

T.C.
BAHCESEHIR UNIVERSITY
GRADUATE SCHOOL
THE DEPARTMENT OF ARCHITECTURE

**FROM POLICY TO REALITY: INNOVATIVE APPROACHES TO
ADDRESSING HOUSING NEEDS IN NIGERIA**

MASTER'S THESIS
HUSSEIN MUSA HUSSEIN

ISTANBUL 2024

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ABSTRACT

FROM POLICY TO REALITY: INNOVATIVE APPROACHES TO ADDRESSING HOUSING NEEDS IN NIGERIA

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Master's Program in Architecture

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Nigeria is currently facing a housing deficit of about 28 million units which is projected to keep increasing due to the increase in population, rapid urbanization and inadequate housing provisions in the country. The focus on affordable housing is driven by the need to address the housing needs of the low-income earners in society, which make up a significant number in the population. It examines the role and importance of housing as well as the current state of affordable housing in Nigeria. This thesis then highlights the different housing policies which had been introduced by different governments in Nigeria's history and tries to understand why there is still a huge housing deficit. Case studies from affordable housing examples in developing and developed countries are studied and analyzed, then an innovative approach of using architecture to provide solutions for this housing deficit is formulated. The principle of formal incremental housing offers a cost effective and accessible solution for the low-income earners, this would be constructed using expanded polystyrene prefabrication which would allow for ease of construction of the basic structures in record breaking time. This thesis proposes a model of housing that not only provides shelter but also an affordable, cost-effective, approach to housing which would integrate into the cultural and social fabric of Nigeria's urban centers.

Key Words: Affordable Housing, Incremental Housing, Social Housing, Housing Policy, Housing Deficit

ÖZ

POLİTİKADAN GERÇEKLERE: NİJERYA'DA KONUT İHTİYAÇLARININ KARŞILANMASINA YÖNELİK YENİLİKÇİ YAKLAŞIMLAR

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Nijerya şu anda yaklaşık 28 milyon adetlik devasa bir konut açığıyla karşı karşıya. Bu açığın, ülkedeki nüfus artışı ve yetersiz konut koşulları nedeniyle artmaya devam etmesi bekleniyor. Bu tez, ülkedeki çeşitli konut türlerini, sosyal konutları, toplu konutları ve toplu konutları vurgulamaktadır. Sosyal konut konusuna odaklanması, nüfusun önemli bir kısmını oluşturan toplumdaki düşük gelirli kesimin konut ihtiyaçlarının karşılanması ihtiyacından kaynaklanmaktadır. Nijerya'da sosyal konutun rolü ve öneminin yanı sıra sosyal konutun mevcut durumu da inceleniyor. Bu tez daha sonra Nijerya'nın tarihinde farklı hükümetler tarafından uygulamaya konan farklı sosyal konut politikalarının altını çiziyor, ancak ülke hala büyük bir konut açığıyla mücadele ediyor. Gelişmekte olan ve gelişmiş ülkelerdeki sosyal konut örneklerinden örnek olaylar analiz edilmektedir. Bu konut açığına çözüm sağlamak için mimariyi kullanmanın yenilikçi bir yaklaşımı araştırılıyor. Resmi artımlı konut ilkesi, düşük gelirli kişiler için uygun maliyetli ve erişilebilir bir çözüm sunmaktadır. Artımlı konutlar, temel yapıların rekor sürede inşa edilmesini kolaylaştıracak genişletilmiş polistiren prefabrikasyon kullanılarak inşa edilecek. Bu tez, yalnızca barınma sağlamakla kalmayıp aynı zamanda Nijerya'nın kent merkezlerinin kültürel ve sosyal dokusuna entegre olan bir konut modeli önermektedir. Çalışma, kapsamlı literatür taraması, vaka çalışmaları ve anket anketini içeren niteliksel ve niceliksel analizlerden geçmektedir.

Anahtar Kelimeler: Artımlı Konut, Sosyal Konut, Konut Politikası, Konut Açığı



This paper is dedicated to my parents, Barr. Musa Hussein and Hajiya
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ABBREVIATIONS

CAHF	Center For Affordable Housing Finance in Africa
CBN	Central Bank of Nigeria
EPS	Expanded Polystyrene
FCT	Federal Capital Territory
FHA	Federal Housing Authority
FHFL	Family Homes Funds Limited
FMBN	Federal Mortgage Bank of Nigeria
FMHUD	Federal Ministry of Housing and Urban Development
FMWH	Federal Ministry of Works and Housing
GRA	Government Residential Area
HUD	Housing and Urban Development
IMF	International Monetary Fund
LCH	Low-Cost Housing
MDG	Millenium Development Goals
NDP	National Development Plan
NHF	National Housing Fund
NHP	National Housing Policy
NHTF	National Housing Trust Fund
NSHF	National Social Housing Fund
PMI	Primary Mortgage Institutions
SDG	Sustainable Development Goals
UN	United Nations
UNCHS	United Nations Center for Housing Studies

Chapter 1

Introduction

This chapter introduces the topic of the thesis and gives a brief description of housing in general and narrows it down to housing in Nigeria. It talks about rapid urbanization and how that is a factor to the problem of housing in Nigeria. It also includes the background to the topic, research questions, statement of the problem, methodology and aim of study.

1.1 Background

The rapid urbanization and population growth in Nigeria's cities have led to a significant increase in the demand for housing. This surge in demand poses a considerable challenge for policymakers and urban planners to develop effective strategies to provide adequate housing for the growing population. By examining the current policies, implementation challenges, and potential solutions, this research seeks to contribute to the discourse on addressing the housing crisis in Nigeria as well as providing suggestions as well as a mass social housing prototype.

The right to housing alongside food as a fundamental human requirement, crucial for a person's survival. More than just a physical structure, adequate housing is pivotal for maintaining the health and moral wellbeing of a populace fostering societal stability, enhancing productivity, and encouraging individual growth. The quality of housing can be seen in how the buildings look, the amenities included, the materials used for walls and roofs, the state of other parts of the building and the overall environment of the house. Housing as a final product is the result of the construction process which includes its structure, design, space, toilets, and other comforts. But housing as an ongoing activity includes the building process, planning for neighborhoods, broader city, and regional planning. Housing also covers building new houses, fixing up old ones and keeping them in good shape to meet new needs. The provision of housing isn't just about building new places to live; it is also about upgrading existing ones and making sure both new and old homes get to the people who need them (Agbola, 1998). The issue of housing is present in both developed and

developing countries whether up north or at the global south. Globally, the challenges of housing include not having enough homes, problems of governments not fully understanding or meeting people's housing needs, difficulties in getting land to build on, the expense of houses compared to their size and quality, and the steep interest rates on mortgages. In Nigeria, the housing shortage is mainly due to poverty, weak and inconsistent housing policies, rapid urbanization, the high prices of construction materials, and outdated construction methods.

Nigeria, as the most populous country in Africa has experienced rapid urbanization in recent decades. According to the United Nations it estimates Nigeria's population at 224.6 million ranking it as the 6th largest worldwide. With a growth rate of 2.41%, the population is expected to swell to 262.58 million by 2030. The Nigeria Multidimensional Poverty Index (2022) reveals that 51.4% of the population in Nigeria faces poverty in various forms, with poverty levels varying widely throughout the country. In 2022, Nigeria's Gini coefficient—a measure of income inequality—is 35.1%, placing it 100th out of 163 countries globally. The combination of rapid urban growth, high unemployment, and widespread poverty adds even more strain to an already overstretched housing sector (CAHF, 2023).

The Habitat Agenda appeals for better human settlements and shelter declares that everyone should have a right to housing that is safe, secure, healthy, accessible, and affordable (UN-Habitat 2001). The housing shortage in Nigeria has become more severe due to fast-paced urban growth. In 2010, Bison reported that there were around 10.7 million houses in Nigeria. However, the gap between housing needs and availability has been widening, jumping from a deficit of 7 million homes in 1991 to 14 million in 2010 (Moore, 2019). According to a 2018 World Bank report Nigeria would need to build about 700,000 new housing units every year over a span of 20 years to keep up with its growing population. This problem has led to more and more slums and makeshift homes popping up quickly, especially on the edges of the big cities.

