregate housing affordability model. The second confirmatory graph showed the residuals histogram plot with a super-imposed normal distribution function. The histogram produced a slightly narrower bell distribution curve.

**Figure 6-5 Showing the Tests for Residual Normality**



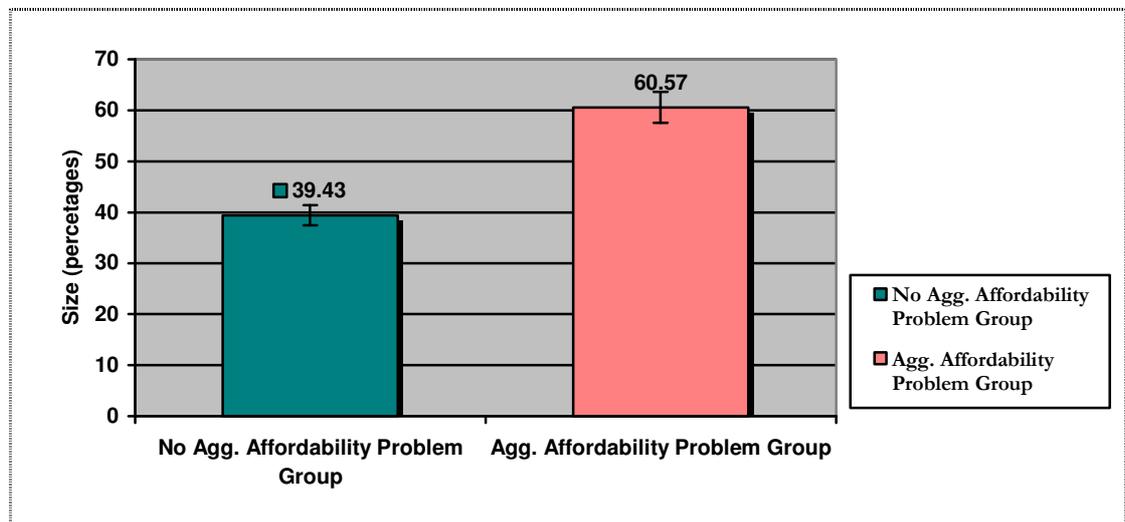
However, the distribution was clearly symmetrical from the middle which approximates the normal distribution. These two graphs tend to suggest that the housing affordability residuals were fairly normally distributed. Therefore, the model of aggregate housing affordability is unlikely to be seriously mis-specified.

#### **6.4.5 Housing Affordability Classifications of Household Using the Aggregate Affordability Index**

The application of the aggregate model in the study indicates that households without housing affordability problems group constitute 39.43% of all households while the remaining 60.57%

of households are those experiencing aggregate housing affordability problems. The proportion of the group with housing affordability problems increased considerably when compared with the shelter poverty and housing expenditure to income model classifications, which stood at about 49.89% and 48.60% respectively. Evidently, the aggregate housing affordability model seems to have captured and classified into the unaffordable group households that would have been otherwise left out by either of the conventional models. Conversely, the proportion of the affordable group has correspondingly been reduced with a margin of about 10% to 12%. Whereas, the shelter poverty and the housing expenditure to income models suggest that the proportion of the unaffordable group and the affordable group are in the same range within the study area, the aggregate model suggests a different picture. It gives a more pronounced picture of housing affordability problems as 3 out of every 5 households in the study area cannot afford their housing.

**Figure 6-6 Showing the Aggregate Affordability Model Classification of Households**



However, the mere fact that the aggregate model identifies a larger proportion of households with housing affordability problems does not necessarily make a good or superior model. In order to appreciate the validity of the aggregate model as a good measure of housing affordability, there is the need to examine in closer detail the extent to which it succeeds in not

only combining the shelter poverty and housing expenditure to income models together, but also in curtailing their respective excesses and weaknesses. This will be briefly presented in the next subsection.

## **6.5 Examining the Classifications of the Aggregate Housing Affordability Model**

In order to assess the aggregate housing affordability model, it is crucial to compare its household housing affordability classifications with both the shelter poverty and housing expenditure to income classifications respectively. The section will examine the housing affordability classifications of the respective models against each other with the view to uncovering to what extent the aggregate model capture the essential elements of the shelter poverty and housing expenditure to income models and the extent to which it identifies and correct cases of mis-classification of the conventional models. The results are shown in table 6-10. At first glance, that table may seem a bit difficult to understand. So, a little explanation of table (6-10) may be required. The table may initially seem a bit confusing because in actual fact it is made up of three different tables of classifications of the same households super-imposed on top of each other with the help of cross-tabulation analysis. The table is made up of two major sections that shows the aggregate housing affordability classifications with the upper section made up of households without aggregate housing affordability problems while the lower section constitute those with aggregate housing affordability problems. Within each of these sections lies the cross-tabulation of the shelter poverty and housing expenditure-to-income group classifications of households. Arranged in this way, detailed information can be derived to assess the performance of the aggregate model.

### **6.5.1 Households that do not have Housing Affordability Problems**

Of the 4643 Households analysed, 1739 of them were classified as having no housing affordability problems by the aggregate model. While the group is mostly made up of those that have earlier been identified by the conventional models, it also crucially contained some

households which the shelter poverty and housing expenditure to income models classified otherwise as shown in table 6-10. About 3.54% of households classified into the affordability problem group by the housing expenditure to income model, were re-classified as having no housing affordability problems by the aggregate model. About 2.56% of households were similarly affected, with respect to the shelter poverty model classification. The significance of these re-classifications should be critically appreciated despite the fact that the percentages of households involved appears to be small. In fact, it would be erroneous to suggest this given that these reclassified households are numerically huge in relation to the overall population. For instance, 2.56% of households that the aggregate affordability model identified and reclassified as having no housing affordability problems represent about 1% of urban households in the survey data used. As at 2006, 1% of Nigerian households represents about 303,000 households of about 1,4 million Nigerians. Thus, any such mis-classification could have unintended dire implications for very large number of households.

### **6.5.2 Households with Housing Affordability Problems**

A close look at households classified as having housing affordability problems revealed even more interesting perspectives. Of the 2904 households classified into the group by the aggregate housing affordability model, 1876 households were jointly identified by both shelter poverty and housing expenditure to income as belonging to this group.

In considering the 518 households that the shelter poverty model classified as having housing affordability problems but rejected by the housing expenditure to income model, the aggregate housing affordability model identified 475 of them as belonging to the group. Of the 473 households identified as having housing affordability problems by the housing expenditure to income model but rejected by the shelter poverty model, the aggregate model recognized about 413 of them as having affordability problems (see table 6-10).

It is also particularly interesting and striking to note that the aggregate model reclassified as having housing affordability problems some households that were jointly identified as other-

**Table 6-10 Comparing Aggregate Housing Affordability Classification of Households with the Shelter Poverty and Housing Expenditure to Income Classifications**

<b>Affordable Group – Aggregate Housing Affordability Index Classification</b>				
		<b>Shelter Poverty Affordability Index</b>		
		No Problem Group	Affordability Problem Group	Total
<b>Expenditure to Income Index</b>	No Problem Group	1,636	43	1,679
	Affordability Problem Group	60	0	60
	Total	1,696	43	1,739
<b>Unaffordable Group – Aggregate Housing Affordability Index Classification</b>				
		<b>Shelter Poverty Affordability Index</b>		
		No Problem Group	Affordability Problem Group	Total
<b>Expenditure to Income Index</b>	No Problem Group	140	475	615
	Affordability Problem Group	413	1,876	2,289
	Total	553	2,351	2,904

wise by both the shelter poverty and housing expenditure to income models. In the study, there were about 140 of such households. These results are interesting in the sense of gaining insight into how the aggregate model works. Not only does it classify some households as having no housing affordability problems contrary to the shelter poverty and housing expenditure to income models, it also identified households with housing affordability problems contrary to both shelter poverty and housing expenditure to income models. Given that the aggregate model was supposed to combine both to shelter poverty and housing expenditure to income models, one can easily wonder why it should classify a household into a different affordability category than that jointly agreed on by both the shelter poverty and housing expenditure to income models. This is one of the strong points of the aggregate model - its ability to modify existing affordability measures and bring some measure of order into an arbitrary yardstick. In order to understand this, there is the need to examine in closer

detail the various groups of households that were identified and reclassified by the aggregate affordability model.

### 2.5.3 Group Whose Housing Affordability Problem Status Classification by Housing Expenditure to Income Model was Rejected by the Aggregate Model

The findings shown in table 6-10 indicate that about 60 households earlier classified as having HEI affordability problems were rejected by the aggregate affordability model and reclassified as having no affordability problems. This group of households, which makes up of about 3.54% of the total householdshat have no housing affordability problems, were considered as not having housing affordability problems given their level of household income and non-housing consumption thresholds. The housing expenditure to income model had classified these households as having affordability problems because they spend more than 30% of their household income on housing. However, the mean household income of the group is about ₦372,177.40 (Naira) while the national household income mean is about ₦206,460.50 (Naira) as shown in table 6-11.

**Table 6-11 Assessment of Households Whose Affordability Problem Status Classification by Housing Expenditure to Income model was Rejected by the Aggregate Model**

<b>Households Whose Affordability Housing Classification by Housing Expenditure to Income Affordability Index was Rejected by the Aggregate Index</b>					
No.	Percentile	Household Size	Non-housing Consumption Threshold (Naira)	Household Income (Naira)	Housing Expenditure (Naira)
1	p10	1	26789.64	172351.70	46270.08
2	p25	2	44226.23	204973.30	54785.81
3	p50	4	69574.75	285985.70	81266.27
4	p75	5	120670.70	408311.50	121331.80
5	p90	6	146509.90	683301.20	220359.70
<b>Mean</b>		<b>3.85</b>	<b>86628.25</b>	<b>372177.40</b>	<b>116842.30</b>

Their median household income is about ₦285,985.70 (Naira), compared to the national average of about ₦142,699.00 (Naira). Assessing their non-housing consumption thresholds also reveal an interesting pattern. While their mean and median non-housing consumption thresholds stood at about ₦86,628.25 and ₦69,574.80 (Naira), the national non-housing consumption thresholds are ₦116,690.00 and ₦101,146.00 (Naira) respectively.

It can therefore be seen that while their respective household income remained much higher than the average household, their non-housing consumption thresholds are also substantially lower than that of the average household. Therefore, the households in this group are economically well-off households who seemed to deliberately over-consume housing by choice and can afford to do so. Given that the issue of under-estimating the affordability status of high income households who choose to over-consume housing is one of the weaknesses of expenditure to income model, it is interesting to observe that the aggregate affordability model identified these cases and reclassifies them accordingly.

#### **6.5.4 Households Whose Housing Affordability Problem Status Classification by Shelter Poverty Model was Rejected by the Aggregate Model**

Similar to the experience with housing expenditure to income model, about 43 households that were classified as having shelter poverty problems were rejected by the aggregate housing affordability model and reclassified as having no housing affordability problems. They make up about 2.56% of households with no housing affordability problems (see table 6-10). The aggregate model modified their earlier classification by considering their level of the housing expenditure and household income.

These households were considered as having housing affordability problems by the shelter poverty model due to the fact that the sum of their non-housing consumption threshold and housing expenditure exceed their household income. However, the aggregate affordability model was able to allow for the powerful influence of household size on their non-housing

consumption thresholds. It could be seen from Table 6-12 that these households have very high non-housing consumption thresholds estimates.

**Table 6-12 Assessment of Households Whose Affordability Problem Status Classification by Shelter Poverty Model was Rejected by the Aggregate Model**

<b>Households Whose Affordability Problem Housing Classification by Shelter Poverty Index was Rejected by the Aggregate Index</b>					
No.	Percentile	Household Size	Non-housing Consumption threshold (Naira)	Household Income (Naira)	Housing Expenditure (Naira)
1	p10	5	168508.00	177499.10	17597.06
2	p25	6	188634.60	203710.30	21043.84
3	p50	8	244659.80	240000.00	28628.88
4	p75	10	296216.00	296064.30	44448.26
5	p90	13	356167.00	356914.30	53505.63
<b>Mean</b>		<b>8.76</b>	<b>251968.5</b>	<b>259003.9</b>	<b>34549.65</b>

Their respective mean and median non-housing consumption thresholds of ₦251,968.50 and ₦244,659.80 (Naira) were more than twice the national average of ₦116,690.00 and ₦101,146.00 (Naira) respectively. Compared to the national household size average of about 4.62, identified households in this group have an average household size of about 8.76, which provide clues to their very high non-housing consumption thresholds. Consumption thresholds that are based on poverty line standards are usually calculated to have a direct linear relationship with household size. However, as suggested earlier, in reality the marginal impact of household size on consumption cost does not increase linearly over larger household sizes. At some point the marginal cost of an additional person in terms of household consumption tends to decrease. Hence, there is the tendency to ascribe slightly exaggerated consumption thresholds for larger sized households.

Furthermore, examining the level of their household income and housing expenditure offers additional clues to justify the re-classification into the group that do not have affordability

problems by the aggregate model. Their median household income is much higher than the national average. The median household income is about ₦240,000.00 (Naira) while the National average is about ₦142,699.00 (Naira).

Conversely, their housing expenditure is much less than the national average. While their median housing expenditure is about ₦28,628.88 (Naira), the national average is about ₦41,455.22 (Naira). Therefore, while their median household income is about twice the national average, their median housing expenditure is almost half of the national average. On the average, they spend about 13% of their household income on housing. For these households, the aggregate affordability model considered their household income to housing expenditure ratio adequate enough to contain the influence of household size on their non-housing consumption thresholds. They were therefore reclassified as not having housing affordability problems. This demonstrates the ability of the aggregate affordability model to modify the inherent measurement weakness of the shelter poverty model.

#### **6.5.5 Households Whose Joint Identification by both Shelter Poverty and Housing Expenditure to Income Models were Rejected by the Aggregate Model**

This group constitutes about 140 households, who were previously classified as having no housing affordability problems by both the shelter poverty and housing expenditure to income models but had this affordability classification rejected by the aggregate affordability model. They constitute about 4.82% of households with housing affordability problems. These households represent unique cases different from the previous groups whose housing affordability classification status was rejected by the aggregate affordability model. Contrary to the other groups whose classifications were changed by the aggregate model, their previous affordability classification status was jointly corroborated by both the shelter poverty and housing expenditure to income models. Households in this group spent less than 30% of their household income on housing, hence they were considered as having no affordability problems by the housing expenditure to income model. The sum of their housing expenditure

and non-housing consumption thresholds does not exceed their household income; hence they were also considered not having affordability problems by the shelter poverty model. It raises the pertinent question - why would the aggregate affordability model that is based on the shelter poverty and housing expenditure to income models reject the household classification which both models jointly agreed upon? Table 6-13 provides clues that justify the re-classification of these families by the aggregate affordability model. While their non-housing consumption threshold is comparable to the first group (whose housing expenditure to income classification was rejected), their housing expenditure is the equally comparable to the second group (whose shelter poverty classification was rejected). However, their average household income is three times lower than that of the first group and two times lower than that of the second group.

**Table 6-13 Assessment of Households Whose Joint Identification by Both Shelter Poverty and Housing Expenditure to Income Models was Rejected by the Aggregate Model**

<b>Households Whose Joint Identification by both Shelter Poverty and Housing Expenditure to Income Affordability Indices was Rejected by the Aggregate Housing Index</b>					
No.	Percentile	Household Size	Non-housing Consumption threshold (Naira)	Household Income (Naira)	Housing Expenditure (Naira)
1	p10	1	33752.76	69326.92	13083.54
2	p25	2	45118.41	91770.24	21672.73
3	p50	3	82038.15	127329.50	29684.33
4	p75	4	112899.90	169123.80	40770.32
5	p90	5.5	140887.80	213059.40	53148.45
<b>Mean</b>		<b>3.2</b>	<b>82936.27</b>	<b>134033.30</b>	<b>31525.91</b>

The group has a mean household income of about ₦134,033.30 (Naira) while the national average is about ₦206,460.50 (Naira). Their median household income of ₦127,329.50 (Naira) is also lower than the national median household income of ₦142,669.00 (Naira). Their non-

housing consumption threshold is also less than the national mean of ₦116690.00 (Naira) and the national median estimate of ₦101,146.00 (Naira).

A major weakness of the shelter poverty and housing expenditure to income models is their inability to identify households who are under-consuming housing. It is common knowledge that some households especially on lower-incomes deliberately choose to under-consume housing in order to satisfy some other pressing or desired non-housing consumption needs. In such cases, they often choose lower-end housing, often inadequate for their actual housing needs. In such cases, the housing expenditure levels are relatively lower than other comparable households. There is an indication that these households have also the problem of under-consuming non-housing needs given their comparatively low non-housing consumption threshold. This group presents a special problem, because they are seemingly able to pay for their housing, as well as their non-housing consumption needs. However, in reality, they under-consume housing while maintaining marginal basic non-housing needs given their lower household income levels.

Comparing tables 6-11, 6-12 and 6-13 seem to indicate that the households identified in table 6-13 are those that under-consume housing, along with having marginal non-housing consumption. It is therefore interesting that the aggregate affordability model was able to identify these households, by simultaneously taking into account their housing expenditure and income levels as well as their non-housing consumption thresholds in relation to other households in the study. It is also noteworthy that in absolute terms, the number of these households is about two and half times larger than those identified as over-consuming housing. In an environment characterized by high housing cost and limited income, the number of households under-consuming housing are usually more than those over-consuming it. In fact the under-consumption/over-consumption household ratio could offer a useful insight into the underlying living constraints of households in adjusting to the tension between household income and housing expenditure.

The reclassification of these three groups seems to evidently indicate the superiority of the aggregate affordability model as a housing affordability measurement tool over the shelter poverty model and the housing expenditure to income model respectively. Not only is it able to capture more fully the divergent perspectives of these conventional housing affordability models, the aggregate affordability model is also able to avoid some of their respective major weaknesses. The aggregate housing affordability model is evidently imposing an empirical discipline upon otherwise arbitrary standards of housing affordability.

### 6.6 Major Characteristics of the Different Aggregate Housing Affordability Quintile Groups in the Study Area

In order to further appreciate the nature and characteristics of the aggregate housing affordability problems of households in the study area, the analysis of housing affordability quintiles was carried out. To do this, an aggregate housing affordability quintile distribution was constructed and matched against major key household characteristics that includes; income, housing expenditure, non-housing consumption threshold, household size, non-housing consumption and housing quality (as shown in Table 6-14).

**Table 6-14 Showing the Quintile distribution of the Weighted Aggregate Housing Affordability, Non-housing Consumption Threshold, Household Income, Household Size Non-housing and Housing Expenditure of Households in Nigeria**

Quintiles	Weighted Housing Affordability	Weighted Housing Expenditure (Naira)	Weighted Housing Quality	Weighted Household Income (Naira)	Weighted Non-housing Consumption Threshold (Naira)	Weighted Household Size (Country Adult Equ.)
Top (5 <sup>th</sup> ) Quintile	1.748	49679.68	0.290	518705.00	125637.2	3.9
4 <sup>th</sup> Quintile	0.183	39090.21	0.115	208628.30	108197.9	3.3
3 <sup>rd</sup> Quintile	-0.210	38378.96	0.172	135307.60	106173.7	3.1
2 <sup>nd</sup> Quintile	-0.521	43456.54	0.009	91169.27	104115.7	3.0
Bottom (1 <sup>st</sup> ) Quintile	-1.141	83888.31	-0.349	92812.15	143029.6	4.4

The findings highlight some interesting housing characteristics of different quintile groups with housing affordability problems. The 60.57% of Nigerian households' that constitute the

group with housing affordability problems were completely captured in the bottom (1<sup>st</sup>) quintile, 2<sup>nd</sup> and the 3<sup>rd</sup> quintiles of the analysis. As shown in the second column of table 6-14, that households in the bottom quartile has the most severe housing affordability problems with a mean aggregate affordability index of about -1.14, while those in the second and third quintiles have mean aggregate affordability indices of about -0.52 and -0.21 respectively.

### **6.6.1 Matching the Household Income of the Quintile Groups against Housing Affordability**

Going by multi-level model estimates, the mean household at the bottom quintile would require an additional annual income of about ₦203,750.00 (Naira) to their current annual income in order to reach the neutral affordability datum of 0 (zero) while holding housing expenditure and household size constant. That translates into an overall increase of ₦296,562.15 (Naira) - more than three times their current average income of about ₦92,812.15 (Naira). However, under the same conditions, the mean household in the second quintile will require additional ₦93,035.71 (Naira) as extra household income (i.e. slightly more than double their current household income of ₦91,169.27 (Naira)). While the average household in the 3<sup>rd</sup> aggregate affordability quintile will require an annual income increase of about ₦37,500.00 (Naira) in order to reach the neutral housing affordability datum if their housing expenditure and household size are held constant. This represents about 27.71% increase in their annual household income. Therefore, while the mean households in the bottom quintile and second quintile have comparable household income, the mean household in bottom quintile would need a much higher comparative increase in income than those of the 2<sup>nd</sup> quintile if they are to over-come their housing affordability problems. In fact, the bottom quintile group required additional ₦110,714.30 (Naira) per annum more than the 2<sup>nd</sup> quintile group.

This is an important finding because it tends to suggest that household income is not the key element that drives the housing affordability disparity between households in the bottom and 2<sup>nd</sup> quintiles. Therefore, either the mean household in the bottom quintile is spending

disproportionate large amounts on housing or that their non-housing consumption expenditure is disproportionately very high or both.

There is also another interesting observation in the nature of household income distribution in the study area. Although the mean household in the 3<sup>rd</sup> quintile group recorded a significantly higher household income than that of bottom and 2<sup>nd</sup> quintile groups, it still fell below the national mean household income by about 60%. In fact, the mean household income of the 4<sup>th</sup> quintile group is about 3.5% lower than weighted national mean household income of ₦216,261.30 (Naira). Therefore, of the five aggregate housing affordability quintile groups, four recorded household income averages that are below the national mean household income. If account is taken of the study findings suggesting that if an average Nigerian households maintains the weighted national mean household income of ₦216,261.30 (Naira); the weighted national mean household expenditure of ₦50,545.63 (Naira); and the weighted national mean household size (country adult equivalent) of about 3.57 persons, such a household would be almost at the neutral housing affordability mark. This suggests that the 4<sup>th</sup> quintile group was only able to record a positive aggregate housing affordability due to the fact that both their total housing expenditure and household size were below their respective national mean values. The low incomes of the four quintile groups that constitute about 80% of the entire urban Nigerian households tends to suggest a generally low purchasing power amongst the overwhelming proportion of households. Given such a situation, the need for more housing may not translate into effective demand that is needed to stimulate adequate private-sector housing delivery.

While in chapter 5 the study noted the huge household income disparity in the study area, the above finding shows just how much this disparity constitutes a major problem towards achieving equitable aggregate housing affordability amongst urban households in the study area. The observed distribution in household income that is not only sharply skewed in favour of the top quintile group but also has the mean household income of the rest of the quintiles group falling below the average national mean can only but exacerbates the serious problem of

limited capacity amongst the over-whelming majority of households to compete for and stimulate market-driven housing supply. This could lead to the expansion of the informal housing market sector.

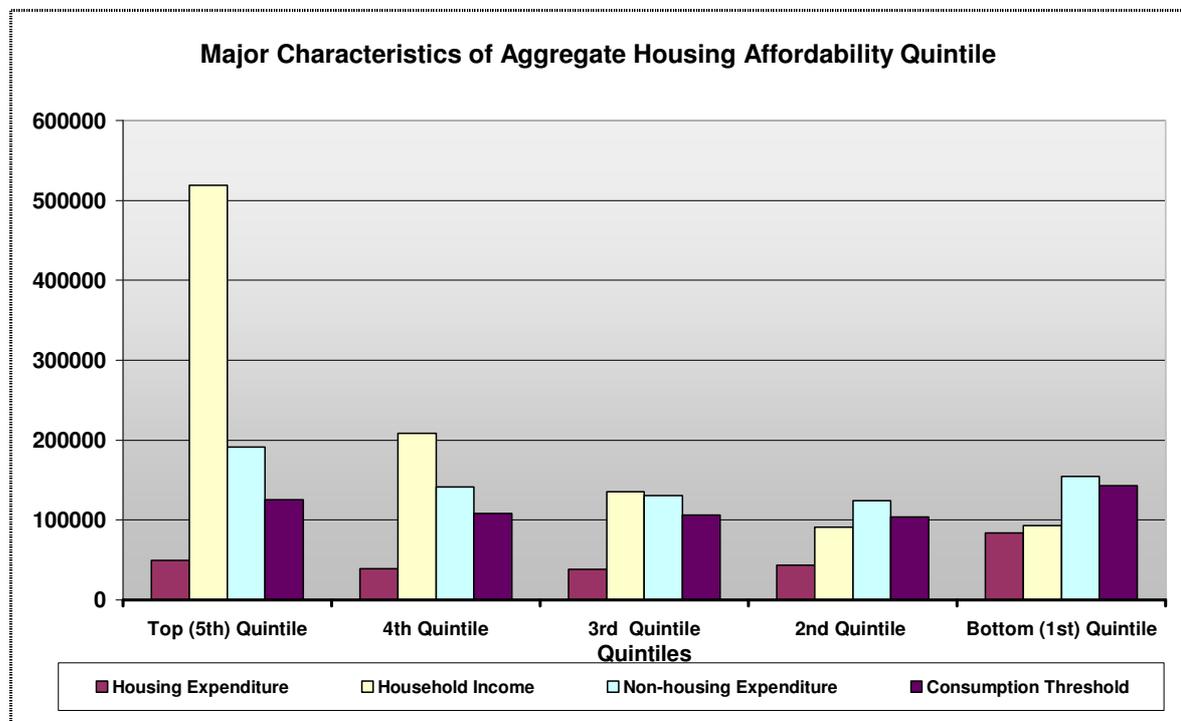
### **6.6.2 Matching the Housing Expenditure of the Quintile Groups Against Their Housing Affordability**

When the household's housing expenditure distribution of the quintile groups is assessed, the mean household in the bottom quintile would theoretically required an annual housing expenditure decrease of about ₦95,083.33 (Naira). Given that they currently spend about ₦83,888.31 (Naira) on their housing, it means that their housing expenditure needs to be entirely eliminated to stand the chance of improving their current housing affordability status to minimum acceptable level. In fact, even with the total elimination of the current housing expenditure burden of the bottom quintile group, they will still need additional income (that is at least 13% of their current housing expenditure) in order to reach the acceptable minimum affordability status. Similarly, the mean household in the 2<sup>nd</sup> quintile would equally need a decrease of ₦43,416.67 (Naira) per annum in their housing expenditure. Given, that they currently spend ₦43,456.54 (Naira) on their housing, it means that 99.9% of their current housing expenditure needs to be entirely eliminated, if they are to improve their housing affordability status to minimum acceptable level. These seem to suggest that the existing household income of these two quintile groups may be too low to support any level of housing expenditure if they are to stand any chance of reaching a meaningful level of aggregate housing affordability. This is an important finding that may have significant implication for policy.

Another striking observation is the sharp disparity in the levels of housing expenditure between the bottom quintile group and the rest of the quintile groups. For instance, while the household income of the mean household in the bottom quintile and 2<sup>nd</sup> quintile are comparable, the housing expenditure of the bottom quintile is almost twice as much. In fact,

the mean household in the bottom quintile spends more on housing than the mean household of any of the quintile groups in the study area.

**Figure 6-7 Histograms Showing Aggregate Housing Affordability, Non-housing Consumption Threshold, Household Income and Housing Expenditure Quintiles**



The group spends as much as 68.86% more than those in the 5<sup>th</sup> quintiles and more than double the housing expenditures of the 3<sup>rd</sup> and 4<sup>th</sup> quintiles respectively. When taken into cognisance that they earn a lot less than those in the 3<sup>rd</sup> quintile, less than half the income of those in the 4<sup>th</sup> quintile and less than one-fifth of the income of those in the 5<sup>th</sup> quintile, the huge housing expenditure burden of the bottom quintile becomes more evident as shown in Figure 6-7. Thus, while households in the bottom quintile group recorded lower levels of income, paradoxically they also pay by far the highest levels of housing expenditure. This may have significantly contributed to the lowest level of aggregate housing affordability recorded by the bottom quintile group.

### 6.6.3 Matching the Housing Quality of the Quintile Groups Against Their Housing Affordability

It is also noteworthy that of all the groups, only the bottom quintile group recorded a negative the housing quality score of about  $-0.349$  with the 2<sup>nd</sup> and 3<sup>rd</sup> quintiles recording low but positive housing quality scores of about  $0.009$  and  $0.172$  respectively as shown in table 6-14. In fact, the bottom quintile group don't just live in the least quality housing but also have the biggest housing quality gap in comparison to the other quintiles groups. The housing quality gap between the bottom and 2<sup>nd</sup> quintiles is in fact more than that between the 2<sup>nd</sup> quintile and the 5<sup>th</sup> (top) quintile group. This is indicative of the huge disparity in housing quality that exists in the study area. This is not surprising, given the fact that both the formal and informal housing sectors were included in the survey. What is of concern is the fact that households in lowest quality housing seemed to comparatively pay more for their housing but in relative and absolute terms. Such situation is easily plausible in situations of severe housing shortages, with unmet backlogs of housing needs. In such a situation, desperate households are compelled to settle at higher costs into available lower quality housing.

It should be borne in mind that housing quality in this study was measured by quality of construction material of the floor, walls and roof of dwelling. Lower quality is taken as dwellings where the outside walls are constructed with mud, wood or bamboo, iron sheets or cardboards; where floors are constructed with earth or mud, plank, dirt or straw; and where roofs are constructed with mud or mud bricks, wood or bamboo and thatch grass or straws. Most often, the use of poor construction materials directly correlates with poor neighbourhood services and infrastructure. It is safe to assume that the majority of these sub-standard houses are common in informal settlements; slums or deteriorating neighbourhoods; traditional core of many organic town/cities; with equally poor and deteriorating neighbourhood services and infrastructure.

Unfortunately, lower quality housing often requires high maintenance cost ratio, which serve to drive up the housing expenditure of households living in such housing. Housing that is

located in neighbourhoods lacking basic infrastructure such as pipe borne water, electricity, waste disposal, roads and sewer drainage, often transferred the burden of providing alternatives to such infrastructure/services at additional costs to homeowners and landlords. For instance, a lack of pipe borne water facility often drives house owners to construct water wells or water boreholes (where possible); build surface water tanks or over-head water tanks that are routinely filled by water bought from vendors, which requires large capital outlay and expenditure. In rented housing, such extra costs are often transferred to renting households - adding to their housing expenditure levels. Thus, the cost of living in such housing in many case ends up being more expensive than living in neighbourhood with relatively better services.

#### **6.6.4 Matching the Non-housing Consumption Expenditure of the Quintile Groups Against Housing Affordability**

A look at table 6-14 would suggest that the mean household in the bottom quintile seem to have higher non-housing consumption expenditure burden relative to their income than those of the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> quintiles. This is so despite the fact that they have the least mean per capita non-housing expenditure of ₦35,166.68 (Naira) when compared to the other quintile groups, which increasingly ranged from ₦39,982.48 (Naira) of the 2<sup>nd</sup> quintile to about ₦48,994.79 (Naira) of the 5<sup>th</sup> quintile. This bottom quintile household recorded the highest non-housing consumption threshold of about ₦143,029.6 (Naira) while the next (2<sup>nd</sup>) quintile group recorded the lowest non-housing consumption threshold of about ₦104,115.7 (Naira). These are all indicative of the impact of household size on non-housing expenditure of households. However, the actual impact of household's size on aggregate housing affordability is more pronounced in situations where the household income is low with households having to struggle to adequately provide for their non-housing needs or forego some of those needs when they cannot be met.

It is therefore safe to conclude that these findings suggest that non-housing expenditure is also another factor that drives housing affordability problems of bottom quintile group in the study

area. This is not surprising, given that shelter poverty, affordability model which emphasises the role of non-housing expenditure in housing affordability is a major component of the aggregate affordability approach. It is more important to consider its the degree of influence on aggregate housing affordability, relative to other factors. The housing expenditure difference of the bottom quintile, compare to the rest both in terms of percentages and absolute figures were much higher than similar disparities in the non-housing consumption threshold of the quintiles. So while non-housing consumption threshold is important, it is obviously not the most critical in accounting for the differences in aggregate housing affordability across the quintile groups.

Generally, these findings tend to indicate that the character and dimension of housing affordability problems of different quintiles within the unaffordable group are likely different from each other. Given the extent of the disparity between the mean household in the bottom quintile and the other quintiles with respect to their respective non-housing consumption threshold and housing expenditure, it is clear that the bottom quintile household not only carry more non-housing consumption burden, but they also spend more money for their housing.

#### **6.6.5 Matching the Household Size of the Quintile Groups Against Their Housing Affordability**

Household size here refers to the country adult equivalent household size which was used in the model analysis not the conventional household size. While the 2<sup>nd</sup> and 3<sup>rd</sup> quintile groups had comparable household sizes of 3.0 and 3.1 persons respectively, the bottom quintile group recorded the highest household size of the identified subgroups with 4.4 persons, which was about 22% above the national mean (country adult equivalent) household size of 3.6 persons.

When the aggregate housing affordability model is considered, the bottom, 2<sup>nd</sup> and 3<sup>rd</sup> quintile groups and will require a household decrease of about 11.5, 5.3, and 2.1 persons respectively, in order to raise their housing affordability into the neutral housing affordability status. This finding tends to suggest that the housing affordability problems of the bottom and 2<sup>nd</sup> quintile

groups will acquire more than just a decrease in household size if they are to be resolved. While it is theoretically possible to resolve the housing affordability problems of the 3<sup>rd</sup> quintile group by reducing their current household size of 3.1 to 2.1, the required decrease in household size for the bottom (1<sup>st</sup>) and 2<sup>nd</sup> quintile groups were by far more than their respective current household sizes - hence the impossibility of applying such an option. The implication of this finding is that using reduction in household size as a tool to improve aggregate housing affordability can only be effective if it is pursued in conjunction with other strategies.

### **6.7 Some Insights into the Nature of the Housing Markets in the Study Area**

When all these attributes of the quintile groups (especially those with housing affordability problems) is considered, they provide insights into the nature of the housing market/ housing delivery system in Nigeria. One major conclusion that could be drawn from the analysis of housing affordability quintile groups is that the nature of housing affordability problems varies across different quintile groups. A closer look at these variations provides clues and possible insights into the broader nature of the housing markets and the housing delivery environment within which they operate. For instance, when the major attributes of the bottom housing affordability quintile group is compared with other quintile groups, it is not far-fetched to reach the conclusion that there are huge housing supply problems in the study area.

A situation where the bottom quintile group has less household income, lives in the lowest quality housing and yet pays much more for housing than the other quintile groups is an indication of serious constrain in housing supply, especially for larger sized households. This is a compelling case to make when the representative household in the bottom quintile group is a household that maintains the highest household size and highest non-housing consumption threshold; whose household income is comparatively within the lowest range and significantly less than the median National household income; and despite the fact that they live in the poorest quality of housing, records by far the highest housing expenditure relative to other

quintile groups that enjoyed a much higher levels of housing quality. This situation should not occur in a well functioning housing market. All things being unequal, people (as rational beings) do not normally pay a lot more money for goods and services of comparatively poorer quality or lesser utility (within the market system), unless they are constrained to do so by prevailing circumstances.

The situation as described in the study area seems to suggest that households at the bottom housing affordability quintile experience more pressing housing supply problems than the other quintile groups, which consequently pushed up their housing expenditure to excessive levels despite its poor quality. It is also important to note that any such housing supply problems indicated in these findings are largely concerned with housing that can adequately cater for especially large households. It has also been uncovered in the course of the study, that there are wide disparities in their housing expenditure and housing quality within the study area along with very extensively low household income distribution across most of the quintile groups. How do these factors affect the housing supply and demand in the study area? What are their implications to policy? These issues are discussed in the later sections of the study

## **6.8 Summary of Key Findings**

- 1.) The use of either of the Housing Expenditure to Income or Shelter Poverty models tends to exclude about 20% of households that would have been captured by the other and vice versa. The aggregate housing affordability model seems to identify households that would have been otherwise left out by either of these conventional models. It also identifies and correctly classify households that under-consume or over-consume housing who would have been misclassified by the conventional affordability models.
- 2.) Within the Nigerian context, the aggregate housing affordability model captures as having housing affordability problems about 10% to 12% more households than the conventional affordability models.

- 3.) About 61% of Nigerian households have housing affordability problems.
- 4.) Of the three variables that significantly influence aggregate housing affordability – household income, housing expenditure and household size; household income has a positive and the most influential relationship with aggregate housing affordability, followed by housing expenditure and lastly household size, two of which have negative relationship with aggregate housing affordability.
- 5.) The aggregate housing affordability status of the Nigerian household that maintains an average national household income, housing expenditure and household size will still be negative but very close to the neutral affordability mark.
- 6.) There is a general low household income level across the four of the five quintile groups in the study area. The poor housing affordability status of the national median household would be increased to the neutral affordability mark if there is about ₦37,366.73 (Naira) per annum increase in their household income while keeping an average constant housing expenditure and household size.
- 7.) Conversely, the national median household would achieve that same neutral affordability mark if there is a housing expenditure decrease of about ₦17,407.50 (Naira) per annum in their national average housing expenditure while keeping an average constant household income and household size.
- 8.) The national median household would also achieve that same neutral affordability mark if there is a decrease of about 2 persons from its current household size while keeping an average constant household income and housing expenditure.
- 9.) Within the group of households with housing affordability problems are different sub-groups with different types of housing affordability problems.
- 10.) There are wide housing quality disparities in the study area.
- 11.) Findings indicate that it is likely that serious housing supply constraints increase housing expenditure and exacerbate housing affordability problems in the study area.

This chapter has attempted to synthesise the aggregate housing affordability index; evaluated the households classification of the new aggregate index against the shelter poverty and the housing expenditure-to-income models and explored possible insights on the nature of housing affordability problems in the study area based on the aggregate housing affordability index including its relationship with household income, housing expenditure and household size. In so doing, it provided answers to research questions one and two of this study. The study will now focus on examining the aggregate housing affordability of socio-economic groups, housing tenure groups and states in the study area. This will be done in the next chapter.

## **EXPLORING THE AGGREGATE HOUSING AFFORDABILITY OF DIFFERENT SOCIO-ECONOMIC GROUPS, TENURE GROUPS AND STATES IN NIGERIA**

### **7.1 Introduction**

This chapter attempts to answer research questions three, four and five of the study by exploring the relationships between aggregate housing affordability and different socio-economic groups, tenure groups and states in the study area and the impact of household income, non-housing and housing expenditures on such relationships. This also leads to the testing of the three hypotheses of the study that involves testing if significant housing affordability differences exist with the various socio-economic groups, tenure groups and states in the study area. The importance of such an investigation has been briefly discussed in the introductory chapter and literature review. In summary, the examination of the housing affordability differences within and between various groups in the society will deepen our understanding of housing affordability; improve our understanding of the actual local housing realities of different groups in the society; and will offer more insights into how best to effectively deal with the housing problems of different groups. This should help to improve knowledge about how best to provide adequate housing for all households.

To further explore the nature of housing affordability differences between socio-economic and tenure groups, the study also controlled for household income, housing expenditure and non-housing expenditure in these analyses to determine how these variables relate to the various groups with respect to their housing affordability. For instance, if the income difference between the socio-economic groups is discounted, will there be any differences in the housing affordability of various socio-economic groups? What will be the nature of such differences (where they exist)? Such questions as these were tackled by applying analyses that controlled for variables while exploring differences between groups. Beyond determining where significant differences exist in the housing affordability of different states, the study also

examined the actual magnitude of housing affordability problems in the states and how best to rank the states using the housing affordability problems size-intensity index as developed in this study.

## **7.2 The Techniques Applied in Determining Housing Affordability Differences between Groups and in the Test of Study Hypotheses**

The three research hypotheses of the study provided the backdrop to examining the housing affordability differences between the groups and states in the study area. A combination of analysis of variance (ANOVA) models and analysis of covariance (ANCOVA) models were used to explore the housing affordability difference between various identified groups. Attempts were made in the study to examine the impact of household income, non-housing expenditure and housing expenditure on the aggregate housing affordability of these groups by statistically controlling for the effects in further analyses. To do this, each of these variables was introduced into the base model as quantitative regressors. Thus, the base ANOVA model (with only qualitative regressors) was extended into ANCOVA models (with both qualitative and quantitative regressors). In this way, the derived models account for the respective covariate differences between the groups with respect to household income, non-housing expenditure, and housing expenditure of households.

The combination of traditional tests of hypotheses approach (Wald's test method) and confidence intervals approach including graphs were used to analyse the housing affordability differences of these various groups. The inclusion of the confidence interval approach was meant to satisfy some major limitations associated with the traditional test of hypothesis approach. As noted by both Goldstein (1994) and Sim and Reid (1999) amongst others, the test of hypothesis approach gives little or no indication of the magnitude of statistical relationships; it reduces statistical inference to a process of binary decision making; and whether or not statistical significance is achieved may simply be a function of choice of sample size. Arguing along these lines Batterham and Hopkins (2006, p.51) contended that;

“Regardless of how the  $P$  value is interpreted, hypothesis testing is illogical, because the null hypothesis of no relationship or no difference is always false—there are no truly zero effects in nature. Indeed, in arriving at a problem statement and research question, researchers usually have good reasons to believe that effects will be different from zero. The more relevant issue is not whether there is an effect but how big it is. Unfortunately, the  $P$  value alone provides us with no information about the direction or size of the effect or, given sampling variability, the range of feasible values. Depending, *inter alia*, on sample size and variability, an outcome statistic with  $P < .05$  could represent an effect that is clinically, practically, or mechanistically irrelevant.”