Even with the significant contribution of the real estate sector, which accounted for 5.34% of GDP growth in the first quarter of 2022, the supply of housing remains insufficient. Although the federal government allocated \$1.13 billion for housing in the 2022 budget, it has been estimated that a staggering \$50.6 billion is needed to address the country's housing shortfall, which stands at 28 million units (CAHF, 2022).

According to the 2019 Nigeria Living Standards Survey, a significant portion of urban households in Nigeria resides in compound houses (35.3%), flats or apartments (28.8%), and detached houses (25.9%). The survey also reveals that over 49% of these urban households are renters, whereas only a minority of 32.5% own their homes in the urban localities (CAHF, 2023). The challenge of providing adequate housing supply in Nigeria is exacerbated by the soaring costs of building materials, a situation worsened by inflation and a fluctuating foreign exchange rate. For instance, the price of a standard 50kg bag of cement has more than doubled, rising from ₦2,650 in 2018 to ₦5,500 (equivalent to \$7) in 2023. Similarly, the cost of 10mm diameter reinforcement bars has shot up from ₦220,000 in 2018 to ₦420,000 (around \$552) in 2022. The Nigerian Building and Road Research Institute points out that Nigeria imports over 90% of its building and construction materials, which adds to the high costs. Industry experts continue to urge the federal government to consider the use of locally sourced building materials as a viable solution to reduce housing construction expenses. In response to these concerns, the federal government has been in discussions with leading cement manufacturers, prompting BUA Cement to announce a price cut of cement from ₦5,500 (\$7) to ₦3,500 (\$4.6).

The Nigerian government recognizes the importance of addressing the housing deficit and has implemented various policies and programs aimed at providing affordable housing for its citizens. The National Housing Policies were a significant step towards addressing the housing challenge. These policies aimed to increase the supply of affordable housing through various strategies, mortgage financing, and slum upgrading. However, despite these efforts, the housing deficit continues to grow, and most Nigerians still struggle to access decent and affordable housing.

One of the key challenges in translating housing policies into reality is the lack of effective implementation. While policies may be well-intentioned, their successful execution requires a comprehensive understanding of the local context, adequate funding, and efficient coordination among various stakeholders. In the case of Nigeria, the implementation of housing policies has often been hindered by corruption, inadequate funding, bureaucratic inefficiencies, and a lack of political will (Oyediran, 2019). These factors have contributed to the widening gap between policy intentions and actual outcomes.

When discussing housing in Nigeria's fast-growing cities it is crucial to consider various factors including land availability, financing mechanisms, construction techniques, and community participation (Oluwasola, 2003). Land availability is a significant challenge as urban land is often scarce and expensive. The high cost of land makes it difficult to develop housing projects particularly in prime locations. Additionally, the lack of clear land tenure systems and the prevalence of land speculation further complicate the issue.

Financing mechanisms play a vital role in making housing a reality. Traditional mortgage financing options are often inaccessible for low-income individuals due to high interest rates and stringent eligibility criteria. Therefore, alternative financing models such as microfinance, community savings schemes, and public subsidies need to be explored to ensure both affordability and accessibility for all segments of society. This points to the urgent call for a comprehensive strategy to tackle the housing issue head-on. The Federal Mortgage Bank of Nigeria (FMBN), tasked with providing mortgages to low-income earners through the National Housing Trust Fund (NHTF) faces operational and financial constraints that hinder its effectiveness. As a result, the small number of low-income individuals who do manage to own homes typically acquire land and build gradually as their finances allow. In contrast, those with higher incomes tend to purchase homes outright with cash or secure mortgage financing that is typically repaid over a period of up to 10 years (Akinlusi, 2007).

Construction techniques also play a crucial role in reducing the cost of housing. Innovative and sustainable construction methods, such as prefabrication, modular construction, and the use of locally available materials, can help lower construction costs while maintaining quality standards. These techniques can also contribute to the promotion of local entrepreneurship and job creation, further stimulating the economy (Akinlusi, 2007). Community participation and engagement are essential for the success of affordable housing projects. Involving the local community in the planning, design, and implementation stages ensures that the housing solutions meet their specific needs and preferences. Moreover, community participation fosters a sense of ownership and responsibility which then leads to the long-term sustainability of housing projects.

This thesis aims to critically analyze the existing policies, implementation challenges, and potential solutions for envisioning affordable social housing in

Nigeria's fast-growing cities. This research aims to propose an architectural solution to reduce the housing deficit in Nigeria by examining case studies, conducting interviews, and reviewing pertinent literature.

1.2 Problem Statement

The increased population growth and rapid urbanization in Nigeria's cities have led to a disturbing shortage of housing. Government policies which are meant to address this shortage often fail to translate effectively into practical housing solutions, these are hindered by limited funding, bureaucracy, and fraud. This challenge goes beyond policy and planning into the area of architectural design where there is a need for practical and cost-efficient housing prototypes. This thesis aims to not only examine the barriers in policy implementation but to introduce a prototype design for affordable housing. The goal is to create a model that is not just theoretically sound but also feasible, providing a tangible solution to the nation's affordable housing crisis.

1.3 Research Question

- In what ways can architectural design contribute to the practical realization of affordable social housing in Nigeria?
- How can community involvement and feedback be effectively incorporated into the design and implementation process of affordable housing projects in Nigeria?

1.4 Aim of study

This thesis aims to understand why numerous housing policies have been yet there is a significant housing deficit in the country. With the projection of an increase in the population in the future, there must be more attention on housing especially for the vulnerable which means access adequate and affordable housing for the population. The main goal is to produce a simple and low-cost housing design that's perfect for low-income earners in society. The thesis also aims to understand the problems with implementations and why these housing policies are not reaching the desired target. It

would also be proffering solutions to policy makers and stakeholders in the housing sector on ways to address the housing crisis in Nigeria. This study would also add to the fields of architecture and urban planning, especially in developing countries by offering practical solutions to the problem of housing deficit.

1.5 Methodology

This thesis starts with the introduction to housing and the nature of housing in Nigeria. The second chapter delves into the literature review on housing, urbanization, housing deficit, and the relationship between all of them is highlighted. The third chapter is the historical context of Nigeria, this is a general overview of the country which we would be discussing about. This research paper methodology employs a mixed-methodology approach, which would integrate qualitative and quantitative means in exploring the problem of housing in Nigeria. It adopts this mixed methodology approach by collecting numerous crucial information about the housing issue in Nigeria through indebt literature review through past academic writings, articles, and government data. Nigeria has had numerous housing policies in the past 5 decades, yet the housing deficit is still the highest in Africa, so we had to study all the previous housing policies and why they failed to have an impact. The research analyses case studies with different approaches to housing around the world to try and understand which best suits the country. There is also a questionnaire which is used in this research which helped us in understanding how some of the population thought about the current state of housing in Nigeria. The survey uses the simple random technique for sampling, respondents comprised of different age groups of both genders, from different occupation groups comprising of students, unemployed, government and state officials, and the private sector. At the end the data is analyzed using graphs to explain some of the results and trends gotten from the survey.

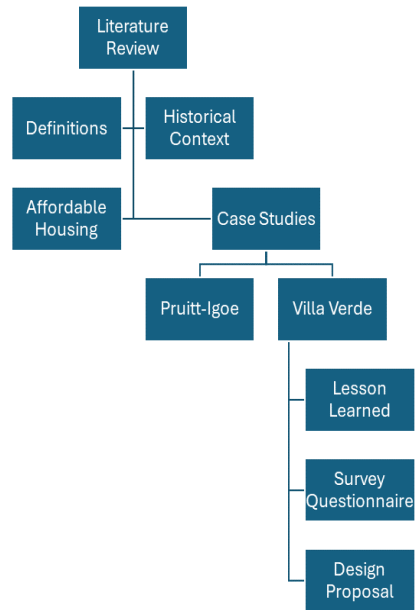


Figure 1. Flow Diagram of Thesis

Chapter 2

Literature Review

This chapter focuses on the various literature reviews relating to the topic of the thesis. It includes literature reviews on housing, urbanization, and incremental housing this would provide more enlightenment on these various topics.

2.1 Housing

Housing is universally recognized as an essential requirement for human existence and a fundamental condition for survival (Onibokun, 1983; United Nations, 1992; Salau, 1990). A dwelling serves as a refuge, offering shelter, comfort, security, and dignity. As an integral component of the environment, housing exerts a significant influence on the health, productivity, social conduct, contentment, and overall well-being of the community (Onibokun, 1998). While housing is commonly understood as a means of providing shelter, it holds much greater significance for certain individuals, serving as a prominent indicator of their standard of living and social status (Nubi, 2008). Furthermore, a house serves as the physical framework within which human, social, economic, and cultural resources are realized, enhanced, and harmonized.

The house as fundamental concept in housing is an economic good. It evolves from interaction of other economic variables that brings about its production. If those economic variables become unstable, or, continue to accelerate, the final product will follow the same direction, which in this context is the increase in the cost and consequently the price. The desirable goal of low-cost housing, therefore, rests on the economic fundamentals that are interacting to bring about the product. The achievement of the goal of low-cost housing is hindered as the economic variables remain on the path of increase.

Housing, as opposed to a mere dwelling, encompasses the creation of an environment that encompasses not only residential structures, but also places of employment, security measures, and necessary infrastructure such as roads, electricity, and clean water. Housing involves the provision of shelter, along with economic opportunities and social services (Idrus, 2008). The availability of adequate housing

serves as a measure of a country's level of development (Alao, 2009). Consequently, inadequate housing not only reflects poorly on a country's standard of living, but also hinders its economic progress. Therefore, the provision of housing is a key priority for all governments. Developed countries, for instance, typically engage in long-term planning that encompasses not only housing, but also the necessary infrastructure maintenance and development. The provision of suitable and sufficient housing has a positive impact on the economy, security, health, and overall quality of life for individuals.

The significance of housing is of such magnitude that during the 19th century and early 20th century, most efforts to address housing needs were primarily undertaken by governmental entities. However, a shift in approach has occurred since the latter parts of the 20th century, wherein global efforts to tackle the housing challenge have embraced the enabling approach. This shift has been fostered by Western governments and international organizations such as the United Nations (UN), the International Monetary Fund (IMF), the World Bank, and the UN-HABITAT. The involvement of these international organizations aims to amplify efforts and extend their reach to developing countries where housing issues are particularly severe (Daniel, 2014). Notable programs implemented by these organizations include Agenda 21, the Millennium Development Goals (MDG), and currently, the Sustainable Development Goals (SDG) of the United Nations (Olugbenga, 2017).

2.2 Affordable Housing

Affordable housing refers to housing that can be obtained by households without compromising their other essential needs. Housing affordability entails the ability to purchase a dwelling that meets the appropriate size and minimum physical and sanitary standards, while still having enough income to meet the minimum consumption requirements for other essential goods and services (Struyk, 2005). The United Nations sets a standard of at least 300 calories per day for an individual's minimum intake.

The issue of housing delivery and the resulting deficit in housing stock is further compounded by theoretical considerations surrounding perspectives on housing. It is crucial to recognize that an accurate diagnosis is essential for an effective prognosis.

The perceptions of various stakeholders including the government, individuals who own homes, private and commercial investors, policy makers, and researchers play a significant role in finding solutions to the rising costs of housing (Oyediran, 2019). Housing can be viewed as a social amenity or a commercial commodity. Given the ongoing dynamics of population growth and urbanization, investors in the housing subsector must be actively involved in providing housing options. For investors, a housing deficit represents an opportunity for investment if the returns are comparable to other investment options; otherwise, their funds will be directed elsewhere. The commercial perspective is a crucial factor that should not be underestimated when considering the housing deficit. This explains why investors in the housing sector are more inclined to focus on the high-net-worth market, which promises higher yields, rather than the low and middle-income segments of the housing market (Oyediran, 2019). Consequently, this may lead to the introduction of substandard housing that fails to meet sustainability criteria.

The term "appropriate size" in relation to a household dwelling simply means that the dwelling should be suitable for the members of the household. Therefore, the provision of adequate housing is crucial for any country, particularly Nigeria, as housing serves as a catalyst for the national economy. As highlighted by (Onibokun, 1983), the housing industry can stimulate the national economy. Housing represents a significant portion of a country's wealth, and households allocate a substantial portion of their income towards it. Consequently, housing has become a recurring topic in economic, social, and political discussions, often accompanied by intense emotional sentiments (Agbola, 1998).

2.3 Housing Deficit

The housing deficit, which refers to the imbalance between housing demand and supply, is intricately linked to the process of urbanization. In traditional rural settings, where housing standards can be met with affordable materials, there is rarely a shortage of housing (Ndubueze, 2009). In these settings, individuals in need of housing can typically afford to build with assistance from their peers and family members, as the economic system is not solely based on commodities. While in urban areas, the ability of families to acquire housing is influenced by numerous factors, including

income level, housing availability, and cost (Özdemir, 2016). The growth of housing demand in urban centers is not only driven by natural population growth, but also by rural-urban migration and economic activities that attract labor from other cities. Consequently, the supply of housing stock in urban areas is constrained by factors such as financing, land availability, building material costs, regulatory permits, and infrastructure. These determinants of housing supply limit the development of housing stock relative to demand, resulting in a housing deficit.

A housing policy serves as a framework that outlines actions and objectives, without necessarily providing specific strategies for achieving those objectives, apart from broad strategies (Emekçi, 2020). It sets guidelines and boundaries for discretionary actions undertaken by individuals tasked with implementing the overall action plans. Scholars in the field of housing have observed that certain housing policy decisions, whether explicitly stated or implied, reflect the historical efforts of governments, while others serve as statements of goals or prescriptions for the behavior of individuals or organizations. Consequently, policies are regarded as well-thought-out, meticulously articulated, and formally presented documents (Emekçi, 2020).

The housing deficit, primarily observed in urban areas, can be analyzed because of two distinct types of demands, resulting in the segmentation of the housing market. These demands consist of the market for rented accommodation, serving the needs of specific clientele such as starter families and temporary city workers, and the market for owner-occupied housing (Keivani & Werna, 2001). Recognizing this differentiation is crucial as it necessitates distinct strategies to address deficits in each segment, both from the perspective of demand and supply.

To eliminate the deficit in rented accommodation, it may be necessary to incentivize investors to increase the supply of rental properties, encompassing a diverse range of housing options spanning from affordable to high-end (Ndubueze, 2009). Conversely, closing the deficit in homeownership may entail providing support to families in accessing affordable financing options, as well as assisting developers in constructing affordable housing units. Consequently, the elimination of the housing deficit in Nigeria requires a comprehensive approach that incorporates measures targeting both the supply-side (investors and property developers) and the demand-

side (potential homeowners/families). This underlying principle can be identified in many past government policies aimed at addressing the housing deficit.

2.4 Housing Provisions

Housing provision encompasses a series of interconnected stages that encompass the initiation, production, supply, and maintenance of new and existing housing (Hecht, 2006). It involves considering the contextual factors of supply and demand, which are based on housing needs and requirements (Jolaoso, 2012). These terms are frequently utilized in housing literature and are often used interchangeably by different scholars. Therefore, a clear understanding of their definitions will aid in clarifying their usage in subsequent sections of this report.

Housing supply refers to the quantity of dwelling units available within a given housing market, region, or country (Carswell, 2012). On the other hand, housing delivery is an ongoing process that entails the production of a dwelling unit, its occupation by one or more households, and, if necessary, the rehabilitation or renewal of the building to prolong its lifespan (Onyeacholem, 1991). Lastly, housing demand pertains to the quantity of housing, in terms of both type and quality, that households desire and can afford to purchase or rent in the open market without any form of subsidy. Thus, housing demand takes into account both individual preferences and financial capabilities (Golland, 2008). Housing need refers to the current insufficiency or inadequacy of housing to accommodate households who are unable to afford suitable housing in the open market. This includes individuals who are living in unsuitable or inadequate housing and cannot resolve their situation without assistance (PSRSHM, 2008).