It is therefore important to go beyond merely showing that an effect or relationship exist to show the magnitude of such effect.

On the other hand, confidence intervals normally identify the likely range of the true, real, or population value of a statistic (it shows the region where the true population mean lies). Thus, it could be effectively used to mitigate the limitations of the traditional hypothesis testing methods that serve to either reject or retain a null hypothesis based on derived p-value statistic by providing additional information on the precision and accuracy of an observed sample statistic. It does this by estimating the variability of such an observed sample statistic and its probable relationship to the value of this statistic in the population from which the sample was drawn respectively, offering deeper insight on the magnitude of observed effects (Sim and Reid, 1999). Thus, while such intervals encapsulate the results of many hypothesis tests, they focus more on estimating the size of the true effect. They also lend themselves to graphical representations, which offer a natural and straightforward assessment of statistical power (Masson and Loftus, 2003). Employing confidence interval tests here will not only highlight the magnitude of housing affordability differences that exist between identified groups, but also allow for easier comprehension of the relationships being examined by representing them graphically.

In analysing the results of these models and testing for significant differences in relationships between parameters, simultaneous/complex comparisons methods were employed to examine identified significance differences at different level of analyses while adjusting for household income, non-housing expenditures and housing expenditures respectively. In these tests, socioeconomic groups, housing tenure groups are explanatory variables where  $n$  group effects

are defined in terms of  $n-1$  dummy variable contrasts. The analyses seek to simultaneously test whether these contrasts are zero and where they are not, and to explore which particular linear combinations of the coefficients involved is significantly different from zero.

Thus, the study examines if there are significant housing affordability differences between identified groups in general terms; (and where such differences exist), examine in specific terms which of these groups differ from others. The Wald statistic was chosen given its capability and flexibility in handling large samples size tests, testing of both fixed and random parts of the model, coefficient tests and multivariate simultaneous tests as carried out in the study. It is based on the value of an unrestricted likelihood function, which tends to be near zero if the set of hypothesized restrictions is valid but farther from zero than would be explained by sampling variability alone if the set of hypothesized restrictions is erroneous. According to Goldstein (1994), this procedure is defined by a contrast ( $r \times p$ ) matrix  $\mathbf{C}$ , which is used to form a linearly independent functions of parameters  $p$  in the model  $f=C\beta$ , where each row of  $\mathbf{C}$  defines a particular linear function. For instance, to test the hypothesis that the slope terms  $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \dots = \beta_n = 0$ . It can be stated as follows;

$$H_0 : [C][\beta] = [k] \quad \text{where } f = k, \text{ and } k = 0$$

$[C]$  = contrast ( $r \times p$ ) matrix, where  $r$  is the number of parameters in the model and  $p$  the number of simultaneous tests

$[\beta]$  = the vector of parameters (fixed or random)

$[k]$  = the vector of values that the parameters are contrasted against (usually the null).

The Contrast matrix  $\mathbf{C}$  is filled with 1 if a parameter is involved; -1 if the parameter is involved as a difference; and 0 the parameter is not involved otherwise. Thus, examining if there are significant differences between the identified six socioeconomic groups (i.e.  $n-1$  dummy variables) in this study can be defined as shown below;

$$C = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & \dots & 0 \\ 0 & 0 & 1 & 0 & 0 & \dots & 0 \\ 0 & 0 & 0 & 1 & 0 & \dots & 0 \\ 0 & 0 & 0 & 0 & 0 & \dots & 1 \\ 0 & 0 & 0 & 0 & 0 & \dots & -1 \end{bmatrix} \quad f = \begin{bmatrix} \beta_0 \\ \beta_1 \\ \beta_2 \\ \beta_3 \\ \beta_4 \\ \beta_5 \end{bmatrix} \quad k = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

Given the general null hypothesis stated above, the Wald Statistic  $R$  can be expressed in form;

$$R = (\hat{f} - k)^T [C(X^T \hat{V}^{-1} X)^{-1} C^T]^{-1} (\hat{f} - k)$$

where  $\hat{f} = C\hat{\beta}$  and  $(X^T \hat{V}^{-1} X)^{-1}$  is the estimated covariance matrix of the fixed or random coefficients. The Wald statistic is distributed as approximately  $\chi^2$  with  $r$  degree of freedom, if the null is correct. Following this procedure, the results would yield the chi-squared statistic for the overall test that considered all the contrasts simultaneously in addition to the chi-squared statistic for each test focussed on specific group(s) separately. The value of  $R$  obtained is judged against the critical values of the chi-squared distribution with  $r$  degrees of freedom.

As noted above, this traditional approach to testing for differences was complemented with the confidence interval approach. It required obtaining an  $\alpha\%$  confidence region for the parameters. In this study the  $\alpha\%$  used is 95% confidence region. To do this,  $\hat{R}$  needs to be set to equal the 95% tail region of the  $\chi^2$  distribution with  $r$  degree of freedom. Following the above Wald statistic, it is expressed as;

$$\hat{R} = (f - \hat{f})^T [C(X^T \hat{V}^{-1} X)^{-1} C^T]^{-1} (f - \hat{f})$$

According to Goldstein (1994), the above formula yields a quadratic function of the estimated coefficients, with an  $r$ -dimensional ellipsoidal region. The study was also interested in determining the confidence intervals for each set of contrasts separately while maintaining a fixed probability for all the intervals and for the population value of these functions of the parameters.

For a  $(1 - \alpha)\%$  interval write  $C_i$  for the  $i$ -th row of  $C$ , then a simultaneous  $(1 - \alpha)\%$  interval for  $C_i\beta$ , for all  $C_i$  is given by;  $(C_i\hat{\beta} - d_i, C_i\hat{\beta} + d_i)$

Where,  $d_i = [C(X^T\hat{V}^{-1}X)^{-1}C_i^T\chi_{q,(\alpha)}^2]^{0.5}$

where  $\chi_{q,(\alpha)}^2$  is the  $\alpha\%$  point of the  $\chi_q^2$  distribution

The derived confidence intervals (CI) along with the housing affordability means of each of the groups were plotted to graphically illustrate the housing affordability differences between these groups.

### 7.3 The Aggregate Housing Affordability of Different Socio-economic Groups in Nigeria

In order to examine the aggregate housing affordability of different socio-economic groups in this study, several perspectives were pursued. These includes determining the extent to which socio-economic group influence the level of housing affordability of households by; determining whether there are differences in the housing affordability of different socio-economic groups, the nature of these differences, and the extent to which major factors such as household income, non-housing expenditure and expenditure on housing influence these differences. Six identified socio-economic groups, discussed in Chapter 5 above, were used in the analysis and they are as follows;

- Managerial and professional occupations - SEG1
- Intermediate occupations – SEG2
- Small employers – SEG3
- Own account workers (Self employed without employees) – SEG4
- Lower supervisory and technical occupations – SEG5
- Semi-routine and routine occupations – SEG6

To pursue the above mentioned objectives, the study tested the following hypothesis;

*Null Hypothesis 1 ( $H_0$ ): There is no significant difference in the residential housing affordability of different socio-economic groups, including when controlling for such factors as household income, non-housing expenditure and housing expenditure in the study area.*

In order to test the above hypothesis, the base ANOVA model regressed aggregate housing affordability ( $Y$ ) against the set of socio-economic group (explanatory) dummy variables (SEG1, ..., SEG5) as represented by  $X_1, \dots, X_5$ . The sixth group – Semi-routine and routine occupations (SEG6) served as reference / benchmark category in the model. As required, the intercept value  $\beta_0$  represents the housing affordability mean value of the Semi-routine and routine occupations group. From the result of the multi-level modelling of different socio-economic group's aggregate housing affordability as shown in table 7-1, socioeconomic status has a moderate but significant influence in the aggregate housing affordability of households. The result showed that socio-economic status of households, accounts for about 5% of the total between enumeration areas (EAs) variance while it also explained about 0.31% of the total between households (HHs) variance in aggregate housing affordability within the study area. In order to determine whether significant difference exist between the socioeconomic groups, derived p-value must be shown to be less than 0.05 (since the study adopts 95% critical interval). Therefore, results will be considered significant when the probability that they could occur by chance (as a result of sampling error) is less than 5%.

When the aggregate housing affordability of each social economic group is simultaneously compared with others, the results tend to suggest that there is a significant difference between the socioeconomic groups. The calculated (Wald statistic)  $R = 89.872$ , when judged against the critical values of the chi-squared distribution at 15 degrees of freedom yielded an extremely low p-value of  $2.54e-21$ , which is less the 0.05. *Therefore, the null hypothesis ( $H_0$ ) is rejected in favour of the alternate hypothesis.*

Table 7-1 Showing the Results of the Multi-level Models of Aggregate Housing Affordability Differences Between Various Socio-economic Groups in Nigeria

Parameter	Est. (s.e.) (single level)	Estimate (s.e.)	Estimate (s.e.)	Estimate (s.e.)	Estimate (s.e.)
	A	B	C	D	E
<i>Fixed</i>					
constant $\beta_0$ ( Semi-routine and routine occupations – SEG6)	-0.189 (0.000)	-0.147 (0.039)	-1.042 (0.037)	-0.245 (0.051)	0.205 (0.049)
Managerial and professional occupations (SEG1) ( $x_1$ )	0.962 (0.000)	0.855 (0.098)	-0.037 (0.048)	0.799 (0.100)	0.923 (0.095)
Intermediate occupations (SEG2) ( $x_2$ )	0.529 (0.000)	0.413 (0.083)	0.063 (0.037)	0.400 (0.083)	0.386 (0.080)
Small employers (SEG3) ( $x_3$ )	0.203 (0.000)	0.159 (0.083)	0.013 (0.034)	0.145 (0.081)	0.160 (0.079)
Own Account Workers (SEG4) ( $x_4$ )	0.225 (0.000)	0.152 (0.060)	0.035 (0.030)	0.151 (0.060)	0.149 (0.058)
Lower supervisory and technical occupations (SEG5) ( $x_5$ )	0.262 (0.000)	0.227 (0.094)	0.053 (0.073)	0.221 (0.095)	0.233 (0.078)
Household Income ( $x_6$ )			4.92e-006 (1.21e-007)		
Non-housing Expenditure( $x_7$ )				7.17e-007 (3.07e-007)	
Expenditure on housing ( $x_8$ )					-6.92e-006 (8.92e-007)
Joint chi sq test (5df)	3.95e+14	89.87	5.205	75.730	106.229
p-value	0.00000	2.54e-21	0.39138	3.25e-18	6.57e-25
Sig.	significant	significant	Non-sig.	significant	significant
<i>Random</i>					
<i>Level 2</i>					
$\sigma_{u0}^2$ (between EAs intercept)		0.334 (0.051)	0.111 (0.015)	0.326 (0.049)	0.372 (0.057)
Chi square test (1df)		43.270	54.210	43.88	41.995
p-value		4.77e-11	1.80e-13	3.49e-11	9.12e-11
Sig.		significant	significant	significant	significant
<i>Level 1</i>					
$\sigma_{e0}^2$ (between HHs intercept)		1.633 (0.295)	0.341 (0.043)	1.627 (0.293)	1.501 (0.287)
$\sigma_{e01}$ (single level variance)	2.152 (0.002)				
Chi square test (1df)		30.723	62.195	30.920	27.416
p-value		2.98e-8	3.11e-15	2.69e-8	1.64e-7
Sig.		significant	significant	significant	significant
% of between EAs variance explained		9.49	69.92	11.65	-0.81
% of between HHs variance explained		-0.31	79.05	0.06	7.80
-2*loglikelihood (Deviance)	14487.410	14277.340	7944.397	14253.450	14040.700

While the above results suggest that there are significant differences between socio-economic groups in general terms, it is necessary to identify the specific socioeconomic groups that have significantly different aggregate housing affordability from each other. Detailed results of such tests of significant relationships between each pair of socio-economic groups are shown on table 7-2. The table (7-2) showed the multiple comparison results of all possible pair of groups in all the test models. It showed all the specific cases where the null hypothesis was accepted (when there is no significant difference between groups) or where the null hypothesis was rejected (when there is significant difference between groups). Results suggest that the aggregate housing affordability of the Managerial and professional occupation group (SEG1) is significantly different from all the other groups. The aggregate housing affordability of the Intermediate occupation group (SEG2) is significantly different from other groups, with the exception of Small employees group (SEG3) and Lower supervisory and technical occupation group (SEG5). Furthermore, the Small employees group (SEG3) did not have any significant aggregate housing affordability difference with the Own account workers group (SEG4); Lower supervisory and technical occupation group (SEG5); or the Semi-routine and routine occupations group (SEG6).

However, while there was no aggregate housing affordability difference between Own account workers group (SEG4) and Lower supervisory and technical occupation group (SEG5), they (Own account workers group) have a significant aggregate housing affordability difference with the Semi-routine and routine occupations group (SEG6). The aggregate housing affordability of the Lower supervisory and technical occupation group (SEG5) was also shown to be significantly different from that of the Semi-routine and routine occupations group (SEG6).

When the analysis is disaggregated at both the EA and HH levels respectively, both of these between EA variance and within EA variances were shown to be significantly different than zero. The between EA variance ( $\sigma_{u0}^2$ ) and the within EA variance ( $\sigma_{e0}^2$ ) recorded p-values of 4.77e-11 and 2.98e-8 respectively, which indicate that the observed significant housing affordability

differences between identified socio-economic groups exist at both levels of analyses (see result in table 7-1). There is however, a greater variation in housing affordability of various socio-economic between the EAs than within the EAs.

The study also controlled for household income, non-housing expenditure and housing expenditure in further exploration of these differences (as earlier stated). In this way, it is possible to understand the impact of these variables since the derived models account for their covariate differences across identified socio-economic groups.

**Table 7-2 Showing the Results of the Test of Significant Relationships between Socio-economic Groups in Nigeria**

<b>Models /Socio-economic Groups</b>	<b>Chi sq (f-k)=0 (1df)</b>	<b>P-value</b>	<b>Sig.</b>
<b>Model Results with Socio-economic Groups (SEG) only</b>			
Man. / Prof. Occup. (SEG1) and Intermed. Occup. (SEG2)	14.763	0.0004	Significant
Man. / Prof. Occup. (SEG1) and Small Emp. (SEG3)	38.534	5.381e-10	Significant
Man. / Prof. Occup. (SEG1) and Own Acc. (SEG4)	44.079	3.154e-11	Significant
Man. / Prof. Occup. (SEG1) and Lower superv. and Tech. Occup. (SEG5)	23.357	1.346e-6	Significant
Man. / Prof. Occup. (SEG1) and Semi /routine Occup.(SEG6)	76.590	2.104e-18	Significant
Intermed. Occup. (SEG2) and Small Emp. (SEG3)	5.249	0.022	Non-sig.
Intermed. Occup. (SEG2) and Own Acc. (SEG4)	7.818	0.005	Significant
Intermed. Occup. (SEG2) and Lower superv. and Tech. Occup. (SEG5)	2.465	0.116	Non-sig.
Intermed. Occup. (SEG2) and Semi /routine Occup.(SEG6)	24.635	6.928e-7	Significant
Small Emp. (SEG3) and Own Acc. (SEG4)	0.007	0.933	Non-sig.
Small Emp. (SEG3) and Lower supervisory and tech. Occup. (SEG5)	0.372	0.542	Non-sig.
Small Emp. (SEG3) and Semi /routine Occup.(SEG6)	3.814	0.051	Non-sig.
Own Acc. (SEG4) and Lower supervisory and tech. Occup. (SEG5)	0.524	0.469	Non-sig.
Own Acc. (SEG4) and Semi /routine Occup.(SEG6)	6.346	0.012	Significant
Lower superv. and Tech. Occup. (SEG5) and Semi /routine Occup.(SEG6)	5.750	0.016	Significant
<i>Simultaneous test for all the group (Joint Chi Square at 15 df)</i>	89.872	2.54e-21	Significant
<b>Model Results for SEG – Adjusted for Household Income</b>			
Man. / Prof. Occup. (SEG1) and Intermed. Occup. (SEG2)	3.614	0.057	Non-sig.
Man. / Prof. Occup. (SEG1) and Small Emp. (SEG3)	0.761	0.383	Non-sig.
Man. / Prof. Occup. (SEG1) and Own Acc. (SEG4)	2.025	0.155	Non-sig.
Man. / Prof. Occup. (SEG1) and Lower superv. and Tech. Occup. (SEG5)	1.123	0.289	Non-sig.
Man. / Prof. Occup. (SEG1) and Semi /routine Occup.(SEG6)	0.594	0.441	Non-sig.
Intermed. Occup. (SEG2) and Small Emp. (SEG3)	1.393	0.238	Non-sig.
Intermed. Occup. (SEG2) and Own Acc. (SEG4)	0.614	0.434	Non-sig.
Intermed. Occup. (SEG2) and Lower supervisory and Tech. Occup. (SEG5)	0.017	0.896	Non-sig.
Intermed. Occup. (SEG2) and Semi /routine Occup.(SEG6)	2.838	0.092	Non-sig.
Small Emp. (SEG3) and Own Acc. (SEG4)	0.456	0.500	Non-sig.

Small Emp. (SEG3) and Lower supervisory and Tech. Occup. (SEG5)	0.293	0.588	Non-sig.
Small Emp. (SEG3) and Semi /routine Occup.(SEG6)	0.150	0.699	Non-sig.
Own Acc. (SEG4) and Lower supervisory and Tech. Occup. (SEG5)	0.063	0.793	Non-sig.
Own Acc. (SEG4) and Semi /routine Occup.(SEG6)	1.346	0.246	Non-sig.
Lower superv. and Tech. Occup. (SEG5) and Semi /routine Occup. (SEG6)	0.534	0.465	Non-sig.
<i>Simultaneous test for all the group (Joint Chi Square at 15 df)</i>	5.205	0.990	Non-sig.
<b>Model Results for SEG – Adjusted for Non-housing Expenditure</b>			
Man. / Prof. Occup. (SEG1) and Intermed. Occup. (SEG2)	11.901	0.001	Significant
Man. / Prof. Occup. (SEG1) and Small Emp. (SEG3)	32.055	1.499e-8	Significant
Man. / Prof. Occup. (SEG1) and Own Acc. (SEG4)	36.282	1.707e-9	Significant
Man. / Prof. Occup. (SEG1) and Lower superv. and Tech. Occup. (SEG5)	19.072	1.259e-5	Significant
Man. / Prof. Occup. (SEG1) and Semi /routine Occup.(SEG6)	63.455	1.641e-15	Significant
Intermed. Occup. (SEG2) and Small Emp. (SEG3)	5.377	0.020	Significant
Intermed. Occup. (SEG2) and Own Acc. (SEG4)	7.241	0.007	Significant
Intermed. Occup. (SEG2) and Lower supervisory and Tech. Occup. (SEG5)	2.245	0.134	Non-sig.
Intermed. Occup. (SEG2) and Semi /routine Occup.(SEG6)	23.223	1.443e-6	Significant
Small Emp. (SEG3) and Own Acc. (SEG4)	0.004	0.950	Non-sig.
Small Emp. (SEG3) and Lower supervisory and Tech. Occup. (SEG5)	0.479	0.489	Non-sig.
Small Emp. (SEG3) and Semi /routine Occup.(SEG6)	3.242	0.071	Non-sig.
Own Acc. (SEG4) and Lower supervisory and Tech. Occup. (SEG5)	0.473	0.492	Non-sig.
Own Acc. (SEG4) and Semi /routine Occup.(SEG6)	6.269	0.012	Significant
Lower superv. and Tech. Occup. (SEG5) and Semi /routine Occup.(SEG6)	5.419	0.020	Significant
<i>Simultaneous test for all the group (Joint Chi Square at 15 df)</i>	75.730	4.08e-10	Significant
<b>Model Results for SEG – Adjusted for Housing Expenditure</b>			
Man. / Prof. Occup. (SEG1) and Intermed. Occup. (SEG2)	22.780	1.817e-6	Significant
Man. / Prof. Occup. (SEG1) and Small Emp. (SEG3)	48.327	3.608e-12	Significant
Man. / Prof. Occup. (SEG1) and Own Acc. (SEG4)	56.145	6.732e-14	Significant
Man. / Prof. Occup. (SEG1) and Lower superv. and Tech. Occup. (SEG5)	34.956	3.372e-9	Significant
Man. / Prof. Occup. (SEG1) and Semi /routine Occup.(SEG6)	93.448	4.170e-22	Significant
Intermed. Occup. (SEG2) and Small Emp. (SEG3)	4.254	0.039	Significant
Intermed. Occup. (SEG2) and Own Acc. (SEG4)	6.671	0.010	Significant
Intermed. Occup. (SEG2) and Lower supervisory and Tech. Occup. (SEG5)	2.146	0.143	Non-sig.
Intermed. Occup. (SEG2) and Semi /routine Occup.(SEG6)	23.316	1.375e-7	Significant
Small Emp. (SEG3) and Own Acc. (SEG4)	0.015	0.903	Non-sig.
Small Emp. (SEG3) and Lower supervisory and Tech. Occup. (SEG5)	0.578	0.447	Non-sig.
Small Emp. (SEG3) and Semi /routine Occup.(SEG6)	4.110	0.043	Significant
Own Acc. (SEG4) and Lower supervisory and Tech. Occup. (SEG5)	9.031	0.003	Significant
Own Acc. (SEG4) and Semi /routine Occup.(SEG6)	6.729	0.009	Significant
Lower superv. and Tech. Occup. (SEG5) and Semi /routine Occup. (SEG6)	0.915	0.339	Non-sig.
<i>Simultaneous test for all the group (Joint Chi Square at 15 df)</i>	106.229	6.57e-25	Significant

When **non-housing expenditure and housing expenditure variables** were separately controlled in these models, the results there were still largely similar to the base model which showed significances in the housing affordability differences between the socio-economic groups.

*Therefore, the null hypothesis ( $H_0$ ) is also rejected here in favour of the alternate hypothesis even when non-housing expenditure and housing expenditure variables were separately controlled.*

In the model when **non-housing expenditure** was controlled, the aggregate housing affordability of Intermediate occupation group (SEG2) and Small employers group (SEG3) was shown to be significantly different as opposed to being non-significant in the base model. Similarly, in the model when **housing expenditure** was controlled, the aggregate housing affordability of Intermediate occupation group (SEG2) and Small employers group (SEG3) was also shown to be significantly different. Similarly, the aggregate housing affordability of Small employers group (SEG3) and Semi-routine/routine occupations group (SEG6) was also shown to be significantly different from each other as well as that between the Own account workers (SEG4) and Lower supervisory and technical occupation group (SEG5). These relationships were shown to be not significant in the base model. However, contrary to the base model that indicated a significant housing affordability differences between the Lower Supervisory and technical occupation group (SEG5) and the Semi-routine /routine occupations group (SEG6), controlling for **housing expenditure** renders as insignificant the difference in aggregate housing affordability of these two groups. However, when **household income** was controlled in the model, there was no significant difference in aggregate housing affordability between the socio-economic groups. This result tends to suggest that whatever difference in aggregate housing affordability between the groups is largely attributable to the differentiation in their household income. *Hence, the null hypothesis ( $H_0$ ) was accepted when household income is controlled in the model.*

As can be observed so far, although the derived probability values (p-value) have indicated where significant aggregate housing affordability differences exist between the various socio-economic groups under varying circumstances, they have not conveyed any information about the size of the true effects in these analyses (nor the precision and accuracy of an observed sample statistic).

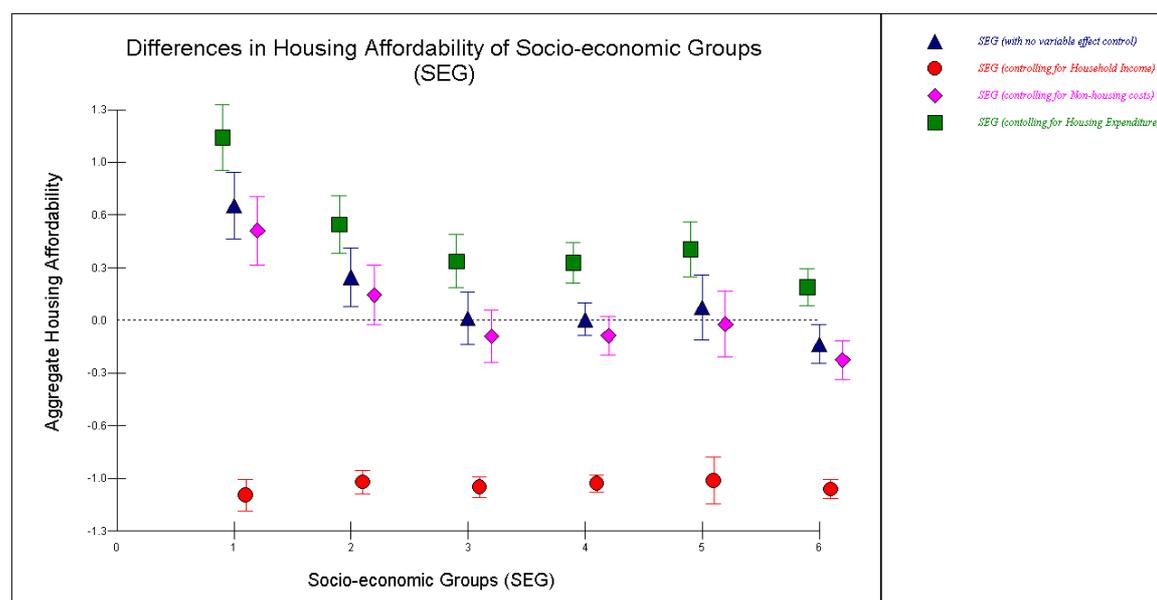
**Table 7-3 Showing the Confidence Intervals of the Relationships between Socio-economic Groups in Nigeria**

Models	Socio-economic Groups	Estimated Group Mean	95% Separate Conf. Interval of the Group Mean	Separate Uncertainty Interval	
				Lower Limit	Upper Limit
Socio-economic Groups (SEG) only	SEG1	0.708	0.207	0.501	0.915
	SEG2	0.266	0.183	0.083	0.449
	SEG3	0.013	0.163	-0.150	0.176
	SEG4	0.005	0.100	-0.095	0.105
	SEG5	0.079	0.201	-0.122	0.280
	SEG6	-0.147	0.118	-0.265	-0.029
SEG – Adjusted for Household Income	SEG1	-1.078	0.098	-1.176	-0.980
	SEG2	-0.979	0.070	-1.049	-0.909
	SEG3	-1.029	0.063	-1.092	-0.966
	SEG4	-1.007	0.055	-1.062	-0.952
	SEG5	-0.989	0.144	-1.133	-0.845
	SEG6	-1.042	0.059	-1.101	-0.983
SEG – Adjusted for Non-housing Expenditure	SEG1	0.554	0.211	0.343	0.765
	SEG2	0.156	0.182	-0.026	0.338
	SEG3	-0.099	0.161	-0.260	0.062
	SEG4	-0.094	0.118	-0.212	0.024
	SEG5	-0.023	0.202	-0.225	0.179
	SEG6	-0.245	0.118	-0.363	-0.127
SEG – Adjusted for Expenditure on Housing	SEG1	1.127	0.202	0.925	1.329
	SEG2	0.591	0.180	0.411	0.771
	SEG3	0.364	0.165	0.199	0.529
	SEG4	0.354	0.120	0.234	0.474
	SEG5	0.438	0.172	0.266	0.610
	SEG6	0.205	0.113	0.092	0.318

Such further information offers valuable insights that could be useful in deepening our understanding of existing conditions. Hence, the study complemented these analyses with the confidence interval approach. Amongst other benefits of the approach, it is easy to understand and yields the point estimate of the mean where the width of the interval indicates the precision of

such mean estimation. The results are shown in the columns of table 7-3 and plotted in fig. 7-1 to uncover interesting patterns in the aggregate housing affordability of these groups. In fig 7-1, the general base model, represented in blue, shows that only the Managerial and professional occupation group (SEG1) and the Intermediate occupation group (SEG2) have significant positive (above 0 datum line) aggregate housing affordability. Although, the Small employers group (SEG3), Own account workers group (SEG4) and Lower supervisory and technical occupations group (SEG5) have marginally above 0 mean affordability estimates, their respective lower uncertainty intervals bounds fell below the affordability datum line – overlapping 0 at 95% Confidence Interval (CI).

**Figure 7-1 Showing the Confidence Intervals Plots of the Aggregate Housing Affordability of Socio-economic Groups in Nigeria**



The dotted horizontal reference line represents the population mean of 0 in aggregate housing affordability.

Therefore, they do not have significant positive aggregate housing affordability at 95% CI. Both of the upper and the lower confidence interval bounds around the estimated affordability mean of the Semi-routine and routine occupations group (SEG6) are below the datum line. The results suggest that these groups have significant housing affordability problems. The Managerial and

professional occupation group (SEG1) recorded the highest level of aggregate housing affordability in the study area, followed by the Intermediate occupation group (SEG2). The Semi-routine and routine occupations group (SEG6) registered the lowest aggregate housing affordability in the study area. As can be seen in fig. 7-1, when the model controls for **household income**, the aggregate housing affordability of the groups represented in red colour, fell sharply below the datum line with no significant difference between the social economic groups. When **non-housing expenditure** is controlled for, the aggregate housing affordability of the groups (represented in pink colour), while following the general pattern of the base model, recorded negative mean affordability for all the groups with the exception of Managerial and professional occupation group (SEG1) and the Intermediate occupation group (SEG2). In this model, the lower CI bound of Intermediate occupation group (SEG2) overlaps 0 at 95% CI. These results therefore suggest that the managerial and professional occupation group (SEG1) is the only group that have significant positive aggregate housing affordability.

Controlling for **housing expenditure** in the model revealed further interesting results. The aggregate housing affordability of the groups represented in green colour (fig. 7-1), improved dramatically, with all the groups having above datum aggregate affordability means. This result seems to suggest that when housing expenditure was controlled in the model, all the socio-economic groups recorded significant higher and positive levels of housing affordability in the study area. It was interesting to observe that while household income is largely responsible for the significant differences in housing affordability of various socio-economic groups, housing expenditure play a major role in determining aggregate housing affordability problems within the study. There is a moderate inverse relationship between household expenditure and non-housing expenditure in relation to aggregate housing affordability of socio-economic groups. While non-housing expenditure tends to increase along with household income, which in itself is associated

with higher levels of aggregate housing affordability, housing expenditure tends to be higher within the lower income groups (as shown in table 7-4).

**Table 7-4 Showing the Cross Tabulation of the socio-economic groups with Aggregate Housing Affordability, Non-housing Consumption Threshold, Household Income, Household Size Non-housing and Housing Expenditure of Households in Nigeria**

Key Variables	Socio-economic Groups (Six Categories)					
	Managerial / Professional	Intermediate	Small Employers	Own Account	Lower Supervisory	Semi-routine/ Routine
Agg. Affordability	0.773	0.400	0.013	0.035	0.073	-0.189
Household Income	385397.3	261506.2	208906.2	210296.6	212524.6	176326.3
Expenditure on Housing	66632.3	46837.7	50040.5	49767.8	50132.7	49763.0
Housing Quality	0.273	0.089	0.155	0.109	0.288	-0.307
Non-housing Expenditure	225875.3	151357.9	154342.8	138131.4	135354.0	132877.1
Household Size	4.04	3.73	3.60	3.55	3.50	3.82

Generally, despite the differences all the socio-economic groups have very substantial housing affordability problems. For instance, a closer look at table 7-5 readily shows that while the Managerial and professional occupation group (SEG1) has the best comparative aggregate afford-

**Table 7-5 Showing the Aggregate Affordability Quintile distribution of the Various socio-economic groups in Nigeria**

Aggregate Affordability Quintiles	Socio-economic Groups (Six Categories)						
	Managerial / Professional	Intermediate	Small Employers	Own Account	Lower Supervisory	Semi-routine/ Routine	Total
Bottom Quintile(1 <sup>st</sup> )	12.87	14.07	15.86	19.57	12.8	22.83	18.11
2nd Quintile	10.98	13.55	19.34	18.23	13.89	21.08	17.74
3rd Quintile	10.62	16.52	22.5	22.54	16.7	20.59	19.92
4 <sup>th</sup> Quintile	18.32	24.36	23.1	20.73	29.1	20.17	21.47
Top (5 <sup>th</sup> ) Quintile	47.21	31.5	19.2	18.93	27.51	15.33	22.75
Total	100	100	100	100	100	100	100

Key: column percentages

ability, the group has up to 23.93% of its households in the last two housing affordability quintiles. The Semi-routine and routine occupations group (SEG6) has as much as 43.91% of its households in the same category with the Small employers group (SEG3) and Own account workers group (SEG4) recording 35.20% and 35.80% respectively.

Table 7-5 provides additional insight into the nature of housing affordability problems across the socio-economic groups. For instance, the Semi-routine and routine occupations group (SEG6) has the poorest housing affordability in the study area, recorded the lowest quality housing, earns the least household income, along with having a comparative housing expenditure with other quintile groups. The Small employers group (SEG3) and Own account workers group (SEG4) and equally share the same pattern of relatively low housing quality and low-income with higher levels of housing expenditure.

With the exception of the Managerial and professional occupation group (SEG1) and the Intermediate occupation group (SEG2) that make up about 20.88% of households, the representative households of all the other socio-economic groups have household incomes that are lower than the weighted national average of ₦216,261.30 (Naira). If the non-housing and housing expenditures of households are subtracted from their respective household incomes, the balance can be considered as potential savings. Given the low level of household income distribution in the study area, the estimated potential savings of the representative household in each of the socio-economic groups are indeed very low. The Small employers group (SEG3), Own account workers group (SEG4) and Lower supervisory and technical occupations group (SEG5) could potentially have savings of about ₦4,523.30 (Naira), ₦22,397.00 and ₦27,037.90 (Naira) respectively. The Semi-routine and routine occupations group (SEG6) has an estimated net negative savings of about ₦-6,313.80 (Naira) respectively.

In conclusion, the major elements of findings here lead us to reject the null hypothesis in all the models tested here. The only exception was the model that controlled for household income

which recorded no significant difference between socio-economic groups, and thus the *the null hypothesis* ( $H_0$ ) *was accepted* in this particular model. This finding is interesting because it clearly indicates that whatever significant difference in aggregate housing affordability that has been recorded between the socio-economic groups it is basically attributable to the differentiation in their household income.

#### **7.4 The Aggregate Housing Affordability of Different Tenure Groups in Nigeria**

The aggregate housing affordability differences between the housing tenure groups were also examined. Four housing tenure groups were identified for this purpose in the study and they are as follows;

- Ownership tenure – HTG1
- Rent-free tenure – HTG2
- Subsidized tenure – HTG3
- Rental tenure – HTG4

The second hypothesis stated below, provided the basis to explore the housing affordability differences between these tenure groups.

*Null Hypothesis 2 ( $H_0$ ): There is no significant differences in the residential housing affordability of different tenure groups, including when controlling for such factors as household income, non-housing expenditure and housing expenditure in the study area.*

As in the earlier ANOVA analyses, the base model regressed aggregate housing affordability ( $Y$ ) against the set of tenure group (explanatory) dummy variables (HTG1,..,HTG4) as represented by  $X_p,..X_r$ . The third group – Subsidized housing tenure (HTG4) served as reference / benchmark category in the model with the intercept value  $\beta_0$  represents the housing affordability mean value of this group. The results of these analyses are shown in table 7-6. It could be seen from the result table that the housing tenure group accounts for about 7.05% of the total between

Table 7-6 Showing the Results of the Multi-level Models of Aggregate Housing Affordability Differences Between Various Housing Tenure Groups in Nigeria

Parameter	Est. (s.e.) (single level)	Estimate (s.e.)	Estimate (s.e.)	Estimate (s.e.)	Estimate (s.e.)
	A	B	C	D	E
<i>Fixed</i>					
constant $\beta_0$ (Subsidized/nominal Rental – TG3)	0.405 (0.000)	0.341 (0.096)	-0.895 (0.041)	0.195 (0.104)	0.607 (0.105)
Ownership Tenure Group (TG1 – TG3) ( $x_1$ )	-0.515 (0.000)	-0.430 (0.101)	-0.292 (0.035)	-0.453 (0.100)	-0.309 (0.102)
Rent-free Tenure Group (TG2 – TG3) ( $x_2$ )	-0.174 (0.000)	-0.099 (0.120)	0.207 (0.036)	-0.078 (0.119)	-0.184 (0.124)
Rental Tenure Group (TG4 – TG3) ( $x_3$ )	-0.270 (0.000)	-0.225 (0.098)	-0.030 (0.037)	-0.248 (0.097)	-0.233 (0.095)
Household Income ( $x_4$ )			4.93e-006 (1.09e-007)		
Non-housing Expenditure ( $x_5$ )				1.01e-006 (2.89e-007)	
Expenditure on housing ( $x_6$ )					-6.27e-006 (9.36e-007)
Joint chi sq test (3df)	1.83e+12	31.891	2513.843	51.530	80.752
p-value	0.00000	5.52e-07	0.00000	3.77e-11	2.56e-19
Sig.	significant	significant	significant	significant	significant
<i>Random</i>					
<i>Level 2</i>					
$\sigma_{u0}^2$ (between EAs intercept)		0.343 (0.056)	0.086 (0.012)	0.321 (0.051)	0.399 (0.064)
Chi square test (1df)		38.028	50.920	40.061	38.407
p-value		6.974e-10	9.621e-13	2.462e-10	5.743e-10
Sig.		significant	significant	significant	significant
<i>Level 1</i>					
$\sigma_{e0}^2$ (between HHs intercept)		1.626 (0.267)	0.309 (0.039)	1.618 (0.265)	1.517 (0.260)
$\sigma_{e01}$ (single level variance)	2.130 (0.001)				
Chi square test (1df)		37.077	62.288	37.276	34.106
p-value		1.136e-9	2.967e-15	1.025e-9	5.219e-9
Sig.		significant	significant	significant	significant
% of between EAs variance explained		7.05	76.69	13.01	-8.13
% of between HHs variance explained		0.12	81.01	0.61	6.82
-2*loglikelihood (Deviance)	16036.670	15799.080	8217.184	15741.540	15618.050

enumeration areas (EAs) variance while it also explained about 0.12% of the total between households (HHs) variance in aggregate housing affordability within the study area. Further results tend to suggest that there are significant housing affordability differences between the housing tenure groups as indicated by the calculated (Wald statistic)  $R = 31.891$ , which has a p-value of  $5.52e-07$ . *Therefore, the null hypothesis ( $H_0$ ) is rejected in favour of the alternate hypothesis.* Disaggregating the analysis at both the EA and HH levels respectively also suggested that there are significant differences at both levels. The between EA variance ( $\sigma_{u0}^2$ ) and the within EA variance ( $\sigma_{e0}^2$ ) recorded p-values of  $6.974e-10$  and  $1.136e-9$  respectively that were much less than .05 (see table 7-6).

Given the above results, multiple comparison tests were carried out in order to identify which pairs of tenure groups have significant aggregate housing affordability differences. Results from the multiple comparison tests are summarised in table 7-7. Findings suggest that there is a significant housing affordability differences between each of the groups with the exception of the Rent-free tenure group (HTG2) and Subsidized tenure group (HTG3). It is interesting to note that the ownership tenure group (HTG1) and the Rental tenure group (HTG4) are the only group whose aggregate housing affordability are significantly different when compared with the other groups in the study area.