On the other hand, housing requirement encompasses both housing demand and housing need. It represents the quantity of housing necessary for all households to have access to suitable housing, regardless of their ability to pay (Golland & Blake, 2004). In simpler terms, it refers to the amount of housing needed to accommodate the population according to the minimum standards defined by the Government or local policies. Housing provision modes encompass various methods by which residential units are created, developed, and made available to individuals (Keivani & Werna, 2001; Golland & Blake, 2004; Harris & Mathews, 2009). In developed nations, these

modes primarily involve government intervention, housing associations, and private developers due to the presence of a well-structured system (Golland & Blake, 2004; Harris & Mathews, 2009; McNelis, 2014). Conversely, in developing countries, housing provision modes can be classified into conventional and unconventional approaches. The conventional approach to provision entails the establishment of formal and regulated organizations, such as government/public sector entities, private sector developers, and cooperatives. Conversely, the informal approach relies on individual endeavors within an unstructured developmental context, often resulting in the formation of squatter or slum settlements (Keivani & Werna, 2001). Some of the various housing sectors include:

- **Private Sector:** Housing provision through the private sector involves individuals, property developers, or collaborations between developers and house or landowners as the initiators (Tsenkova, 2011). This mode of housing provision is predominantly speculative, although there are exceptions when non-governmental organizations are involved. The products of this mode can range from individual residential buildings to large-scale speculative developments. In many developed countries, this mode contributes a significant proportion of the overall housing provision, ranging from approximately 20 to 60 percent (Okpala, 1992; Keivani & Werna, 2001). For instance, in the United Kingdom (UK), the private sector plays a major role in housing construction and management (Mullins, 2006). Similarly, in many developing countries, the private sector primarily contributes to the housing stock, primarily benefiting middle and high-income groups (Ndubueze, 2009). Therefore, it serves as a primary means of meeting housing demand.
- **Joint Venture:** In this mode of housing provision, a collaborative effort is established between public authorities and private firms. The government provides suitable land and tax incentives, while the private firms assume the responsibility of financing the construction of the dwellings. These private enterprises engage in this partnership with the understanding that they will be able to sell a predetermined portion of the projects on the open market, while offering the remaining units to a specified group of beneficiaries at agreed-upon prices (Madden, 2011).

This joint venture between public authorities and private firms serves as the primary method of housing provision in many developed countries, such as the United Kingdom and the United States. However, an increasing number of developing countries are also adopting this approach to address their housing needs. This strategy of provision serves to fulfill the demand for housing.

- **Public Sector:** In this mode, government housing agencies take direct action to initiate, organize, and manage housing development for the general population (Doherty, 2004). The government, through these agencies, provides shelter for middle and low-income groups by either directly constructing housing units or implementing aided self-help and settlement upgrading programs (UN-Habitat, 2011). However, public housing provision in developing countries accounts for only around 10 percent of the total housing stock, and in some cases, it represents one-third of the dwellings provided (Werna, 2001). In certain developing countries in South Asia and Africa, such as South Africa, Ghana, and Nigeria, this mode of housing provision has not achieved significant success over the years. Nevertheless, efforts to address housing needs, particularly through the provision of low-cost housing, are continuously evolving.

2.5 Incremental Housing

Incremental housing is a step-by-step process of housing development that starts with a basic core house and is progressively expanded in size and quality over time, tailored to the owner's needs and resources (Goethert, 2010). This method provides homeowners with significant flexibility to enlarge and improve their homes in response to changes in family size, structure, and financial capabilities. The innovation of this housing approach lies in its process rather than the final outcome (Hamid and Elhassan, 2014).

In the rapidly growing cities of developing countries, informal building and expansion, often referred to as the "pay-as-you-can-afford" process, is a common

practice among low-income sectors. Families typically begin with core houses and gradually transform them into quality 'middle-income' housing, given sufficient time and resources. Incremental housing is not merely about improving quality piecemeal but also about adding space, allowing room-by-room growth toward a household's dream home (UN-World Urban Forum, Rio de Janeiro, 2010).

The concept of core housing is rooted in John Turner's work on self-help housing, which greatly influenced World Bank and national housing policies in the 1960s and 70s. Turner championed self-help housing as a viable solution for low-income groups, advocating for the use of local systems, appropriate technology, and community-sourced materials, labor, and skills. He promoted integrating formal and informal housing development, arguing that self-help building could effectively address low-income housing needs by allowing for gradual, affordable construction that adapts to changing household priorities and incomes (Turner, 1972).

Affordable housing remains a significant challenge in developing countries, with demand far outstripping supply. Following political independence in the late 1950s and 1960s, African governments began to intervene in urban housing markets, although often on a less ambitious scale than in Asia and Latin America. For example, Kenya's first independent government established a Ministry of Lands and Settlement, delegating urban housing responsibilities to municipal governments. In Nigeria, slum clearance and public housing delivery were managed by local governments or local development authorities (Wakely, 2014). However, public housing agencies' inability to meet construction targets and maintain housing led to the need for government subsidies to reduce costs and integrate housing access with broader social policies for urban poverty reduction (Wakely, 2014).

Incremental housing offers several advantages and presents some challenges that need to be evaluated for sustainable development integration. Bredenoord et al. (2014) highlighted several benefits, including, allowing households to prioritize facilities and quality according to their financial capacity, making it a viable option for meeting housing needs. Being cheaper than formal construction by avoiding corporate overheads and profits, and utilizing local resources, including owner labor. Likely using appropriate technology and locally available systems and resources, stimulating growth in local small-scale manufacturing and materials supply, thereby boosting the local economy. Requiring incremental financing with relatively small loans, often with

shorter repayment terms, unlike complete dwelling construction, which necessitates large, long-term loans. Enabling owners to treat their homes as investments, continuously investing in extensions and upgrades to meet evolving needs. Offering a bottom-up approach that reflects the needs and capabilities of the poor, guiding government intervention (Bredenoord et al., 2014).

The operational challenge of incremental housing lies in devising the most efficient methods to ensure affordability through coordinated planning and financial structuring, targeting programs to reach the poorest households. Effective implementation of incremental housing requires productive collaboration among local residents, public utility companies, central and local governments, financial institutions, civil society organizations, and beneficiary households to pool resources and reduce unit costs, making housing affordable for low-income families (Green and Rojas, 2008).

The concept of incremental housing has been widely implemented in three main forms: site and service schemes, self-help settlement upgrading, and core housing. During the 1970s and 1980s, these approaches were considered effective mechanisms for providing housing to low-income groups in developing countries, earning support from several international organizations (IHC, 2008). Notably, the World Bank launched a series of site and service projects across many developing countries before shifting its focus to squatter-settlement upgrading programs. Broadly, self-help housing approaches are categorized into three types: user-initiated (without state aid), state-supported (settlements upgrading), and state-initiated housing programs (Harms, 1992). These distinctions are explored in detail below.

Unaided self-help housing. This form of self-help usually begins with households acquiring land, either legally or through illegal squatting or unregistered subdivisions (Harms, 1992). In this user-initiated process, low-income households take the initiative to gradually improve their dwellings without any government assistance. Often, this method results in low-quality housing and involves illegal land acquisition and construction outside building regulations and permits (Harms, 1992).

State supported self-help (settlements upgrading). In this approach, the process is initiated by the end users, but the local municipality or state provides support to upgrade the settlements to meet minimum standards. This support typically includes infrastructure provision, technical assistance, and financial aid for upgrading (Harms,

1992). This form of self-help requires community participation, often facilitated by Community-Based Organizations (CBOs) and Non-Governmental Organizations (NGOs). According to Harms (1992), effective implementation necessitates a special working relationship between professionals and non-professionals. Support may also come through policies that ensure secure land tenure for low-income households. Recently, there has been a resurgence in state-supported self-help housing, with UN-Habitat advocating that assisted self-help housing is the most affordable and effective way to provide sustainable shelter for low-income groups.

State initiated self-help housing. This form of self-help housing is typically initiated by local or national governments or international agencies. The implementation of these programs requires active participation from the beneficiaries. Notable examples include the core housing and site and service housing concepts promoted by the World Bank and other international organizations during the 1970s and 1980s (Harms, 1992). Programs of this nature are often initiated, planned, and regulated by the implementing organizations or multilateral entities (Napier, 2005).

Chapter 3

Historical Context and Housing in Nigeria and Around the World

This chapter introduces Nigeria and gives an overview of the demography and urbanization of the country. It briefly narrates the timeline from when Nigeria got its independence to the current government. This would be important when we discuss the various housing policies introduced over the course of time. The chapter also highlights housing, affordable housing, and public housing Around the world and in Nigeria. It presents a comparative analysis of two significant case studies in social housing: the Pruitt-Igoe complex in the United States and Villa Verde in Chile. Through these case studies, we will explore how differing strategies in policy formulation and implementation can profoundly affect the social fabric of communities and the lives of residents.