When **household income** is controlled in this model, all the groups are shown to have significant aggregate housing affordability difference with each other except that between the Subsidized tenure group (HTG3) and Rental tenure group (HTG4). Considering the fact that these two groups have significant housing affordability differences in the general model, it could therefore suggest that the observed differences between these two groups in the general model is as a result of differentiation in household income. It could also be argued that the lack of differentiation in household income is also a contributing factor to the non-significant relationship between the

**Table 7-7 Showing the Results of the Test of Significant Relationships between Housing Tenure Groups in Nigeria**

Models /Tenure Groups	Chi sq (f-k)=0 (1 df)	P-value	Sig.
<b>Model Results with Housing Tenure Groups (HTG)</b>			
Ownership Tenure (HTG1) and Rent-free Tenure (HTG2)	17.020	3.699e-5	<b>Significant</b>
Ownership Tenure (HTG1) and Subsidized Tenure (HTG3)	18.020	2.186e-5	<b>Significant</b>
Ownership Tenure (HTG1) and Rental Tenure (HTG4)	11.502	0.001	<b>Significant</b>
Rent-free Tenure (HTG2) and Subsidized Tenure (HTG3)	0.681	0.409	<b>Non-sig.</b>
Rent-free Tenure (HTG2) and Rental Tenure (HTG4)	3.733	0.053	<b>Significant</b>
Subsidized Tenure (HTG3) and Rental Tenure (HTG4)	6.858	0.009	<b>Significant</b>
<b>Model Results for HTG – Adjusted for Household Income</b>			
Ownership Tenure (HTG1) and Rent-free Tenure (HTG2)	352.962	0.000	<b>Significant</b>
Ownership Tenure (HTG1) and Subsidized Tenure (HTG3)	69.743	6.756e-17	<b>Significant</b>
Ownership Tenure (HTG1) and Rental Tenure (HTG4)	102.886	3.55e-24	<b>Significant</b>
Rent-free Tenure (HTG2) and Subsidized Tenure (HTG3)	32.481	1.204e-8	<b>Significant</b>
Rent-free Tenure (HTG2) and Rental Tenure (HTG4)	84.456	3.929e-20	<b>Significant</b>
Subsidized Tenure (HTG3) and Rental Tenure (HTG4)	0.658	0.417	<b>Non-sig.</b>
<b>Model Results for HTG – Adjusted for Housing Expenditure</b>			
Ownership Tenure (HTG1) and Rent-free Tenure (HTG2)	22.216	2.436e-6	<b>Significant</b>
Ownership Tenure (HTG1) and Subsidized Tenure (HTG3)	20.517	5.910e-6	<b>Significant</b>
Ownership Tenure (HTG1) and Rental Tenure (HTG4)	13.565	0.000	<b>Significant</b>
Rent-free Tenure (HTG2) and Subsidized Tenure (HTG3)	0.434	0.510	<b>Non-sig.</b>
Rent-free Tenure (HTG2) and Rental Tenure (HTG4)	4.482	0.034	<b>Significant</b>
Subsidized Tenure (HTG3) and Rental Tenure (HTG4)	6.523	0.011	<b>Significant</b>
<b>Model Results for HTG – Adjusted for Non-Housing Expenditure</b>			
Ownership Tenure (HTG1) and Rent-free Tenure (HTG2)	1.921	0.166	<b>Non-sig.</b>
Ownership Tenure (HTG1) and Subsidized Tenure (HTG3)	9.216	0.002	<b>Significant</b>
Ownership Tenure (HTG1) and Rental Tenure (HTG4)	2.068	0.150	<b>Non-sig.</b>
Rent-free Tenure (HTG2) and Subsidized Tenure (HTG3)	2.208	0.137	<b>Non-sig.</b>
Rent-free Tenure (HTG2) and Rental Tenure (HTG4)	4.191	0.041	<b>Significant</b>
Subsidized Tenure (HTG3) and Rental Tenure (HTG4)	5.946	0.015	<b>Significant</b>

Rent-free tenure group (HTG2) with the Subsidized tenure group (HTG3), as shown in the general model. It is interesting to note that unlike the previous socio-economic group model, there are still significant differences in aggregate housing affordability between the housing tenure groups when household income is controlled in the model. This indicates that household income plays a greater role in differentiating the housing affordability of socio-economic groups than tenure groups in the study area.

Derived results followed the pattern of the general model when **non-housing expenditure** is controlled in the model. However, there were contrasting differences when **housing expenditure** is controlled especially in relation to Ownership tenure group (HTG1). Contrary to the results of the general model, controlling for housing expenditure results in no significant relationship between the Ownership tenure (HTG1) and both the Rent-free tenure (HTG2) and Rental tenure (HTG4) respectively. It could therefore be argued that the observed differences in aggregate housing affordability between these groups, as recorded in the general model, is largely due to differentiation in household expenditure within the study area. The traditional test of hypothesis approach presented above all, was complemented with the confidence interval (CI) approach.

The results of the CI approach, presented in table 7-8 and plotted in fig.7-2, give more insights into the housing affordability differences between the housing tenure groups in the study area. In the general base model represented in blue in fig 7-2, only the Rent-free tenure group (HTG2) and the Subsidized tenure group (HTG3) as shown to have significantly positive aggregate housing affordability with their lower confidence interval bound lying above neutral zero (0) affordability datum. While the aggregate housing affordability mean of the Rental tenure group (HTG4) was above the datum line, its lower confidence interval bound fell below the neutral zero (0) affordability datum. The Ownership tenure group (HTG1) was the only groups that its housing affordability mean registered below the neutral zero (0) affordability datum. The Subsidized tenure group (HTG3) recorded the highest level of housing affordability amongst the groups,

while Ownership tenure group (HTG1) recorded the lowest housing affordability in the study area with high level of housing affordability problems.

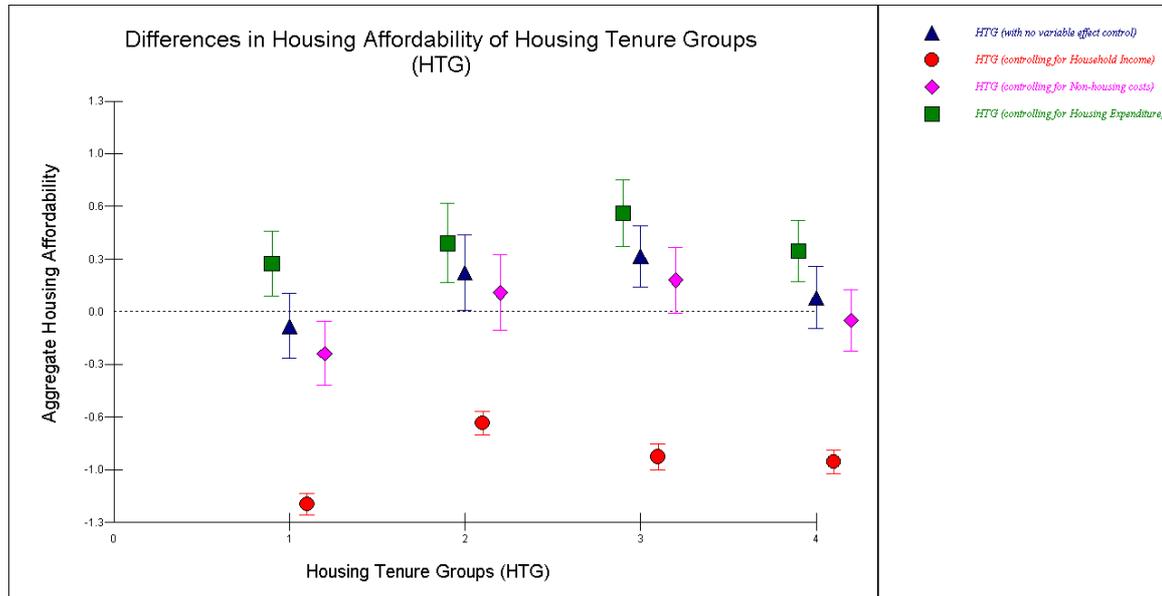
**Table 7-8 Showing the Confidence Intervals of the Relationships between Housing Tenure Groups in Nigeria**

	Housing Tenure Groups	Estimated Group Mean	95% Separate Conf. Interval of the Group Mean	Separate Uncertainty Interval	
				Lower Limit	Upper Limit
Housing Tenure Groups Only (HTG)	HTG1	-0.089	0.199	-0.288	0.110
	HTG2	0.242	0.234	0.008	0.476
	HTG3	0.341	0.189	0.152	0.530
	HTG4	0.086	0.191	-0.105	0.277
HTG - Adjusted for Household Income	HTG1	-1.187	0.068	-1.255	-1.119
	HTG2	-0.688	0.071	-0.759	-0.617
	HTG3	-0.895	0.080	-0.975	-0.815
	HTG4	-0.925	0.073	-0.998	-0.852
HTG - Adjusted for Non-housing Expenditure	HTG1	-0.258	0.196	-0.454	-0.062
	HTG2	0.117	0.233	-0.116	0.350
	HTG3	0.195	0.203	-0.008	0.398
	HTG4	-0.053	0.190	-0.243	0.137
HTG - Adjusted for Expenditure on housing	HTG1	0.298	0.200	0.098	0.498
	HTG2	0.423	0.243	0.180	0.666
	HTG3	0.607	0.206	0.401	0.813
	HTG4	0.374	0.187	0.187	0.561

These results clearly suggests that only the housing tenure groups that benefit from some form of housing subsidy, reducing their housing cost, have positive aggregate housing affordability. While it has been shown that the aggregate housing affordability of the ownership and rental housing tenure groups are significantly different from each other, both of them have significantly aggregate housing affordability problems within the study area. From the graph in fig.7-2, it can be seen that when **household income** is controlled (as represented in red colour), the aggregate housing

affordability of all the groups fall drastically below neutral zero datum line, while maintaining significant affordability differences between each other.

**Figure 7-2 Showing the Confidence Intervals Plots of the Aggregate Housing Affordability of Housing Tenure Groups in Nigeria**



The dotted horizontal reference line represents the population mean of 0 in aggregate housing affordability.

It is interesting to observe the increase in levels of aggregate housing affordability of both the Rent-free tenure group (HTG2) and Rental tenure group (HTG4) when household income is controlled in the model. In fact the Rent-free tenure group (HTG2) emerged as the group with the highest level of housing affordability. It could therefore be argued that household income differentiation between the groups comparatively boosts the aggregate housing affordability of the Subsidized tenure group (HTG3).

However, there is a similar pattern in the aggregate housing affordability of the tenure groups when **Non-housing expenditure** is controlled (as represented in pink colour in fig. 7-2), when compared with the base model (represented in blue colour). The aggregate housing affordability levels of all the tenure groups reduces significantly after controlling for non-housing expenditure. The Subsidized tenure group (HTG3) was the only tenure group that its lower bound confidence interval was above the neutral zero (0) datum line. In other words, the Subsidized tenure group

(HTG3), is the only tenure group that has a positive aggregate housing affordability, when non-housing expenditure is controlled.

Conversely, when **Housing expenditure** is controlled in the model, all the tenure groups registered positive aggregate housing affordability levels, while maintaining the pattern of differences between the groups in the base model. It will however be observed in table 7-8 and fig. 7-2 that there is a greater increase in the mean aggregate housing affordability of the Ownership tenure group (HTG1) than all the other tenure groups. This is an indication that of all the groups, the Ownership tenure group (HTG1) comparatively bears the highest housing expenditure burden in the study area. This may also provide a clue why the Ownership tenure group (HTG1) has the least aggregate housing affordability, as shown in the base model.

**Table 7-9 Showing the Quintile distribution (in Percentages) of the Various Housing Tenure Groups in Nigeria**

Aggregate Affordability Quintile Groups	Housing Tenure Groups (Four Categories)					Total
	Ownership Tenure	Rent-free Tenure	Subsidized Tenure	Rental Tenure		
Bottom(1 <sup>st</sup> ) Quintile	28.39	4.26	14.22	12.84	18.94	
2nd Quintile	22.18	17.09	14.55	17.44	19.32	
3rd Quintile	16.61	29.93	15.89	21.5	19.88	
4 <sup>th</sup> Quintile	15.34	28.36	23.86	23.26	20.33	
Top (5 <sup>th</sup> ) Quintile	17.48	20.36	31.48	24.96	21.53	
Total	100	100	100	100	100	
Proportion of Households with Housing Affordability Problems	69.46	54.44	47.41	51.44	60.57	

Key: column percentages

In spite of the housing affordability differences between the tenure groups, they all register very substantial housing affordability problems as shown in table 7-9. Of the 69.46% of households within the Ownership tenure group (HTG1) that have housing affordability problems, ( as much as 28.39% and 22.18 of them are in the bottom and 2<sup>nd</sup> housing affordability quintile groups respectively. In contrast to the Ownership tenure, even though that as much as about 54.44% of

households in the Rent-free tenure group (HTG2) have housing affordability problems, they recorded the least proportion of households in the bottom quintile groups with as little as 4.26%.

The Rental tenure (HTG4) and the Subsidized tenure group (HTG3) have about to 51.44% and 47.41% of households, respectively as having housing affordability problems with about 12.84% and 14.22% of their respective households in the bottom quintile group. While more proportion of households in the Rent-free tenure group (HTG2) are identified as having housing affordability problems than those of the Rental tenure (HTG4) and the Subsidized tenure (HTG3) groups, the severity of such affordability problem is less than those of the two groups.

Table 7-10 offers further insights into the nature of housing affordability of the tenure groups.

**Table 7-10 Showing the Cross Tabulation of the Housing Tenure Groups with Aggregate Housing Affordability, Non-housing Consumption Threshold, Household Income, Household Size Non-housing and Housing Expenditure of Households in Nigeria**

Key Variables	Housing Tenure Groups (Four Categories)			
	Ownership Tenure	Rent-free Tenure	Subsidized Tenure	Rental Tenure
Aggregate Affordability	-0.111	0.231	0.405	0.135
Household Income	219830.3	179668.2	270817.4	212518.7
Expenditure on Housing	60512.6	25927.9	47161.8	46889.2
Housing Quality	-0.168	0.129	0.311	0.286
Non-housing Expenditure	163757.4	116911.1	158377.9	139141.0
Household Size	4.1	2.8	3.5	3.1

The Ownership tenure group (HTG1), which recorded the lowest comparative housing affordability, has the lowest housing quality score and the highest housing expenditure. It is noteworthy that while both the Ownership tenure group (HTG1) and the Rental tenure group (HTG4) have comparable household income, the housing expenditure of the Rental tenure group (HTG4) is substantially lower despite having higher levels of housing quality. It is noteworthy to

observe that the Subsidized tenure group (HTG3), which enjoys the highest level of aggregate housing affordability in the study area has comparable housing expenditure the Rental tenure group (HTG4), while enjoying higher housing quality and household income. In fact the Subsidized tenure group (HTG3), is the group with the highest average household income. From a policy perspective, the finding that the group with the highest household income is the group whose housing is being subsidised exposes one of the major weakness of public subsidized housing in the study area.

In conclusion, the major elements of findings here lead us to generally reject the null hypothesis in all the models tested here. None of the variables (household income, non-housing expenditure and housing expenditure) has any major influence on the housing affordability of tenure groups in the study area. However, there were specific cases in the multiple comparison results where the null hypothesis was accepted (when there is no significant difference between two groups). However, the general result that there are significant differences in housing affordability of the tenure groups irrespective of household income, non-housing expenditure and housing expenditure is important from a housing policy perspective and will be discussed in the later part of the study.

## **7.5 Examining the Relationship between Socio-economic Groups and Housing Tenure Groups in Nigeria**

To further contextualize and understand these results, the socio-economic groups and tenure groups were cross tabulated to expose important patterns of association (shown in table 7-11). Contrary to conventional wisdom, the Semi-routine/ routine occupation group (SEG6) with least comparative household income maintained the highest proportion of households (60.62%) with ownership tenure while only 26.59% of the Managerial / professional occupation group - SEG1 (the socio-economic group with the highest income) has ownership tenure. As high as 39.62% and

45.41% of Small employers (SEG3) and Own account workers (SEG4) respectively have ownership housing tenure.

**Table 7-11 Showing the Cross Tabulation of the Housing Tenure Groups with Socio-economic Groups**

Tenure groups	Socio-economic Groups (Six Categories)					
	Managerial / Professional	Intermediate	Small Employers	Own Account	Lower Supervisory	Semi-routine/ Routine
Ownership (HTG1)	26.59	29.57	39.62	45.41	26.20	60.62
Free-Rental (HTG2)	9.63	15.02	11.81	11.77	11.32	11.14
Subsidized (HTG3)	13.24	10.08	7.289	7.46	4.47	5.15
Rental (HTG4)	50.54	45.33	41.28	35.36	41.28	23.10
Total	100	100	100	100	100	100

Key: column percentages

The high level of ownership tenure households among lower income groups may be due to the fact that the Nigerian Living Standard Survey 2003-04 sampled residents of both the formal and informal housing. It is common in the study area that many lower income households of many informal settlements tend to own their housing and as such classified into the ownership tenure group.

It is equally interesting to observe that the higher income Managerial / professional occupation group (SEG1) and Intermediate group (SEG2) enjoy substantially higher levels of subsidized and rental housing than the other groups. There is a seeming lack of differentiation in the proportion of households across the socio-economic groups that have free-rental tenures in the study area with the Intermediate group (SEG2) recording the highest with 15.02% while the Managerial / professional occupation group (SEG1) recorded the least with 9.63%.

## 7.6 The Aggregate Housing Affordability of Different States in Nigeria

Having examined the aggregate housing affordability of different socio-economic groups and housing tenure groups in the study area, the next task is to examine and compare the aggregate housing affordability of households across states in the country. It is important to find out if housing affordability has a discernible spatial pattern in the study area especially given the fact poverty studies in Nigeria seem to suggest that poverty has a spatial dimension. In order to do this, the third hypothesis of the study was tested. The hypothesis in its null form is stated below:

*Null Hypothesis 3 (H<sub>0</sub>): There are not significant differences in the residential housing affordability of different States in the study area.*

Given that there are as many as 37 states (including the Federal Capital Territory) to consider, treating each of these states as fixed effects (with 36 parameters) in an ANOVA model will be cumbersome and inelegant. A better option therefore was to conceive a 3 level (States, Enumeration Areas and Households) variance components model of aggregate housing affordability, where the residual variance is partitioned into components corresponding to each level of hierarchy.

The equation of the model can be expressed as follows;

$$\text{AggHaffdindx}_{ijk} = \beta_{0jk} + e_{ijk}$$

Where  $i$  to the level 1 household unit,

$j$  refers to the level 2 EA unit and

$k$  refers to the level 3 STATE unit

The variance components of the above stated model are namely; between State variance ( $\sigma_{v0}^2$ ), between Enumeration Areas variance ( $\sigma_{u0}^2$ ) and between Households variance ( $\sigma_{e0}^2$ ), where the  $\sigma_{v0}^2$  captures the group effect between States. The basic thinking is that the testing technique must be able to show whether there are significant differences in the aggregate housing

affordability of States over and above the significant locational effect that is captured at the level of the EAs (level 2) and the significant household effect that is captured at the level of HHs (level 1). Thus, there is the need to disaggregate the between location variance component into States variance component and Enumeration Area variance component in order to isolate the State variance component ( $\sigma_{v0}^2$ ) for testing. That is what using the 3- level (States, Enumeration Areas and Households) variance component models in testing the above hypothesis guarantees.

In this way, the null hypothesis stated above can be written as (the residual between State variance)  $\sigma_{v0}^2 = 0$ , which is analogous to testing  $H_0 = \beta_1 = \beta_2 = \dots = \beta_{37} = 0$  in a fixed effects model, where  $\beta_1 \dots \beta_{37}$  represent the States. Although Wald statistic test can still be used to test the above hypothesis as in previous cases, the likelihood ratio test, which offers a very precise means of comparing “nested models”, is a better option. Models are described as “nested” when one model is considered as a restricted form of the other. The likelihood ratio statistic is the probability of obtaining the observed data if the model were true, computed as the difference between the nested models. The statistic measures to what extent the estimated values of the model are different from the real values - in fact it is a measurement of “badness of fit” or the deviance, usually denoted as  $-2 \times \log \text{likelihood}$ .

In this study, the likelihood ratio test require comparing  $\sigma_{v0}^2$  in the three-level variance components model with the 2-level model where  $\sigma_{v0}^2$  is constrained to zero. The difference in deviance ( $-2 \times \log \text{likelihood}$ ) of the two models is then subjected to a chi-squared distribution test with the degrees of freedom calculated as the difference in the number of parameters between the two models (Rasbash 2005). An added advantage of designing the model in this way is that it makes assessing the group effect of such factors as household income, non-housing expenditure and housing expenditure on housing affordability at State level easier.

Table 7-12 Showing the Results of the 3 Level Variance Components Models of Aggregate Housing Affordability differences between States in Nigeria

Parameter	Y- model Estimate (s.e.)	$\beta_1$ hh income model Estimate (s.e.)	$\beta_2$ non-housing expd. model Estimate (s.e.)	$\beta_3$ housing expd. model Estimate (s.e.)
	A	B	C	D
<b>2 Level model (HH and EA)</b>				
constant $\beta_{0_{ij}}$	0.044 (0.029)	-1.010 (0.025)	-0.094 (0.042)	0.376 (0.047)
$\beta_{x_{ij}}$		4.91e-06 (1.10e-07)	9.20e-07 (2.85e-07)	-6.54e-06 (8.79e-07)
$\sigma_{u0}^2$ (between EAs intercept)	0.369 (0.056)	0.103 (0.013)	0.348 (0.052)	0.418 (0.065)
$\sigma_{e0}^2$ (between HHs intercept)	1.628 (0.268)	0.325 (0.400)	1.621 (0.265)	1.510 (0.259)
-2*loglikelihood (Deviance)	15863.930	8553.038	15815.450	15651.670
<b>3 level model (HH,EA and STATE)</b>				
constant $\beta_{0_{ijk}}$	0.049 (0.065)	-1.055 (0.047)	-0.111 (0.080)	0.368 (0.064)
$\beta_{x_{ijk}}$		4.90e-06 (7.95e-08)	1.01e-06 (3.29e-07)	-6.08e-06 (1.13e-06)
$\sigma_{v0}^2$ (between STATES intercept)	0.121 (0.035)	0.060 (0.012)	0.123 (0.035)	0.107 (0.034)
$\sigma_{u0}^2$ (between EAs intercept)	0.262 (0.050)	0.051 (0.013)	0.234 (0.046)	0.310 (0.060)
$\sigma_{e0}^2$ (between HHs intercept)	1.519 (0.276)	0.303 (0.051)	1.520 (0.275)	1.420 (0.270)
-2*loglikelihood (Deviance)	15764.130	8299.417	15708.580	15564.030
Likelihood ratio statistic (-2*loglikelihood difference between the 2 level model and 3 level model)	99.80	253.62	106.87	87.64
p-value Chi square test (1df)	1.686e-23	0.0000	4.754e-25	7.852e-21
Sig.	Significant	Significant	Significant	Significant
% of between STATES variance explained	6.36	14.92	6.55	5.82
% of between EA variance explained	13.77	12.32	12.47	16.86
% of between HH variance explained	79.86	73.19	80.98	77.32

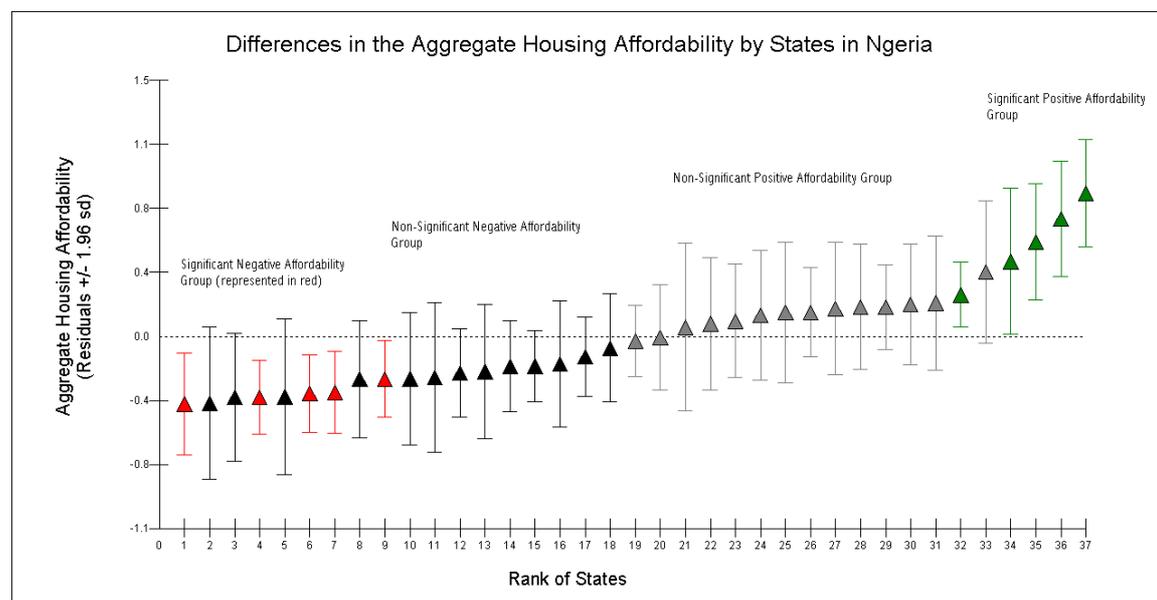
Derived results are shown in table 7-12. Of the total explained residual variance components of the aggregate housing affordability in the study area, between State variance accounts for about 6.36%; between Enumeration Areas variance account for about 13.77%; while between

Households variance make up of about 79.86%. In other words, about 6.36% of the total variation in aggregate housing affordability within the study area is attributable to differences between the States. Likelihood ratio test will determine if the above variation is indeed statistically significant. As shown in table 7-12 under the 3-level model results, the calculated between-State variance ( $\sigma_{v0}^2$ ) is 0.121 with a standard error of about 0.035. That roughly suggests a statistically significant  $\sigma_{v0}^2$ . To formally test the hypothesis, the computed deviance (-2\*loglikelihood) of the 2-level model is 15863.93 while that of the 3-level model is 15764.13 with both having about 99.80 deviance (-2\*loglikelihood) difference between them. Chi Square test of 99.80 under 1df (degree of freedom) at no more than 5% critical limit yields a p-value of 1.686e-23 which is less than 0.05. Hence, the null hypothesis  $H_0$  can be rejected in favour of the alternative  $H_1$  that there is a significant aggregate housing affordability differences between States in the study area. Similar results were also derived when household income, non-housing expenditure and housing expenditure were separately controlled in the model to determine the extent to which they influence housing affordability differences between States in the study area (as shown in table 7-12).

It is however important to note that the explained between-States variation in aggregate housing affordability sharply increases from 6.36% to 14.92% when household income is added to the base 3-level model while it was slightly reduced to 5.82% when housing expenditure is added to the same base 3-level model. This clearly suggests that there is a higher explained variation in the level of housing affordability relative to household income between the States than was the case with housing expenditure. The explained variation in the level of housing affordability relative to household expenditure between the States was also lower than was the case with non-housing expenditure. These results tend to suggest a more similar or even level of housing expenditure relative to the level of housing affordability across the States compared to income or non-housing expenditure. The nature of housing expenditure is less variable across the States.

In order to determine the size effect of aggregate housing affordability across states, level-3 residuals were estimated one for each state along with their comparative standard errors. These were ranked and graphically plotted in fig 7-3 below. The criterion for judging statistical significance at the 95% confidence level for any pair of residuals is whether their confidence intervals overlap as presented in fig. 7-3. States whose housing affordability residuals are greater than 0 (zero) with their respective lower intervals bounds above the neutral 0 (zero) datum line are considered to have significant positive aggregate housing affordability. Their positive affordability status cannot just be as a result of any sampling error that may have been inherent in the data. These States are represented with green colours in fig. 7-3 and they include Rivers, Delta,

**Figure 7-3 Showing the Confidence Intervals Plots of the Ranked Aggregate Housing Affordability of States in Nigeria**

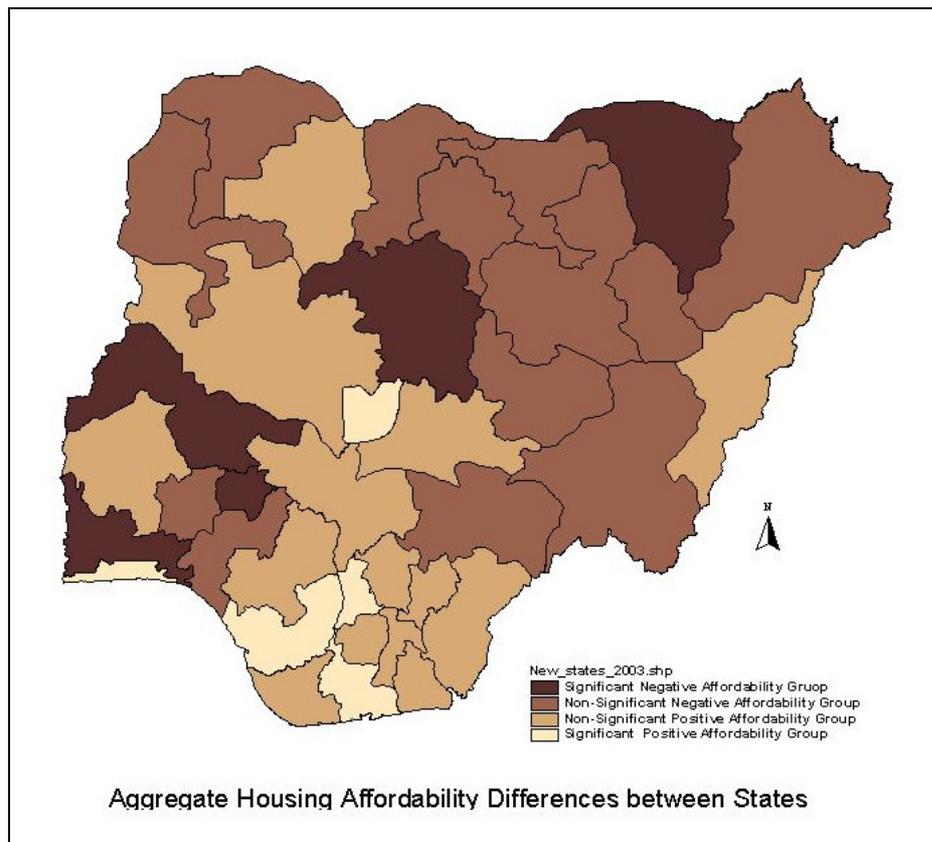


Anambra, Lagos and Abuja the Federal Capital Territory. Table 7-13 shows the break-down of the categorisations plotted in fig. 7-3 while fig. 7-4 represented these results within the Nigerian map.

**Table 7-13 Showing the Aggregate Housing Affordability Categories of States based on Statistical Differentiation**

<b>GROUPS</b>	<b>STATES</b>	<b>No.</b>
Significant Negative Housing Affordability Group	Kwara, Kaduna, Ekiti, Ogun and Yobe	5
Non-Significant Negative Housing Affordability Group	Benue, Kano, Gombe, Osun, Ondo, Plateau, Borno, Kwara, Katsina, Kaduna, Ekiti, Kebbi, Jigawa, Sokoto Ogun, Bauchi, Taraba and Yobe	13
Non-Significant Positive Affordability Group	Adamawa, Bayelsa, Cross-River, Edo, Ebonyi, Akwa-Ibom, Abia, Nassarawa, Enugu, Niger, Zamfara, Imo Kogi and Oyo	14
Significant Positive Affordability Group	Rivers, Abuja (FCT), Delta, Anambra and Lagos	5

**Figure 7-4 Map Showing States of Different (Significant) Aggregate Housing Affordability in Nigeria**



Findings suggest that when considering the entire study area, these five are amongst the States that on the average performed better than the others. The representative mean households of the five States do not have an aggregate housing affordability problem. Of this group, only Abuja (FCT) is located outside the southern regions of the country. In fact, with the exception of Lagos State (former national capital) and Abuja (current national capital), the rest of the States in this group are from the south-south and south east regions of the country.

The second group of 14 States represented on fig.7-3 in gray colour has above 0 (zero) housing affordability residuals while their respective lower confidence interval bounds overlap the neutral 0 (zero) affordability datum. This group of States are categorized as non-significant positive affordability group and are not statistically considered to have conclusive positive aggregate housing affordability as derived results fall within data error estimates. Many of these States are also clustered within the south-south, south-east and north-central regions, with one State each located in the south-west, north-east and north-west regions respectively.

The remaining 18 States display negative housing affordability of which 5 cases were significant. These 5 States that have significant negative affordability represented in red colour on fig.7-3 above are Kwara, Ekiti, Kaduna, Ogun, and Yobe. Two of these States are located in the south-west region of the country while the remaining three states are respectively located in each of the three northern regions. The rest of the 13 remaining States with non-significant negative affordability are also located in the northern regions of the country with the exception of Ondo and Osun States that are located in the south-west region.

The fact that there were only 5 states with significant positive aggregate housing affordability out of the total 36 States plus the Abuja (FCT) is indicative of enormous and wide-spread housing affordability problems in the study area. It is also important to note that since only 5 States also have significant negative affordability, the housing affordability differences between 27 States are not significant. Apart from the separate groups of 5 States the recorded significant positive

aggregate housing affordability, the remaining 32 States in Nigeria cannot be shown statistically having acceptable housing affordability. In fact, the median households in 29 of these States were shown to have negative aggregate housing affordability scores. Even within the ‘best performing’ States with positive median aggregate affordability scores, the proportions of households below the neutral 0 datum line were still unacceptably very high (see fifth column in table 7-14 below). However, there is need for caution in the interpretation and possible generalisation that can be drawn from the above results. It must be remembered that the analysis involved all households including extreme (i.e. the very rich and the very poor) households and therefore assessed the general level of housing affordability in states. Assessing the general level of housing affordability in a State is not the same thing as assessing the magnitude or distribution of housing affordability problems in that State. While these types of general (all inclusive) analyses are useful and necessary, the insight they give into the extent of housing affordability problems in various States is limited. Further insights into the extent of housing affordability problems in States can be derived by examining only households with housing affordability problems within the context of their respective States and in relation to the country as a whole. The next section will explore the actual level of housing affordability problems in the States.

### **7.7 The Magnitude of Aggregate Housing Affordability Problems of States**

Housing affordability as a policy issue is relevant largely because of households that cannot “afford” decent housing. It draws attention to those who cannot “afford” adequate housing and provides the context within which to assess the performance of the existing housing markets. It is therefore pertinent that this section focuses on exploring the magnitude of aggregate housing affordability problems using the States as the unit of analysis. The discussion presented in this section is aimed at achieving two objectives namely;

**Table 7-14 Showing the Magnitude of Aggregate Housing Affordability Problems by States in Nigeria**

State Code	STATE	Sig. Group	Median Afford.	Prop. Afford. Problems (%)	Intensity Afford. Problems	State Prop. of National Afford. Problems	Agg. Size-Intensity Afford. Index	Ranking Afford Problems Index
19	<b>Kano</b>	2	-0.322	70.700	-0.530	9.01	974.65	<b>1</b>
24	<b>Lagos</b>	4	0.081	45.030	-0.522	12.95	887.15	<b>2</b>
30	<b>Oyo</b>	2	-0.178	63.720	-0.432	8.41	767.30	<b>3</b>
18	<b>Kaduna</b>	1	-0.317	73.260	-0.524	6.17	688.99	<b>4</b>
27	<b>Ogun</b>	1	-0.391	80.610	-0.524	4.58	562.93	<b>5</b>
20	<b>Katsina</b>	2	-0.356	68.130	-0.750	4.07	485.80	<b>6</b>
29	<b>Osun</b>	2	-0.245	72.880	-0.386	4.72	476.36	<b>7</b>
8	<b>Borno</b>	2	-0.433	70.830	-0.606	3.57	405.81	<b>8</b>
13	<b>Ekiti</b>	1	-0.435	78.620	-0.569	2.58	317.87	<b>9</b>
28	<b>Ondo</b>	2	-0.276	67.400	-0.421	3.19	305.47	<b>10</b>
23	<b>Kwara</b>	1	-0.406	68.900	-0.628	2.38	266.88	<b>11</b>
5	<b>Bauchi</b>	2	-0.632	76.270	-0.748	1.94	259.16	<b>12</b>
31	<b>Plateau</b>	2	-0.253	70.830	-0.537	1.92	208.84	<b>13</b>
35	<b>Yobe</b>	1	-0.546	81.200	-0.642	1.56	208.46	<b>14</b>
12	<b>Edo</b>	3	-0.031	51.830	-0.350	2.58	180.53	<b>15</b>
2	<b>Adamawa</b>	3	-0.070	60.000	-0.890	1.46	165.25	<b>16</b>
22	<b>Kogi</b>	2	-0.101	54.290	-0.345	2.14	156.05	<b>17</b>
21	<b>Kebbi</b>	2	-0.719	76.670	-0.938	1.05	155.40	<b>18</b>
14	<b>Enugu</b>	3	-0.003	49.440	-0.278	2.28	143.91	<b>19</b>
33	<b>Sokoto</b>	2	-0.391	70.550	-0.620	1.20	137.45	<b>20</b>
16	<b>Imo</b>	3	-0.007	50.000	-0.222	2.19	133.77	<b>21</b>
7	<b>Benue</b>	2	-0.098	61.250	-0.467	1.45	130.44	<b>22</b>
4	<b>Anambra</b>	4	0.422	32.500	-0.370	2.87	127.68	<b>23</b>
11	<b>Ebonyi</b>	3	-0.056	53.910	-0.282	1.66	114.57	<b>24</b>
9	<b>Cross_Rivers</b>	3	-0.110	56.100	-0.461	1.38	113.47	<b>25</b>
15	<b>Gombe</b>	2	-0.416	72.730	-0.670	0.93	113.33	<b>26</b>
26	<b>Niger</b>	3	-0.054	52.840	-0.304	1.62	111.75	<b>27</b>
1	<b>Abia</b>	3	0.017	47.290	-0.375	1.71	111.26	<b>28</b>
32	<b>Rivers</b>	4	0.327	36.710	-0.415	2.03	105.58	<b>29</b>
34	<b>Taraba</b>	2	-0.908	75.710	-0.974	0.62	92.45	<b>30</b>
17	<b>Jigawa</b>	2	-0.404	65.710	-0.985	0.68	88.09	<b>31</b>
36	<b>Zamfara</b>	3	-0.119	56.600	-0.671	0.85	80.46	<b>32</b>
3	<b>Akwa_Ibom</b>	3	-0.019	53.190	-0.476	0.86	67.49	<b>33</b>
10	<b>Delta</b>	4	0.492	29.410	-0.440	1.36	57.62	<b>34</b>
37	<b>FCT</b>	4	0.023	47.870	-0.421	0.66	44.90	<b>35</b>
25	<b>Nassarawa</b>	3	0.026	43.300	-0.507	0.69	44.86	<b>36</b>
6	<b>Bayelsa</b>	3	0.187	38.000	-0.357	0.69	35.63	<b>37</b>

- to critically explore how best to determine the comparative magnitude of housing affordability problems across the States;
- and to subsequently rank the States based on the resultant affordability problems size-intensity index (developed in this study).

This is particularly important because successive Nigerian national housing programmes have tended to isolate some States for different levels of special considerations. One may tend to question the basis and rationale for identifying these states for special treatment as there are reasons to suspect that some States are favoured more than others due to political considerations rather than because of the actual magnitude of housing needs. Hence, while it may be naïve to entirely discount the role of national politics in such considerations, it will be more appropriate to consider the actual degree of housing problems in these States. However, determining how these states should be ranked based on the magnitude of their housing problems is a bit more challenging than may initially seem. How such an issue should be approached is presented here based on housing affordability problems of households.

Three different perspectives must be considered to fully capture magnitude of housing affordability problems of States in comparative terms. They are;

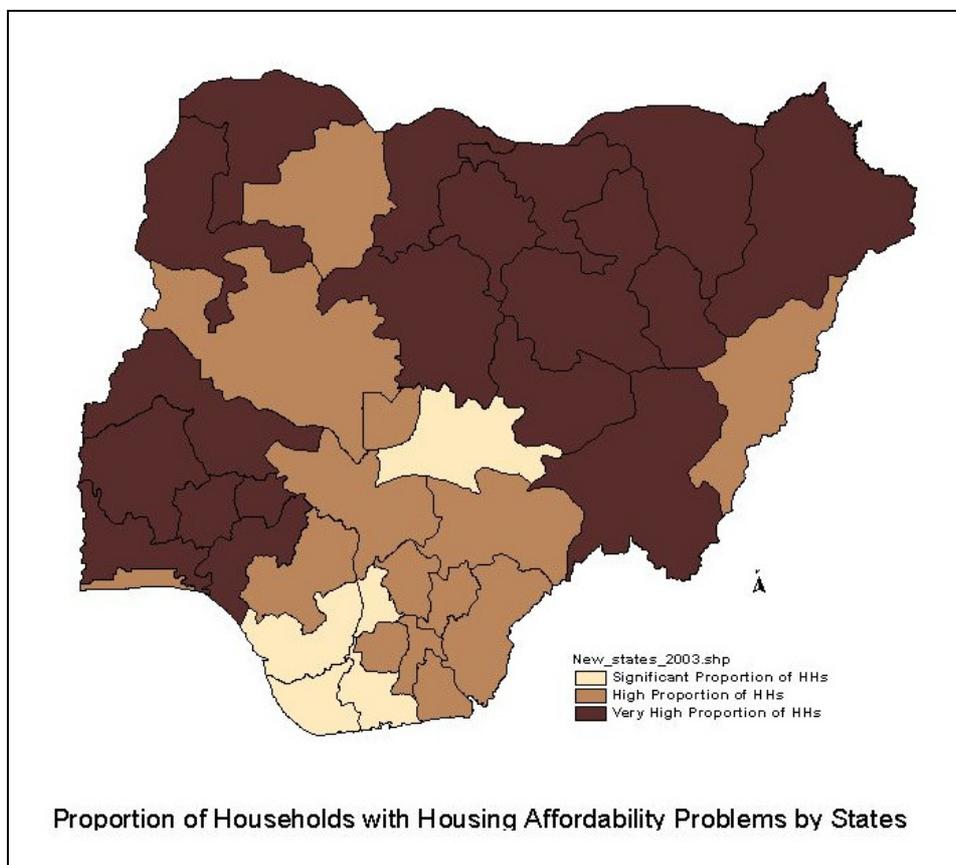
- a) the proportion of households with housing affordability problems in each of the States;
- b) the state proportion of households with housing affordability problems in the country;
- c) the intensity of affordability problems of households in each of the States.

While the first two issues relate to different dimensions of the size of housing affordability problems at the state and national level respectively, the third issue refers to the depth of such housing affordability problem in these States. Each of these perspectives is presented in the following sections. These variables were aggregated into a compound magnitude index called housing affordability problems size-intensity index, which was then used to rank the States (see the last column in table 7-14).

### 7.7.1 The Proportion of Aggregate Housing Affordability Problems within the States

This is the within States estimation of the proportion of households with housing affordability problems. In this study, it is the proportion of households (in percentages) that have negative aggregate affordability scores within a given state. Thus it estimates the percentage size of households that have housing affordability problems in each of the States based on their aggregate housing affordability scores.

**Figure 7-5 Map Showing Categories of States Based of the Proportion of Households With Negative Aggregate Housing Affordability in Nigeria**



Findings indicate that the proportion of those that cannot “afford” housing within States ranges from 29.4% in Delta State to 81.2% in Yobe State, which suggests that there are huge proportions of households that face housing affordability problems across Nigeria. Table 7-15 is represented by the map shown in Fig.7-5. It shows three distinct groups of States, categorized in the order of

aggregate affordability spread. Five (5) states make up the group with the least spread that ranged from 29.4% to 43.3% of households with housing affordability problems.

**Table 7-15 Showing the Aggregate Housing Affordability Categories of States based on Statistical Differentiation**

<b>GROUPS</b>	<b>STATES</b>	<b>No.</b>
Very High Proportion of HHs with housing affordability problems	Kano, Gombe, Osun, Ondo, Plateau, Borno, Kwara, Katsina, Kaduna, Ekiti, Kebbi, Jigawa, Sokoto, Ogun, Oyo, Bauchi, Taraba, and Yobe	<b>18</b>
High Proportion of HHs with housing affordability problems	Adamawa, Cross-River, Edo, Ebonyi, Akwa-Ibom, Abia, Benue, Enugu, Niger, Zamfara, Abuja (FCT), Imo, Kogi and Lagos	<b>14</b>
Significant Proportion of HHs with housing affordability problems	Rivers, Nassarawa, Anambra, Bayelsa and Delta	<b>5</b>

Even this range constitutes a significant proportion of households with affordability problems. However on the other end of the spectrum, 18 States constitute the group with the highest proportions of households with affordability problems ranging from 61.3% to 81.2% referred to in fig.7-5 as the very high proportion group.

These findings which suggests that about two-third to four-fifth of households in these States cannot “afford” relatively decent urban housing should be a major cause for concern with housing policy circles. The pattern of spread indicates that all these 18 States are from the South western and northern parts of the country. A group of about 14 States including Lagos and Abuja (FCT) make up the intermediate group where the proportion of households that are burdened with housing affordability problems range between 43.4% to 61.2% of households.

### **7.7.2 States Proportion of Households with Housing Affordability Problems in the Nigeria**

The state proportion of household with housing affordability problems is another ‘size’ perspective for determining the magnitude of housing affordability problems in States. It refers to the between states proportion of households with housing affordability problems in the country.

It is measured by determining each State's share (in percentages) of the total households with housing affordability problems in the country. In other words, it measures the extent (in percentages) of each State's contribution to the total pool of households that have housing affordability problems in the country. In order to determine this measure for each of the State, the estimated total number of urban households in each of the States were derived based on the estimated proportion (in percentages) of urban residence and the population estimates of States (as contained in the provisional results of the 2006 census results). Thereafter, the derived proportion of households with housing affordability problems in each of the States were used in conjunction with the estimated proportion of urban residence in each of the States to derive the population size estimates of household with housing affordability problems. Finally, the percentage ratio of the population size estimates of household with housing affordability problems relative to the national total were derived for each of the States (see the seventh column in table 7-14).

**Table 7-16 Showing the Aggregate Housing Affordability Categories of States based on Statistical Differentiation**

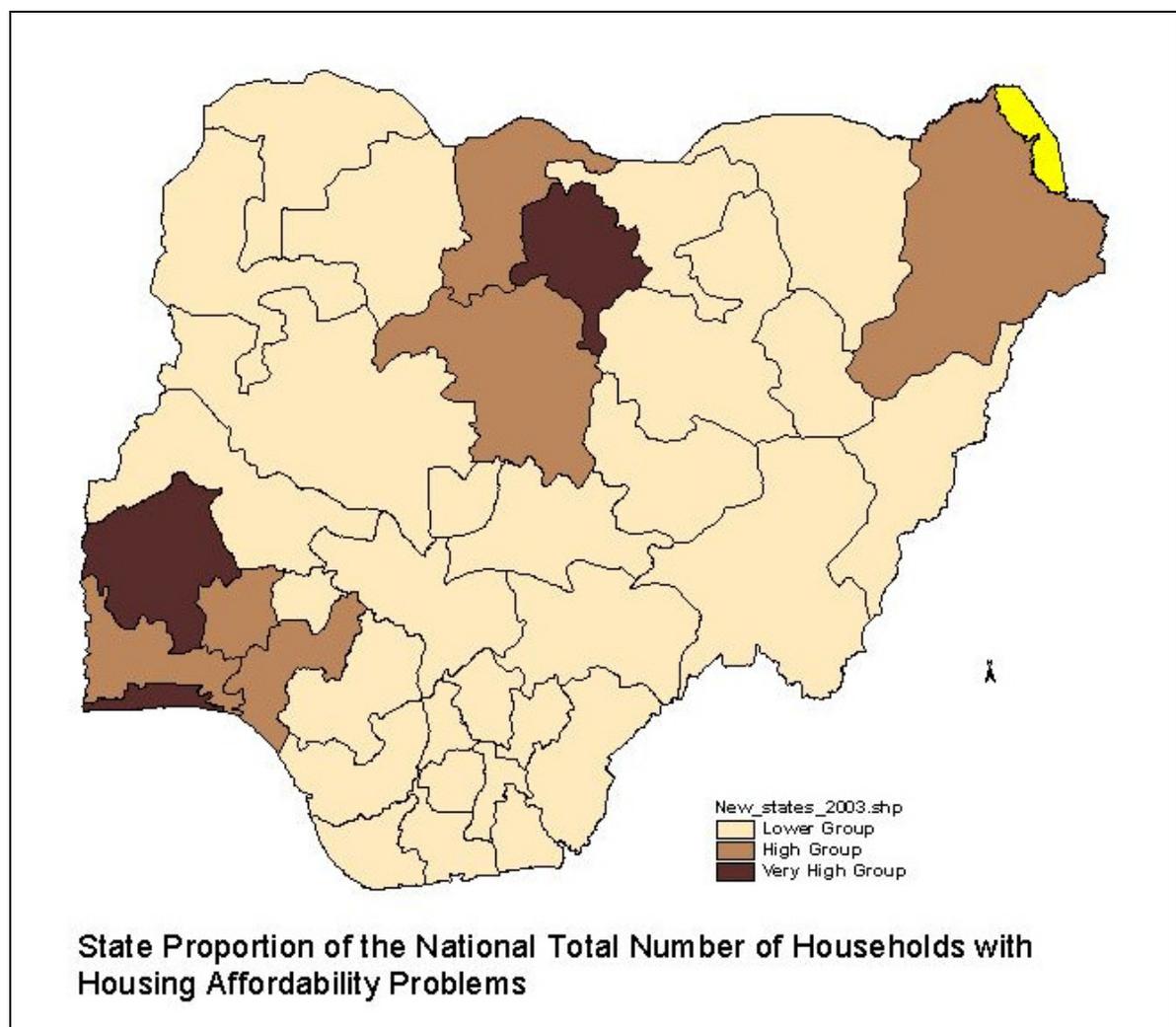
GROUPS	STATES	No.
Very High Proportion Group	Kano, Lagos, Oyo	3
High Proportion Group	Katsina, Osun, Borno, Ondo, Kaduna and Ogun	6
Lower Proportion Group	Edo, Kwara, Bauchi, Plateau, Yobe, Adamawa, Kogi, Kebbi, Enugu, Sokoto, Imo, Benue, Anambra, Ebonyi, Cross_Rivers, Gombe, Niger, Abia, Rivers, Taraba, Jigawa, Zamfara, Akwa_Ibom, Delta, FCT, Nassarawa, Ekiti, and Bayelsa	28

Findings suggest that there were indeed very wide disparity between some States. While some States such as Gombe, Taraba, Jigawa, Zamfara, Akwa-Ibom, Delta, Nassarawa, Bayelsa and Abuja (FCT) individually contribute less than 1% of the national total of households that have

housing affordability problems, some States such as Oyo, Kano and Lagos States contribute about 8.4%, 9% and 12% respectively.

Table 7-16 is represented in fig.7-6 showing categorisation of states based on their respective proportional contributions to the total number of households with negative aggregate housing affordability scores in the country. Three groups of states were indentified. Of the 36 States and the FCT, 28 of them were categorised into the lower contributing group. These States respectively contribute no more than 2.87 % of the total households with housing affordability problems.

**Fig.7-6 Map Showing Categories of States Based of their Proportion of Households With Negative Aggregate Housing Affordability Relative to the Country Total**



The next group consisting of 6 states were categorised as high contributing states. Their respective share of the national total range between 2.87% to 6.17% and they are made up of Katsina, Osun,

Borno, Ondo, Kaduna and Ogun States. Only three states namely Oyo, Kano and Lagos States belonged to the very high contributing group with estimates of about 8.4%, 9.0% and 12.9 respectively. Details are shown in Appendix 7-3.

Therefore, while it was important to measure the proportion of household with housing affordability problems as was done in the earlier analysis; this measure captures in absolute terms the actual state proportions of the total households housing affordability problems. So while it is important to account the fact that as much as 75.7% of households in Taraba State have housing affordability problems compared to Lagos State that recorded about 45%; it is equally important to realise and take into account the fact that Taraba's 75.7% represents about 181,679 households while Lagos States 45% represents about 3,802,684 households in absolute terms.

### **7.3 The Intensity of Aggregate Housing Affordability Problems in Nigeria**

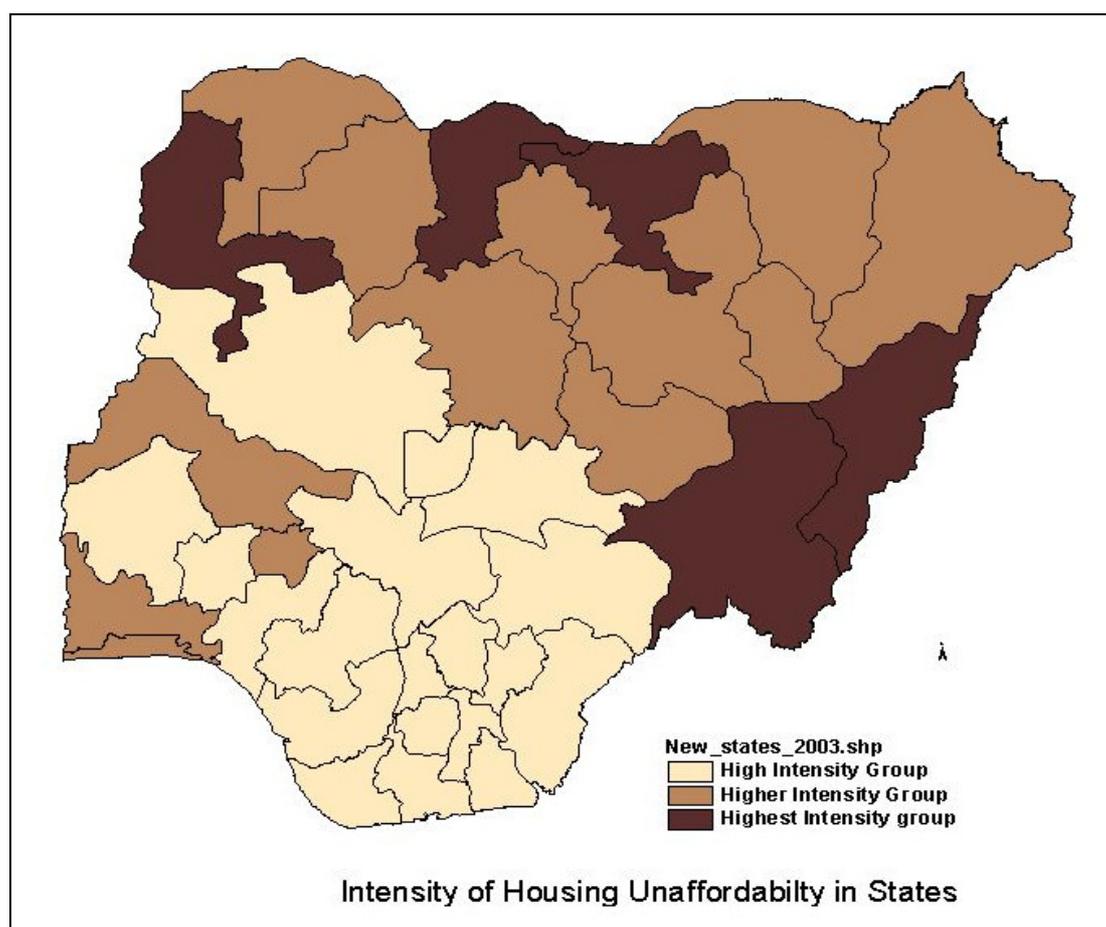
'Intensity' of aggregate housing affordability problems as used in this section refers to the depth of housing affordability problems for any given household that is below the neutral affordability datum. It measures how far-away or further-off below zero (0) is the housing affordability status of households. In this study, this is computed as the median value of below zero aggregate housing affordability scores of households. Correlation analysis indicated that the proportion of households with housing affordability problems (in percentages) in States and the intensity of housing affordability problems within States are correlated to about 0.551. Thus, whilst the two are significantly related, there are States where there are substantial variations in level of housing affordability spread and intensity. It should also be noted that intensity of housing affordability problems within states correlates at about 0.628 with the proportion of households in core poverty within states. States that showed highest levels of intensity of housing affordability problems include; Taraba, Adamawa, Taraba, Jagawa, Kastina and Kebbi States (see table 7-17 and fig. 7-7). The median below zero housing affordability scores in these States ranged between -0.745 to -0.985 on the aggregate housing affordability index continuum.

There were about 18 States plus Abuja (FCT) that make up the lowest intensity group. These States include all States in the South-south and South-east regions and some States of the South-west and north-central regions of Nigeria.

**Table 7-17 Showing the Intensity of Aggregate Housing Affordability Problems by States**

<b>GROUPS</b>	<b>STATES</b>	<b>No.</b>
Lower Intensity Group	Rivers, Nassarawa, Anambra, Bayelsa, Delta, Osun, Ondo, Oyo, Cross-River, Edo, Ebonyi, Akwa-Ibom, Abia, Benue, Enugu, Niger, Abuja (FCT), Imo and Kogi	<b>19</b>
Higher Intensity Group	Borno, Yobe, Gombe, Bauchi, Plateau, Kaduna, Kano, Zamfara, Sokoto, Kwara, Ekiti, Ogun and Lagos	<b>13</b>
Highest Intensity Group	Adamawa, Taraba, Jigawa, Katsina and Kebbi	<b>5</b>

**Figure 7-7 Map Showing Intensity of Aggregate Housing Affordability Problems by States in Nigeria**



Leading States within this includes; Imo, Enugu, Ebonyi, Niger, Kogi and Bayelsa States. Their respective median below zero aggregate affordability scores ranged between -0.222 and -0.507.

While Abuja (FCT) was among the least intensity group Lagos States fall into the higher intensity group that comprised of 13 States. Other south-western States that are in the higher intensity group are Ekiti and Ogun States.

While States such as Oyo, Osun and Ondo were amongst the group of States with the highest spread of affordability problems (i.e. percentage proportion of below 0 affordability households), they were also registered amongst the least intense group of States.

#### **7.4 The Housing Affordability Problems Size-Intensity Index**

Attempts have been made in the previous sections to briefly discuss the proportion of households with housing affordability problems within the states as well as between the states. The intensity of the housing affordability problems of households within the states has also been briefly discussed. Given that these three aspects of housing affordability problems vary across states, each of these is singularly deficient in capturing the entire magnitude of housing affordability problems in various states. Magnitude as conceived in the study ought to reflect both the *size* and *intensity* of aggregate housing affordability problems in the study area. Hence, the magnitude of housing affordability problems is taken as the totality of housing affordability problems in a given state that takes into account both the size of the households that have housing affordability problems within and between the states, along with the depth of such problems.

An aggregate index – the housing affordability problems size-intensity index has been developed to capture this conception of magnitude as used in this study. To do this – the respective size and intensity scores of the states were aggregated to derive the index. Given that *intensity of affordability problems*, which is the median below zero affordability scores of States were negative numbers, *intensity scores* were first transformed before using them to adjust the *size indicators scores* using the following formula;

$$tINTENSEAFF = (1 - INTENSEAFF)$$

where, *INTENSEAFF* represents the *intensity* of housing affordability problems

*tINTENSEAFF* represents the *transformed intensity* of housing affordability problems

Then,

$$HAPSIZINT = WSAFFPROP * BSAFFPROP * tINTENSEAFF$$

Where, *WSAFFPROP* represents the proportion of households with negative affordability scores within the states.

*BSAFFPROP* represents the states proportion of households with negative affordability scores relative to the national total.

*HAPSIZINT* represents the housing affordability problems size-affordability index.

The states were then categorised into three groups based on the derived housing affordability problems size-affordability index namely the moderate, the high and the very high magnitude group. These state groupings are shown and represented in table 7-18 and fig. 7-8 (details are shown in the eighth column of table 7-14).

**Table 7-18 Showing Magnitude of the Aggregate Housing Affordability Problem Categories by States**

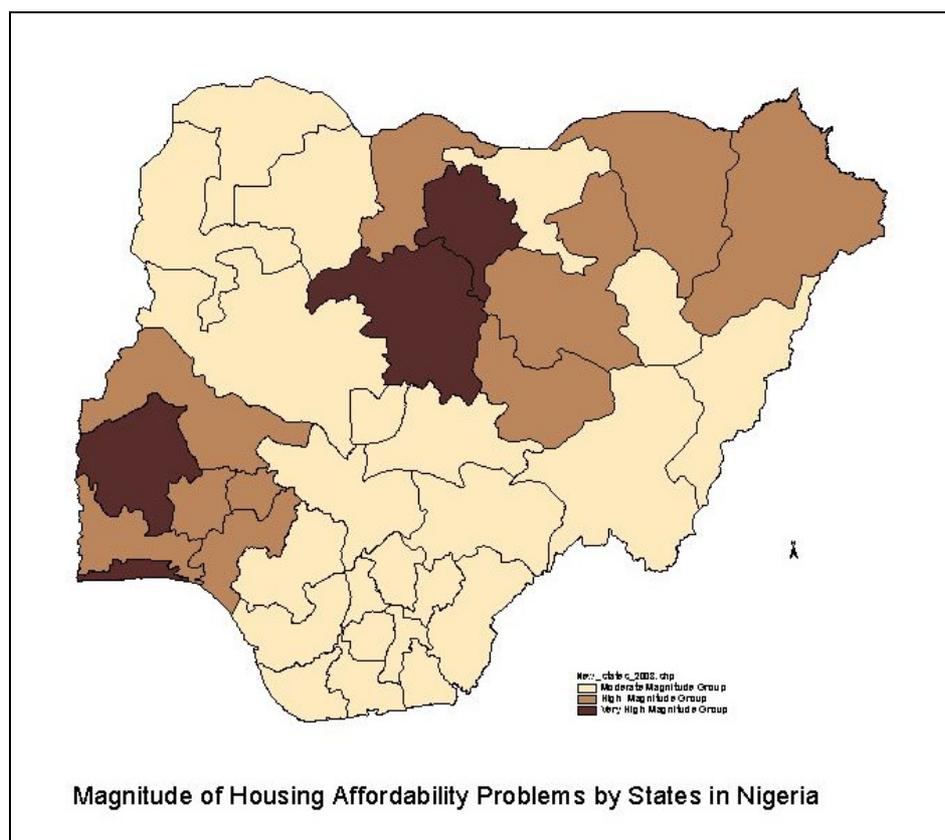
GROUPS	STATES	No.
Very High magnitude Housing Affordability Problem Group	Kano, Lagos, Oyo and Kaduna	4
High Magnitude of Housing Affordability Problem Group	Katsina, Osun, Borno, Ekiti, Ondo, Kwara, Bauchi, Plateau, Ogun and Yobe	10
Moderate Magnitude of Housing Affordability Problem Group	Edo, Adamawa, Kogi, Kebbi, Enugu, Sokoto, Imo, Benue, Anambra, Ebonyi, Cross_Rivers, Gombe, Niger, Abia, Rivers, Taraba, Jigawa, Zamfara, Akwa_Ibom, Delta, Nassarawa, Bayelsa and Abuja (FCT)	23

The relatively moderate magnitude group is made up of 22 States and Abuja (FCT). All the states in the south-eastern region and south-southern region fell into this category along with the bulk of states in the north-central region with the exception of Kwara and Plateau states. Within this

group, the 5 states that have the least magnitude of housing affordability problems are Bayelsa, Nassarawa, Delta, Akwa-Ibom and Abuja (FCT).

The high magnitude group is made up of ten states mostly from the south-west and north-east regions of the country. Four (4) states were identified and classified into the very high magnitude group namely Kano, Lagos, Oyo and Kaduna states. Of the 36 states and FCT in the study area, these 4 states accounts for 36.54% of the total number of households with housing affordability problems. As can be easily seen in fig.7-8, two of the states that were in the very high magnitude group – Kano and Kaduna are located in the north-western region while the other two Lagos and Oyo states are located in the south-west region of the county.

**Figure 7-8 Map Showing Magnitude of Aggregate Housing Affordability Problems by States in Nigeria**



Of these states, Kano state recorded the highest magnitude of housing affordability problems. This finding runs against the conventional notion that Lagos state has the worst housing problem

in the country given the share size of Lagos as the largest city in Nigeria that also attracts the highest rate of urban influx relative to other cities in Nigeria. A close look at table 7-14 offers some clues as to why Kano edged out Lagos to occupy the unenviable first spot as the State with largest housing affordability problem. The two states have comparable levels of intensity of housing affordable problems. However, while Lagos state has more households with housing affordability problems (making up about 13% of the national total compared to Kano's 9%), the proportion of households with housing affordability problems with Lagos state is about 45% compared to the 71% recorded in Kano.

The findings generally suggest that the south-western region of the country has the worst housing affordability problems. All the states in the region were either categorized into the high or the very high magnitude groups. This may not be unconnected to the fact that this region is the most urbanized region in the country with more cities and towns than any other region including the two largest cities in the country Lagos and Ibadan.

These findings confirm huge magnitudes of housing affordability problems in states with the largest cities in the north-western and south western states having the most severe problems. In general, the south-southern and south-eastern regions comparatively recorded the least severe housing affordability problems in of the country.

## **7.8 Summary of Key Findings**

- 1.) There are significant housing affordability differences between identified socio-economic groups in Nigeria with only the Managerial and professional occupation group (SEG1) and the Intermediate occupation group (SEG2) having a significant positive (above 0 datum line) aggregate housing affordability. The Semi-routine and routine occupations group (SEG6) registered the lowest aggregate housing affordability in the study area.

- 2.) Findings tend to suggest that the significant difference in aggregate housing affordability of socio-economic groups is largely attributable to differentiation in their household income. With exception of the Managerial and professional occupation group (SEG1) and the Intermediate occupation group (SEG2), all the other socio-economic groups have income levels that are below the weighted national household income, resulting in potentially low household savings (for these groups).
- 3.) There is a significant housing affordability differences between identified housing tenure groups in Nigeria with only the Rent-free tenure group (HTG2) and the Subsidized tenure group (HTG3) having significant positive housing affordability.
- 4.) Subsidized tenure group has the highest level of aggregate housing affordability while Ownership tenure group has the lowest aggregate housing affordability in the study area in the study area.
- 5.) Rental housing tenure group has better aggregate housing affordability than the Ownership tenure group.
- 6.) Findings suggest that the significant difference in aggregate housing affordability of housing tenure groups is not attributable to just one variable amongst those examined. Therefore, it is either that none of these variables influence the observed differences (which is less likely) or they do so collectively rather than just individually.
- 7.) There are significant housing affordability differences between States in Nigeria. Abuja (FCT), Rivers, Delta, Anambra and Lagos States have significantly positive housing affordability while Kwara, Kaduna, Ekiti, Ogun and Yobe States constitute the ones that have significantly negative housing affordability.
- 8.) There were huge disparities between states in the number of households that have housing affordability problems within the respective states; the state's percentage share of households with housing affordability problems relative to the national total; and the intensity of housing affordability problems in various states.

- 9.) Kano State recorded the highest magnitude of housing affordability problems in the country and together with Lagos, Ibadan and Kaduna states account for about 37% of the total households with urban housing affordability problems in Nigeria. While the south-west region was identified as having the largest housing affordability problems, the south-southern and south-eastern regions comparatively recorded the least housing affordability problems.

Having completed the exploration of the housing affordability of different socio-economic groups, housing tenure groups and States in Nigeria, this chapter has provided answers to research question three, four and five as raised in this study. Findings also generally supported the three research hypotheses of the study tested here. The study will now be focused on examining the housing policy implications of the major findings summarised in chapter 6 and this chapter. The next chapter will attempt to discuss some specific policy implications of specific findings of study.

## **POLICY AND PLANNING IMPLICATIONS OF RESEARCH FINDINGS**

### **8.1 Introduction**

This chapter attempts to highlight the housing policy implications of the major findings of the study. The focus here is on more specific policy implications of particular findings. Thus the Chapter explores the policy implications of the aggregate housing affordability model in relation to household income, housing expenditure and household size in the study area and those implications as they relate to the variation in housing affordability across different groups and states in Nigeria. It also considers how to make current Nigeria housing policy more responsive to the housing needs of the diverse households in Nigeria in the light of the disparities between them in terms of income, housing and non-housing expenditure, housing quality and household size. It is important to emphasise that this Chapter should not be read as attributing primary causal relevance to many of the specific findings discussed here. Many of these findings do not reflect the root causes of the housing affordability problems in the study area, but rather are symptoms of broader problems. Thus it is necessary to understand these broader problems and the policy challenges that they raise if they are to be successfully resolved into a larger policy framework.

### **8.2 The Housing Policy Implications of Using the Aggregate Housing Affordability Approach Model**

Findings in the study confirm the view that the two conventional housing affordability models - housing expenditure to income and shelter poverty - tend to vary significantly in the type of households that they capture as having housing affordability problems. Such variation is shown in this study to be within the range of about 20% of households. Thus, the use of one of the methods in assessing housing affordability in Nigeria would tend to exclude about 20% of households that would have been identified by the other. This indeed is a serious short-coming in

continuing to solely use these models to measure housing affordability since it implies that if either of these models are applied to measure the housing affordability of Nigerian households, it is likely to result in the misspecification of the housing affordability of about 6 million households comprising of about 30 million Nigerians. The enormity of this discrepancy for housing policy design and implementation cannot be over emphasised. Resultant housing policy strategies would have been inadvertently based on wrong assumptions and invalid estimates, thus significantly undermining the possibility of achieving stated policy goals and objectives.

In addition to the above problem, these conventional housing affordability models also have inherently limited capacity to correctly identify households over-consuming or under-consuming housing and non-housing needs. This weakness limits their individual efficacy as housing affordability classification tools and limits their usefulness in the design of effective targeted housing strategies and programmes for sub-populations with housing affordability problems. Continuing to use them in ways that do not limit or allow for their inherent weaknesses reduces the ability to fully understand the nature and dimensions of housing affordability problems among different households and to proffer viable solutions to mitigate such problems.

In contrast, the aggregate housing affordability model that has been developed in this study seems to capture households that would have been otherwise left out by either of these conventional models. The model captures about 10 to 12% more households that have housing affordability problems when compared to either of the conventional models. In absolute terms, that represents about 15 to 18 million Nigerians, whose housing affordability problems would have been otherwise remained 'hidden'. Such underestimation undermines the understanding of the actual severity of problems and limits the attention that such problems demand.

Furthermore, the aggregate housing affordability model also identifies and correctly classifies households that under-consume or over-consume housing or households who would have been misclassified by the conventional affordability models, thus making it a better housing affordability measuring tool. It therefore offers a more beneficial usage in housing policy considerations than

the individual conventional models. In addition, it gives a more complete picture of housing affordability within any given geographic area and gives a more accurate assessment of the degree of relative housing affordability of individual households living within the area. Hence, it can more accurately advance our understanding of the nature and dimension of housing affordability problems. This should also help to advance the capacity to designing better housing policy strategies in dealing with housing affordability problems.

According to the study, as much as about 61% of Nigerian households have housing affordability problems. That means that the about three out of every five Nigerians live within households with housing affordability problems. With the exception of the Managerial and professional occupations group and Intermediate occupations group, all the other 4 socio-economic groups in Nigeria experience housing affordability problems. Given these findings, there is no doubt that the Nigerian housing delivery system has failed the majority of Nigerians. Such massive and widespread housing problem poses an enormous housing challenge that demands concerted and cogent policy actions. The enormity of such a problem and challenge demands fundamental restructure in the current National housing delivery system with the view of making it more responsive to the needs of the majority of Nigerians.

### **8.3 The Housing Policy Implications of Findings on the General Role of Household's Income, Expenditure and Size**

Some important findings were made in exploring the general relationship between housing affordability and household income, expenditure and size in the study area. They suggest that if an average Nigerian households maintains the weighted national mean household income of ₦216,261.30 (Naira); the weighted national mean household expenditure of ₦50,545.63 (Naira); and the weighted national mean household size (country adult equivalent) of about 3.57 persons; such a household would only barely fall below but almost at the neutral housing affordability mark.

If it is considered that the current national Housing Policy 2002 identified the low-income group as “all employees or self-employed persons whose annual income as at the year 2001 is ₦100,000.00 (Naira) or below”; then the enormity of the housing affordability challenge becomes clearer. The study estimated that the median aggregate housing affordability household in Nigeria whose current household income is about ₦186,057.80 (Naira); with housing expenditure of about ₦49,765.46 (Naira); and a household size of about 4.45 persons records a negative housing affordability. Nevertheless, the negative housing affordability facing such a household would be reduced reach the neutral affordability mark if any of the following were achieved;

- a 20.1% increase in household income while keeping other variables constant;
- a 35.0% decrease in housing expenditure while keeping other variables constant;
- a 44.5% decrease in household size while keeping other variables constant.

The neutral affordability mark is theoretically at a datum point where a household is neither considered to have a positive nor negative housing affordability status. It is the lowest housing affordability status, which a household can occupy without being classified as having housing affordability problems. Hence, in housing affordability policy context, it represents the minimum acceptable housing affordability status.

The fact that it would take a 20.1% increase in the existing household income for the median housing affordability household in Nigeria to improve its housing affordability to *neutral* affordability means that the current household income of the median housing affordability household is below the required level that guarantees adequate housing affordability by 20.1%. In the same vein, the implication of an alternative 35% reduction requirement in the housing expenditure of the median housing affordability household to achieve neutral affordability status is that the current housing expenditure by the median housing affordability households is above the required level that guarantees adequate housing affordability by 35%. It would also follow that a two person reduction in the current size of the median housing affordability household if they are

to achieve neutral affordability status suggests that the size of the median housing affordability household is 44.5% *too large* for affordability purposes.

It should be borne in mind that household income was generally the major factor to determining housing affordability followed by housing expenditure and the household size respectively. The order in terms of importance for housing affordability of these factors would easily explain why higher rates of change in percentage are required from household size (44.5%) and housing expenditure (35%) compared to the required lower rate change in household income (20.1%). Thus, for the median affordability household, the housing affordability effect of a 44.5% change in household size is equivalent to that of a 20.1% change in household income as well as the effect of a 35% change in housing expenditure.

However, the policy implications of these findings are clearer when the actual values of these required rates of changes in these factors are considered. For instance, when translated into actual values, it would require an equivalent of 2 person decrease in the household size or a ₦17,407.50 (Naira) per annum decrease in housing expenditure or an increase of ₦37,366.73 (Naira) per annum in household income for the median housing affordability household if they are to solve their housing affordability problems. Thus, a 2 person reduction in household size of the median housing affordability household will on the average achieve the same housing affordability effect as a ₦17,407.50 (Naira) per annum reduction in their housing expenditure or a ₦37,366.73 (Naira) per annum increase in their household income.

However, even though the required percentage decrease in housing expenditure is higher than the required household income increase (35% compared to 20.1%), the actual monetary value of the housing expenditure reduction requirement is actually less than half the alternative required household income increase of the median household.

This tends to suggest that holding all other factors constant, the financial costs of reducing the housing expenditure burden of households in order to achieve minimal desirable levels of housing

affordability may be less than half the financial cost of achieving the same purpose through an increment in household income.

Resolving housing affordability problem of a given household by increasing its household income is an indirect way of dealing with housing affordability problem. It is more non-interventionist in nature, and therefore the preferred pro-market policy option in dealing with housing affordability problems. Such an approach is often based on the hope that benefiting households would spend an adequate proportion of such an income increment in such ways that satisfy their housing expenditure needs. In the study, it is estimated that the average household would spend a little less than half of their income to satisfy their housing needs. Thus, within the context of improving housing affordability in the study area, reducing housing expenditure cost burden of households is much cheaper than increasing the income of households.

*Therefore it is highly practical to give priority to policy strategies that would appropriately relieve excessive housing costs/expenditure burden of households.*

Although, it is acknowledged that subsidising housing expenditure is an indirect increase in income, one major advantage of this approach is that it appears to be much cheaper than the option of directly increasing household's income. Another advantage is that direct housing assistance often tends to be more effective than such indirect assistance as increment in household income especially when they are properly designed to ensure that such subsidies are spent on housing. Such policy interventions may have to restrict or limit household's housing consumption choice in some sense to not only ensure that such subsidies are used for the purposed for which they are designed but more importantly – to also limit the total amount of subsidy received by households and limit cost of the policy. In pursuing such a policy strategy, it is however important to proceed in such a way as not to discourage private sector housing investment and further limit the supply of housing in the market. Arguing for such a policy does not discount the importance of using household income as a tool to improve the housing affordability of households. After all, the study has clearly shown that household income is the most important factor that influences

aggregate housing affordability of households. *However, the point to be made here is that an increase in household income may be very important in improving the housing affordability status of households, but it is by no means the cheapest option or a guaranteed option when compared with decreasing housing expenditure of households.*

Such fiscal and wage/labour policy tool as increasing wages and income of households require very careful planning given the inherent danger of being counterproductive (if not carefully managed). Such policy may inadvertently serve to drive up domestic inflation which will in turn exacerbate both housing and basic non-housing expenditure to compound the housing affordability problems it is meant to improve. However, it is important to underscore the fact that increasing the household's capacity to pay for their housing and non-housing needs must be recognised as one of the key ways to dealing with housing affordability problems in the study area.

It is also interesting to consider the finding on household size, which suggests that if the size of median housing affordability household is reduced by two persons, its housing affordability status would reach (and slight surpass) the neutral housing affordability mark. Therefore a one-person reduction in the size of the median housing affordability household would dramatically reduce its current housing affordability problems by half. While achieving a 2-person reduction in household size, which represents about 44.5% of current median household size, may be considered drastic and difficult, a one-person reduction in household size is more reasonable and achievable. The good news is that in recent years the average household size in Nigeria has been on the decline. The Human Development Report (2006) showed that the average number of births per woman in Nigeria which was 6.9 in 1970–75 came down to 5.8 in 2000–2005. This is a positive trend that should be encouraged to further reduce average size of households. The established relationship between aggregate housing affordability and household size clearly projects the relevance of population policy strategies to housing affordability of households.

#### **8.4 Housing Policy Implications of Findings on the Having Distinct Sub-groups within the Group of Households with Housing Affordability Problems**

While the previous section focused broadly on the general population represented by the national median housing affordability household, this sub-section is concerned with identified housing affordability quintile groups within the study area especially those with housing affordability problems. There are important housing policy implications of the findings that are specific to sub-groups within those households that have similar housing affordability problems. The character and dimension of the housing problems faced by these sub-groups are different such that each subgroup may respond differently to a uniform set of policy solutions strategies. Different housing problems may require different sets of solutions if they are to be contained. Given that the three quintile groups (with negative housing affordability) experience housing affordability problems of different levels of severity, it is likely that they have varying characteristics that may shed more light into the nature of their housing problems as distinct sub-groups. If such insights are correctly interpreted, they may aid in defining effective policy strategies to tackle existing housing problems of these groups. The discussion will now be focused on the possible policy implications of the differences in household income, housing quality, non-housing expenditure and household size between the bottom, 2<sup>nd</sup> and 3<sup>rd</sup> quintile groups. These are the quintile groups with housing affordability problems.

##### **8.4.1 On Household Income**

While the bottom and 2<sup>nd</sup> quintile groups in the housing affordability distribution recorded comparable low household income, the 3<sup>rd</sup> quintile group recorded a significantly higher household income of ₦135,307.60 (Naira) which was still below than national mean household income by about 60%. Even the household income of the 4<sup>th</sup> quintile group was below the weighted National mean household income, which suggests that there is a generally low household income levels in Nigeria with households in the 5<sup>th</sup> quintile as the only group that has

relatively very high income. It is safe to assume that given the importance of household income to housing affordability, the generally low level of income in Nigeria to a large extent accounts for the high level of housing affordability problems in the country. Based on the conventional wisdom, low income amongst majority of households reduces the capacity of these households to adequately satisfy both their housing and non-housing needs. This is especially so if housing resource allocation, production and distribution systems are mostly market-driven. Low income amongst a majority of households reduces effective demand which consequently does not stimulate market supply. This constitutes a serious problem which weakens the ability of the market to function effectively. It also militates against the proper functioning of the housing finance market. The low income amongst a majority of households does not encourage household savings that could be invested in the National Housing Trust Fund (NHTF) to avail themselves the opportunities provided by participating effectively in the Fund. Therefore, it limits effective participation of households in the NHTF, which also shrinks the envisaged resource base of the fund, consequently limiting its effectiveness and the growth of the mortgage market in general. It also implies that the current housing policy emphasis on homeownership can hardly be justified given that the over-whelming majority of Nigerian households simply cannot afford to buy or build their own dwelling, even under the framework of the NHTF. Given the centrality of the National Housing Trust Fund to the current national housing policy reform, the danger posed by low household income distribution to the Fund, threatens the entire premise of current housing policy.

Further analyses of the respective household income of quintile groups in relation to their aggregate housing affordability revealed the degree to which current household income levels are inadequate. It is most telling that as long as the representative households in the bottom and 2<sup>nd</sup> quintile groups spend anything at all on housing (no matter how minimal), they will continue to have housing affordability problems. *While policy strategies that are directed towards increasing overall household income may wholly solve the housing affordability problems of the 3<sup>rd</sup> quintile group such strategies must be*

*used in conjunction with other measures to improve the aggregate housing affordability of the bottom and 2<sup>nd</sup> quintile groups.* Given the unlikelihood of achieving the multiple additional income increment required by households in the bottom and 2<sup>nd</sup> bottom quintiles to solve their housing affordability problems, other sets of strategies must be defined in conjunction with income increment strategies to stand any chance of success. Since the two groups have comparable levels of household income, it is clear that household income is not the key element driving the significant housing affordability disparity between these two quintile groups, and that housing and non-housing expenditures are more important.

#### **8.4.2 On Housing Expenditure**

While the bottom (1<sup>st</sup>) quintile group recorded the highest drastic housing expenditure that was about 40% above than national mean housing expenditure, the 3<sup>rd</sup> quintile group recorded the lowest which was about 24% below the national mean housing expenditure of households. This underscores large disparity in housing expenditure between the quintile groups that have housing affordability problems. While housing expenditure comparatively represents a major problem for the bottom quintile group, it does not constitute such an intense problem for the 3<sup>rd</sup> quintile group. Moreover, the bottom and 2<sup>nd</sup> quintiles registered significantly different expenditure levels (housing and basic non-housing), while having comparable household income levels. This expenditure disparity largely accounts for the significant differences in their respective levels of aggregate housing affordability. Consequently, the disparity in housing expenditure between the bottom and the 2<sup>nd</sup> quintile groups (and all the other quintile groups) makes housing expenditure an important policy consideration in dealing with the housing affordability problems of the bottom quintile group. While the problem of high housing expenditure is most pressing in the bottom quintile group, the housing expenditure of the 2<sup>nd</sup> and 3<sup>rd</sup> quintile groups could also be deemed high given their relative low household incomes.