3.1 Historical Context

3.1.1 Brief History of Nigeria.

Nigeria is a country located in the western part of Africa, it is bounded to the east by Chad Republic and Cameroon, to the north by Niger Republic, Benin republic to the west and to the south it is bordered by the about 800 kilometers of the Atlantic Ocean. Nigeria is one of the largest countries in Africa and the 32nd biggest in the world, it has a total land area of 923,770 square kilometers. It is made up of 36 states and the Federal Capital Territory, and 774 local governments. It is subdivided into 6 geo-political zones region namely south-east, south-west, south-south, north-central, north-east, and north-west.

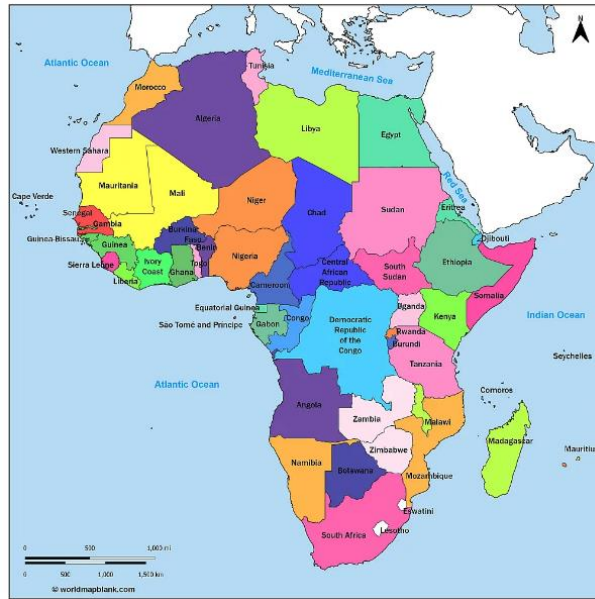


Figure 2. Map showing the Continent of Africa and all its countries.
(World Map Bank, 2023)

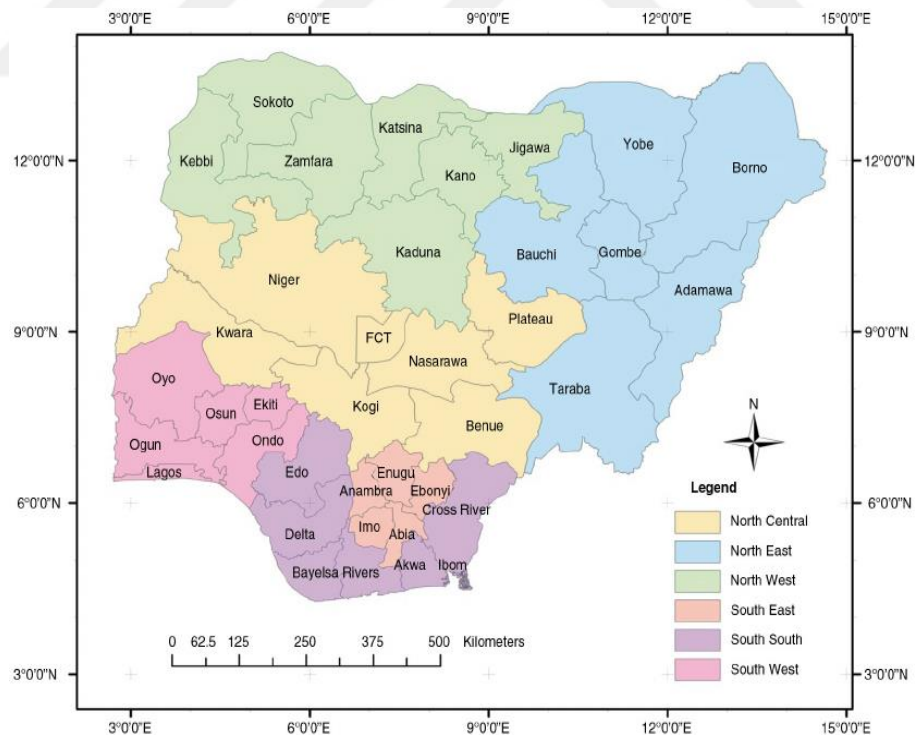


Figure 3. Map of Nigeria showing 36 states and regions.
(Olanike Adedaji, 2015)

The Country operates under a presidential system of government which is made up of three distinct branches: the National Assembly, the Executive, and the Judiciary. These branches are designed to oversee and balance each other, ensuring checks and balances in governance (Elaigwu, 2009). These regions - the North, Southeast, and Southwest - are predominantly associated with Nigeria's three major ethnic communities: the Hausa-Fulani in the North, the Igbo in the Southeast and the Yoruba in the Southwest. Beyond these primary groups Nigeria is a mosaic of over 300 ethnic groups including many minority tribes.

Before the onset of colonial rule, Nigeria was home to over 200 individual ethnic groups, each functioning as its own separate community with unique histories and cultures (Onyanta, 2007). During the British colonial reign, they governed Nigeria as two separate entities: the Northern and Southern Protectorates. In 1914, these protectorates were amalgamated for administrative cost-saving reasons, forming provinces in the process. Then in 1939 the Southern Province was split into the Eastern and Western Provinces. The British implemented distinct administrative systems for these regions, which resulted in varied developmental of the different regions (Onyanta, 2007). The colonial era in Nigeria, which came about on the 19th century greatly influenced the development of the country. The British colonial government introduced several systems of management, financial administration as well as urban development. During that period the government developed infrastructure that would mainly be of their economic benefits such as roads, railways, and ports. These were to facilitate the extraction and exportation of raw materials. This led to an uneven growth and development across the country.

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

Table 1.
Showing Nigerian States and The Geo-Political Regions.

In 1960, Nigeria gained its independence from the British Empire and initially embraced the British style of government. Abubakar Tafawa Balewa took the reins as the country's first Prime Minister and Nnamdi Azikiwe as the Governor General. Nigeria embarked on a path of rapid development and modernization. This saw significant investments in infrastructure, education and healthcare all around the country. Urban centers began to grow due to industrialization and economic diversification. However, this system didn't last long as there was a military coup in 1966 which would be the first coup out of a few. There was a succession of military governments who ruled the country for 29 out of the 33 years till 1999 when democracy was fully restored. (Okunola, 2020)

Before the 1970s, agriculture was Nigeria's major source of revenue, there was vast arable lands in the north which was able to feed the nation and export. After the oil boom in the 1970s, the country became the wealthiest in Africa and all attention shifted from agriculture to oil. This has resulted in the migration of people from rural areas to cities in search of greener pastures. Nigeria is experiencing rapid urbanization with nearly 50% of the population living in the urban areas compared to 38% in 1993 (Ojebode, 2016).

3.1.2 Demography of Nigeria.

Nigeria is the most populous country in Africa and the 6th most populated country in the world with a population of more than 220 million people. The United Nations projects that by 2050, the population of Nigeria would be about 400 million. According to the Economic Trading Report of 2016, it can be observed that approximately one individual out of every 43 individuals worldwide is of Nigerian descent. The Nigerian population has experienced a significant increase over the years with the population rising from 143.3 million in 2006 to 182 million in 2016 and 223 million in 2023. This population growth has consequently affected the population density per square kilometer, which has risen from 149.3 in 2004 to 180.3 in 2012 and 246 in 2023 (UN, 2023). This rapid population growth is a double-edged sword: while it presents opportunities for economic expansion and a large labor force, it also strains existing infrastructure and services, especially in urban areas. The growth in population and density has placed considerable pressure on the demand for housing. Regrettably, the supply of housing has been unable to meet this demand, resulting in the proliferation of slums and substandard accommodation throughout the country.