It is known that within the market system, supply and demand considerations are crucial factors in determining the price structure of goods. Consequently, high demand tends to drive up price when there is a supply constraint. Given the perennial high demand for urban housing in the country; findings in the study seem to offer clues suggesting housing supply constraints as the major reason for high housing cost/expenditures in the study area including the disparities that have been observed between the bottom housing affordability quintile group and the rest of the quintile groups. In this regard, the current huge disparities in housing expenditure amongst households with comparable income levels in the study area must be confronted. *These challenges call for articulation of policy actions that either drive housing expenditures down or lessen the financial burden of such high housing expenditures on households especially those in the lower quintile groups.* However it should be noted that while it is theoretically possible to solve the housing affordability problems of households in the 3<sup>rd</sup> quintile group by solely pursuing policy strategies directed towards achieving desirable low housing expenditure levels, they will be less effective in dealing with the affordability problems of the bottom and 2<sup>nd</sup> quintile groups. Consequent to the findings that the bottom and 2<sup>nd</sup> quintile groups will continue to have housing affordability problems no matter how little they pay or spend on housing given their current levels of household income and basic non housing expenditure, policy strategies that are only targeted towards the reduction of housing expenditure cannot be effective for these (bottom and 2<sup>nd</sup> quintile) groups. Any such policy strategies must be articulated alongside other relevant strategies to deal with the more complex dimensions of housing affordability problems of the bottom and 2<sup>nd</sup> quintile groups.

#### **8.4.3 On Housing Quality**

It is clear from the findings in this study that there is a significant problem of poor urban housing quality in the study area, especially in the northern parts of the country. Even the new Federal Capital Territory, Abuja, recorded an overall negative housing quality mainly because of its many peripheral shanty towns and informal settlements.

Further findings indicated that there is a *large disparity in housing quality of the quintile groups*. The bottom (1<sup>st</sup>) quintile group was identified as the only sub-group that both records a negative housing quality and pays more than other quintile groups for their housing. Hence, not only does the quintile group with the worst aggregate housing affordability problems live in the poorest housing, they also ironically spend the most for their housing. This unfortunate paradox gives an insight into the multi-dimensional housing problems that confront households at the bottom housing affordability quintile. It is however clear that poor dwelling quality often directly correlates to poor neighbourhood quality. Hence, poor dwelling quality is often an indication of poor quality neighbourhood, which is widely recognised as constituting major problem in cities of many developing countries including Nigeria. *This finding is important in the sense that it directly links poor quality housing to higher housing expenditure and affordability problems*. Traditionally, housing policies in Nigeria have advocated upgrading low quality houses in urban areas solely “as a step towards improving the quality of the environment” (FGN 2002, p.12).

*In the light of this finding, housing/neighbourhood upgrading should also be seen as a valuable tool to boost the supply of adequate housing to especially lower income households*. This contention has far reaching policy and planning implications. It underscores the urgent need to prioritise urban renewal as one of the most critical element in ensuring adequate housing for all. All too often urban renewal concerns receive secondary attention from policy and decision makers as well as peripheral attention in housing and urban policy documents (in the country). Concerted urgent emphasis should therefore be given to urban renewal and development control strategies as means of enhancing the aggregate housing affordability of households.

#### **8.4.4 On Basic Non-housing Consumption and Household Size**

In spite of the fact that they recorded the lowest mean per capita non-housing expenditure, the bottom quintile group had the highest non-housing consumption threshold in the study area - about 22% above the national mean. The significantly higher proportion of non-housing

consumption threshold of the bottom quintile group is largely attributable to their relatively larger household size in comparison with other groups. Literature suggests that basic non-housing expenditure (as measured by non-housing consumption threshold) is mostly relevant to housing affordability when household income of households is relatively low. Given the basic non-housing expenditure disparity between the bottom quintile group, and most of the quintile groups, it is evident that basic *non-housing expenditure is also another factor that drives housing affordability problems of the bottom quintile group in the study area.*

This contention underscores the logic of shelter poverty affordability model that basic non-housing expenditure of households is an important factor in determining the housing affordability of any given household. So while non-housing consumption threshold may not be the most critical in accounting for the differences in aggregate housing affordability across the quintile groups, it is obviously important in understanding the disparity between the bottom quintile group and the 2<sup>nd</sup> quintile group. Thus, effective policy strategies to deal with the housing affordability problems of the bottom quintile group should necessarily include non-housing consumption considerations. These include a range of options that cover such areas as inflation control, energy, education, transportation, poverty reduction strategies, and population control strategies amongst others which are beyond the scope of this thesis. Reduction of household size can theoretically be used to solve the entire housing affordability problems of households in the 3<sup>rd</sup> quintile group. However, given the level of housing affordability problems of the bottom and 2<sup>nd</sup> quintile groups, it will acquire more than just a decrease in household size if they are to be resolved. Thus, strategies to achieve reduction in household size as policy tools to improve aggregate housing affordability of households can only be effective if they are pursued in conjunction with other strategies aimed at reducing high housing expenditure and boosting household income.

### **8.5 Policy and Planning Implications of Findings on the Significant Difference in Aggregate Housing Affordability of Socio-economic Groups**

Findings suggest that there is a significant housing affordability differences between identified socio-economic groups in Nigeria. Of the 6 identified socio-economic groups in the country, only two - the Managerial and professional occupation group (SEG1) and the Intermediate occupation group (SEG2) have significant positive aggregate housing affordability. While three other socio-economic groups namely; Small employers, Own account workers (self employed without employees) and Lower supervisory and technical occupations recorded marginally positive (above 0) aggregate housing affordability scores, their respective scores were found not to be statistically significant (at  $p < .05$ ). The semi-routine and routine occupations group recorded a statistically significant negative affordability score and is the group with the lowest aggregate housing affordability in the study area. In other words, the representative households of the top two socio-economic groups do not in general have housing affordability problems, while those of the other socio-economic groups contend with varying degrees of housing affordability problems. About 65% and 54% of the Managerial/professional occupation group and the Intermediate occupation group respectively do not have housing affordability problems compared to the 32% of the Routine/semi-routine group. In fact, about 60% of Small employees and 63% of Own account workers groups have housing affordability problems. So it is clear that housing affordability in the country is sharply skewed in favour of the upper socio-economic groups. Although it is expected that higher socio-economic groups would have higher levels of housing affordability since they tend to enjoy higher income levels, the sheer size of those in the lower socio-economic groups that have housing affordability problems should be a major policy concern. Appropriate policy response must amongst other things address the issue of low income among the majority of socio-economic groups. For instance, on the Managerial/professional occupation group and the Intermediate occupation group, who make up less the 3% of households were the only ones

whose average annual household incomes were above the weighted national mean household income.

The current Nigerian national housing policy neither defines nor isolates any socio-economic group for any major policy consideration other than individuals referred to as “low income” in order to contextualise low-income housing. The policy merely characterised the low income group as all employees or self-employed persons whose annual income for the year 2001 was ₦100,000.00 (Naira) or below. The policy estimated that about 90% of Nigerians fall into this ‘low’ category group while noting that previous strategies adopted for the provision of houses for the Nigerian masses were not successful. However, there were no new envisioned concrete policy strategies to achieve more effective low-income housing under the current housing policy.

Beyond echoing the ineffectual strategies of the previous 1990 housing policy on improving low-income housing, the current housing policy further stipulated that 40% of the National Housing Trust Fund should be dedicated towards low-income and rural housing; and the need to encourage State, Local Government and other relevant bodies to make available to low income groups a variety of standard building plans (that would be considered as approved plans) to meet different socio-cultural needs. It is doubtful if the new proposals will necessarily improve low-income housing in the country. It is reasonable to question the effectiveness of 40% as the sum required to deal with low income housing. If the same policy document estimated that about 90% of Nigerians fall into the “low” category and if over 60% of Nigerians currently live in rural areas; then reserving just 40% of the NHTF for low-income housing does not appear to be commensurate to the scale of the problem. It raises the question as to why medium and high income housing should get a much higher proportion of NHTF investment (60%) than low-income housing if about 90% of Nigerians fall into the lower income category.

Often, both housing policy implementation and housing finance considerations have tended not to favour low income housing. The situation is further compounded by the emergent housing market bias towards upper middle and high income housing that often guarantees more market

profit for investors. These can explain the situation where the bulk of housing investment by the organised private sector is mostly concentrated on higher-end housing especially those built within the framework of various private-public sector partnership arrangements.

The housing policy provision to invest about 40% of NHTF seems to be indicative of the bias against low-income housing or the lack of political will within official circles to tackle the housing problems of the overwhelming majority of Nigerians who happen to fall into the low-income category. It underscores the contention that there is really no urgency or priority attached to tackling the enormous unmet backlogs of housing needs for lower income households in the study area.

Furthermore, the idea of dedicating a substantial proportion of the Nation Housing Trust Fund (NHTF) to low-income housing may be laudable but there are no defined specific policy strategies/actions to ensure that it will be implemented. There is nothing in the current housing policy that serves to ensure or encourage the implementation of this policy provision. In fact, the target socio-economic groups for low-income housing cannot participate effectively in the NHTF due to low household income levels and resultant meagre household savings across these socio-economic groups. For instance, the semi-routine and routine occupations group (SEG6) which have net negative savings of about ₦6,313.80 (Naira) and the small employers group (SEG3) with ₦4,523.30 (Naira) estimated potential savings, would not be able to contribute the requisite 2.5% of their income into the NHTF. For the own account workers group (SEG4) and lower supervisory and technical occupations group (SEG5) that can pay the requisites 2.5%, given the estimated potential per annum savings of about ₦22,397.00 and ₦27,037.90 (Naira) respectively and their current levels of income, the amount of loan they can take out and repay is severely limited. The representative households of these groups would not be able to pay back any loan that is about half the maximum sum of 1.5 million (Naira) that could be borrowed from the NHTF even if they paid no interest at all on the principal sum over the 25-year amortisation period. When it is considered that in reality, the ₦1.5 million (Naira) maximum sum can hardly be

adequate to construct a modest low income dwelling, then it becomes clear that housing ownership is beyond the capacity of these socio-economic groups. Onyeike (2006) estimates the cost of such housing in Owerri town to be about ₦5 million (Naira).

Given the low level of household income in the study area, the estimated potential savings of the representative household in each of the socio-economic groups are indeed very low. The Small employers group (SEG3), Own account workers group (SEG4) and Lower supervisory and technical occupations group (SEG5) could potentially have savings of about ₦4,523.30 (Naira), ₦22,397.00 (Naira) and ₦27,037.90 (Naira) respectively. The Semi-routine and routine occupations group (SEG6) has an estimated net negative savings of about ₦-6,313.80 (Naira) respectively. Therefore, there is the likelihood that the overwhelming bulk of available fund in the NHTF will continue to be directed towards higher-end, upper income housing to the detriment of low-income housing needs of the majority of households.

#### **8.6 Policy and Planning Implications of Findings on the Significant Difference in Aggregate Housing Affordability of Housing Tenure Groups**

Examining the nature of the housing affordability of different tenure groups in the study is of great importance from a housing policy perspective. According to Daniere (1992), such an inquiry can provide better understanding of the various strategies that affect tenure choice decisions, and help identify households likely to be most affected by housing programmes that emphasise different tenure arrangements. Given the focus of this study, the findings on the aggregate housing affordability of the subsidised housing tenure group, and how it compares with that of the other housing tenure groups was of particular interest. Recall that this revealed a significant aggregate housing affordability differences between the rent-free tenure (HTG2) and the subsidized tenure group (HTG3) and all other groups and that they were also the only groups that have significant positive housing affordability. The subsidized tenure group (HTG3) had the least housing affordability problems while the ownership tenure group (HTG1) recorded the most severe housing affordability problems in the study area. Further findings also suggest that unlike

socio-economic groups, no particular variable (i.e. household income, housing expenditure and household size) is responsible for the observed significant difference in aggregate housing affordability of housing tenure groups. Detailed specific findings on each of the housing tenure groups and their policy implications are discussed below.

### **8.6.1 Ownership Tenure Group**

The ownership tenure group who were the largest of all the tenure groups in the study area with about 45.16% of total urban households was shown to have the most severe aggregate housing affordability problems. Findings showed that about 70% of homeowners in the study area have housing affordability problems. The group recorded the highest housing expenditure and household size levels while living in the poorest housing. These findings are particularly interesting in policy context because they counter the conventional notion that homeowners are mostly well-off individuals who do not pay but rather receive (imputed) rents for their housing and therefore have little housing affordability problems. The study revealed that the ownership tenure group has the most pressing housing affordability problems with as much as 28% of its households in the bottom housing affordability quintile group. *The study has therefore revealed the enormous housing affordability predicament of the homeowners in the study area contrary to conventional belief.*

In order to understand the nature of households that constitutes the ownership tenure group and their housing predicament the study explored the composition of the group in further detail. The analysis showed that about 61% of the Semi-routine/ routine occupation group are home owners, while as high as 40% and 45% of Small employers and Own account workers respectively are also owners. The household income of each of these socio-economic groups is below the weighted national mean household income. Only about 27% of the Managerial/professional occupation group - the wealthiest of the socio-economic groups in the study area - are homeowners. These facts thus contradict the notion that homeowners in Nigeria are mostly made up of high income households.

Furthermore, an attempt has been made earlier to explain the relationship between low quality housing and higher housing expenditure of households. Findings showed that the tenement/single room house types that make up as much as 66% of housing in the study area that falls under the ownership tenure. This house type is prevalent in low-income neighbourhoods and informal settlements, and therefore likely to explain the low housing quality of the ownership tenure group. Moreover, homeowners are comparatively made up of older household heads with larger household sizes, which accounts for the higher basic non-housing expenditure of this tenure group.

These explanations of the poor housing affordability status of the ownership tenure group have some important implications to housing policy reform in the study area. *It suggests a failure of the successive Nigerian national housing policies that have emphasized and focused on homeownership (at affordable cost) as the preferred choice of tenure in the study area.* Over the years, these successive housing policies have relentlessly pursued the ideals of providing affordable homeownership for all (FGN 1990; 2002). The housing policy bias towards homeownership is partly fuelled by the assumed superior advantages and importance of the ownership tenure to individuals, households, communities and the larger society. These include the fact that it tends to promote higher quality residential neighbourhoods; often represents the single largest financial asset and investment of households; stimulates economic growth; promotes household's well-being and happiness; promotes household status, upward mobility and accumulation of wealth; stimulate civil participation within neighbourhoods and communities; and often represents an important life-time aspiration. (Cox, 1982; Tipple and Willis, 1991; Wachter and Megbolugbe, 1992; Megbolugbe and Linneman, 1993). Many of these benefits of homeownership will remain elusive if the costs of home ownership continue to be unaffordable for a majority of households; or if such housing becomes a financial burden or source of housing affordability problems for owners. Study findings suggest that this may likely be the case in Nigeria where the overwhelming majority of homeowners face housing affordability problems. For instance, contrary to the conventional association of homeownership

with high quality residential housing, in reality the reverse is the case. Housing under the ownership tenure are predominantly of low quality many of which are in deteriorating neighbourhoods, which often leads to decline in property values and low asset values. These realities largely undermine the intended benefits of the ownership tenure in the study area.

Another issue is the large size of the tenure group which can either be seen as a problem or a potential positive phenomenon. It becomes a problem when, as in the present situation, most homeowners face major housing affordability problems with little or negligible housing policy intervention to mitigate such problems. Being the largest tenure group, they more readily represent the face of Nigerian housing than any other tenure group. With the current housing policy bias in their favour, their fortunes largely determine the success or failure of the housing policy implementation in the country. Alternatively, the large size of the ownership group can equally be conceived as a positive phenomenon given that it provides the opportunity to build upon a large base that already exists. The huge proportion of households with ownership tenure reflects the high level of commitment by a majority of households to invest in permanent housing arrangements which ownership represents even under difficult circumstances. Thus, they are more likely to become willing and active partners with governments and other interest groups to achieve desired housing goals if properly engaged. Therefore there is the need for a more vigorous effort to substantially reduce the cost of home ownership, both in terms of new and existing housing. Amongst other strategies, the government must explore ways to make its site and services schemes; urban renewal programmes; capital grant allowance schemes, and property tax incentives packages more attractive and effective, in order to mitigate the existing housing expenditure burden of homeowners and in making home ownership more accessible and affordable.

Nevertheless, the findings that the ownership tenure group recorded the lowest comparative housing affordability while living in the poorest housing quality in the study area calls to question the strategic viability of emphasising home ownership as a means to ensure adequate housing for all. This is especially so, given the increasing realisation that majority of households cannot

participate effectively in the NHF programme design to promote home ownership given their low level of income. The scale of the problem demands urgent re-assessment of the current housing policy priorities on home ownership. The associated poor state of home ownership tenure and the severe housing affordability burden of homeowners make compelling case to seriously consider shifting policy emphasis or giving equal policy priority to development of other housing tenures. The option of expanding other tenure groups may offer a more viable way to complement home ownership as means towards achieving the vision of ensuring adequate affordable housing for all Nigerians.

### **8.6.2 Rental Tenure Group**

With respect to size, the rental tenure is the next important tenure group in the study area with about 36% of urban households. While their marginally positive aggregate housing affordability level is not statistically significant, their aggregate housing affordability is still significantly different from those of the other tenure groups. Given their higher affordability score, they have significantly better aggregate housing affordability than the ownership tenure group. While the rental tenure group had comparable household income with the ownership tenure group, their housing expenditure is substantially lower despite having higher levels of housing quality. About 13% of those with rental tenure fall into the bottom quintile of housing affordability compared to about 28% of those with ownership tenure. Thus, compared to households with ownership housing tenure, households in the rental group have greater potential to being assisted out of housing affordability problems with comparably less resources. Thus, given the size of the rental tenure group and their inherent characteristics, the rental tenure deserves more policy attention and support than it has received under successive Nigerian national housing policies. *Given the level of Nigerian socio-economic development; financial resources and enormous housing affordability problems of urban households, it is probably more realistic to pursue the vision of adequate housing for all through a more invigorated expansion of affordable rental housing than the current emphasis on home ownership.* More concerted effort

should be focussed on lower-income rental housing development as opposed to the present situation where most of the organised private sector housing initiatives have concentrated on higher-end upper income housing. There needs to be a radical policy shift from its present bias in favour of higher-end upper income housing. For instance under the section for mobilising private sector participation, the new housing policy (FGN 2002, p.39) argues that any policy that can improve the housing situation of the upper and middle income groups is bound to have a 'trickle down effect' on the lower income sector of the market. This frame of thinking is in line with the notion of *filtering*, where the lower-income housing needs will be mitigated by relieving the housing pressure on higher and middle-income groups. The enormous housing problems of the lower income group cannot be effectively tackled through such an approach. The idea of using filtering as a real tool to deal with the housing problems of the lower-income housing is not supported by the realities of the study area. In fact, the entire volume of public housing has been too little to trigger any significant filtering in rental housing in Nigerian cities (Ozo, 1990). Often most of the vacancy chain that will be produced by higher income households moving into better newly built housing will be broken before they can significantly benefit the lower-income households given the high unsatisfied demand for decent housing across all the income groups. Assuming filtering was to work perfectly as theorised, it is difficult to see how satisfying all the housing needs of the very small proportion of the high-income households who need better housing will make any significant impact in filling the enormous backlogs of housing deficit and needs of the very large lower-income households in the study area.

Again, assuming that filtering works, it will have the indefensible distributional effect of concentrating poorer households in the lowest quality housing (Lansley, 1979). Therefore, such thinking exposes the lack of depth in the articulation of the current housing policy in not giving due consideration to the realities of the Nigerian housing market.

Another instance where the provision of the current policy may have had adverse housing affordability impact for rental households is on the issue of rent control. Whereas the previous

housing policy of 1990 stated that it will “continuously review the concept and operations of the rent control measures to encourage the private sector in the provision of rental accommodation”; the current housing policy pivoted towards the extreme ideological pro-market position of total eradication of rent control. It stated that it will “ensure that rent control measures are never introduced as they mitigate against market delivery” (TCHUD 2002, p. 39). Such a rigid ideological pro-market position does not in any way protect rental households from unnecessary exploitation by unscrupulous landlords and real estate agents. Granted that in some situations, extreme rent control can have depressing effect on private sector housing supply; the total abolishment of any form of rent control in a country like Nigeria with enormous backlog of unmet housing needs especially in lower income housing markets may serve to encourage undue exploitation of rental households. For instance, in Lagos it is not unusual to be asked for an advanced rental deposit of more than two to three years in some parts of the city whereas about six months to one year deposit are normally required in some other states. Therefore, such a blanket ban of any form of rent control may serve to exacerbate housing affordability problems of households instead of reducing it indirectly through encouraging additional housing supply. It is often assumed that removing rent control barriers will stimulate the private sector to develop more housing. Any policy to roll back rent control must ensure that it is carried out within a framework that guarantees that rental households are not unfair exploited by unscrupulous landlords and estate agents. This situation calls for a leasing / tenancy reform in Nigeria to ensure that rights and obligations of all the stakeholders in rental housing are clearly defined and enforced.

### **8.6.3 Subsidized and Free-Rent Tenure Group**

The Subsidized tenure group and Free-rental tenure group whose weighted proportions approximates about 7% and 12% of households respectively, were the only groups that recorded significantly positive aggregate housing affordability in the study area. The Subsidized tenure

group enjoy the highest level of aggregate housing affordability and housing quality in the study area, while having comparable housing expenditure with the rental tenure group. Of all the tenure groups, they maintained the highest average household income of about ₦270,817.40 (Naira), which is significantly higher than the national average. This is based on the fact that majority of households in the rental tenure are from the higher socio-economic groups. Given that they have comparable housing expenditure levels with the Rental tenure group; it could be assumed that the housing subsidies enjoyed by these households help to keep their housing expenditure within manageable bounds given their higher level of household income. In other words, the housing expenditure of the Subsidised tenure group could have been excessive if they were to maintain similar housing without subsidies. The subsidy framework gives benefiting households the opportunity to enjoy higher quality housing at comparable costs with the Rental tenure group.

It can therefore be argued that housing subsidies have positively influenced desirable aggregate housing affordability of households in the study area. If the goal of the subsidised housing tenure is to improve housing affordability of households, it clearly succeeded in Nigeria. This beneficial aspect of the direct public housing provision by government is not often acknowledged. However, it is also clear that the subsidised tenure housing system have largely benefited the ‘wrong’ households - the higher income households. One of the problems of subsidised public housing allocation in Nigeria is that houses that are built for the lower income have often gone to the higher income households. The findings in the study justify such claims.

*Thus, while it should make more sense to drastically expand the subsidised housing tenure in the study area in order to stand any chance of achieving the housing for all policy goal, such programmes should be more effectively designed and targeted towards the lower income and lower socio-economic households, who need them most. It must however be acknowledged that careful targeting is necessary because government budgets and expenditure are all too often constrained.*

The Subsidised tenure group and the Rent-free tenure group make interesting contrasts in comparison, which offer valuable housing policy insights. While the subsidised tenure group has

the highest household income in the study area, the rent-free tenure group has the lowest household income of about ₦179,668.20 (Naira), which is significantly below the national average. Furthermore, the rent-free tenure group recorded the lowest housing expenditure in the study area of approximately ₦26,000.00 (Naira). Thus, while they have the lowest household income in the study area, their housing expenditure was at such a low level to guarantee them a positive aggregate housing affordability. It is therefore evident from this finding that even the lower income households can attain positive housing affordability status, provided their housing expenditure burden is reduced to a level that is commensurate to their income. The positive affordability of the rent-free housing tenure group shows that housing subsidies can be an effective tool in tackling the housing affordability problems of the lower income/socio-economic groups in the study area. Given the ample evidence that housing subsidies are effective in reducing aggregate housing affordability problems of households; and being mindful of the inefficient, wasteful government intervention experiences in the past through direct public housing provision, it is pertinent to explore how best to enable housing subsidy regime in Nigeria.

### **8.7 Policy and Planning Implications of Findings on Significant Differences of the Aggregate Housing Affordability of States in Nigeria**

There is a significant housing affordability differences between States in Nigeria. While states such as Rivers, Delta, Anambra, Lagos and Abuja (FCT) have significantly positive housing affordability, others such as Kwara, Kaduna, Ekiti, Ogun and Yobe States recorded significantly negative housing affordability. Furthermore, there are comparatively large disparities between states in the magnitude of housing affordability problems as measured by the housing affordability problem size-intensity index of states. Thus, with respect to aggregate housing affordability there are huge disparities across the states in the following three areas; a) *within states proportion of households* that have housing affordability problems; b) *between states proportion of households* with housing affordability problems relative to the national total; c) *the intensity* of such housing affordability problems.

These findings have significant housing policy implications. They underscore the critical need for states to develop their own housing policies and programmes, which reflect their peculiar situations and circumstances or for national policies to be sensitive to inter-state differences. These disparities indicate that different states may likely respond differently to a uniform set of policies and programmes. All too often, states have no consolidated housing policy variants of their own and tend to operate without one. In defining the institutional framework for housing delivery, the current housing policy document encouraged states to develop their own housing policy but within the framework of the national housing policy. Such a provision underscores the need to get the national housing policy framework right in the first place and to make it flexible enough for states to adapt and manoeuvre in response to their peculiar needs and circumstances. The current national housing policy that emphasised unregulated market housing delivery can hardly provide an adequate framework for the states in designing effective housing policies to tackle the varied nature of their housing problems.

Further findings that identified 4 states as constituting the group that have very high magnitude of housing affordability problems offer possible insights on which states should be given priority considerations in the design and allocation of housing programme resources. For instance Kano state recorded the highest magnitude of housing affordability in the country followed by Lagos, Ibadan and Kaduna states respectively. Together these 4 states account for about 37% of the total households with urban housing affordability problems in Nigeria. Based on enormity of housing problems in states, these four states should be recognised for special attention in housing resource allocation. All too often such decisions have been made based on other considerations rather than “on the ground” housing needs of households. For instance; the states that were isolated for special consideration in the current housing policy are Abuja (FCT), Lagos, Kano and River States (in that order). The policy recommended the implementation of a pilot housing programme to develop about 40,000 housing units nation-wide. Of these 40,000 housing units, 3,000 units were allocated to Abuja; 2,000 units to Lagos; 1,500 units to Kano and River states while the rest of the

states in the country were allocated 1,000 housing units each. It is most likely that if the criteria used in identifying these states were based on the magnitude of their respective housing problems, the list would have looked different. If housing affordability problems were to be the criteria, Abuja (FCT) which was accorded the highest priority would not have been in the list as well as River state which also belong to the groups of states with comparatively modest housing affordability problems. Kano state would have been moved up the ladder to reflect the magnitude of housing affordability problems in the state. Although some other factors such geographical balance need to be taken into account in making such decisions, it is important that at the end of such process, resources are best allocated to where they are needed most.

This chapter have attempted to discuss some specific findings and policy implications of such findings. They must be cast into a broader policy framework. In fact, the specific policy implications that have been identified in this chapter serve as a prelude to discuss the broader policy implication of the findings in the next chapter. Hence, specific or direct policy implications that were drawn from these findings as discussed here serve as identified challenges that an appropriate broad housing policy framework for Nigeria should articulate if the housing policy goal of ensuring adequate housing for all is to be achieved. The next chapter will discuss the broader implications of findings for the overall policy framework in Nigeria.

## **REFLECTIONS ON HOUSING POLICY REFORMS IN NIGERIA**

### **9.1 Introduction**

While the previous chapter had focused on narrow specific policy implications of some findings, this chapter will emphasise the broader implications of the study's findings for housing policy reforms in Nigeria. These housing policy implications include issues of housing supply inelasticity and deficiency, improving the quality of existing housing; ensuring that the housing market works for all, enabling an appropriate implementation of subsidy regimes, designing more responsive state-level housing policies and integrating housing policy with wider social and economic policies. For over three decades, Nigerian housing policy approaches have largely been dictated by a mixture of transient conventional wisdom, convenient prejudices and fashionable ideas of the changing times. While the fundamental nature of Nigerian housing problems remained unchanged, housing policies have swung from one end of the ideological spectrum to the other, often without their fundamental premises being critically examined. Thus, while the national housing policy ambitions have grown, their achievements have become smaller and the housing conditions of the average Nigerian have continued to decline. For instance, as far back as 1975 the Nigerian Third National Development Plan 1975-1980 observed that

"As a result of the acute shortage of suitable rental accommodation especially for the low income groups in our major towns and cities, rents are extremely high and the average urban worker often has to pay as much as 40 per cent of his monthly income in rent. This is a major factor in the distortion of income distribution in favour of the property - owning class and constitutes an obstacle in the realization of one of the long-term goals of our developmental effort - the attainment of a just and egalitarian society. There is no area of social services where the urban worker in Nigeria now needs relief more desperately than in housing (Federal Government of Nigeria, 1975, p.308)."

Unfortunately, over three decades later, after successive national development plans and housing policies, the central message of the above statement still holds true for the present day Nigeria. Successive housing policy regimes in the country have failed irrespective of how they were branded. The current housing policy which has de-emphasise active government participation in

deference to the private sector has so far not performed better either. There are doubts if the new policy will ever improve housing conditions in the country given its inherent contradictions. There are reasons to also believe that in respect of some key issues, real efforts have not been made to ensure the efficacy of the new housing policy in responding to the housing realities of households. Based on some of the findings in the study, this chapter attempts to discuss some of the broad issues that should be considered and clearly thought through in charting effective housing policy reform course for the country.

To this end, reflecting on the characteristics of the housing affordability problem quintile groups especially those at the bottom offers a useful starting point. The representative household in the bottom quintile group is a household whose comparatively low household income is significantly less than the national median household income and lives in the lowest quality housing but records by far the highest housing expenditure compared to other quintile groups that enjoy much higher levels of housing quality. Such households also have the highest household size along with significantly higher non-housing expenditure burden when compared to the other groups. *A situation where the household with the lowest comparative income has the highest housing expenditure for the lowest quality housing suggest a severe problem that can be explained by plausible acute housing supply shortages.*

Such findings confirm some of the findings from other studies, which have been discussed earlier in the literature review, where lower income households often pay more for their housing than higher income households and have little or no discretion over their housing expenditure (Van Der Heijden and Haffner, 2000). The housing supply shortages in Nigeria as evident from the above findings have also been widely observed in the literature and in the successive national housing policies in Nigeria.

Furthermore, a situation where such a household will require to treble their household income or total elimination of their housing expenditure in order to reach neutral housing affordability status clearly indicates that the existing “housing market do not work” for them. The same could be said of another representative household of the 2<sup>nd</sup> housing affordability quintile group which requires

doubling their household income or elimination of their housing expenditure in order to reach neutral housing affordability. These groups obviously belong to the section of the population for which unregulated housing markets currently do not work. It is evident that these groups can neither compete favourably in unregulated housing markets nor can their housing requirements be adequately accommodated within such markets. The next sections of the chapter will explore what these findings broadly suggest within the Nigerian housing policy reform context.

## **9.2 Housing Supply Inelasticity and Supply Deficiency Considerations in Nigerian Housing Policy Reform**

Over the years, successive Nigerian housing policy documents have emphasised the need to improve the supply of housing in the country. Indeed, it was one of the major reasons that prompted government intervention in housing provision. For over three decades before the current housing policy, the common feature of Nigerian housing policy implementation was the central role of government in direct provision of public housing (Onibokun, 1990; Federal Republic of Nigeria, 1991; Ikejiofor, 1999). This role is seen by government as part of its social responsibility to ensure the availability of adequate housing for all income groups as documented in the Third National Development Plan 1975-1980 (Federal Government of Nigeria, 1975). The overall impact of that strategy towards redressing the poor housing situation in the country's urban areas was minimal at best (Ogunshakin and Olayinwole, 1992; Ikejiofor, 1999; Ogu and Ogbuozobe, 2001). Despite these failures, the notion of direct government provision of housing as the way to increase the overall housing supply in the country has remained officially popular until recently.

The new National housing policy 2002 has moved away from direct housing provision by the government and has sought to boost housing supply through housing finance reforms and private-sector mobilisation. It should be admitted that the results of successive supply oriented housing policies have been poor. Hence, the issue here is not to discuss the need for a supply-

centred housing policy but rather on how to make such a policy effective to achieve desired goals given the findings of the study.

Given that inelasticity in the nature of housing supply is one of the major factors that hinder the proper functioning of the housing market, it is important to understand the inelastic nature of housing supply, in order to appreciate what is required to effectively tackle the enormous housing supply problems in the country. The supply of housing responds slowly to changes in the determinants of supply and thus housing delivery would take a long time to reach housing consumers who need them if delivery mechanism is left solely to the market (Lansley 1979). One of the main reasons for the observable inelastic supply within the housing market is tied to the complexity of the housing production process. This complexity stems from the bulky nature of building materials and components that have to be transported to the building site at high costs; the high and diversified labour component, which has to be deployed at the building site; the long housing production cycle duration, which at times affect initial costs, demand factors such as interest rates and inflation, and the often slow and rigid regulatory and bureaucratic framework within which it is delivered (UNCHS, 1996; Tipple, 2001). These characteristics (particularly the lengthy and costly production process and fixed location) combine to make housing supply relatively inelastic. And unlike other markets, housing markets are often slow to respond to demand, even when that demand is effective in an economic sense. Another reason for this inelastic character of housing supply lies in the fact that housing is by its nature often very bulky and immobile and therefore cannot be move from place to place in response to changing market conditions. Hence, housing surplus in one area often co-exist with drastic deficit in another; with high vacancy ratios co-existing alongside homelessness, because of the place-fixity of the existing housing stock.

The sluggish response of housing supply to demand and the durability of housing give rise to a situation where the existing housing stock is very much greater than the annual flow of new housing units. This obviously encourages the structural imbalance in supply and demand in most

housing sectors, which tends to encourage volatility in land price movements and, in the long-term, real price increases especially in large cities, with often adverse housing consequences especially for the lower income households (Ellis and Andrews, 2001; Milligan, 2003). This is because any sudden change in the level of demand is more likely to be reflected in the change of housing price than change in supply. If any change in supply occurs at all, such changes usually occur in the medium or long term which in itself make it difficult to determine the actual impact of housing demand on supply. The aspect of housing supply that responds to demand and price changes in the short-term is the utilisation of existing housing stock. For instance, if there are a significant rise in house prices or rents, a small family living in a big house may decide to rent, lease or sell part of their house or move to another place entirely. Conversely, it has been argued that if there is a fall in house price, the same family may decide to hold on to the extra space or even move to a bigger house. In this way, price would seem to serve as a housing allocation tool. However, it should be noted that the allocative capacity of price is at best partial and ineffective since the response and impact of price increases on new and existing housing stock supply is slow and minor. It should also be noted that the argument concerning the impact of declining prices is merely theoretical in relation to Nigerian housing market where over whelming demand for all types of urban housing ensures that house prices almost never fall.

Compared with housing supply, housing demand is much more volatile as its depends on such factors as household formation, income levels, housing cost, mortgage finance availability, changes in the labour force and migration. Relatively, any of these factors can change suddenly with major impact on house prices as fluctuations in housing demand have drastic impact on house prices in the short-run, as has been noted. Therefore, the market solution to shortage in housing supply is to allow house prices to rise to a sufficient level as to choke off 'excess' demand while simultaneously encouraging more intensive use of existing housing stock in the short-term to restore market equality between demand and supply. This means that theoretically the free market system does not allow persistent housing shortages as its price mechanism tends to curb excess

'effective' demand. However, the major flaw in this system is that it may reduce excess demand but certainly not social need. In his critical assessment of this type of market solution to housing shortages, Lansley (1979, p.25) reasoned that;

“A serious objection to allowing the market to operate in this way is that it is the least affluent who would suffer from the effect of shortages and be forced to over-crowded conditions paying higher rents than they can afford. Moreover, because supply is highly inelastic even a large price may not call forth an increase in supply. Even a small shortage could have the effect of causing a steep rise in prices, provide large gains for existing property owners and increase the difficulties of low-income groups obtaining adequate accommodation.”

Studies have shown that housing cost and expenditure tend to increase faster than household incomes of lower income groups when compared to high-income households and in addition (relative to their income) the lower income households pay more for their housing than higher income households. These findings obviously suggest that higher income households have more discretion over their housing expenditure (Haffner and Menkveld, 1993; Van Vliet, 1998; Van Der Heijden and Haffner, 2000).

Free-market advocates would also argue that the filtering process is another market solution that would ensure the gradual release of adequate housing for lower income households by the more affluent households when they vacate their housing for better ones. Thus, even if the market seems to respond more towards high-income households by providing higher cost housing, such development would still generate a backward chain of movement that would allow upward movement of whole groups into better housing. The weakness of this argument especially with respect to the study area had been discussed in the last chapter (refer to section 8.6.2).

The problems of poor housing supply are more visible in many lower-income countries such as Nigeria where the majority of newly formed households cannot afford the lowest priced house in the formal sector housing market, exacerbated by rapid urban growth predominantly driven by rural-urban migration (Hoek-Smit and Diamond, 2003). Given that only few households (within the higher income bracket) can afford newly constructed housing, it means that only a small proportion of the requirement for new housing can be fulfilled by new standard housing

construction. This reinforces the tendency of many newly formed households to either share with relatives, or seek the ‘comforts’ of the informal extra-legal housing sector in many of these countries (Hoek-Smit and Diamond, 2003). Ikejiofor (1998) in his investigation of the strategy of sharing of dwelling units in Abuja, Nigeria reached similar conclusions.

Therefore, given the inherent inelastic supply of housing and the existing major housing supply deficiency that exists in Nigeria, it is clear that such an enormous challenge can only be confronted through pro-active, massive investment in housing where the private sector, civil societies and communities will need all the assistance, stimulus and incentives possible in order to commit their own resources into housing to a greater extent than they have done in the past.

It is clear that previous government intervention to provide direct housing to mitigate housing supply shortages fell well short of its goals. What is more disturbing is that eighteen years after the apparent adoption and pursuit of the “enabling approach” to housing provision there is little evidence of improvement in the housing situation for the average Nigerian. *The ambitious commitment of the 1990 national housing policy “to ensure that all Nigerians own or have access to decent housing at an affordable cost by the year 2000” (Federal Republic of Nigeria, 1991, p.5) has remained a distant dream as evident in the findings of this study.*

The main thrust of the enablement approach as pursued by recent and current housing policies has been discussed in Chapter 2. One of the main implications of that discussion is that current policy marks a shift towards a more entrenched market ideology that reduces the role of the state while emphasizing the dominant role of the private sector to lead and drive housing development. However, in the area of housing finance reform few changes have been made, while policy provision have virtually remained unchanged in the area of mobilising private sector investment in housing.

What has been observed in recent years is the increasing involvement of the private sector in developing expensive higher-end housing under various public-private sector partnership arrangements. It could therefore be argued that the sort of incentives that have been offered to

the private sector has so far been insufficient to stimulate their active involvement in other types of housing development such as medium and lower income housing. If these incentives which proved inadequate in the previous housing policy have not been significantly changed or modified to stimulate more private sector investment, then there is little reason to expect the current housing policy to produce a different positive result. It is fair to assume that when one does the same thing repeatedly, one is likely to get the same results. What is clear from findings in the study is that more far-reaching policy modifications need to be pursued to improve the housing situation in the country. It will require more pro-active policy strategies to significantly improve housing supply in the country. While the overall housing supply in the country needs to be boosted, attention should be particularly paid to encouraging much-needed housing supply in areas where they are presently most needed, such as lower income housing with emphasis on rental housing and social housing. The supply of lower-income rental housing and social housing for the underprivileged should be especially stimulated by making such housing sectors financially viable and rewarding to housing investors. The existing provisions in the current housing policy to encourage private sector investment are not sufficiently attractive to investors. The existing package only consists of a mix of tax incentives that were not specifically directed to specific types of housing and which have proven ineffectual in the past. These tax incentives were exactly the same under the previous policy that failed to attract expected investments into areas of desperate housing needs. If those incentives did not work then, there are reasonable doubts that they would work now. More stimulating initiatives that go beyond existing tax incentives are required. This effort must recognise the need for a shift of policy emphasis from housing ownership to rental housing. While home ownership should be stimulated for those who can afford them, rental housing should be emphasised for the overwhelming majority who cannot afford decent housing of their own. And therefore more specific stimulating housing supply incentives should be designed to encourage this area of housing need.

However, while the development of new housing including low-income rental and social housing are crucial to increasing housing supply, ensuring the quality of existing ones is also vital in gainfully reducing the need for new housing. This is discussed in the next section.

### **9.3 Improving the Quality of Existing Housing**

It is evident from the findings in this study that there is a problem of poor quality housing in Nigeria's urban areas, especially in the northern parts of the country. Further findings seem to highlight the relationship between poor urban housing quality and aggregate housing affordability given the size of the disparities in the housing quality of the different housing affordability quintile groups in the study area. It highlights the paradox, noted above, that those in the bottom housing affordability quintile group who live in the poorest housing spend more on housing relative to other quintile groups. In other words, poor housing quality translates into high housing expenditure for households especially for those in the bottom quintile group. Therefore, policy and planning efforts to improve the quality of housing in the study area should not only be seen in the light of improving the environment, but also improving the housing affordability of households. More impetus and emphasis should therefore be given to urban renewal and development control strategies as means of enhancing the aggregate housing affordability of households. To do these, it is important to get the legal and regulatory framework right, as considered in the next section.