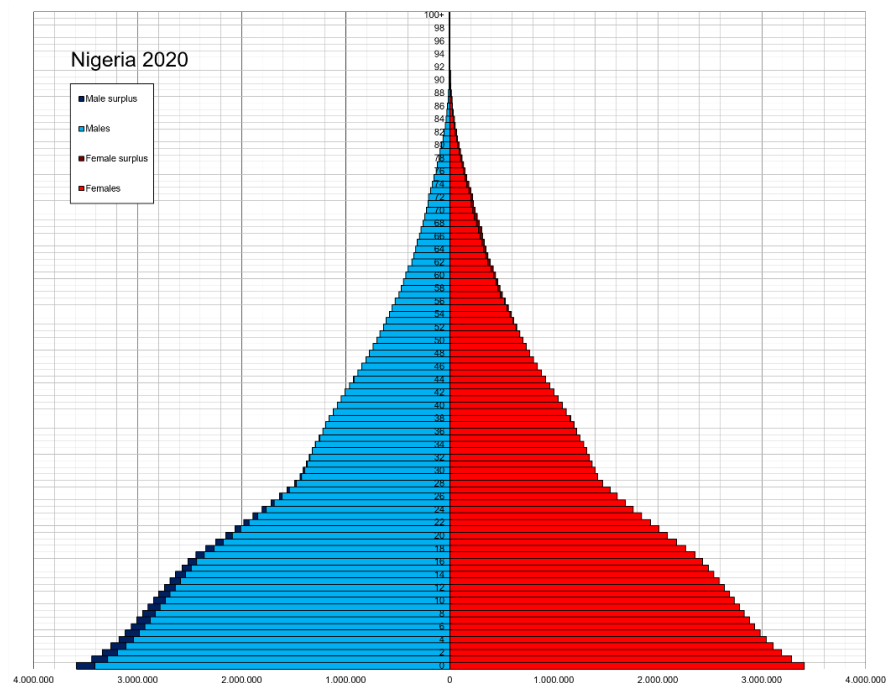


Figure 4. Nigeria single age population pyramid 2020

(USCBI, 2019)

3.1.3 Urbanization in Nigeria

The process of urbanization is the shift or movement of the populace from rural to urban settings. This constitutes a pivotal social transformation observed globally. This transition is typified by the relocation of individuals from rural regions to metropolitan centers with the resulting demographic growth being synonymous with urban migration (Okunola, 2020). According to a United Nations report, the global urban populace has experienced a quadruple increase since the mid-20th century. Significantly, urban centers within the developing countries are contributing to over 90 percent of this urban expansion.

Demographic estimated that in 2007, the world urban population had equaled that of the rural population for the first time ever. The upsurge of the urban demographic is expected to continue rising, with expectations of reaching the 5 billion marks by 2030. Predominantly, this surge is foreseen within the developing regions of Asia and Africa, which are projected to host the largest urban populations. Contemporary assessments reveal that urbanites constitute more than half of the global population (UN, 2018). It is projected that by the mid-21st century, cities will be the chosen domicile for 70 percent of the global population, with towns and cities in Asia and Africa experiencing the most substantial growth. As a result, urban populations in the developing world are expected to rise at an average annual rate of 2.3% from the year 2000 to 2030.

The challenges derived from rapid urbanization and the unchecked growth of cities in Nigeria are significant. Urban areas are expanding without proper planning, resulting in millions of residents living in substandard and inhumane conditions, primarily within slums and makeshift settlements. Usually, these slums are situated on unauthorized vulnerable lands like flood-prone areas where housing and essential amenities are severely lacking. The living conditions in these dire environments can be attributed to a combination of poverty and a limited awareness of the associated risks among the population.

Informal housing sector primarily drives urban land and housing provision, contributing to approximately 20 to 40% of the city's physical growth. These areas often lack essential infrastructure and are predominantly inhabited by the poor.

Because of their informal nature, these housing settlements don't attract formal financial institutions. Thus, mortgages typically avoid financing in these regions (Oyelaran, 2017). Consequently, housing in these areas, whether for rental or ownership, is primarily funded through personal savings, phased building, and other non-traditional methods. Furthermore, the absence of effective advocacy and the inadequacy of programs aimed at promoting organized urban development have exacerbated the existing issues. According to the 2008 report from the United Nations Human Settlements Program (UN-HABITAT) titled "The State of African Cities," the country has witnessed significant instances of urban sprawl and the emergence of urban corridors in various regions, including but not limited to the Lagos-Ibadan, Lagos-Otta, Lagos-Epe, Kano Megacity, Karu-Keffi axis, and Onitsha-Ogbaru-Awka corridors (Ojebode, 2016).



Figure 5. Urbanization in the largest cities in Nigeria.

(UN DESA, 2018)

Numerous towns and cities, including those serving as the capitals of states and local governments, suffer from inadequate planning, rendering them ill-suited for their administrative roles. It is imperative to confront the unfavorable situation of allowing urban areas to expand without the implementation of comprehensive land use plans and development control measures as crucial tools and guiding principles for fostering sustainable human settlements planning and management. One glaring issue lies in the proper planning and provision for transportation within these cities. Intra-city mobility

is severely impeded due to the absence of proper planning and efficient land use management. The transportation system is marked by significant deficiencies and structural flaws. Numerous Nigerian cities are divided into multiple local governments, which hinders their effective governance (Jebode, 2016). There exists neither a legal framework nor a practical system for urban governance in place.

Without competent and accountable urban governance, the potential contributions of cities to national economic and social development are at risk of being squandered. Urbanization is not only an inevitable trend but also a vital driver of economic growth. Nigerian cities, like their counterparts worldwide, serve as significant engines of progress and hubs of political activity. The ramifications of Nigeria's rapid and uncontrolled urbanization are profound, impacting not only the residents of cities and towns but also the broader Nigerian economy. This phenomenon has far-reaching consequences for political stability, social cohesion, and environmental sustainability. Prioritizing the development of cities is therefore pivotal in achieving socio-political and economic growth, as well as ensuring environmental sustainability within the country (Okunola, 2020). Furthermore, cities play a crucial role in the national human settlements system. Thus, it becomes imperative to reevaluate the interconnectedness between the development of rural areas and rural populations and the growth of urban areas.

3.2 Housing in Nigeria and Around the world

3.2.1 Affordable Housing in Nigeria

Access to affordable housing is a fundamental right that everyone should be able to enjoy (UN-Habitat, 2008). Simply, affordable housing refers to accommodation that is either for rent or purchase, which are supposed to be affordable and meant for households with limited financial means to secure private housing (Milligan, 2009). Nonetheless, the term "affordable housing" sparks confusion and diverse interpretations. Its definition varies across various platforms, including public housing policies, land-use planning, assistance programs, and academic research includes home ownership, private rentals, and public rentals" (HLGPM, 2005). The affordable housing idea recognizes the needs of the population whose incomes are not enough or do not even have any to allow them access to adequate housing (Milligan et al, 2004).

Affordable housing should not just be cost-effective but also incorporate essential amenities for the well-being, safety, and hygiene of its residents. According to the United Nation's guidelines from 1991, such housing must ensure residents have consistent access to vital resources, which would include clean water for drinking, energy sources for cooking, heating, and electricity, as well as sanitation, washing facilities, and adequate means for food storage and waste disposal. Also, the location of affordable housing is very important; it should be situated in areas that provide easy access to job opportunities, medical facilities, educational institutions, childcare centers, and other vital community services (United Nations, 1991).

Income plays an important role in determining housing affordability. One common method used to assess housing affordability is by looking at the percentage of a household's income spent on housing-related expenses (Chris, 2005). For housing to be deemed affordable, it shouldn't take up so much of a family's income that they can't afford other essentials like food or medical care (UN-Habitat, 2011). It's crucial to note that "affordable" doesn't equate to "inferior quality" (Walsall Council, 2008). Generally, affordable housing should be in a livable state, equipped with fundamental facilities, and be situated in areas that grant easy access to essential services, ensuring a reasonable quality of life. This includes proximity to schools, healthcare institutions, and convenient transportation to workplaces (Glaeser and Gyouko, 2013).