#### **9.3.1 Constructing an Appropriate Legal and Regulatory Framework**

Housing policy is largely about how to resolve different and often-conflicting interests with a view to achieving stated goals. Achieving this delicate balance is often a matter of having an appropriate legal and regulatory framework. This implies the removal of existing regulations detrimental to policy objectives and also the imposition of regulations that would facilitate the achievement of those objectives. There are various elements of different dimensions to this framework. Some of

these elements focus on the broad aspects of creating more equitable access to housing which includes such issues as property rights, an enabling fiscal environment, and the freedom of people to associate and organize. Other elements are specifically focussed on the housing delivery process such as development control and zoning systems. As argued by the United Nations, the overall aim is to secure a framework that is "light but firm" - in which a small number of rules and regulations are implemented rigorously as opposed to existing "heavy but loose" system with large numbers of norms and sanctions that are selectively applied according to political patronage or narrow financial interests (UNCHS, 1997b). The Habitat II housing policy agenda envisages a planning culture that is flexible, participatory and responsive to the needs of the poor (UNCHS, 1996).

The above view point has implications on how the various aspects of development control, as discussed further below, should be conceived and implemented in order to accommodate the housing needs and aspirations of the all groups in the society. Development control and zoning systems should be "permissive" and flexible, focused on key areas of the city, devolved to the lowest level possible, and integrated into one responsible department or agency (UNCHS, 1996). In this way it would be easier to implement by poorly resourced agencies with the prospect of some measure of success. Recognizing that current high and rigid standards as imposed by the provisions in the building codes, planning regulation and schemes, and zoning ordinances constitute a major barrier to the provision of adequate housing for the poor , UNCHS (1996, p.253) noted that:

“An insistence on inappropriate standards for, for instance, plot size and infrastructure standards has increased prices to the point where a high proportion of all land developments take place illegally. Many of these standards have their origins in standards imposed during colonial times that were originally intended only for the high quality residential areas of the colonial rulers in circumstances where demand for urban land was far lower as urban centres were much smaller and in most instances, urban populations kept down by strong restrictions on the rights of the native populations to live there.”

There is the overwhelming need to revise and replace these standards with lower, more flexible and realistic provisions that would take into account the cultural and socio-economic realities of

different segments of the Nigerian urban population.

In Nigeria, the major legal and regulatory instruments for the delivery of the housing policy are the Land Use Decree of 1978, Nigerian Urban and Regional Planning Decree (Degree No. 88 of 1992), Nigerian Urban Policy of 2002 and the existing Planning, Building Regulations and Byelaws. Collectively, these instruments have not yet succeeded in engendering an effective regulatory environment for housing development in the country. Of the regulatory instruments identified above, the weaknesses of Land Use Decree of 1978 presents the most immediate problem given that the decree revolves around the primary issue of use and control of land, which is central to housing development. The objectives of the Decree were the facilitation of land acquisition by government for development purposes and minimizing land speculation and the resultant escalation of land prices. It has often been argued that the Decree has not facilitated the process of acquisition of land by the government. Development projects are still being delayed due to land disputes. Moreover, the procedure for securing certificates of occupancy (which are signed by the State Governor to confer a statutory right of occupancy to the holder) is not only cumbersome but also time-consuming. The registration of land titles can take between two and fifteen years (or more) and, with significant portion of urban plots untitled and with no properly maintained cadastral maps; it is difficult to obtain a clear picture of land tenure. As a result, appropriate sites for the development of low-income housing are difficult to acquire at a cheap or affordable price. When planned low-income houses are eventually developed on these sites, their prices and rents make them unaffordable to lower-income households, thus encouraging more privileged people to acquire newly developed low-income housing within the formal housing markets. Repeated efforts to review the Decree have been unsuccessful given the significant constitutional amendment required, which must pass through the National Assembly. In recognition that a commission has been set-up to make recommendation to the Federal government on the best way to reform the Decree it is hoped that the much needed review of the Decree will come sooner than later.

It is however important to note that the problems of the Nigerian physical development regulatory system are not essentially the lack of adequate instruments but the failure to effectively implement existing ones. The current haphazard and chaotic regulatory environment often fails to protect the housing interests of lower socio-economic groups with detrimental consequences to the overall housing sector and the environment. Hopefully, the political will of the government in conjunction with adequate civil support systems will ensure more effective implementation of these instruments in the future. As noted by Darshan Johal of the United Nations Centre for Human Settlement (UNCHS, 1998, p.i) “policy without the resources and capacities to implement it, and the political pressure required to force through difficult decisions, is destined to fail.” The next section will discuss the importance of implementing appropriate development control measures in the Nigeria.

### **9.3.2 Choice of Development Control Measures**

Having discussed the issue of constructing an appropriate legal and regulatory framework with respect to improving the housing quality in the study area, this section would be focused on choice of development control measures that are used to ensure and improve the quality of urban housing. The focus here is particularly important given the significant low housing quality within the study area and their negative impact on housing affordability of households that suggests the inherent need for adoption of more effective development control measures. It is known that housing and land markets in any urban area are largely shaped by social and economic factors that influence the demand and supply of real estate. However, it cannot be denied that planning and development control can have an important role in shaping such markets.

There are three groups of development control techniques being used in Nigeria which have different impacts on the housing market and on housing availability and affordability for households. These are:

- *Preventive measures* such as the enforcement of building byelaws, subdivision regulations and

zoning ordinances, which serve as guides for future development.

- *Curative techniques* to deal with undesirable effects on the environment. Examples include are urban renewal and upgrading programmes.
- *Punitive measures* that are manifested in the form of evictions from plots of land and the demolition of built up areas. An example is slum clearance measures that can remove housing development undertaken by private developers and households.

It should be noted that, to date, the development control tools that are emphasized and mostly readily employed by the town planning authorities in the country have been the preventive and punitive instruments. The orientation towards the preventive and punitive development control measures, and the neglect of the curative measures have had significant impact on the housing and land markets in most urban areas in the country. The study will briefly discuss each of these development control measures.

#### **a) Preventive Development Control Measures**

Preventive measures often consist of rigid enforcement of building byelaws, subdivision regulations and zoning ordinances within the framework of a master plan or development plan. It is believed that the high standards enshrined in these tools has often generated more costs than benefits to residents and are rarely applied in a manner which takes into account the critical issue of impacts on low-income households. Furthermore, the complex development permission procedures built into the planning and land-development process which has limited the accessibility and affordability of land has often discouraged potential developers of and investors in low-income housing. This reinforces the existing shortages in housing supply and drives-up housing rents and prices.

Many of the provisions of these preventive mechanisms have been adopted from western planning standards that have little relevance to the socio-cultural and economic realities of the country. As Omuta (1987) had argued, inappropriate or inefficient development occurs when

stated planning goals are often unrealistic in relation to societal problems and values. It is important to also note that regulations that demand unrealistically large plot sizes for each house simply ensure that most of the population cannot afford a legal site on which a house can be built. Many site and service schemes have been too expensive for low-income households because the price of large plots is beyond their ability to pay, especially when the costs of services and the cost of building the house itself have to be met UNCHS (1996).

Another factor that has discouraged land accessibility for the low-income groups is the development process of Planning – Servicing – Building – Occupation which incurs administrative and transaction costs (cost added) at every stage of the sequence, thus turning the ‘finished product’ into an even more expensive commodity. This is especially the case in Nigeria where the bureaucratic procedure of developing formal housing is very cumbersome. The reversal of this development process sequence of Planning – Servicing – Building – Occupation by the informal housing sector does offer some lessons. For one, the incremental approach of the informal housing sector does help the poor to ‘spread the cost’ of developing the land over a suitable long period without having the burden of initially absorbing the ‘costs’ of planning-servicing-building process (Berner, 2001).

Complimentary to these suggestions is the need for the government to review the existing Land Use Act of 1978 with a view to improving the availability and accessibility developable land especially for low income housing purposes (which has been discussed earlier). The present difficulty of acquiring land legally for such development in the country constitutes a limiting factor in providing housing for the poor in the formal housing sector.

#### **b) Punitive Development Control Measures**

Punitive development control tools are those measures that are designed to penalize those who contravene planning control provisions. Actions such as evictions, demolition and slum clearance fall under this category. Issuance of planning approval/ building permit is one of the most

common ways of controlling development in Nigerian cities. Any building without such permit is deemed to be illegal and the owner is liable to charges as specified by the law. As prescribed by the 1992 urban and regional planning law, section 61, sub-section 1 (Federal Republic of Nigeria, 1992b), these may range from being compelled to undertake minor adjustments to the offending structure to its demolition. Although, demolition is conceived as a 'last resort' measure it is still widely used as can be seen from the recent massive evictions and demolitions of communities and other settlements in Abuja the Federal Capital Territory as part of the belated implementation of the 1979 Abuja Master Plan by the government. The Special Rapporteur on adequate housing, United Nations High Commission for Human Rights (UNHCHR) Kothari (2006) reported that;

Evictions allegedly began on a mass scale in 2003. The evictions, so far, have reportedly destroyed nine communities, including both formal and informal settlements. A total of 49 settlement areas are reportedly earmarked for demolition. The nine communities allegedly affected to date are: Wuse and Mpape demolished in 2004, Dantata and Old Karimo in November 2004, Jabi/Kado in April 2004, Chika in November 2005, Idu Karimo between 2005 and 2006, Kubwa between June 2005 and April 2006, and Dei-dei in April 2006. It is also reported that the Chika (Extension) Community has been totally destroyed, including social services, schools and churches.

A very recently case in Lagos was the demolition of over 2,000 'illegal' structures at Ishefun, in the Ipaja Local Government Development District of the Lagos State, in an attempt by the State government to recover its land, which was earmarked for government projects including a millennium housing scheme (Okojie, 2008). The increasing reliance on these types of tools is not unconnected to the culture of undemocratic regimes that are nevertheless genuinely desperate to 'save' the cityscape from chaotic hazardous development.

Closely tied to this issue is the nature of slums and of slum clearance. Squatter and slum settlements by their very nature contravene building and planning regulations. In Nigerian law, squatters are persons living in structures that are illegally occupying land without permission of the owner or have been erected against existing legislation. Slums are legal, permanent dwellings, which have become substandard through age, neglect or subdivision into smaller units. However, squatter dwellings and slums, no matter how they are defined, are both homes for the poor and

are characterized by poorly built structures, unsanitary conditions, over crowding and degraded occupancy. Slums and squatter settlements are usually regarded as a 'bad thing'. However, they do provide shelter for the urban poor and simply removing and clearing them further reduces the supply of housing for this group. Unfortunately, there has been a long and persistent history of slum clearance in the country. The negative impact of these punitive development control measures on the housing situation of the poor and the low income cannot be over-emphasized. As sub-standard housing takes two forms - the informal sector that is represented by squatters, and the formal sector as represented by tenement slums - evictions and demolitions curtail the supply of both formal and informal housing for the poor. Furthermore, in conjunction with high standards and the cumbersome plan approval process, it exerts a stifling effect on housing investment aspirations and capacity of the poor to build for themselves and improve their housing. The sole result of regulatory laws which price formal houses beyond the reach of the urban poor is that the poor are forced to live in accommodation of a quality poorer than they could in fact afford. Quite rationally, the poor will not spend money on houses likely to be demolished by officialdom and to avoid this they can be subject to corrupt activity by officials and landlords willing to overlook their illegal status in return for payment (UNCHS, 1996). Such extreme development control tools as eviction, demolition and slum clearance should really be used as a 'last resort' option in ensuring security of lives and health of the community. However, in situation where their application become unavoidable, adequate provisions must be made to properly relocate those that would be evicted. That will be slum clearance measure 'with a human face' which will not reduce the quantity of housing stock available for the poor and for those who cannot afford their housing within the formal housing markets.

**c) Curative Development Control Measures**

Within the context of urban renewal, slum upgrading is considered as curative development control measure. As oppose to slum clearance, upgrading is a move towards incremental

development and improvement of housing and infrastructure within slum and informal settlements. The move towards greater tolerance of slum and informal settlement development by policy and decision makers is one of the major factors underpinning the option of upgrading. Furthermore, it has been realized over the years, that it is more efficient and beneficial to improve on the existing settlements and the facilities therein than building from the scratch (Churchill, 1980; Gattoni, 1998; Berner, 2001).

As a development control tool, curative measures are given less emphasis than preventive and punitive measures. In fact, given the enormity of slum and informal settlement development in Nigerian urban areas, it could be said that governmental effort towards instituting upgrading as a viable development control tool has been minimal, contrary to stated policy objectives. However, there are a few examples of upgrading in the country, including the Okpoko (slum) Upgrading Scheme (Onitsha) – a World Bank sponsored project that started in 1980 - and the Central Lagos and Iponri (Lagos) Urban Renewal schemes. There has also been increasing attention paid towards developing more innovative upgrading schemes that draw heavily on the flexible mechanisms of informal land markets to overcome the seemingly systemic problems of conventional upgrading schemes (Berner, 2001). For instance, it has been acknowledged that perhaps the two most serious difficulties with upgrading programmes are how to sustain the initial impetus and how to expand them to the point where they reach most or all of those in need (UNCHS, 1996, p.45). In this respect, much could be learned from the Million Houses Programme in Sri Lanka and Kampung Improvement Programme (KIP) in Indonesia, as initiatives that achieved significant successes in these two areas respectively. The Indonesian *Kampung* Improvement Programme's success in sustaining initial impetus and expanding the programme to the point where it reached a high proportion of all low-income households was achieved through establishment of effective partnerships between community organizations and local government who jointly contribute to the investment in the programme and in the maintenance of provided infrastructure and services. Another innovative experience is the Million

Houses Programme in Sri Lanka that achieved a measure of institutionalisation of the programme, which maintains its sustainability through developing the capacity and knowledge of local municipal authorities who continuously work with the inhabitants of low-income settlements to improve their settlements. The success of these schemes seems to suggest that policies towards containing housing poverty in the country must, among other options, look in this direction for solutions. Thus, there is a need for planning agencies to move away from the current narrow and isolated project based orientation of upgrading as currently conceived and implemented in Nigeria. A more desirable option would be to institutionalise upgrading within city and municipal authorities that have the capacity and knowledge to work with the inhabitants of low-income settlements in upgrading the quality and extent of infrastructure and service provision, and in regularising land tenure. Beyond institutionalising upgrading programmes within the city management framework lies the greater challenge of successfully sustaining these programmes and ensuring that they achieve their objectives through adequate political commitment and support for such projects. In this regard, there is a need for more innovative approaches that enhance community participation among targeted groups, find workable solutions to the issues of security land tenure and adequately mobilise and allow access to credit.

There is as yet no perfect upgrading programme but there are many insights to be gained from the experiences of such programmes as the Community Mortgage Programme (CMP) in the Philippines that used collaborative arrangements between community-based organisations, non-governmental organisations and government which facilitated access of low income households to land and credit. Another programme is the Khuda-ki-Basti (KKB) in Hyderabad in Pakistan that used the granting of security of tenure in order to advance self-sustaining incremental development of allocated land to poorest households by government. Some of these best practice cases can offer insights into innovative ways to improve upgrading programmes in Nigeria. In this way the marginalised majority of lower-income households can be recognised as principal stakeholders in the future and fate of Nigerian urban cities. Such thinking must consequently

inform the commitment to ensuring that the operation of the housing market is mediated to work for all.

#### **9.4 Ensuring that the Housing Market Works for All**

Under current policy, there is a growing corporate private sector participation in housing, which, as might be expected, has concentrated on the provision of more profitable higher-end housing for the wealthy. This tendency tends to reinforce the limits of the private sector within the market delivery mechanism in ensuring a more equitable housing delivery system. As has been attested by UNCHS (1998, p.339);

“The tendency in market economics on short-term optimization at the expense of longer-term investment and planning is of concern as is the lack of attention paid to the influential role of interest groups and other non-economic factors in manipulating the way markets work to the advantage of some and the detriment of others. These and other observations encourage a re-emphasis on the limits of market mechanisms and reassert the importance of strong government and social action.”

Whereas the enablement approach advocates a move towards the private sector and the market in housing delivery, it clearly stated that such a move should be pursued “within a framework that addressed those areas where the private and unregulated markets do not work” (UNCHS, 1996). In fact, the successful implementation of the enablement approach will likely depend on how such housing policies identify those areas where the private and unregulated markets do not work and adequately provide for such affected households outside the framework of unregulated markets. Nigerian housing policy, must necessarily take cognizance of this important caveat in defining its enablement housing policy in order to stand any chance of success.

How then can such areas where the private and unregulated markets do not work be defined and determined? The current National housing policy identifies such groups as unemployed young school leavers, students, the destitute, the infirm, the orphans and widows. However, beyond these groups with special housing needs, all households that can not afford existing housing as identified by this study belong to the group as well. It therefore means that households in the

bottom affordability quintile group, the 2<sup>nd</sup> quintile group and the 3<sup>rd</sup> quintile group, that together constitute about 60% of households, belong to this larger group whose housing interests cannot be guaranteed by the private and unregulated markets. Thus, it could be acknowledged that a majority of households in Nigeria belong to this group. Furthermore, if it is taken into consideration that within the two remaining quintile groups (i.e. 4<sup>th</sup> and 5<sup>th</sup> groups) that have no housing affordability problems, the rent-free tenure group and the subsidised tenure group collectively accounts for about 49% and 55% respectively. Thus about half of the households that do not have housing affordability problems were able to achieve such status as a result direct subsidies which are forms of housing market regulation. *It can therefore be argued that at present, the dominant private and unregulated housing markets in Nigeria do not work for the overwhelming majority of households.*

The fact that the present housing markets have not worked for the overwhelming majority of Nigerians does not mean that it cannot work for them, given adequate incentives and regulatory frameworks. However, it is difficult to envisage a situation where the unregulated housing market will adequately provide housing at affordable cost to the bottom and 2<sup>nd</sup> housing affordability problem quintile groups, who would need to pay nothing for their housing, if they are to achieve a neutral housing affordability status (giving their current prevailing circumstances). If the private and unregulated markets do not work for the overwhelming majority of households in Nigeria, why then should it be adopted as a relevant and dominant policy reform approach for the country? Arguably, it would be more reasonable to adopt a housing policy approach that would work directly for the majority of households with the caveat being that the market should be maintained only in areas where they work.

It must be accepted that while there is an important role for private and unregulated markets in providing housing, given the current nature of the housing problems in Nigeria, that role is rather limited. It is limited to the small proportion of households that can compete effectively and secure suitable affordable accommodation within such a market. Within the context of this small group, a

private and unregulated housing market would offer a more efficient resource allocation than the Nigerian experience where government have provided public housing or subsidized housing to such higher income, households who do not need such housing assistance. It should be borne in mind that the private sector has always dominated the Nigerian housing market providing over 90% of existing housing stock. So much of the existing housing problems in Nigeria could be ascribed to market 'failures'. While the study has argued that more government involvement is needed to especially intervene where markets do not work, where they seem to work such markets should be enabled to work better – that is the essence of the enablement approach. *Thus, the current national housing policy should also be assessed in the light of whether it advances “new innovative strategies” to ensure that the private sector, civil societies and communities are strengthened and motivated enough to vigorously increase their participation and investment in housing provision.* This is one of the major weaknesses of the current Nigerian housing policy even as it emphasises private sector led housing provision. Policy rhetoric may have shifted, with some policy provisions slightly modified and adjusted but not much has been done to ensure a radically different result from the previous housing policy that failed to achieve its goal. Given that the private sector has historically not been able to provide adequate affordable housing for the majority of Nigerian households, the government's attempts at providing mass public housing as an alternative has been abysmal and wasteful. The widening income disparity, the prevalent low household income amongst the majority of households in Nigeria and the deteriorating housing conditions of households suggest strongly that current housing policy reforms should have been focused towards enabling appropriate demand and supply subsidies to stimulate and invigorate the housing delivery system in Nigeria. This would provide a more effective means of ensuring that the housing interests of all are taken into consideration within the current housing policy reform in the country.

## 9.5 Enabling Appropriate Subsidy Regime

The enablement approach is a compromise, a mid-way, gap-bridging construct to moderate between the opposing ideology of the market and the state in resource allocation and distribution. The genuine need for intervention in the Nigerian housing market and the inability of government to effectively deliver direct public housing tend to reinforce the need to explore other forms of housing subsidies as a means of enabling urban housing provision. Malpezzi (1998) identified the following factors as criteria for analysing subsidies; clear objectives, effectiveness, duration, transparency, finance mechanism of the programme, political feasibility, efficiency, equity and fairness and market effects. Taking these factors into consideration in defining a subsidy programme would perhaps be instructive in avoiding mistakes of the past; and contribute significantly to create a truly enabling housing assistance regime within the housing sector.

Embedded in the enablement approach is the underlying tension (and to some extent confusion) in delineating the extent of market and the state participation in housing provision. While pro-market advocates more readily embrace general income subsidies and less enthusiastically demand-side subsidies as more appropriate subsidy regimes, market sceptics more often prefer supply-side subsidies. However, if the housing policy goal of ensuring adequate housing for all is to be realised, the merits and strength of these subsidy regimes must be creatively exploited to assess their benefits for those who lack adequate housing at affordable costs. Mistakes of the past must be acknowledged. Subsidies have in the past been poorly designed and implemented. As observed by Mayo (1999, p.39);

“Often they have been badly targeted and have provided housing perceived as having benefits to its occupants valued at considerably less than the cost of the housing provided. What is worse, however, is that subsidies are often structured in ways that distort housing prices and create incentives that ensure that groups other than direct beneficiaries bear significant costs (such as higher housing prices and reduced access to housing finance).”

The benefits of the supply subsidies should be also examined. Nigeria offers an interesting example in that even when the performance of the Nigerian government in direct public housing delivery has been generally judged to be poor; it still produced *some* beneficial results. This has

been shown in the findings of this study, where the subsidised tenure group recorded the highest level of aggregate housing affordability. There are other clear examples such as the study of Katz, et al. (2003), which showed that in the United States supply-side subsidies have achieved more of the major seven housing policy objectives than demand-side subsidies. It should also be accepted that improving the purchasing power of the poor does not necessarily improve their ability to secure decent housing. Even in countries such as United States and United Kingdom where enormous resources have been committed to demand (income support) subsidies, there are salient observations that the extent of redistribution effected through such policies has never been, and is never likely to be, sufficient on their own to create an effective demand for good quality housing by low-income households (Lansley, 1979; Grigsby and Bourassa, 2003; Katz et al., 2003).

An enablement approach to housing should not be crudely interpreted to over-emphasise the role of unregulated market and the need to enable such markets. Often, realities on the ground do not give much optimism for successes of market-driven enablement strategies as currently pursued by the Nigerian national housing policy. Indeed it has been observed that enabling strategies that are focused on market actors can produce highly uncertain outcomes (Miraftab, 2004; Mukhija, 2004). Given this contention, Mukhija (2004) has advised on the need for a more cautious, circumspect and varied policy approach in the adoption and implementation of market enablement strategies especially in the developing countries. He is of the opinion that “public policy must be open to the possibility that there may be an inherent contradiction between conventional and formal market processes, and the provision of decent housing for low-income groups; even though this recognition makes the task much more difficult for policy-makers and much more challenging for urban policy researchers” (Mukhija, 2004, p.2239).

However, in defining an appropriate enabling subsidy regime for any country, its policy makers should be aware that no single policy, demand-side or supply-side, represents the pre-eminent means for attaining all possible programmatic goals, and that an amalgam of options might represent a superior strategy to any “pure” approach in a particular context (Galster, 1997). This

contention have recently been re-echoed by some studies including Katz, et al. (2003), Khadduri, et al. (2003), Pomeroy (2004), Public Research Initiative (2005), and Raphael et al. (2005) who advocate continuous and creative use of both types of subsidies. Given that the nature and dimension of housing problems in the developing countries are different from that of most western developed countries and do in fact differ from country to country and even within a given country, there is the inherent need to conceptualise and design housing subsidies in a way that is responsive to local context. As has been noted by Pugh (2001, p.414) many housing problems in the developing countries ‘originate from supply inadequacies in land, finance and construction, rather than in the inadequacy of demand.’ Thus, there is the need to design both demand and supply subsidies in ways that they can effectively complement each in ensuring that both affordability and supply issues are properly addressed. This is consistent with the contention of Keivani and Werna (2001) in advocating for a more pluralistic approach in developing housing policies in developing countries rather than narrowly focusing on just enabling the market. This approach would not only create the opportunity for further development of specific modes in appropriate socio-economic settings but would also serve to enable the creation of synergies through combined complementary modes that would overcome the relative inherent weakness in both the use of only demand or only supply-side policy instruments.

In practice, the housing outcomes of most subsidies are dependent on a wide range of interlocking and potentially contradictory factors such as the influence of economic and demographic conditions on housing supply pattern; the nature of investment and demand within the housing sector; the structure of the local housing market, and the nature of interaction between housing subsidies and other government policies (Milligan, 2003). In his discourse of the contradictions of the enablement approach, Mukhija (2001, p.791) admonitions to policy makers in the developing countries may be instructive. He advised that;

Paradoxically, enabling housing provision through market mechanisms may require four levels of seeming policy contradictions—both decentralisation and centralisation; both privatisation and public investment; both deregulation and new regulations, and both

demand-driven and supply-driven development. In other words, enabling is likely to require a different type of state involvement, not necessarily less state involvement. A complex and more sophisticated role of the state is necessary to provide the institutional support for well functioning property markets, as well as to capture the opportunities high value property markets provide.

It is beyond the limits of the study to explore the specific supply and demand side housing subsidies that would be most appropriate in Nigeria. However, what is clear is that the housing assistance provisions of the current housing policy are not enough. The current incentives to mobilise private sector participation that include an unspecified grant capital allowances, tax exemption on mortgage loans (5-year period) and exempt investment tax (5-year period) are clearly not sufficient to encourage massive investment in lower income housing.

Often, as is the case in Nigeria, the most important and difficult component in housing development is accessibility to suitable land. This is where the government can play a critical supportive role for the private sector. The government is uniquely positioned to provide proper serviced lands for public-private sector partnership in housing development, using it as a leverage to encourage private sector participation in different areas of housing. Another important area is the issue of adequate neighbourhood utilities and services such as roads, sewerage systems, electricity and pipe-borne water. The government should use its ability to provide and maintain these types of infrastructures in public-private sector partnership arrangements in such a way to adequately attract and stimulate private sector interest in housing development especially in lower income housing.

It is of paramount importance to bear in mind that in practice government can alter and implement chosen approaches in ways that can have a profound impact on the actual effectiveness of the subsidies (Katsura and Romanik, 2002). This underscores the need for clarity of purpose and adequate political will to pursue housing subsidy regimes in a manner that directly or indirectly reduces the housing affordability problems of households and creates more desirable housing opportunities for majority of households.

## **9.6 The Need for More Group-Specific Policy Strategies and More Responsive State-Level Housing Policies**

There are significant differences in the aggregate housing affordability among the various socio-economic groups, housing tenure groups and housing affordability quintile groups, as well as in major indicators of housing affordability such as housing expenditure, non-housing expenditure, household income, household size and housing quality, as this study has shown. Thus, it may be more useful if housing policy provisions can be adapted to and specified in the light of these differences. Responsibilities for identifying the appropriate subgroups to be targeted within the context of housing policy provisions should be left for policymakers. However, what is more important is that housing policy provisions adequately respond to the needs of such groups (when identified). In defining low-income housing, the current Nigerian housing policy 2002 identified the low income as employees whose annual income as at the year 2001 is 100,000.00 (Naira) or below (Federal Government of Nigeria, 2002). However, beyond identifying that group and specifying 40% of the National Housing Trust Fund (NHTF) for low income and rural housing, there were no other specific policy strategies or programmes that directly responded to their needs, or protected their interests, or mitigated their weak financial status in such a way as to enable them to compete favourably for housing with other groups. In short, there were no specific policy strategies or programmes within the policy to enable the low income households to “have access to adequate housing at affordable costs.” For instance, the housing finance framework as provided by the current housing policy under the NHTF will leave out some socio-economic groups that cannot effectively participate within its framework given their low household income and low household savings. Yet other possible and suitable strategies/programmes were not provided to support such groups that have been so excluded. This is one of the major weaknesses of the current housing policy. Such a policy cannot be defended as protecting the housing interest of all Nigerians. Given the increasing need to ensure that policy prescriptions reflect the interest of all groups in the society, the issue of differences

between groups and individuals is becoming very important. As a departure from the past, future housing policies must be sensitive and relevant to such differences if they are to be effective. This must necessarily be a key yard-stick in assessing the potential of any housing policy to promote social equity.

Furthermore, in order to develop viable housing policy interventions, there is the “need to recognize, understand and adapt to local realities” (UNCHS, 1997b). An important lesson that has been learnt over the years is the fact that the proportion of inadequate housing varies from country to country, and between regions due to the complex mix of economic, political, social, ecological and demographic characteristics, which influence the form of urbanization and housing development (Van Vliet, 1987; World Health Organisation, 1988; Sandhu, 1989). These differences hold true even within countries as has been shown in the study findings to be the case in Nigeria. There is a demonstrable disparity in the magnitude of measured housing affordability across the states and in the factors that influence housing affordability. These findings tend to suggest that the right mix of housing solutions is likely to vary from state to state. Recognising this, current housing policy provides for the states to make their own housing policies within the framework of the National housing policy but the importance of such state-level policy has not been sufficiently encouraged.

It needs to be recognised that in order for such a provision to be effective, the National policy framework must be sufficiently flexible to grant the states enough room to manoeuvre in adapting such policies to their local realities. Current housing policy seems to be rigid and too centralised, and therefore would limit the ability of the states to develop more radical housing policies that may be effective in dealing with their housing problems, given their local realities. However, while it is possible to have a different mix of policies based on particular contexts, the ultimate ‘litmus test’ is to what extent they achieve the desired results. Thus, housing policy reform options in Nigeria should be based on the particular specificities of the country and of its states such as -

their socio-cultural context, the detailed household characteristics of various groups, and their housing affordability levels - if success is to be achieved.

### **9.7 Integrating Housing Policy with Wider Social and Economic Policies**

This study's findings on the relationship between aggregate housing affordability and household income, housing expenditure, and household size suggest that other social and economic policies can be effective in tackling housing affordability problems. Effective housing policy must take account of, respond to and be integrated with, action in these broader areas. These findings suggest significant links between different policy areas which may assist in achieving the goal of mitigating housing affordability problems. In the previous chapter, the relevance of fiscal/monetary, labour and wages and population policies to housing affordability was briefly discussed in relation to the specific findings of the study. Other policy areas that have specific relevance to aggregate housing affordability include gender equality and poverty reduction strategies, given that intensity of housing affordability problems are strongly related to proportion of core poverty across the states. Policies, strategies and programmes that address urban poverty also constitute vital components that should be pursued. Thus, promotion of gender equality and empowerment is of vital importance due to the widely acknowledged close relationship between poverty eradication and women's empowerment. For example, in some geographical areas especially under customary laws, women have limited property rights, rights of tenure and property inheritance rights. These are some of the factors that tend to exacerbate urban housing poverty especially amongst women-headed households. Thus, it has been observed by Falu and Curutchet (1991) that women-headed households are among the poorest in all societies, they have the greatest difficulty in obtaining adequate housing and that most social housing initiatives and policies do not take into account the specificity of women's needs especially those of the female-headed households. As a result, poor women face lots of obstacles in effectively participating and benefiting from many social housing schemes.

In accordance with the Habitat II Agenda, there is the need to draw policy attention to these areas to create and ensure an inclusive housing policy delivery programme. However, the issue of maintaining fairness to both gender groups also extends to other socially disadvantaged groups that have either been discriminated against or neglected. There is an increasing awareness that the distinctive needs and equal rights of children, older people, disabled people and those discriminated against by virtue of caste or ethnicity must be taken on-board in housing delivery considerations (UNCHS, 1997b).

The relationships between poverty, inequality and substandard-housing conditions is well documented (UNCHS, 1996). Studies have also established various relationships between interest and inflation rates, tax subsidies, savings, and property rights on the availability of housing (World Bank, 1993; Pugh, 1994; UNCHS, 1998). Designing appropriate intervention strategies demands a more thorough and deeper understanding of these relationships and linkages. This consideration is especially crucial in Nigeria given the current economic reforms in the country. Government has in the past two decades been restructuring the macro-economic environment with little regard as to how it impacts on housing development and investments. Thus, it is necessary for policy initiatives to articulate areas of housing policy consensus with respect to these linkages, which exist between housing and wider social, economic, political and environmental goals.

In emphasising the potentials of applying housing policy strategies and non-housing strategies to solving housing affordability problems in the study area, the importance of attempting to simultaneously integrating these policies to minimise overall housing affordability problems and to achieve broader socio-economic development goals in the most effective manner is highlighted. This is in consonance with the Habitat II Agenda's vision of the need towards a more holistic outlook in policy making. The Agenda emphasised strong links between housing and development and the need to integrate housing policy instruments into the wider macro-economic, social and environmental policy framework. This idea envisioned adequate housing not just as a goal in itself but also as a tool for social and economic development. It emphasized

the need for “policy makers to understand the trends that shape the shelter sector and the interdependencies that link this sector with its overall economic and social context” (UNCHS, 1990, p.12). It thus argued that effective housing policy must necessarily move beyond focusing on just the ‘needs’ of the housing sector and be based on in-depth understanding of the mutual impact of the housing sector on development processes and its broader social and economic concerns. For example, effective implementation of good housing strategies is expected to boost adequate housing supply to satisfy housing need and demand. Good housing improves productivity, which in turn contributes to economic growth and development. Proper infrastructure and transportation facilities stimulate investment and improve the competitiveness of a given locality where gains would in turn reinforce and stimulate further sectoral growth. Conversely, when inappropriate economic policy instruments are adopted these links break down with negative consequences on the housing development process and the overall economy as when, for example, high inflation stifles housing finance or housing investment and savings capacities of both developers and households. Thus, Nigerian national housing policy strategies should incorporate relevant measures outside the traditional housing sector which influence housing outcomes. These would include fiscal, monetary, population, poverty reduction and gender equality policies amongst others. Policy makers and urban planners in Nigeria (and indeed in all Sub-Sahara African countries) must be able to understand these linkages between housing and non-housing policy goals with the view to designing and promoting policy options and strategies that would be mutually supportive and feed from the gains of each other to the benefit of all. This chapter and the previous chapter that examined possible housing policy implications of findings have provided answers to the last research question (six) of the study. The next chapter will now briefly summarise the entire study and draw the major conclusions of study.

## **SUMMARY AND CONCLUSION**

This is the last chapter of this study. The Chapter attempts to give a concise summary of the entire study and the conclusions that can be drawn from the study findings and their policy implications in relation to housing policy reform in Nigeria.

### **10.1 Summary**

There has been a shift towards expanding the role of markets in the social and public policy delivery systems in many advanced economies. This shift corresponds to the increasing pressure by supra-national financial institutions such as the World Bank on many developing countries such as Nigeria to restructure its social and public policy delivery systems along pro-market, deregulated lines. These policies have been increasingly forced on many developing countries without thorough consideration of their suitability and impact. This study has attempted to contribute to the current discourse on suitability and effectiveness of delivering adequate housing for all through the unregulated housing market in Nigeria and has also attempted to explore ways of improving the national housing policy reforms in the country. It has proceeded by examining the nature of urban residential housing affordability among different socio-economic groups, housing tenure groups and states in Nigeria, and has considered the implications of the study's findings for Nigerian housing policy reform. The motivation for the study has been that policy and decision makers need to have deeper understanding and greater awareness of the forces that influence and shape such important factor as the housing affordability of different groups within society if they are to chart the right housing policy reform direction for the country. To do this, it sought to develop a new and better way of measuring housing affordability in order to adequately capture and aggregate into one index other widely used methods of measuring housing affordability - the income-to-housing expenditure model and the shelter poverty model - while taking into account the quality of housing occupied by households. Thereafter, the composite

approach technique was developed to derive the aggregate housing affordability index of households and measure the housing affordability of various groups that were identified in this study.

This research study, made up of ten chapters that can be divided into three major parts. The first part of the study that consist of the first four chapters was devoted to identifying the Nigerian housing policy reform dilemma within the context of Habitat II Agenda that enunciated the enablement approach. The section attempted to establish the major contextual and theoretical motivation for the study. It discussed the history and major elements of current housing policy reform to highlight the present housing policy dilemma in the Nigeria and the challenge of striking the delicate balance between market liberalization, government intervention, and social mechanisms in the housing process in order to achieve the desired goal of ensuring adequate access to decent housing for all.

Two closely related concepts and theories that largely provided the major theoretical framework for this study were also discussed. They were the public interest economic theory of regulation and theory of distributive justice. Further theoretical exploration of the market vs. non-market contention in housing provision; and the inherent need for government involvement in housing delivery system complemented the concepts and theories to consolidate the theoretical motivation for this study.

Extensive review of existing literature on housing affordability was carried out to identify some pertinent weaknesses, gaps and considerations that justified undertaking this research study. These include the weaknesses in the conventional measures of housing affordability (the income-to-housing expenditure and the shelter poverty models) that needs to be improved; the severe dearth of housing affordability studies that has been focused on African countries and Nigeria in particular despite the enormity of housing problems in the continent.

The second part of the study which consists of chapter 5 through to chapter 7, presented the methodology and procedure that were employed in the study, data analysis and findings of the

study. The study largely made use of quantitative research method and techniques. The bulk of the data used in the study were based on secondary data types and sources. The major base data used in the study was extracted from the Nigeria Living Standards Survey (NLSS) 2003-2004 database, which was a cross-sectional sample survey of 21,900 urban and rural households drawn from all states in Nigeria including the Federal Capital Territory (FCT). Urban households consisting of 4,662 households of 19,679 persons were isolated and used in the study analyses. After preliminary identification of relevant variables, the selected variables were modified, standardised, transformed and recombined with other variables to generate required secondary variables for the study.

Given that no standard socioeconomic group classification schema is officially in use in Nigeria, a socioeconomic group classification schema was developed and applied using available NLSS data. The derived schema was based on the National Statistics Socio-economic Classification (NS-SEC) blueprint (based on the Goldthorpe approach) that is currently in use in the United Kingdom (UK). While it was necessary to maintain the coherent theoretical basis for the classification, the blueprint was also adequately modified to reflect the socio-economic and cultural difference between the UK and Nigeria. While nine analytic classes were derived, they were collapsed into six analytic classes used in the study analyses. They are Managerial and professional occupations; Intermediate occupations; Small employers; Own account workers (Self employed without employees); Lower supervisory and technical occupations; and Semi-routine/ routine occupations. Four main housing tenure groups were identified and used in study analyses namely; Ownership tenure, Rental tenure, Nominal /subsidized rental tenure and Free Rental tenure (Uses without paying rent). Other groups that were also used in the study includes the 36 states in Nigeria including Abuja - Federal capital Territory and the housing affordability problem quintile groups that was derived from the aggregate housing affordability index of households in the study area. Wide range of analytical and statistical tools that includes; Principal Component Analysis (PCA); Partial Least Square Regression (PLS); Multi-Level Modelling Regression Analysis (RA), Analysis

of Variance (ANOVA) and Analysis of Covariance (ANCOVA) were used to develop and model the aggregate housing affordability of households in study area. GIS was also used to permit spatial analysis and data manipulation. Computing the aggregate index involved a two-step procedure that separately derived the housing expenditure-to-income model which was adjusted with housing quality of respective households and the shelter poverty model based on the poverty line approach. Afterwards, these two models were aggregated together using the Partial Least Square Regression (PLS) technique to produce the aggregate housing affordability index. The aggregate housing affordability model was demonstrated to be a superior model by its ability to capture about 10 to 12% more households who have housing affordability problems than either of the housing expenditure-to-income or shelter poverty models while it identifies and correctly classify households that under-consume or over-consume housing who would have been misclassified by the conventional affordability models. About 61% of households in Nigeria were found to have housing affordability problems including the household that maintains an average national household income, housing expenditure and household size.

Within the group of households with housing affordability problems are different sub-groups with different character and dimension of housing affordability problems which gives insight into the various levels and aspects of housing affordability problems in the study area. Findings indicated a generally low household income distribution, which will likely limit effective participation of households in the National Housing Trust Fund (NHTF). Furthermore, there exist housing supply constraints and extensive housing quality problems that push up housing expenditure to exacerbate the housing affordability problems of households in the study area.

There were significant housing affordability differences between identified socio-economic groups, tenure groups and states in Nigeria. While the managerial and professional occupation group had the highest and positive aggregate housing affordability, the semi-routine and routine occupations group registered a negative and the lowest aggregate housing affordability in the study area. For the tenure groups; the subsidized tenure group had the highest level of aggregate

housing affordability while ownership tenure group recorded the lowest aggregate housing affordability in the study area. It was also shown that given the potential low level of household savings within most of the socio-economic groups, majority of Nigerian households cannot participate effectively in the NHTF.

With respect to the aggregate housing affordability of states; while states such as Rivers, Delta, Anambra, Lagos states and Abuja (FCT), have significantly positive housing affordability, such states as Kwara, Kaduna, Ekiti, Ogun and Yobe states recorded significantly negative housing affordability. The state with the highest magnitude of housing affordability problems in the country is Kano State and together with Lagos, Ibadan and Kaduna states account for about 37% of the total households with urban housing affordability problems in Nigeria. While the south-west region had the largest housing affordability problems; the south-southern and south-eastern regions comparatively recorded the least housing affordability problems in the country.