According to the minister of Power, Works, and Housing "there has been a continuous debate as to whether the houses should be "affordable", whether it should be "low cost", whether it should be "social" or whether it should be "mass housing". When we consider the term "mass housing", we recognize it implies the need to amplify the production, delivery, and supply of housing. We grasp its significance and are committed to addressing it. However, when it comes to terms like "affordable", "social", or "low-cost", we believe it's essential to understand our community's perspective. Thus, we plan to carry out a national survey, seeking feedback from our citizens about their expectations regarding housing costs and evaluating the feasibility of meeting those expectations." (Fashola, 2015). For countless Nigerian families, the quest for decent and affordable housing remains an elusive dream. Various research efforts, including those by Awotona (1990), Salau (1992), Ikejiofor (1999), Ndubueze, and Finmark Trust (2010), underline the glaring gap between the supply and demand for affordable housing. The Center for the Study of Social Policy points out that this

scarcity can lead to overwhelming rent costs, overcrowding, subpar living conditions, and pervasive housing insecurity for many Nigerians (CCSP, 2011).

Affordable housing isn't merely a structure but a backbone to a nation and its populace. In its absence, individuals face financial hardships, the bonds of families and communities weaken, employment opportunities diminish, the economy falters, and environmental degradation intensifies (Disney, 2007). This deficiency in affordable housing isn't just a minor glitch; it's a profound and pervasive issue across Nigeria. Recognizing its significance, the provision of good quality, reasonably priced housing for lower to middle-income households is a key objective established in the national housing policy (NHP, 2012). Many of these families have limited financial independence, making the dream of owning a home seem distant. A more feasible approach for them might be to enlarge the residences they currently occupy, often shared with other familial units, typically close relatives (UN-Habitat, 2011).

To significantly bolster the national housing stock, the United Nations (2006) emphasized the need to galvanize, structure, and drive the housing sector in alignment with the overarching framework of the housing delivery system (UN-Habitat, 2006). The prevalent mode of development in the nation, characterized by private developers focusing on upscale housing catering mainly to the affluent minority, is driven largely by profit motives rather than addressing the needs of the broader population (Adedeji and Olotuah, 2012). Given that many of these developers rely on short-term financing that demands quick returns, the resultant housing prices are often steep, making them inaccessible to the lower to middle-income brackets that are most in need (Adedeji and Olotuah, 2012).

3.2.2 Social Housing in Nigeria

Social housing is a general term used to describe rental housing which may be owned or managed by the state or organizations with the sole purpose of making it available for low-income earners. Social housing is sometimes used interchangeably with public housing, and it represents a housing arrangement where the property is owned by the government which could be at state or local government level. Basically, social housing involves housing options that are structured and funded in a manner that allows individuals with low or no income to have access to them while still being able to meet other essential requirements. Social housing is characterized by its

emphasis on affordability and accessibility. This represents a critical instrument in addressing housing inequalities and alleviating the burdens of housing inadequacy.

The introduction of the social housing scheme emerges as a response to the historical oversight of this demographic in past housing programs (Ihuah, 2015). Evidently, social housing is emerging as a viable solution for the government to ensure that even the less privileged in society have proper shelter. Social housing can be seen as a collaborative effort involving the government and potentially the private sector to offer incentives for the less privileged in society to have access to housing. The term "less privileged" typically refers to those who have no source of income, those who earn very little or those that lack the means to independently secure housing due to factors such as disabilities, age, unemployment, or poverty. However, in this context, it specifically pertains to Nigerians in the lower income range, typically salary grade levels 01-07 in the public sector or an equivalent income in the private sector, who contribute 2.5 percent of their income to the National Housing Fund (FMHUD, 2006). It's worth noting that individuals accessing housing through this program are expected to have a stable income, whether formal or informal, to meet periodic housing payments (Umoren, 2006). The origins of state-sponsored housing in Nigeria date back to the construction of Festac Town in Lagos, which initially accommodated the attendees of the 1977 World Black Festival of Arts and Culture (Ebie, 2012). This development featured various types of housing units including high-rise apartments, semi-detached houses, terraced houses, and bungalows. The project also had different social amenities such as kids' playgrounds, police stations, religious centers, and educational institutions. Essential utilities were also considered with electricity, telephone services, and sewage systems (Ihuah, 2015).



Figure 6. Festac housing estate in 1977.

(Culture crush)

Despite these comprehensive developments, upon completion and during the initial allocation phase in the late 1970s, it became clear that the housing was unaffordable for the various income groups it was intended for. The Federal Housing Authority responded by suggesting that certain costs such as land acquisition and infrastructure should be subsidized by the state to ease the financial burden on buyers (Ebíe, 2012). The proposed financial model included a 20-year amortization period for mortgage payments with a nominal interest rate below 5% annually, which meant buyers would only need to cover the basic costs of the building's structure. This framework, once approved by the military government, was replicated across Nigeria's then 12 states, and continues to influence housing policies in all 36 states today. Festac Town stands as a pioneering social housing project in Nigeria, with a significant impact on the socio-economic fabric of the country. It introduced a reformed allocation system that enhanced the housing market and mortgage sector, expanding housing accessibility for low-income populations (Ebíe, 2012).

The Nigerian National Housing Policy of 2011 was established to address the housing needs of the nation's lowest income earners. Recognizing that government intervention is crucial, the policy outlines the use of subsidies to make housing more affordable and accessible. The overarching goal is to enhance the well-being of the

poor and vulnerable groups such as women, single mothers, the elderly, and the disabled by providing them with adequate housing, thereby ensuring dignity and social stability. The policy aimed to tackle the substantial housing deficit, which stood at an estimated 16-17 million units in 2011, by creating opportunities for government bodies to demonstrate their commitment to social housing. It seeks to promote socioeconomic development, job creation, investment, and the utilization of local building materials and technologies (Ebie, 2012).



Figure 7. Social houses constructed by the Ministry of Works in Zuba
(FMWH, 2023)

Strategic actions include completing abandoned housing projects, providing affordable serviced plots, and addressing finance issues to aid no-income and low-income earners (Ihuah, 2015). The policy encourages long-term mortgage solutions, the development of micro-enterprises within housing schemes, and the involvement of NGOs and other organizations in the construction of social housing. There's an emphasis on making a variety of architectural designs available to meet diverse cultural needs, with concessions on fees (Ebie, 2012). The policy also supports the establishment of housing cooperatives and associations, community urban upgrading programs, and the allocation of land for low-income housing.

Despite these efforts, the policy has been critiqued for focusing too much on housing production without a sustainable framework for the maintenance and management of these social housing estates post-construction (Ihuah, 2015). Sustainable development within the housing sector requires a model that ensures the

continuous provision of affordability, safety, accessibility, comfort, and security of tenure.

3.2.3 Public Housing in Nigeria

Despite the government's focus on mass public housing in the past, private housing sector has consistently played the leading role in building houses in Nigeria. Public housing initiatives, even at their peak, couldn't significantly influence the urban housing market either by bringing down rental prices or kickstart a downward trend in the housing market (Ozo, 2009). The National Housing Policy of Nigeria recognized that the private sector supplies more than 90% of the country's housing (Federal Government of Nigeria, 2006). When we talk about the private sector in this context, we're referring to a mix of individual homebuilders, small construction companies, commercial property developers, real estate agencies, financial institutions, and business organizations that invest in residential properties to earn profits. This means that the term 'private sector' in this discussion includes nearly all housing providers, except for those that are operated by government entities. The major actors in this sector include:

3.2.3.1 Individual houses.

Within Nigeria's urban housing sector, individual and family initiatives play the most significant role in the private provision of residences. According to the FMHUD (2012), this sector has consistently been the dominant force in the Nigerian housing sector, accounting for over 90 percent of the country's housing stock, as acknowledged by the NHP report. While these individual efforts predominantly supply rental housing in urban locales, the driving force behind them is self-interest, resulting in a wide spectrum of housing catering to various income levels, from luxurious homes to more modest and even informal, substandard accommodations. Most urban households belong to the low to middle-income bracket, and it is within these sub-markets that individual contributions are most evident. Many homeowners rent out parts of their residences—additional apartments or rooms—to recover their investment costs and boost their income. It's common for these property owners to expand their ventures, constructing and renting out more houses for profit, especially in lower-income and informal settlements. Often, these landlords started in these areas before relocating to

more affluent neighborhoods. The approach of funding home ownership through personal savings and individual efforts has its roots in traditional rural housing methods, which have significantly shaped similar urban practices (UNCHS, 2017).