The third part of this study consist of Chapters 8 to 10 that explored the specific policy and planning implications of findings; and reflections on some broad policy issues that need to be thought through in designing appropriate housing policy strategies in Nigeria. Possible policy implications of specific findings were discussed along with the broad implications they have for the current housing policy reform in the country were discussed in Chapter 8 and 9 respectively while the last Chapter 10 summarised and concluded the study. Based on some of the findings and identified weaknesses there are reasons (such as the ones stated below) to believe that the current housing policy has not been thought through enough to ensure at least some tangible success.

- If the housing finance provisions within the current national housing policy were properly thought through, it would have been realised that given the low household income distribution across most socioeconomic groups, the overwhelming majority of Nigerian households cannot participate effectively in the National Housing Trust Fund, which is the centrepiece of the current housing finance reform.

- If the current national housing policy was thought through, it would have realised that the market does not work for the overwhelming majority of the Nigerian households who cannot afford their housing and therefore cannot be relied upon to provide decent, safe, sanitary housing for all at affordable costs and secured tenure.
- If the current national housing policy was thought through, it would have realised the devastating impact of existing poor housing quality on housing affordability of households especially those with ownership housing tenure; and give upgrading and urban renewal the policy priority and urgency they deserve.
- If the current national housing policy was thought through, it would have realised the futility of the continuous policy emphasis on home ownership as opposed to equally emphasising affordable rental housing as veritable means of ensuring adequate housing for all.
- If the current national housing policy was thought through, it would have realised that more radical stimulation and mobilisation of the private sector through the provision of more attractive and enticing packages are needed to encourage them to massively invest into especially the lower-income housing in order to meaningfully boost housing supply in the country.
- If the current national housing policy was thought through, it would have realised that more government involvement is needed not less in partnership with the private sector, civil societies and communities in the provision of adequate housing for all especially lower income housing where unmet housing needs are most pressing.
- If the current national housing policy was thought through, it would have emphasised how to tie its objectives and strategies to other relevant social and economic policies such as population policy, monetary/fiscal policy, labour and wage policy positions, poverty reduction strategies etc.

Consequently, there is the need to move away from current entrenched ideological position in defining the national housing policy. Policy direction should be more pragmatic and should be

primarily determined and informed by realities on the ground, based on the nature of housing problems and set out policy objectives. The country is better served when policy positions are determined by the housing realities of households than emergent “politically correct” ideological positions inspired by some international institutions abroad to primarily serve interests other than the majority of households in Nigeria. Articulating solutions to housing affordability problems in cities need to be given a central priority and ought to be based on an accurate and dynamic understanding of realities, especially the complex ways in which real market work, and how economic, social, and political interests interact.

## **10.2 Conclusion**

This study has attempted to explore how the current Nigerian national housing policy reform can be made more effective based on examining the nature of housing affordability of households in the country. It made two broad significant contributions to the current housing affordability discourse. A major theoretical contribution is the development of a composite approach to measuring housing affordability of households. The aggregate housing affordability index that was derived from the composite approach not only identify more households as having housing affordability problems, it also seems to identify and correctly classify households that over-consume or under-consume housing and basic non-housing goods (who would have been misclassified by conventional housing affordability models). Findings in this study indicate that the method offers a superior approach to measuring housing affordability of households which have significant housing policy implications. It is hoped that further assessment and wider application of this composite approach would confirm the findings of this study with respect to the superiority of the approach over the conventional housing affordability models.

Another major significant contribution of this study was the application of this composite approach to examining housing affordability in Nigeria. The application of this technique to rigorously examine the nature of housing affordability of different socio-economic groups,

housing tenure groups and States in Nigeria constitutes a major significant geographical contribution towards understanding housing affordability in such developing countries as Nigeria. Given the current lack of in-depth research literature on housing affordability in Nigeria, it is hoped that this study will contribute to the existing pool of scant literature and help to inspire other research works in this important area of housing research. This study will hopefully contribute towards overcoming the existing dearth of in-depth housing affordability research literature in Nigeria.

Within this context, it is also hoped that some of the data limitations in current NLSS 2003/04 that constrained some of the study analyses (as has been discussed in the limitations of study section of the introductory chapter) will be improved upon by subsequent Household Survey programmes. The critical need for the expansion and the availability of high quality household databases in countries such as Nigeria cannot be over-emphasised. It would have been practically impossible to carry out this study without the availability of NLSS 2003/04. In this regard, further improvement of existing database would create the opportunity to further expand the focus of this type of study in future.

Beyond arguing for more government engagement in housing delivery in pursuit of national housing policy goal and objectives, there is the need for further in-depth research towards exploring different types and mechanisms of housing assistance that would likely be effective within the framework of national housing policy given the level of housing affordability of households in Nigeria. Valuable insights would be gained in exploring the viability and feasibility of different housing assistance / subsidies within the context of aggregate housing affordability of households in such developing countries as Nigeria. It will also be interesting to examine the impact of different housing policies on aggregate housing affordability of households using appropriate micro-simulation tools. Such studies will definitely contribute to the current debate on the suitability of different housing policy reforms trajectory in such developing countries as Nigeria.

It is pertinent to stress that the current housing policy in Nigeria, which de-emphasised government involvement has failed to galvanise the country's full potential for tackling the country's enormous housing problems. There is little connection between the ambitious policy goal and the means to achieve it. The nature of housing; the complexity of its delivery systems, its cultural and socio-economic roles, and the enormity of existing housing problems has raised the housing challenge beyond the capacity of any one narrow ideology such as the market ideology to provide a solution. Free unregulated housing markets cannot deliver decent, safe and sanitary housing at affordable cost with secure tenure for all in Nigeria especially with its inherent weak market structures and institutions.

Therefore, the real issue is not whether government involvement in housing is necessary, it is how best to do that and achieve the desired objective given the enormity of the problems, the socio-economic realities and the goal of the Nigerian housing policy. It is evident that the Nigerian government is an inefficient provider of direct public housing. While past mistakes should be avoided, that should not be a reason or the justification for government to adopt a passive role in housing provision. Indeed the benefits of adequate housing development and the enormity of existing housing deficiencies and problems require *all available hands on deck*. It requires the active co-ordinated and integrated efforts of all stake holders – the government, the organised private sector, the civil societies, and communities at various levels. Thus, rather than de-emphasising the role of government, the current policy should have strongly amplified their role within the context of the enablement approach.

Nevertheless, there is still ample opportunity to rationally balance the current housing reform trajectory. At present, Nigeria has successfully liquidated its external debt liabilities. This new found debt-free status should serve it well in resisting the external pressure to adopt inappropriate housing policy reforms. Government and policy makers must put the housing interest of majority of Nigerian households first before any other considerations within the context of housing policy reforms. Fortunately, the current billions of dollars budget surplus from high crude oil price

provide an ample and uncommon opportunity to substantially invest in the NHTF and other well considered housing assistance programmes to stimulate massive mortgage investments and lower cost housing in the country. With careful planning and implementation, such a move will invigorate private sector investment in housing, boost housing production to mitigate housing supply deficiencies and alleviate the extreme housing affordability burden of many households in Nigeria.

The present Nigerian housing context and socio-economic realities demand far more vigorous government involvement in housing development, working together with a more committed private sector, energised civil societies and empowered communities in order to tackle the enormous housing problems in the country. The housing policy goal of ensuring that all Nigerians own or have access to decent, safe and sanitary housing accommodation at affordable costs with secure tenure poses such a formidable challenge that it will require fundamental changes in the mechanisms of housing provision and income distribution. It will require a new purposeful way of governing and ensuring that policies are not just provided but implemented. The government must show deeper commitment to move beyond *politically correct rhetoric* and pursue practical policy reforms and implementation strategies with a political will that matches the monumental housing challenge the country faces. It is only then that the lofty goal of the Nigerian housing policy will mean something more than just words.

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## Appendix 5-1 Some Technical Considerations in using NLSS Survey Database

### A) Estimation Procedure

The following statistical notations were used:

$N$  = the number of EAs in each State

$n_i$  = Size of replicates  $r^{\text{th}}$

$r$  = number of replicates in a State

$H$  = number of housing units listed in the  $i^{\text{th}}$  selected EA.

$X_{hj}$  = number of housing units selected from  $i^{\text{th}}$  selected EA.

$$W_{rij} = \text{weight of the replicate} = \left( \frac{H}{h_j} \times \frac{N}{n_i} \right)$$

$Y_{rij}$  = total value of variable from the  $j^{\text{th}}$  housing unit of  $i^{\text{th}}$  selected EA.

#### Replicate Estimate (Monthly Estimate)

$$\hat{y}_r = W_{rij} \sum \sum (y_{ij})$$

#### Annual State Estimate

$$\hat{Y}_r = \sum_{i=1}^{12} \sum_{j=1}^{10} w_{rij} \sum_{i=j}^n Y_{rij}$$

#### Sampling Error (Variance) Estimate

The Jackknife indefinite method of variance estimation was used for the survey because the method required replication and clustering (Federal Office of Statistics Nigeria, 2005).

An estimate of State variance was first obtained. Cluster estimate is  $(Z_i) = \sum \sum w_{ij} y_{ij}$

$$\bar{z} = \frac{\sum Z_r}{rn}$$

Mean Estimate

Therefore mean variance is

$$v(\bar{z}) = \frac{S_r^2}{r_n} \quad \text{where} \quad S_r^2 = \frac{\sum (Z_r - \bar{z})^2}{(rn - 1)}$$

$$\therefore V(\bar{z}) = \frac{\sum (Z_r - \bar{Z})^2}{rn(rn-1)}$$

### **B) Derivation of Weights**

Given the two-stage design of the survey database, the actual population level estimates were derived by multiplying data for each household in such a way that it is equal to the inverse of the probability of selecting that household from the total list of households within its EA as well as selecting that EA from the list of EAs within its State. The selection is usually done in such a way that the weighting factor is at the EA level in each State and is calculated as follows;

$$\sum (N_h / n_h) \sum (M_{hi} / m_{hi}) \sum X_{hij} P_{hij}$$

where

$N_h$  = the total number of EAs in State h.

$n_h$  = the number of sampled EAs in State h.

$M_{hi}$  = the number of listed households in ith EA of State h.

$m_{hi}$  = the number of sampled households in ith EA of State h.

$X_{hij}$  = the number of persons in the jth household in ith EA of State h.

$P_{hij}$  = the poverty score for the jth household in ith EA of State h.

In order to extend household aggregates to the population, the weighting factor will need to be multiplied by average household size.

### **C) Applying Price Deflators**

The prices of goods and services are often different between different States in Nigeria; and between the Urban and rural areas within the States. There are many reasons why prices vary across regions at different periods. Some of these could be attributed to inflation and seasonality of supply. In actual fact, the prices of some food items are cheaper during the harvesting season than planting season.

Prices also differ between different socio-economic groups. Higher income households could afford to buy food in bulk at reduced prices with the added capacity to adequately store such food than poorer households who that could only buy in smaller quantities at higher unit prices.

Therefore any study that aims to compare expenditures across geographical zones and socio-economic groups must take into account these differentials. These variations in prices across regions and over time required the computation of an index to normalize expenditures to a reference period and geographic area. Hence price defectors based on the Consumer Price Index (CPI) data for both food and non-food expenditures were to adjust local prices aggregates derived from the field.

Two indices for food and non-food were used adjust expenditure aggregates converting aggregate expenditures in local prices to regionally deflated current prices. The Laspeyer price index technique was used to compute these deflator indices (Federal Office of Statistics Nigeria, 2005). The price index expresses prices with reference to a fixed point in time and fixes a basket of goods. The index therefore, measure spatial and time variations of price by fixing the basket and the reference price. The equation below

$$C_{r,t}^L = \sum_{i=1}^n w_{i,0,0} \left( \frac{P_{i,r,t}}{P_{i,0,0}} \right)$$

summarises the components of the prices index with  $C_{r,t}^L$  = the Laspeyer Price Index;  $w_{i,0,0}$  is the budget share of commodity  $i$  at the reference region  $r(0)$  and time  $t(0)$ ;  $p_{i,0,0}$  is the reference price for commodity  $i$  at the reference region  $r(0)$  and time  $t(0)$ ;  $p_{i,r,t}$  is the price for commodity  $i$  in a particular region and at a particular time.

A reference base month of January 2004 and a basket of food and non-food representative of the poorest 40% of the population were used to compute the deflator indices.

## **Appendix 5-2**

### **Brief reflection on the quality of data and the copy of the relevant sections of the questionnaire used in NLSS 2003/04 that generated all the primary variables used in the study**

As I have already noted, this study would have been almost impossible without the existence and availability of the NLSS 2003/04 database. In fact, lack of this type of database in Nigeria in the past, contributed to the current dearth of indepth investigation of housing affordability at the household level in the country. Therefore, I was naturally excited with the availability of the NLSS 2003/04 database since it offered me the opportunity to embark on the type of study that I really wanted to undertake. However, I was also very mindful of the fact that if I build my entire PhD thesis around this Survey and Data (as my study will indeed require), the validity of the thesis can only be as good as the data, Therefore, I needed to be satisfied that the NLSS 2003/04 database was of very high quality before designing my study around it. I had to be critical of the data especially given the problems of data reliability issues that are often associated with such household survey.

I read lots of preparatory and process documents of the survey and database. I also sought the opinions of some officials of the Bureau of Statistics (formerly known as Federal Office of Statistic) in Nigeria), one of whom was directly involved with the survey through informal discussions on the quality of the survey and data. These initial efforts convinced me of the relative high quality of planning, preparation, execution and monitoring that guided the survey which was a collaborative Statistical Capacity development effort between the Nigerian Government and other international agencies, which includes the World Bank, the European Union, the Department of International Development (DFID) and the United Nation Development Programme (UNDP). The success of the NLSS 2003/04 marked one of the high points of the Federal Office of Statistics. The actual summary of the methodology employed in development the database is discussed on the introductory chapter 1 of the Draft Report on Nigerian Living Standards Survey 2003/2004 (Ref: Federal Office of Statistics 2004).

I also make effort to compare the NLSS databse with other regarded database in the country such as the Nigeria Health and Demographic Survey 2003 and previous Annual Abstracts of Statistics to check for consistencies in the distribution and pattern of some indicators across the States in Nigeria such as household consumption expenditures, characteristics of sampled household head etc. This survey was consistent with known parttern of consumption expenditures in the country. Household characteristics such as household size, level of education and employment were found to be also consistent with established trend which helped to inspire my initial confidence on the quality of data to enable this study.

During the actual analysis of data as carried out in this study, stringent effort was made to reliably deal with missing data in other to maintain the quality of derived data. Observations that lack recorded data on key indicator as household income were eliminated from the analysis.

However, there were also limitations in the database that constrained this study (as discussed in section 1.7 of chapter one under limitation of study).

There were few cases of concern with respect to adequacy of the sample size of households in some states. While there is an expected variation in recorded samples size of households across the states in accordance to their respective urban population sizes, few states especially Anambra and Imo recorded very low sample sizes (less than 50 households) in comparison to other states. However, given that as much as 36 states and the FCT Abuja were used in the study analyses, the few short comings in the sample size of states were not enough to threaten the intergrity of the survey data. It is hoped that future similar surveys should avoid such short comings.

**FEDERAL REPUBLIC OF NIGERIA**  
**FEDERAL OFFICE OF STATISTICS ABUJA, NIGERIA**

Questionnaire  of



**NIGERIA LIVING STANDARDS SURVEY (NLSS)**

SEPTEMBER 2003 TO AUGUST, 2004

**PART A: HOUSEHOLD QUESTIONNAIRE**

STATE.....   SURVEY MONTH .....   SURVEY YEAR .....

SECTOR..... E.A. CODE..... RIC..... HH NO.....

NAME OF HEAD OF HOUSEHOLD..... ADDRESS HEAD OF HH.....

SECTION 1: HOUSEHOLD ROSTER FOR EACH PERSON				FOREACH PERSON 12 AND MORE YEARS OLD										
1. ID	2. Sex	3. Relationship to Head of Household		4. Does he or she have a birth certificate?	5. How old is (NAME)		6A. What is (NAME's) present marital status?	6B. How old were you when you first got Married?	7A. Does (NAME) spouse live in this household?  IF Q6=1-3  Yes...1 (>=8) No...2	7B. What is the Reason for Non Union?  Permanent Migration.....1 Abandonment.....2 Refugee Status.....3	8. COPY THE ID CODE OF THE SPOUSE  (IF MORE THAN ONE SPOUSE THE FIRST ONE)	9. What is (NAME'S) religious denomination  Christian.....1 Muslim.....2 Traditional.....3 Other.....4 (Specify)	10. Does (NAME) father live in this household?  Yes.....1 No.....2 (>=12)	11. COPY THE ID CODE OF THE FATHER IF HE IS RESIDENT IN THE HOUSEHOLD
		M...1 F...2	Head.....1 Spouse.....2 Own Child.....3 Step Child.....4 Grandchild.....5 Brother/Sister.....6 Niece/Nephew.....7 Brother/Sister-in-law.....8 Parent.....9 Parent-in-Law.....10 Other relative.....11 Maid/Nanny House Servant.....12 Non-Relative.....13	Yes.....1 No.....2  Ask person to get birth certificate and copy the Age into Column 5.	Years and months if 5 or under, otherwise years only  (if less than 12 years old (>> 9))	Married (Monogamous).....1 Married (Polygamous).....2 Informal/Loose Union.....3 Divorced.....4 Separated.....5 Widowed.....6 Never Married.....7 (>=9)								
			NAME	CODE		YRS	MTS		YRS					
01														
02														
03														
04														
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														

**SECTION 1: HOUSEHOLD ROSTER Cont.**

ID	12 What was his/her father's highest educational level completed?  None.....1 Primary.....2 Middle/JSS.....3 Vocational/Comm.....4 O' Level.....5 SSS.....6 A' Level.....7 Training College.....8 Technical/Professional.....9 Tertiary.....10 Koranic School.....11 Don't Know.....12	13 What kind of work has his/her father done for most of his life?  SEE OCCUPATION AL CODES IN INTERVIEWER S MANUAL	14 Does NAME's mother live in this Household?  Yes.....1 No.....2 ( >=10)	15 ID OF MOTHER IF SHE IS RESIDENT IN THE HOUSEHOLD  OTHERWISE  <input type="text" value="p&gt;181"/>	16 What was his/her mother's highest educational level completed?  None.....1 Primary.....2 Middle/JSS.....3 Vocational/Comm.....4 O' Level.....5 SSS.....6 A' Level.....7 Training College.....8 Technical/Professional.....9 Tertiary.....10 Koranic School.....11 Don't Know.....12	17 What kind of work has his/her mother done for most of her life?  SEE OCCUPATION AL CODES IN INTERVIEWER S MANUAL	18 For how many months during the past 12 months has he/she been away from this household?  (IF 3 Months or less (>= 20)  MONTHS	19 While absent is he/she living in another household? (Including single person household)  Yes.....1 No.....2	20 HOUSEHOLD MEMBER  CHECK THE CRITERIA ABOVE  Yes.....1 No.....2  (>= NEXT PERSON)
01									
02									
03									
04									
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**SECTION 2: EDUCATION PART A:GENERAL EDUCATION CONTINUED**

16.	17.	18.	19.	20.	21.	22.		23.	24.	25.	26.	27.	28.	29.	30.	31.
						YR	MTS									
Did (NAME) have a scholarship during the past 12 months?  Yes...1 No...2 (>>18)	What was the amount of the scholarship received in the past 12 Months?  AMOUNT	Has (NAME) left school now?  Yes...1 (>>20) No...2	Is the School (NAME) attending a Public or Private School?  Federal Govt.....1 State Govt...2 Local Govt.....3 Religious Body.....4 Industrial...5 Private.....6 Other .....7 Specify	What was the highest class of primary education (NAME) completed?  None.....1 Class 1.....2 Class 2.....3 Class 3.....4 Class 4.....5 Class 5.....6 Class 6.....7	Did (NAME) have an interruption for one term or more during your primary studies?  Yes...1 No...2 (>>25)	For how long was the interruption?  YR	MTS	What was the main reason for the interruption?  Financial....1 Health.....2 Pregnancy /marriage....3 Failed Exams.....4 Dismissal...5 Not Interested...6 Other .....7 (SPECIFY)	Did (NAME) continue or drop out of School?  Continued.....1 Dropped Out.....2	Did (NAME) ever repeat any class of primary schooling?  Yes.....1 No.....2 (>>27)	How many times altogether did (NAME) ever repeat any class of primary schooling?  NO OF TIMES	Was the primary school (NAME) last attended public or private?  Federal Government...1 State Government...2 Local Govt.....3 Religious Body.....4 Industrial.....5 Private.....6 Other .....7 Specify	Has (NAME) ever attended a secondary school?  Yes.....1 No.....2 (>> PART B)	What was the highest class completed?  None.....1 JSS1.....2 JSS2.....3 JSS3.....4 SSS1.....5 SSS2.....6 SSS3.....7 Technical .....8	Was the secondary school (NAME) last attended public or private?  Federal Govt.....1 State Govt.....2 Local Govt.....3 Religious Body.....4 Industrial...5 Private.....6 Other .....7 Specify	Did (NAME) ever repeat a class?  Yes...1 No...2 (>>33)
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SECTION 2: EDUCATION PART A: GENERAL EDUCATION CONT.

ID	32. How many times (NAME) did (NAME) repeat a class?	33. Did (NAME) have an interruption for one term or more during his JSS studies?  Yes...1 No...2 (>> PART 2B)	34. For how long was the interruption?		35. What was the main reason for the interruption?  Financial...1 Health...2 Pregnancy/marriage...3 Failed Exams...4 Dismissal...5 Not Interested...6 Other...7 (SPECIFY)	36. Did (NAME) continue or drop out of School?  Continued...1 Dropped Out...2	SECTION 2B: EDUCATIONAL CAREER													
			YR	MTS			1 Has (NAME) ever Attended a Technical and/or Vocational School?  Yes...1 No...2 (>>PART 2C)	2 How Many Course Years did (NAME) complete?  None...1 1 Year...2 2 Years...3 3 Years...4 4 Years...5 5 Years...6	3 What was the highest certificate (NAME) achieved?  None...1 Prof. Certif...2 City and Guilds...3 Other...4 (SPECIFY)	4 Was the technical school (NAME) last attended public or private?  Federal Govt...1 State Govt...2 Local Govt...3 Religious Body...4 Industrial...5 Private...6 Other...7 (SPECIFY)	5 Has (NAME) ever attended a tertiary educational institution (THAT IS A UNIVERSITY)?  Yes...1 No...2 (>> PART C)	6 How Many Years did (NAME) attend ?  Years	7 What was the last institution attended?  Advanced Teacher Training...1 Poly-Technic...2 University...3 Other...4 (SPECIFY)	8 What was the highest qualification (NAME) achieved?  Cert. Of Completion...1 Diploma...2 Bachelors...3 Masters...4 Doctorate...5 Other...6 (SPECIFY)	9 Was the Tertiary school (NAME) last attended public or private?  Federal Govt...1 State Govt...2 Local Govt...3 Religious Body...4 Industrial...5 Private...6 Other...7 (SPECIFY)					
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**SECTION 2: EDUCATION**

PART 2C: LITERACY/APPRENTICESHIP

LITERACY								APPRENTICESHIP									
1. Can (NAME) READ a simple letter in English?	2. In What Nigerian language can (NAME) READ a letter?  STATE THE ONE IN WHICH YOU ARE MOST PROFICIENT  None.....1 Hausa.....2 Ibo.....3 Yoruba.....4 Other.....5 (SPECIFY)	3. Can (NAME) WRITE a letter in English?  Yes.....1 No.....2	4. In what Nigerian language can (NAME) WRITE a letter?  STATE THE ONE IN WHICH YOU ARE MOST PROFIC- IENT  None.....1 Hausa.....2 Ibo.....3 Yoruba.....4 Other.....5 (SPECIFY)	5. Can (NAME) do Written calculat- ions?	6. Has (NAME) attended a literacy course?  Yes.....1 No.....2 (>>8)	7. For how long has (NAME) attended this course?  Y E M E A T A R S H S S		8. Has (NAME) ever been an appren- tice?  Yes, in the Past.....1 No.....2 (>>14)	9. How long was (NAME) an appren- tice?  Y E M E A T A R S H S S		10. What is the main trade (NAME) learnt?  Carpentry.....1 Masonry.....2 Tailoring.....3 Black Smithing.....4 Mechanical.....5 Electrical.....6 Painting/ Spraying.....7 Trading.....8 Hairdressing/ barbing.....9 Catering.....10 Other.....11 (SPECIFY)	11. Did (NAME) pay a fee for this training?  Yes, in kind.....1 In cash.....2 Both.....3 NO.....4. (>>14)	12. How much did (NAME) pay for the training?  AMOUNT	13. Who paid for the Training?  Self.....1 Parent.....2 Other Relative.....3 Employer.....4 Govt.....5 NGO.....6 Community Assoc.....7 Private Organizati- ons.....8 Other.....9 (Specify)	14. Has (NAME) attended other short training course(s) lasting not more than 6 months?  Yes.....1 No.....2 (>> NEXT MEMBER)	15. What is the total number of months (NAME) attended such course(s) in the last 5 years?  (Since 1999/00)	16. What was the main subject of the most recent training?  Clerical.....1 Managerial.....2 Computer.....3 Marketing.....4 Teaching.....5 Leadership.....6 Medicine.....7 Farming.....8 Other.....9 ( SPECIFY)
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**SECTION 4: EMPLOYMENT AND TIME USE**

**PART 4A: SCREENING QUESTIONS AND LIST OF OCCUPATIONS IN THE PAST 12 MONTHS**

RESPONDENT: ALL HOUSEHOLD MEMBERS AGED 5 AND ABOVE: I would now like to ask you about your activities over the past 12 months that is since

MONTH   YEAR  2  0  0

ID	ID CODE OF PERSON INTERVIEWED	1. During the past 12 months have you done work for which you received a wage or any other payments?  Yes.....1 (>>5) No.....2	2. During the past 12 months have you been paid money including payment in kind through self- employment (For example trading)  Yes.....1 (>>5) No.....2	3. During the past 12 months have you worked on a farm, in a field or herding livestock?  Yes.....1 (>>5) No.....2	4. During the past 12 months, have you worked unpaid for an enterprise belonging to a member of your household?  Yes.....1 No.....2 (>> Part 4F)	5. During the past 12 months, what kind of work did you spend most of your time on?  (IF ECONOMIC INACTIVE e.g., STUDENTS ETC.)  CODE 00  >>PART 4F  (Write and code from Manual)		6. Which other activities did you do? ENTER UP TO 4 CHOICES FROM THE OCCUPATION CODES  Other 30 occupations apart from Q5				7. During the past 12 months did you do any other work besides the OCCUPATIONS IN Q5?  Yes.....1 No.....2
						MAIN OCCUPATION	CODE 1	CODE E1	CODE 2	CODE 3	CODE 4	
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**SECTION 4A EMPLOYMENT CONTINUED**

ID	8. Now I want to ask you about Money Received from many source whether employment or not. This is income you received within the past 12 Months.  INTERVIEWER TO PROBE ON THE DIFFERENT SOURCE SA'S SHOWN BELOW. THOUGH THIS WILL BE COVERED LATER, THIS SET OF QUESTIONS HELP TO VERIFY WHAT IS STATED IN BOTH SECTIONS 13A to 13B										9. Now I want to ask about money spent by the household during the last 12 months.					
	A	B	C	D	E	F	G	H	I	J	A	B	C	D	E	F
	Money Earned from Employment	Money Earned from Agricultural Activities	Money Earned from Agricultural/ Fish Processing	Money Earned from Non Farm businesses	Money Received as Remittances or Grants from someone outside the Household	Money Received from Credit Unions or Casusu	Money received From disposal of assets to people outside the household	Money Borrowed from people outside the household	Money Received from the government which is not for normal employment	Other Money Received from many other source such as begging etc.	Money Spent on Household Purchases	Money Spent on Other Purchases	Money sent to people outside the household	Money Lent to people outside the household	Money Paid to the Govt.	Other Money spent
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**SECTION 4: EMPLOYMENT AND TIME USE: PART 4B: CHARACTERISTICS OF MAIN OCCUPATION**

**I will now like to ask you about your main occupation in the past 12 Months. You said this was..... (INTERVIEWER SEE PART A. QUESTION 3)**

ID	1 Are you still doing the work now?  Yes...1 (>=3) No..2	2 Why are you not doing the same work?  Sacked from Job.....1 Job completed..2 Seasonal Work.....3 Firm Closed.....4 Found / preferred other work..5 Other .....6 (specify)	3 Did your father or mother do the same kind of work?  Yes..1 No...2	4 Describe the activity (WRITE NAME OF INDUSTRY CODE)  See Manual  CODE	5 Have you received or will you receive money for this work?  Yes...1 No.....2 (>=8)	6 What is the Amount?		7 The last time you received this money, how many hours did you actually work in earning it?  SAME TIME UNIT AS Q.6 HR TIME UNIT	8 In this connection, are you:  Employee...1 Paid Employee..2 Self Employed..3 Paid family Worker....4 Unpaid family Worker...5 Other.....6 (SPECIFY)	9 For whom did you work?  Working on own or family Agricultural Activity, i.e. Farming, Fishing, and Animal Rearing / Poultry/ Hunting.....1 EMPLOYEE IN A WAGE JOB: Government Sector.....2 Parastatal.....3 NGO.....4 Co-operatives.....5 Internation. Co-o peratives.....6 Internat. Organisa / Diplomatic mission.....7 Private Sector (include paid apprentices).....8 Self employed (Non Agriculture).....9 Self employed in business with employees.....10 Self employed in business without employees..11 Employee.....12 Unpaid work in family business.....13 Other (Specify).....14  IF Q9=1, 9,10 OR 11 (>> PART 4C)	10 Are taxes already deducted from your pay?  Yes..1 No..2		11 Did you receive any bonuses, commissions, tips, or allowances for this work?  Yes...1 No.....2 (>=14)		12 What was the value of these  V A L U E TIME UNIT		13 Did you include these when you said you received (ANSWER TO Q 8)  Yes...1 No.....2		14 Do you receive any payment for this work in the form of crops or animals?  Yes...1 No.....2 (>=16)		15 What was the value of these goods?  V A L U E TIME UNIT	
						AMNT	T I M E U N I T				V A L U E	T I M E U N I T	V A L U E	T I M E U N I T	V A L U E	T I M E U N I T						
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**SECTION 4: EMPLOYMENT AND TIME USE**

**PART B: CONTINUED**

ID	16 Did your employer give you accommodation that is free or at a reduced price?  Yes....1 No....2 (>>18)	17. How much rent would you have paid for this place without this help?		18: Did your employer give you free transport or reduced fares?  Yes.....1 No.....2 (>>20)	19. How much did you gain from this arrangement?		20. Do you receive any payment for this work in any other form?  Yes....1 No....2 (>>22)	21. What is the value of this form of payment?		22. Is your place of work in this village or town?  Yes....1 (>>25) No....2	23 How far away is it?  KMS	24. How often do you go between your house and your place of work?		25. How many people altogether work in the same organisation where you do this work  NUMBER	26. When you started this work did you sign a written contract?  Yes....1 No.....2	27. Is there a trade union at the place where you work?  Yes....1 No....2
		VALUE	TIME UNIT		VALUE	TIME UNIT		VALUE	TIME UNIT			NO. OF TRIPS	TIME UNIT			
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TIME UNIT:	1 - Daily	2 - Weekly	3 - Fort - Nightly	4 - Monthly	5 - Quarterly	6 - Yearly
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**SECTION**

**4B: EMPLOYMENT AND TIME USE CONT**

	28 In this job are you entitled to paid holidays?  Yes.....1 No.....2	29 Are you entitled to paid sick leave in this job?  Yes.....1 No.....2	30 Will you receive a retirement pension?  Yes.....1 No.....2	31 Are you entitled to free Or subsidized medical care in this job?  Yes.....1 No.....2	32 Are you entitled to any other Social security benefits in this job?  Yes.....1 No.....2	33 Since you started the job, have you received any training related to your work?  Yes.....1 No.....2 (=> PART 4C)	34 How long did the training last?			35 How many hours a week did you receive this training?	36 Who paid for the training?  Myself Entirely.....1 Employer entirely.....2 Both Cost was shared.....3 It was free.....4 International-agency.....5 Other.....6 (Specify)	37 Was your salary lower during training?  Yes....1 No....2 (=> PART4C)	38 By how much was it lower?  WRITE DIFFERENCE BETWEEN NORMAL SALARY AND SALARY WHILE TRAINING	
							MONTH	WEEKS	HOURS				AMOUNT	TIME UNIT
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**SECTION 4: EMPLOYMENT AND TIME USE**

**PART 4C: SECONDARY OCCUPATION IN THE LAST 12 MONTHS**

**IF NO OF OCCUP. RECORDED IN Q6 PART A IS MORE THAN ONE, PROCEED WITH THIS SECTION. IF NO GO TO PART 4G. Now I will like to ask you about your second occupation, during the last 12 months. This job was (OCCUPATION 2 FROM PART A Q6). Is this correct?**

1. What kind of trade, service or industry is this work connected with?  (Describe the activity)  WRITE NAME OF INDUSTRY FROM INDUSTRY LIST IN MANUAL		2. How long have you been doing this work altogether?		3 Are you still doing the same work? Yes...1 (>=5) No...2	4 Why are you not doing the same work? Sacked from job.....1 Completed job.....2 Seasonal work.....3 Firm closed.....4 Found / preferred Other Work.....5 Other.....6 (specify)	5 Did your father or mother do the same kind of work? Yes.....1 No.....2	6 During the past 12 months, how many weeks did you do this work for?	7 During these weeks, how many hours did you normally work?	8 Did you work on this job at the same time as your main job? Yes.....1 No.....2  IF NO WRITE 00	9 Have you received or will you receive money for this work? Yes.....1 No.....2  (>. 12)	TIME UNIT Daily.....1 Weekly.....2 Fortnightly...3 Monthly.....4 Quarterly...5 Yearly.....6
ID	NAME IF INDUSTRY	ISIC CODE	YRS	MTS			WEEKS	HOURS	WEEKS		
01											
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**SECTION 4C: EMPLOYMENT AND TIME USE CONT**

	10. What is the amount? (Include any bonuses, commission, or tips received.)		11. The last time you received this money, how many hours did you actually work in earning it?  ANSWER MUST BE IN THE SAME TIME UNIT AS Q 10.		12. FOR WHOM DID YOU WORK?  Working on own or family Agricultural Activity, i.e. Farming, Fishing, and Animal Rearing / Poultry/ Hunting.....1 EMPLOYEE IN A WAGE JOB: Government Sector.....2 Parastatal.....3 NGO.....4 Co-operatives.....5 International Co-operatives.....6 International Organisation/ Diplomatic Mission.....7 Private Sector (include paid apprentices).....8 Self employed (other than Agriculture).....9 Self employed in business with employees.....10 Self employed in business without employees.....11 Employer.....12 Unpaid work in a family business.....13 Other (Specify).....14  IF Q 12=1,9,10 or 11 ( >> PART 4D)	13. Are taxes already deducted from your pay?  Yes.....1 No.....2	14. Did you receive any payment for this work in the form of food, crops or animals?  Yes.....1 No.....2 (>>16)	15. What is the value of these goods?		16. Did you receive any payment for this work in any form such as free or subsidized housing, transportation, or other goods or services?  Yes.....1 No.....2 (>>18)
	AMOUNT	TIME UNIT	HOURS	TIME UNIT				VALUE	TIME UNIT	
01										
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TIME UNIT: 1=Daily    2=Weekly    3=Fort-Nightly    4=Monthly    5=Quarterly    6=Yearly

**SECTION 4: EMPLOYMENT AND TIME USE  
PART C: CONCL'D**

ID	17 How much do you gain from this?		18 Is your place of work in this village/town?  Yes...1 No...2 (>>20)		19 How Far Away is it?		20 How often do you go between this house and your place of work?		21 How many people altogether Work in the Same Organization?		22 When you started work, did you sign a written contract?		23 Is there a Trade Union at the place you work?		24 Are you entitled to paid holidays or paid sick leave in this work?  Yes...1 No...2		25 Are you entitled to Social Security benefits in this job?  Yes...1 No...2		26 Since you started this job, have you received any training related to the work?  Yes.....1 No.....2 >>PART 4D		27 How long did the Training Last?		
	Value	Time Unit			KMS	No. of Trips	Time Unit														MONTHS	WEEKS	
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TIME UNIT: 1=Daily    2=Weekly    3=Fort-Nightly    4=Monthly    5=Quarterly    6=Yearly

**SECTION 7 : HOUSING RESPONDENT: HEAD OF HOUSEHOLD**

SECTION 7A: TYPE OF DWELLING						SECTION 7B: OCCUPANCY STATUS OF DWELLING		SECTION 7C: HOUSING EXPENDITURE						
ID	1 Type of Dwelling	2 How many Rooms does this Household Occupy? (EXCLUDE BATH-ROOMS, TOILETS, KITCHEN, PANTRY, STORE)	3 Do Other House-holds Share this Dwelling with You? Yes = 1 No = 2	4 How Long has Your Household been Living in this Dwelling? Year	5 In what type of Dwelling were you Living Before? Code from Q1	6 How Many Rooms were Occupied by the Household?	1 What is your Present Occupancy Status? Dwelling Owned by Head.....1 (>>7C Q8) Dwelling Owned by Spouse.....2 (>>7C Q8) Owned by Head and Spouse.....3 (>>7C Q8) Household Rents the Dwelling.....4 Pays Nominal/Subsidized Rent.....5 Uses Without Paying Rent.....6 No media/Temporal Housing.....7	2 From Whom do you Rent the Dwelling? Relative.....1 Private Employer.....2 Govt.....3 Priv. Indiv. or Agency.....4 Other.....5 (SPECIFY)	1 How Much does the Household Pay in Cash for the Rent? TIME UNIT Daily.....1 Weekly.....2 Monthly.....3 Quarterly.....4 Half Yearly...5 Yearly.....6	2 Does the Household Supply Goods or Services in Exchange for the Dwelling? Yes.....1 No.....2 >> 4	3 What is the Appropriate Value of these goods and Services? (IF RENT FREE PUT ZERO) AMOUNT TIME UNIT	4 Is Part of the Rent Paid by Someone who is not a Household Member Yes = 1 No = 2	5 Who Pays the rent? Relative.....1 Private Employer.....2 Government.....3 Private Individual Agency.....4 Other.....5 (SPECIFY) AMOUNT TIME UNIT	6 How Much did you spend for Construction and Painting in the Last 12 MTS? AMOUNT
	Single Room...1 Apartment/Flat...2 Duplex.....3 Whole Biding...4 Other.....5 (SPECIFY)			YEARS										
SECTION 7D: UTILITIES AND AMENITIES														
1	2	3	4	5	6	7	8	9	10	11	12	13		
What is the main source of Drinking water for this household? Pipe Borne water Treated.....1 Pipe Borne Untreated.....2 Bore hole/Hand pump.....3 Protected Well.....4 Unprotected Well/Rain water.....5 River, Lake or Pond.....6 Vendor, Truck.....7 Other.....8 (SPECIFY)	What is the distance to Source of water for your household? In Dwelling...1 Within 500 metres.....2 500 metres to 1 Km.....3 1 Km or More.....4	Do you pay or share a regular bill from the water company? Yes.....1 No.....2 (>>5)	How much was your last water bill? (ONLY YOUR PORTION IF SHARED WATER BILL) TIME UNIT Daily.....1 Weekly.....2 Monthly.....3 Quarterly.....4 Half Yearly.....5 Yearly.....6 AMOUNT TIME UNIT	How much have you paid to a private water vendor in the last 2 weeks? AMOUNT	Did you sell water to anyone else? Yes.....1 No.....2 (>>8)	How much did you receive for water sold in the last 2 weeks? AMOUNT	What is the main source of lighting for your dwelling? Kerosine.....1 (>>10) Gas.....2 (>>10) Mains Electricity.....3 Electricity from Generator.....4 Battery.....5 Candles.....6 Firewood.....7 Other.....8 (SPECIFY) AMOUNT TIME UNIT	How Much was your last bill? (IF SHARED, GIVE ONLY YOUR PORTION) TIME UNIT Daily.....1 Weekly.....2 Monthly.....3 Quarterly.....4 Half Yearly...5 Yearly.....6 AMOUNT TIME UNIT	What is the main fuel used by the household for cooking? Firewood.....1 Charcoal.....2 Kerosine/oil.....3 Gas.....4 Electricity.....5 Crop Residue or Saw dust...6 Animal Waste.....7 Other.....8 (SPECIFY) AMOUNT TIME UNIT	What kind of refuse collection is used by your household? Collected by Gov't.....1 Collected by Private firm...2 Gov't Bin.....3 Disposal within compound....4 Unauthorized Heap.....5 Other.....6 (SPECIFY) AMOUNT TIME UNIT	How much does your household pay for refuse collection? Daily.....1 Weekly.....2 Monthly.....3 Quarterly.....4 Half Yearly...5 Yearly.....6 AMOUNT TIME UNIT	What type of toilet is used by your household? None.....1 Toilet on water.....2 Flush to sewer.....3 Flush to septic tank.....4 Pail/bucket...5 Covered pit latrine.....6 Uncovered Pit latrine.....7 VIP Latrine...8 Other.....9		

SECTION 7: HOUSING RESPONDENT: HEAD OF HOUSEHOLD CONT

SECTION 7E: PHYSICAL CHARACTERISTICS OF DWELLING					
1	2	3	4	5	6
Main Construction material of outside walls. Mud.....1 Stone.....2 Burnt Bricks.....3 Cement or Concrete.....4 Wood or Bamboo.....5 Iron Sheets.....6 Cardboard.....7 Other.....8 (SPECIFY)	Main flooring Materials. Earthen Mud.....1 Wood or Tile.....2 Plank.....3 Concrete.....4 Dirt/Straw.....5 Other (SPECIFY).....6	Main Roofing Materials. Mud/Mud Bricks.....1 Thatch (Grass or straw).....2 Wood/Bamboo.....3 Corrugated Iron Sheets.....4 Cement/Concrete.....5 Roofing Tiles.....6 Other (SPECIFY).....7	DETAIL SKETCH OF BUILDING	MEASUREMENT TAKEN Inside.....1 Outside.....2	CALCULATE AREA IN SQUARE METRES

- A. **For circular Area calculation** Q4, measure the diameter to get the Radius. Then use the  $\pi R^2$  to get the area square metres.

Area (i)  $\frac{22}{7}$  or 3.14 x radius squared.

(ii)  $\frac{22}{7}$  or 3.14 x R<sup>2</sup>

- B. For Square/Rectangular

Area = L X B sq. metres

**FEDERAL REPUBLIC OF NIGERIA**  
**FEDERAL OFFICE OF STATISTICS ABUJA, NIGERIA**  
Questionnaire of



**NIGERIA LIVING STANDARDS SURVEY (NLSS)**  
*SEPTEMBER 2003 TO AUGUST, 2004*

**PART B :HOUSEHOLD CONSUMPTION**

STATE..... SURVEY MONTH ..... SURVEY YEAR .....  
SECTOR..... E.A. CODE..... RIC..... HH NO.....  
NAME OF HEAD OF HOUSEHOLD ..... ADDRESS HEAD OF HH.....



SECTION 13A2 INCOME TRANSFERS AND MISCELLANEOUS INCOME AND EXPENDITURES

RESPONDENT: HOUSEHOLD HEAD OR MAIN RESPONDENT													
1 During the past 12 months has this household received or collected money or goods from (NAME OF ABSENT HOUSEHOLD MEMBER)? Yes.....1 No.....2		2 During the past 12 months, has this household received or collected money or goods from any other individual? Yes.....1 No.....2 (IF ANSWERS TO Q.1 AND Q.2 ARE NO, >> PART C)		NOTE: TRANSFERS IN THIS SECTION SHOULD NOT INCLUDE PAYMENTS MADE TO THE HOUSEHOLD FOR GOODS AND SERVICES OR FOR WORK DONE BY THE HOUSEHOLD. THESE INCOMES SHOULD BE COVERED IN SECTIONS 4, 8, OR 10.									
3 LIST EACH PERSON'S NAME FROM WHOM HOUSEHOLD RECEIVED MONEY OR GOODS.	4 ID CODE IF PERSON IS AN ABSENT MEMBER OF THE HOUSEHOLD  THEN >> 7	5 IF NOT A HOUSEHOLD MEMBER, RELATIONSHIP TO THE HOUSEHOLD HEAD AND SEX		7 Were these remittances received on a regular basis?  Yes.....1 Weekly.....1 Monthly.....2 Quarterly.....3 Annually.....4 No.....5 Other.....6 (specify)	8 Will you have to repay these?  Yes.....1 No.....2	9 What was the total amount of the cash this household received from this individual during the last 12 months?  AMOUNT	10 What was the total value of food received from this individual during the last 12 months?  VALUE	11 What was the value of other goods (non-food items) received from this individual during the last 12 months?  VALUE	12 Where does this individual live? This village / town.....1 Lagos.....2 Akoka (FCT).....3 Other Urban.....4 Rural.....5 Abroad (Africa).....6 Abroad (Other).....7				
		5 RELATIONSHIP Parent.....1 Spouse.....2 Child.....3 Brother / Sister.....4 relative.....5 Non-relative.....6	6 SEX Male.....1 Female.....2										
SECTION 13A3: MISCELLANEOUS INCOME					SECTION 13A4: MISCELLANEOUS OUTGOINGS (EXPENDITURES)								
During the past 12 months, how much income in cash or kind, did the household receive from the following sources?					During the past 12 months, how much did the household spend (in cash and in kind) on:								
FROM GOVERNMENT			FROM OTHER SOURCES			1	2	3	4	5	6	7	8
1 Social Security	2 State Pension	3 Other (specify)	4 Retirement benefits	5 Dowry or inheritance	6 Other (specify)	Taxes e.g. TV License, Property tax, fines etc.	Maintenance of other Relatives? (INCLUDING GIFTS)	Weddings, Dowry, Funeral or other Ceremonies.	Gifts and Presents (excluding those mentioned)	Other miscellaneous expenditures	Donations (including religious Donations)	Hire purchase Repayment	Funeral Contributions
AMOUNT	AMOUNT	AMOUNT	AMOUNT	VALUE	AMOUNT	AMOUNT	VALUE	VALUE	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
						9. Loans/Inbx. Repaid	10. Stocks and shares	11. Other Cash Rebutt.	12. Bank Savings				
						AMOUNT	AMOUNT	AMOUNT	AMOUNT				

SECTION 13B: HOUSEHOLD INCOME SCHEDULE

INCOME IN NAIRA ONLY

S/N	SOURCE OF INCOME/CASH RECEIPT	VISITS							TOTAL	ITEM CODE	
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>			
1	Wages/Salary of Head									0	1
2	Commissions and Bonuses									0	2
3	Overtime									0	3
4	Wages/Salary of Spouse									0	4
5	Commissions and Bonuses (spouse)									0	5
6	Overtime (Spouse)									0	6
7	Wages/Salary of Male Members									0	7
8	Commission and Bonuses (Males)									0	8
9	Overtime (Males)									0	9
10	Wages/Salary of Female Members									1	0
11	Commissions and Bonuses (Female)									1	1
12	Overtime (Females)									1	2
13	Sales of Farm Product									1	3
14	Profit From Trading									1	4
15	Fees From Prof. Activities									1	5
16	Total Basic Income									1	6
17	Income from Subsidiary Group									1	7
18	Rent Received									1	8
19	Loan raised									1	9
20	Loan Repayment Received									2	0
21	Esusu Received									2	1
22	Divident on Shares									2	2
23	Pools Winning									2	3
24	Sales of Property									2	4
25	Cash Gift Received									2	5
26	Dowry Received									2	6
27	Withdrawal from Saving									2	7
28	Remit. Received from within Nig.									2	8
29	Remit. Received From Outside Nig.									2	9
30	Pension/Gratuity									3	0
31	Other									3	1
32	TOTAL OTHER CASH RECEIPTS									3	2
	CASH IN HAND									3	3
33	At the beginning of 1 <sup>st</sup> day of Survey Month										
34	Imputed Rent from owner occupied/Rent free Building									3	4
	<b>TOTAL</b>									3	5



**Appendix 5-3**

**Weighted Mean Housing Expenditure of Households Regionally Deflated in Current Prices by States.**

<b>STATE</b>	<b>Weighted Total Mean Housing Expenditure of Households</b>
Abia	33745.20
Adamawa	89812.76
Akwa Ibom	57218.91
Anambra	28320.70
Bauchi	69810.94
Bayelsa	30997.17
Benue	55174.77
Borno	68860.57
Cross_Rivers	42332.16
Delta	39697.22
Ebonyi	33094.82
Edo	44392.70
Ekiti	43162.58
Enugu	42585.46
Gombe	62129.41
Imo	33482.83
Jigawa	62421.63
Kaduna	72899.03
Kano	67968.57
Katsina	78838.36
Kebbi	62753.14
Kogi	29712.91
Kwara	57889.27
Lagos	47903.50
Nassarawa	46687.55
Niger	55610.44
Ogun	42655.08
Ondo	36993.93
Osun	33774.26
Oyo	48361.28
Plateau	52754.17

<b>Rivers</b>	44464.96
<b>Sokoto</b>	61764.35
<b>Taraba</b>	76415.47
<b>Yobe</b>	54235.07
<b>Zamfara</b>	94005.15
<b>FCT</b>	57140.37

Appendix 5-4

Showing the Non-Housing Consumption Threshold, Total Annual Non-housing Expenditures of Households and the disparity between them by States

STATE	Weighted Non-housing expenditure ppc (in regionally deflated prices)	Weighted Consumption threshold ppc (in regionally deflated prices)	Disparity between Non-housing Expd and Consumption threshold
Abia	57221.35	37999.13	19222.22
Adamawa	48559.81	33408.13	15151.69
Akwa Ibom	46624.38	27916.91	18707.47
Anambra	58828.88	39033.77	19795.11
Bauchi	40082.15	26734.79	13347.36
Bayelsa	50753.99	33852.91	16901.08
Benue	58244.38	39447.88	18796.5
Borno	47601.89	31901.49	15700.4
Cross_Rivers	53395.83	33999.95	19395.88
Delta	37242.92	24350.02	12892.9
Ebonyi	54469.95	36570.97	17898.98
Edo	56957.76	38025.16	18932.6
Ekiti	53845.13	36070.05	17775.08
Enugu	56959.72	38133.58	18826.14
Gombe	46871.51	32946.07	13925.44
Imo	56415.27	37851.4	18563.87
Jigawa	18699.33	12317.42	6381.911
Kaduna	55845.83	36938.16	18907.67
Kano	52756.58	35118.85	17637.73
Katsina	53968.65	36512.93	17455.73
Kebbi	24565.78	16385.37	8180.406
Kogi	22398.61	14939.87	7458.74
Kwara	27044.27	18035.03	9009.238
Lagos	42608.93	27428.48	15180.45
Nassarawa	44308.66	28935.8	15372.86
Niger	47826.55	29582.45	18244.1
Ogun	66863.94	44086.29	22777.65
Ondo	40196.04	26897.36	13298.68

<b>Osun</b>	62325.03	41709.89	20615.14
<b>Oyo</b>	60917.53	40441.41	20476.12
<b>Plateau</b>	66239.18	42774.29	23464.89
<b>Rivers</b>	54617.56	35202.34	19415.22
<b>Sokoto</b>	39965.37	26359.78	13605.6
<b>Taraba</b>	37750.9	25053.38	12697.52
<b>Yobe</b>	32081.1	21398.09	10683.01
<b>Zamfara</b>	38471.44	25660.45	12810.99
<b>FCT</b>	55887.74	35996.87	19890.87

**Appendix 5-5**  
**Household Income by States in Nigeria**

No.	STATE	Median Total Annual Household Income	Weighted Total Annual Household Income	Weighted Total Annual Household Cash Income	Weighted Per Capita Household Income
1	Abia	173400.00	209332.8	185960.1	71590.11
2	Adamawa	253734.20	418167.3	370687.1	72769.29
3	Akwa_Ibom	180000.00	262674.9	222522.7	68830.97
4	Anambra	177280.00	298147.1	281946.1	97148.48
5	Bauchi	135674.10	192599.8	161802.5	35270.27
6	Bayelsa	163318.90	215184.1	179088.9	76623.84
7	Benue	168779.30	229212.7	163840.5	58094.13
8	Borno	141974.10	227236.5	205005.9	54373.28
9	Cross_Rivers	149851.60	226833.9	202913.9	63391.77
10	Delta	217002.00	298659.2	270887	87563.84
11	Ebonyi	197325.20	238652.3	168898.3	51439.73
12	Edo	170200.00	240993	216985.5	75968.65
13	Ekiti	82810.50	120735.4	98352.43	46518.29
14	Enugu	172676.80	254010.6	228670.3	57799.79
15	Gombe	182749.40	240807.3	206406.1	46636.10
16	Imo	179280.00	217249.3	187768.5	47323.73
17	Jigawa	122422.80	160271.2	106692.7	26587.53
18	Kaduna	164480.90	223329.2	178920.5	52509.84
19	Kano	190602.30	252414.6	211771	61383.67
20	Katsina	185480.80	259012.5	195650.2	42592.20
21	Kebbi	68779.23	121470.1	96254.43	27037.06
22	Kogi	107357.80	129379.5	103071.8	35888.75
23	Kwara	101640.00	154095.3	128957.8	40532.65
24	Lagos	180000.00	235642.6	223304.2	64455.33
25	Nassarawa	209392.30	278705.1	252525.5	70612.01
26	Niger	182400.00	261741.8	235618.7	89289.09
27	Ogun	85640.00	122173.9	110010.3	48823.57
28	Ondo	103902.10	128420.6	113581.2	44107.48
29	Osun	100717.20	138004.9	121577.6	50355.13
30	Oyo	152620.50	209639.8	193454.9	60004.78
31	Plateau	180000.00	184584	169683.9	48313.92
32	Rivers	263518.90	396722.7	362606.6	112000.4

33	<b>Sokoto</b>	156962.30	189358	158430.7	43555.93
34	<b>Taraba</b>	124733.30	194477.3	157146.7	25963.88
35	<b>Yobe</b>	130330.20	132521.2	96456.08	34869.2
36	<b>Zamfara</b>	279450.00	352764.2	257871.5	71582.78
37	<b>FCT</b>	192071.90	412483.7	388097.7	110558.9

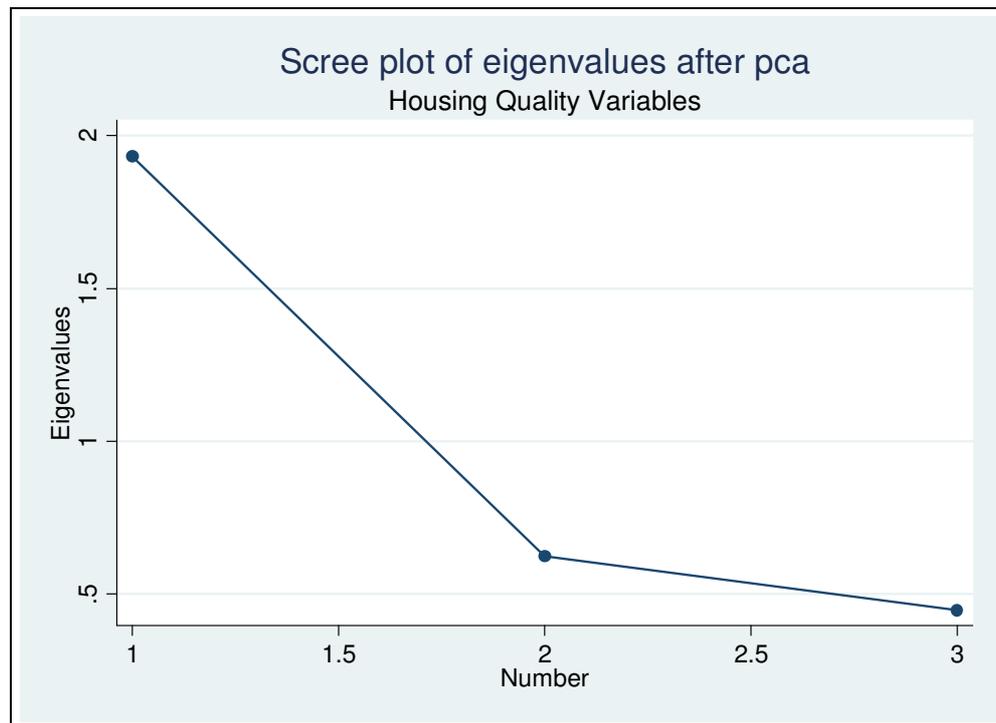
### Appendix 5-6

#### The Result Table of the PCA to Generate the Housing Quality Variable

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1.937	1.31827	0.6457	0.6457
Comp2	.618735	.174473	0.2062	0.8519
Comp3	.444262	.	0.1481	1.0000

#### Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3	Unexplained
flconmat	0.5385	0.8391	0.0767	0
roofmat	0.5912	-0.4412	0.6752	0
wallconmat	0.6004	-0.3182	-0.7337	0



Appendix 5-7

The Occupation and Industrial Codes Used in Nigerian Living Standard Survey(NLSS)  
2003/2004

**NIGERIA LIVING STANDARD SURVEY (NLSS)  
2003/2004**



***OCCUPATION AND INDUSTRY CODES***

FEDERAL OFFICE OF STATISTICS  
HOUSEHOLD SURVEY DIVISION,  
ABUJA, NIGERIA

## OCCUPATION CODES

### OCCUPATION BY INTERNATIONAL STANDARD CLASSIFICATIONS

- 1..... **PROFESSIONAL, TECHNICAL AND RELATED WORKERS**
- 0-1..... Physical Scientists and Related Technicians.
- 0-2/0-3.. Architects, Engineers and Related Technicians.
- 0-4..... Aircraft and Ship Officers.
- 0-5..... Life Scientists and Related Technicians.
- 0-6..... Medical, Dental, Veterinary and Related Workers.
- 0-7..... Professional Nurses.
- 0-8..... Statisticians, Mathematicians, Systems Analysts and Related Technicians.
- 0-9..... Economists.
- 1-1..... Accountants.
- 1-2..... Jurists (eg Lawyers, Judges).
- 1-3..... Teachers.
- 1-4..... Workers in Religion.
- 1-5..... Authors, Journalists and Related Writers.
- 1-6..... Sculptors, Painters, Photographers and Related Creative Artists.
- 1-7..... Composers and Performing Artists.
- 1-8..... Athletes, Sportsmen and Related Workers.
- 1-9..... Professional, Technical and Related Workers Not elsewhere classified.
  
- 2..... **ADMINISTRATIVE AND MANAGERIAL WORKERS.**
  
- 2-0..... Legislative Officials and Government Administrators.
- 2-1..... Managers (excluding Farm Managers).
  
- 3..... **CLERICAL AND RELATED WORKERS.**
  
- 3-0..... Clerical and Related Workers.
- 3-1..... Government Executive Officials.
- 3-2..... Stenographers, Typists and Card/Tape-Punch Machine Operators.
- 3-3..... Book-keepers, Cashiers and Related Workers.
- 3-4..... Computing Machine Operators.
- 3-5..... Transport and Communications Supervisors.
- 3-6..... Transport Conductors.
- 3-7..... Mail Distribution Clerks.
- 3-8..... Telephone and Telegraph Operators.
- 3-9..... Clerical and Related Workers Not Elsewhere Mentioned.

- 4..... **SALES AND RELATED WORKERS.**
  - 4-0..... Managers (Wholesale and Retail Trade).
  - 4-1..... Working Proprietors (Wholesale and Retail Trade).
  - 4-2..... Sales Supervisors and Buyers.
  - 4-3..... Technical Salesmen, Commercial Travellers and Manufacturers' Agents.
  - 4-4..... Insurance, Real Estate Securities and Business Services, Salesmen and Auctioneers.
  - 4-5..... Salesmen, Shop Assistants and Related Workers.
  - 4-9..... Sales Workers Not Elsewhere Classified.
  
- 5..... **SERVICE AND RELATED WORKERS.**
  - 5-0..... Managers (Catering, Lodging Services).
  - 5-1..... Working Proprietors (Catering and Lodging Services).
  - 5-2..... Housekeeping and Related Service Supervisors.
  - 5-3..... Cooks, Waiters, Bartenders and Related Workers.
  - 5-4..... Maids and Related Housekeeping Service workers Not Elsewhere Classified.
  - 5-5..... Building Caretakers, Char workers, Cleaners and Related Workers.
  - 5-6..... Launderers, Dry-Cleaners and Pressers.
  - 5-7..... Hairdressers, Barbers, Beauticians and Related Workers
  - 5-8..... Protective Service Workers.
  - 5-9..... Service Workers Not Elsewhere Classified.
  
- 6..... **AGRICULTURAL, ANIMAL HUSBANDRY AND FORESTRY WORKERS, FISHERMEN AND HUNTERS.**
  - 6-0..... Farm Managers and Supervisors.
  - 6-1..... Farmers.
  - 6-2..... Agricultural and Animal Husbandry Workers
  - 6-3..... Forestry Workers.
  - 6-4..... Fishermen, Hunters and Related Workers.
  
- 7..... **PRODUCTION AND RELATED WORKERS**
  - 7-0..... Production Supervisors and General Foremen.
  - 7-1..... Miners, Quarrymen, Well Drillers and Related Workers.
  - 7-2..... Metal Processors.
  - 7-3..... Wood Preparation Workers and Paper Makers.
  - 7-4..... Chemical Processors and Related Workers.
  - 7-5..... Spinners, Weavers Knitters, Dyers and Related Workers.
  - 7-6..... Tanners, Fishmongers and Pelt Dressers.
  - 7-7..... Food and Beverage Processors.
  - 7-8..... Tobacco Prepares and Tobacco Product Markers.
  - 7-9..... Tailors, Dressmakers, Sewers, Upholsterers, and Related Workers.

- 8-0..... **SHOEMAKERS AND LEATHER GOODS MAKERS.**
- 8-1..... Cabinetmakers and Related Wood Workers.
- 8-2..... Stone Carvers and Stone Cutters.
- 8-3..... Blacksmith, Tool-makers, and Machine Tool Operators.
- 8-4..... Machinery, Fitters, Machine Assemblers and Precision Instrument Makers (Except Electrical).
- 8-5..... Electrical Fitters and Related Electrical And Electronics Workers.
- 8-6..... Broadcasting Station and Sound-Equipment Operators and Cinema Projectionists.
- 8-7..... Plumbers, Welders, Sheet-Metal and Structural Metal Preparers and Erectors.
- 8-8..... Jewellery and Precious Metal Workers.
- 8-9..... Glass Formers, Potters and Related Workers.
- 9-0..... **Rubber and Plastic Product Makers.**
- 9-1..... Paper and Paperboard Product Makers.
- 9-2..... Printers and Related Workers.
- 9-3..... Painters.
- 9-4..... Production and Related Workers Not Elsewhere Classified.
- 9-5..... Bricklayers, Carpenters and Other Construction Workers.
- 9-6..... Stationery Engine and Related Equipment Workers.
- 9-7..... Material Handling and Related Equipment Operators, Dockers and Freight Handlers.
- 9-8..... Transport Equipment Operators.
- 9-9..... Labourers Not Elsewhere Classified.
- 0-0..... Student, Unemployed, Retired, Old Age

## **NOTES ON OCCUPATIONS**

### **3-9: Clerical And Related Workers Not Elsewhere Classified**

Workers in this minor group perform various clerical and related duties not elsewhere classified. Included are those who record the receipt, storage, weighing and issuing of finished goods or materials; despatch, receive, store issue and weight processes; calculate quantities needed and draw up correspondence; provide information and services to visitors in agencies; code and compile statistical data; operate office machines for reproducing copies of documents; operate addressing machinery; carry out other recording correspondence and filing tasks.

### **4-9: Sales Workers Not Elsewhere Classified**

Workers in this unit group perform various selling tasks not elsewhere classified. Their functions include: lending money to customers on pledge or bonds; selling refreshments and confectionery at places of entertainment; performing various other selling tasks.

### **6-4: Fishermen, Hunters and Related Workers Not Elsewhere Classified**

Workers in this unit group perform a variety of fishing, hunting and related tasks not classified elsewhere. Their functions include: breeding and raising fish; cultivating oysters, trapping and hunting wild animals; performing related tasks.

### **7-7: Food And Beverage Processors**

Workers in this category prepare food products and beverages of all kinds for human and animal consumption. The under listed unit groups fall into this category: grain Millers and related workers; sugar processors and refiners; butchers and meat preparers; food preservers; dairy product processors; bakers, pastry cooks and confectionery makers; Tea, coffee and cocoa preparers; brewers, wine and beverage makers; extract one of oil from oil-bearing seeds, nuts and fruits.

### **9-4: Production And Related Workers Not Elsewhere Classified**

Workers in this minor group include craftsmen and specialised workers performing functions requiring application of particular techniques, use of particular tools or machines, abilities and experience in working particular materials in order to make such articles as musical instruments; baskets and brushes; artificial stone and other non-metallic mineral products; dolls, rubber stamps etc. The group also includes those who prepare and stuff skins of animals and birds to give them life-like forms.

## INDUSTRY CODES

<b>A. AGRICULTURE</b>	<b>D. ELECTRICITY, WATER AND GAS.....</b>	
Cash Crops: e.g	Electricity .....	66
Cocoa.....01	Water Supply .....	67
Coffee.....02	Gas .....	68
Pineapple.....03	<b>E. CONSTRUCTION, REPAIR AND MAINTENANCE</b>	
Oil Palm.....04	Construction of buildings and fences .....	69
Sheanut/butter.....05	Roads and Bridges.....	70
Cola Nut.....06	Other Construction .....	71
Cotton.....07	Informal (Modern Material) .....	72
Coconut .....	Informal (Rud and Ratio) .....	73
Tobacco.....09	<b>F. WHOLESALE/RETAIL TRADE.....</b>	
Sugarcane.....10	Wholesale trade .....	74
Other Cash Crops.....11	Retail Trade .....	75
Food Crops e.g	<b>G. RESTAURANTS/HOTELS AND FOOD SELLERS</b>	
Maize.....12	Hotel and Restaurants 5' .....	76
Rice.....13	Hotel and Restaurant (Others).....	77
Sorghum/Millet.....14	Food Sellers.....	78
Cassava.....15	<b>H. TRANSPORT/STORAGE AND COMMUNICATION</b>	
Yam.....16	<b>TRANSPORT</b>	
Cocoyam.....17	Road Transport(Passenger_ = Driving .....	79
Plantains.....18	Road Transport (Freight) = Carrying of load .....	80
Fruits.....19	Rail and Pipeline .....	81
Vegetables.....20	Water Transport (Large Ship) .....	82
Beans and Peas.....21	Water Transport (Local Rivers) = River/boat transport ..	83
Other Food Crops.....22	Air Transport .....	84
Cattle.....23	Transport Services.....	85
	Cold Store Operators .....	86
Goat .....	Private Warehousing etc.....	87
Sheep.....25	<b>COMMUNICATION</b>	
Pigs.....26	Telecommunication Fixed line .....	88
Poultry.....27	Telecommunication Mobile Phone .....	89
Other Livestock.....28	Post Office .....	90
Milk, Butter Making etc.....29	Post Courier .....	91
<b>Forestry related Activities E.g.</b>	Broadcasting .....	92
Hunting.....30	Operation of Communication Cent .....	93
Logging.....31	<b>I. FINANCE/INSURANCE/REAL ESTATE AND BUSINESS</b>	
Fireswood Gathering etc.....32	<b>SERVICES FINANCE</b>	
Charcoal .....	Central Bank.....	94
Other Forest Products.....34	Other Banks .....	95
Marine Fishing.....35	Other Financial Institution .....	96
Inland Fishing.....36	Money Lending.....	97
<b>B. MINING/QUARRYING.....</b>	Esusu Operators.....	98
Coal Mining.....37	Forex Bureau.....	99
Crude Petroleum.....38	<b>INSURANCE</b> .....	100
Iron Ores.....39	<b>REAL ESTATE</b>	
Quarrying and other Mining... 40	Real Estate Government .....	101
	Real Estate Others .....	102
	Rental Agents.....	103

**C. MANUFACTURING/PROCESSING**

Oil Refining .....	41
Cement Production.....	42
Production of Charcoal .....	43
Slaughtering & Meat Processing .....	44
Other Food Processing .....	45
Basket making (weaving etc) .....	46
Other Manufacturing... ..	47
Drinks Beverages and Tobacco.....	48
Textile and Clothing .....	49
Footwear and Leather.....	50
Wood, Paper, printing and publishing .....	60
Drugs and Chemicals .....	61
Rubber and Plastics .....	62
Iron and Steel.....	63
Fabricated Metal .....	64
Vehicle Assembly .....	65

**BUSINESS SERVICES**

Consultancies.....	104
Other Business services.....	105

**J. COMMUNITY/SOCIAL/PERSONAL SERVICES**

Personal Services.....	106
Beauty Care Services.....	107
Hairdressing/Barbering.....	108
Domestic Services/Laundering .....	108
Entertainment and Recreational Services .....	120
Refuse disposal .....	121
Other Services .....	122
Government Services .....	
Public Administration.....	123
Health .....	124
Education .....	125
International Organizations/NGOs.....	126
Private Non-Profit Organizations.....	127

## Appendix 6-1

### Detailed Result of the PLS Regression Analysis to Determine Aggregate Housing Affordability Index

#### Sums of squares explained for X block

	no model	+Dim 1	+Dim 2	+Dim 3
s.s.	0.0000	4765.3132	5455.6429	3705.0440
% s.s.	0.0000	34.2188	39.1760	26.6052
Cum s.s.	0.0000	4765.3132	10220.9560	13926.0000
% Cum s.s.	0.0000	34.2188	73.3948	100.0000

#### Residual standard deviations for X block

	no model	+Dim 1	+Dim 2	+Dim 3
CTRY_ADQ	1.0000	0.9681	0.7991	0.0000
TOTAHHINC8	1.0000	0.2010	0.0990	0.0000
mTHOUEXPDDR	1.0000	0.9979	0.3870	0.0000
r.s.s.	13926.0000	9160.6868	3705.0440	0.0000

#### Cross-validation residual standard deviations for X block

	no model	+Dim 1	+Dim 2	+Dim 3
CTRY_ADQ	0.0000	0.9690	0.7953	0.0000
TOTAHHINC8	0.0000	0.2048	0.1041	0.0000
mTHOUEXPDDR	0.0000	0.9981	0.3959	0.0000
PRESS	13933.1218	9177.3050	3714.1210	0.0000

#### Sum of squares explained for Y block

	no model	+Dim 1	+Dim 2	+Dim 3
s.s.	0.0000	7824.8563	911.2638	420.2149
% s.s.	0.0000	84.2832	9.8154	4.5262
Cum s.s.	0.0000	7824.8563	8736.1201	9156.3351
% Cum s.s.	0.0000	84.2832	94.0987	98.6249

#### Residual standard deviations for Y block

	no model	+Dim 1	+Dim 2	+Dim 3
MHOUEXPDAFF4	1.0000	0.4469	0.1701	0.0959
SHELPOVITY4	1.0000	0.3385	0.2985	0.1353
r.s.s.	9284.0000	1459.1437	547.8799	127.6649

**Cross-validation residual standard deviations for Y block**

	no model	+Dim 1	+Dim 2	+Dim 3
MHOUEXPDAFF4	1.0002	0.4448	0.1717	0.0960
SHELPOVTY4	1.0002	0.3397	0.2996	0.1355
PRESS	9287.1012	1454.0193	553.4650	128.0824

**PRESS and Osten's F-test for significance of a dimension**

	PRESS	F	d.f. 1	d.f. 2	Prob > F
Dim 1	1454.019	25007.35	3	13926	<0.001
Dim 2	553.465	7551.47	3	13923	<0.001
Dim 3	128.082	15410.20	3	13920	<0.001

**Estimates of PLS regression coefficients**

	YLABMHOUEXPDAFF4	SHELPOVTY4
CXLAB		
Constant	-1529.3676	-5434.7744
CTRY_ADQ	-305.6589	-30588.7820
TOTAHHINC8	0.3031	0.9899
mTHOUEXPDDR	-1.0563	-0.9850

**Percentage of the Y variances explained**

	MHOUEXPDAFF4	SHELPOVTY4
Dim 1	80.0	88.5
2	17.1	2.5
3	2.0	7.1

**Percentage of the X variances explained**

	CTRY_ADQ	TOTAHHINC8	mTHOUEXPDDR
Dim 1	6.3	96.0	0.4
2	29.9	3.1	84.6
3	63.9	1.0	15.0

**X component loadings**

X	Dim 1	Dim 2	Dim 3
CTRY_ADQ	0.0242	0.4465	-0.8945
TOTAHHINC8	0.9794	0.1689	0.1108
mTHOUEXPDDR	-0.2006	0.8787	0.4332

**P loadings**

X	Dim 1	Dim 2	Dim 3
CTRY_ADQ	0.2632	0.5051	-0.8945
TOTAHHINC8	1.0283	0.1617	0.1108
mTHOUEXPDDR	0.0672	0.8503	0.4332

**Y component loadings**

Y	Dim 1	Dim 2	Dim 3
MHOUEXPDAFF4	0.6890	-0.9328	-0.4669
SHELPOVITY4	0.7247	-0.3604	0.8843

**Residual Sum of Squares from X Block**

Dim 1 9161 \*\*\*\*\*  
Dim 2 3705 \*\*\*\*\*  
Dim 3 0

Scale: 1 asterisk represents 137 units.

**Residual Sum of Squares from Y Block**

Dim 1 1459 \*\*\*\*\*  
Dim 2 548 \*\*\*\*\*  
Dim 3 128 \*\*\*\*\*

Scale: 1 asterisk represents 22 units.

**Cross-Validation Residual Sum of Squares (PRESS) from X Block**

Dim 1 9177 \*\*\*\*\*  
Dim 2 3714 \*\*\*\*\*  
Dim 3 0

Scale: 1 asterisk represents 137 units.

**Cross-Validation Residual Sum of Squares (PRESS) from Y Block**

Dim 1 1454 \*\*\*\*\*  
Dim 2 553 \*\*\*\*\*  
Dim 3 128 \*\*\*\*\*

Scale: 1 asterisk represents 22 units.

**Appendix 7-1**

**Showing the mean, median, and proportion of households within affordable in Nigeria by States**

<b>STATES</b>	Proportion of Households in Affordable housing group (%)	Mean Affordability	Median Affordability	Ranking Median Affordability
<b>Taraba</b>	24.29	-0.5984	-0.9081	<b>1</b>
<b>Kebbi</b>	23.33	-0.5805	-0.7190	<b>2</b>
<b>Bauchi</b>	23.73	-0.4522	-0.6324	<b>3</b>
<b>Yobe</b>	18.80	-0.4269	-0.5464	<b>4</b>
<b>Borno</b>	21.38	-0.3189	-0.4348	<b>5</b>
<b>Ekiti</b>	29.17	-0.1865	-0.4327	<b>6</b>
<b>Jigawa</b>	27.27	-0.1697	-0.4163	<b>7</b>
<b>Gombe</b>	31.10	-0.2218	-0.4063	<b>8</b>
<b>Kwara</b>	34.29	-0.3491	-0.4041	<b>9</b>
<b>Ogun</b>	29.45	-0.2858	-0.3912	<b>10</b>
<b>Sokoto</b>	19.39	-0.3338	-0.3907	<b>11</b>
<b>Katsina</b>	31.87	-0.2869	-0.3561	<b>12</b>
<b>Kano</b>	29.30	-0.0725	-0.3217	<b>13</b>
<b>Kaduna</b>	26.74	-0.3006	-0.3170	<b>14</b>
<b>Ondo</b>	32.60	-0.1534	-0.2756	<b>15</b>
<b>Plateau</b>	29.17	-0.2820	-0.2535	<b>16</b>
<b>Osun</b>	27.12	-0.1447	-0.2451	<b>17</b>
<b>Oyo</b>	36.28	0.0279	-0.1784	<b>18</b>
<b>Cross Rivers</b>	43.40	0.1734	-0.1188	<b>19</b>
<b>Zamfara</b>	43.90	0.2329	-0.1099	<b>20</b>
<b>Kogi</b>	45.71	0.0409	-0.1006	<b>21</b>
<b>Benue</b>	38.75	-0.0419	-0.0982	<b>22</b>
<b>Niger</b>	40.00	0.5227	-0.0698	<b>23</b>
<b>Adamawa</b>	46.09	0.2764	-0.0558	<b>24</b>
<b>Akwa ibom</b>	47.16	0.1774	-0.0538	<b>25</b>
<b>Ebonyi</b>	48.17	0.2412	-0.0307	<b>26</b>
<b>Edo</b>	46.81	0.2596	-0.0185	<b>27</b>
<b>Imo</b>	50.00	0.1610	-0.0066	<b>28</b>
<b>Enugu</b>	50.56	0.2538	-0.0033	<b>29</b>
<b>Abia</b>	52.71	0.2316	0.0168	<b>30</b>

<b>Nassarawa</b>	52.13	1.0344	0.0230	<b>31</b>
<b>FCT</b>	56.70	0.3519	0.0262	<b>32</b>
<b>Lagos</b>	54.97	0.2864	0.0805	<b>33</b>
<b>Bayelsa</b>	62.00	0.3352	0.1867	<b>34</b>
<b>Rivers</b>	63.29	1.1278	0.3273	<b>35</b>
<b>Anambra</b>	67.50	0.7508	0.4221	<b>36</b>
<b>Delta</b>	70.59	0.7771	0.4921	<b>37</b>

**Appendix 7-2**

**Showing the proportion of the unaffordable group, intensity of affordability problems and ranking in Nigeria by States**

<b>STATES</b>	Proportion of Unaffordable HHs (%)	Ranking of Proportion of Unaffordable group	Unaffordability Intensity	Unaffordability Intensity Rank
Taraba	75.71	<b>6</b>	-1.1075	<b>1</b>
Adamawa	60	<b>20</b>	-1.0204	<b>2</b>
Katsina	68.13	<b>15</b>	-0.996	<b>3</b>
Jigawa	65.71	<b>17</b>	-0.8875	<b>4</b>
Bauchi	76.27	<b>5</b>	-0.8804	<b>5</b>
Kebbi	76.67	<b>4</b>	-0.8756	<b>6</b>
Zamfara	56.6	<b>21</b>	-0.8017	<b>7</b>
Kaduna	73.26	<b>7</b>	-0.7449	<b>8</b>
Borno	70.83	<b>10</b>	-0.7261	<b>9</b>
Benue	61.25	<b>19</b>	-0.7156	<b>10</b>
Kano	70.7	<b>12</b>	-0.6874	<b>11</b>
Kwara	68.9	<b>14</b>	-0.6463	<b>12</b>
Sokoto	70.55	<b>13</b>	-0.6226	<b>13</b>
Yobe	81.2	<b>1</b>	-0.6197	<b>14</b>
Gombe	72.73	<b>9</b>	-0.6197	<b>15</b>
Lagos	45.03	<b>32</b>	-0.6134	<b>16</b>
Plateau	70.83	<b>11</b>	-0.6091	<b>17</b>
FCT	47.87	<b>30</b>	-0.6029	<b>18</b>
Ogun	80.61	<b>2</b>	-0.5566	<b>19</b>
Ekiti	78.62	<b>3</b>	-0.5561	<b>20</b>
Nassarawa	43.3	<b>33</b>	-0.5556	<b>21</b>
Niger	52.84	<b>26</b>	-0.5489	<b>22</b>
Cross_Rivers	56.1	<b>22</b>	-0.5298	<b>23</b>
Akwa_Ibom	53.19	<b>25</b>	-0.5197	<b>24</b>
Oyo	63.72	<b>18</b>	-0.5016	<b>25</b>
Rivers	36.71	<b>35</b>	-0.4695	<b>26</b>
Enugu	49.44	<b>29</b>	-0.4659	<b>27</b>
Ondo	67.4	<b>16</b>	-0.4643	<b>28</b>
Osun	72.88	<b>8</b>	-0.4541	<b>29</b>
Edo	51.83	<b>27</b>	-0.4313	<b>30</b>

Delta	29.41	<b>37</b>	-0.4196	<b>31</b>
Abia	47.29	<b>31</b>	-0.4043	<b>32</b>
Kogi	54.29	<b>23</b>	-0.4014	<b>33</b>
Bayelsa	38	<b>34</b>	-0.3915	<b>34</b>
Imo	50	<b>28</b>	-0.3765	<b>35</b>
Anambra	32.5	<b>36</b>	-0.3707	<b>36</b>
Ebonyi	53.91	<b>24</b>	-0.3652	<b>37</b>

Appendix 7-3

Showing the Between States Proportion of the Unaffordable Group in Relation the National Total

STATES	Population of the HHs Urban Housing Affordability Problems	States proportion of National Total (%)	Rank
Lagos	3802684	12.95	1
Kano	2645744	9.01	2
Oyo	2469844	8.41	3
Kaduna	1811967	6.17	4
Osun	1384765	4.72	5
Ogun	1345737	4.58	6
Katsina	1196574	4.07	7
Borno	1047625	3.57	8
Ondo	936513	3.19	9
Anambra	841864	2.87	10
Edo	757967	2.58	11
Ekiti	756910	2.58	12
Kwara	698725	2.38	13
Enugu	669125	2.28	14
Imo	642766	2.19	15
Kogi	627411	2.14	16
Rivers	596766	2.03	17
Bauchi	571035	1.94	18
Plateau	563321	1.92	19
Abia	502574	1.71	20
Ebonyi	486856	1.66	21
Niger	476325	1.62	22
Yobe	459030	1.56	23
Adamawa	427884	1.46	24
Benue	426407	1.45	25
Cross River	406474	1.38	26
Delta	399569	1.36	27
Sokoto	353155	1.20	28
Kebbi	307154	1.05	29
Gombe	274087	0.93	30

<b>Akwa Ibom</b>	252513	0.86	<b>31</b>
<b>Zamfara</b>	249823	0.85	<b>32</b>
<b>Bayelsa</b>	202921	0.69	<b>33</b>
<b>Nassarawa</b>	201861	0.69	<b>34</b>
<b>Jigawa</b>	198310	0.68	<b>35</b>
<b>FCT</b>	193796	0.66	<b>36</b>
<b>Taraba</b>	181679	0.62	<b>37</b>

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