3.2.3.2 Private profit firms.

The significance and size of the private sector in Nigeria's housing development have been expanding, particularly in the last few years. This sector includes a range of developers: traditional large-scale construction companies, multinational corporations, major local banks, and small to medium-sized property development firms. They are known for undertaking significant housing projects, such as urban residential developments, they include companies like Dantata & Sawoe, Jide Taiwo & Co, CmB Building Limited, Ochacho Homes among others. These firms predominantly focus on crafting premium residential housing in affluent areas of major cities like Lagos, Abuja, and Port Harcourt, often on land that is provided and prepared by the government. As a result, they primarily serve the upper echelons of the private housing market and are engaged in creating housing for corporate staff as well. Real estate in Nigeria is one of the biggest sectors in the Nigerian economy. Gated communities, which Nigerians call 'estates' are now the fastest growing types of housing in Nigeria. In Abuja alone there are more than 200 estates, they are very popular because they offer a wide range of benefits for the population who can afford it. However, with the high cost of land, these estates are typically more expensive thereby only the middle- and high-income earners can afford them. They are very sought after by those who can afford it because they offer security, modern homes and a sense of community for the residents. Gwarimpa housing estate which is the single largest housing estate in west Africa with a size of 1090 hectares. Gwarimpa is so big that it is regarded as a district now in Abuja and it has more estates inside of it (Hussein, 2023).

3.2.3.3 Government Owned Residence

These houses which were owned or leased by either the federal or state governments are specifically for their workforce. These homes are allocated primarily to civil servants and other government workers of certain ranks and positions. They are offered at a minimal rent, which is typically deducted from their monthly salaries. A significant segment of approximately 25% of civil servants benefited from this

housing model (Talba, 2004). Government-owned housing falls into two categories: the government residential areas (GRAs) and the staff quarters for lower-income employees working in governmental agencies.

GRAs are a common feature in most major Nigerian cities, they trace back to the colonial era when the British administration established European Quarters to house the growing influx of colonial officials and business executives around the 1920s. These areas are characterized by Western-style detached homes set on spacious plots with ample open space resulting in one of the lowest urban housing densities of around one unit per two hectares. Post-independence and these GRAs have continued to provide subsidized upscale accommodation for senior government personnel (Okechukwu, 2009). Now you will find that these GRAs are where the high-income earners, politicians and a lot of state government houses are located. These areas are typically well serviced with good road networks and fully secured (Uche, 2022).

The second type of government-provided housing targets the lower to middle-level staff of various government enterprises and parastatals aiming to offer them the most basic and affordable accommodation close to their workplaces. Unlike the more prestigious GRAs, these are modest one or two-bedroom units which are configured as detached, semi-detached, block of flats or terraced houses on smaller plots. Despite the high-density nature of these neighborhoods, they typically include essential services and utilities providing better living conditions compared to other overcrowded and economically challenged areas while still being more cost-effective due to subsidies.



Figure 8. NNPC quarters, Abuja.

Nevertheless, with a shift in policy to reduce federal involvement in direct housing provision and in line with market-friendly civil service reforms, the government has implemented a monetization policy in the Federal Civil Service (Okechukwu, 2009). This reform translates existing benefits like subsidized housing into cash allowances. It entails the sale of all government-owned and rented accommodations, previously offered at subsidized rates to about 25% of civil servants, through public auctions. Now, civil servants must secure their own housing but are compensated with an accommodation allowance that ranges from 50% to 75% of their Annual Basic Salary, based on rank (Talba, 2004). Although the government defends this policy as a more efficient resource distribution and equitable provision method, it has faced criticism for potentially exacerbating the housing situation for civil servants who were better off under the subsidized system, as they may now have to resort to inferior housing in less desirable areas due to market rate pricing. The policy set the motion for a downward spiral in the housing structure in Abuja as it led to an shortage increase of housing units especially for the lower income class (Hussein, 2023).

3.2.4 Mass housing.

The mass public housing initiative provided by the government for the general populace is another sector of public housing. This is arguably the most discussed type of public housing, constructed by specialized government agencies at the federal and state levels. The actual building is carried out by private contractors who secure these projects through governmental bids. Upon completion, these properties are offered for rent or purchase to the public at below-market rates (Okechukwu, 2009).



Figure 9. Mass Housing Unit in Abuja
(Oshundairo, 2023)

The history of mass public housing in Nigeria has been marked by a combination of desire and challenges. The government's attempt to provide affordable housing through various strategies has faced issues of misallocation, corruption, manipulation of processes, and inadequate coordination among different tiers of government. Despite the establishment of agencies like the Federal Housing Authority (FHA) and the involvement of State Housing Corporations, the execution of public housing programs often fell short of targets. For example, between 1971 and 1995, only about 14% of the planned housing units were built.

These initiatives included ambitious targets, such as the 1971-1975 plan to construct 59,000 units, which achieved only 12% completion. A 1980s program earmarked ₦1.9 billion for around 200,000 units but managed to complete just 32,000, a mere 20% of the goal. Political conflicts and changes in government further disrupted these programs. In 1994, another public housing effort aimed to build 121,000 units but was quickly acknowledged as a failure, requiring fundamental restructuring. Even with these setbacks, the drive for public housing continued, with the Federal Ministry of Works and Housing (FMWH) and state governments launching new, albeit limited, projects into the late 1990s and early 2000s (Okechukwu, 2009). The persistent issues with direct public housing provision in Nigeria reflect a complex interplay of policy,

execution, and socio-political dynamics. The goal of providing affordable housing to the population has been a challenging endeavor, with systemic inefficiencies and obstacles at various levels of governance.

3.3 Case Studies

There are 2 case studies of social housing which include the Pruitt-Igoe housing complex in the USA and Villa Varde Incremental housing in Chile. This case studies would be analyzed and at the end they would be compared and discussed.

3.3.1 Pruitt-Igoe.

In 1950, the St. Louis Housing Authority appointed the firm of Leinweber to carry out the architectural work for the housing project. The architects were presented with a set of non-negotiable conditions including the predefined size and location of the plot, a fixed number of residential units, and a specified project density, all of which were established by the St. Louis Housing Authority beforehand (Bölükbaş, 2016, p. 41). Despite these financial constraints, public housing projects received considerable support as they played a crucial role in shaping the post-war social landscape. However, the financial concerns necessitated a reevaluation of the project. The density was increased to 55 units per acre to address these financial limitations. These changes compelled Yamasaki and his team to forsake their original plan and devise a new design for the public housing endeavor. (Bölükbaş, 2016, p. 41).

Despite the architects' pivot to a high-rise design for the project, the Public Housing Administration (PHA) continued to exert pressure to minimize expenses. As a result of housing policies aimed at managing economic expenses, Pruitt Homes and Igoe Apartments were developed with a combined cost of roughly \$36 million — with Pruitt Homes accounting for \$21,689,412.14 and Igoe Apartments for \$14,438,145.58. Pruitt-Igoe emerged as one of the public housing projects within this framework. Spanning 57 acres, it was situated in the predominantly African American area of the northern side of the city, identified as a slum clearance target within the postwar urban renewal strategy. In 1950, St. Louis secured federal backing for 5,800 units of public housing. The St. Louis Housing Authority dedicated about half of these units to Pruitt-Igoe (Katharine, 1991, p 164). This 2,700-unit complex was expected to accommodate

15,000 residents, resulting in a population density that surpassed that of the initial slum areas.



Figure 10. Pruitt Igoe
(Wikipedia contributors, 2024)

Despite typical challenges associated with high-rise, low-income housing—such as high density, noise pollution, heavy traffic, and a dearth of local amenities including grocery stores, pharmacies, educational institutions, and childcare facilities—the initial years of Pruitt-Igoe were marked by relative satisfaction among its inhabitants. The community enjoyed a harmonious mix of single-parent households, traditional families, individuals earning low incomes, and those on welfare—a mix once considered indicative of effective public housing management (Comerio, 1981). Residents were lured by property speculators, through the federal 235 program, to buy up deteriorating homes in nearby areas—properties that were often unmanageable and grossly overpriced (Comerio, 1981). Concurrently, the federal government revised the public housing admissions policies, allowing many welfare-dependent families, who had been previously barred, to move in. Consequently, Pruitt-Igoe turned into a repository for those rejected by other housing projects within the city. Demographic changes and suburbanization were some of the conditions that laid the groundwork for the decline in occupancy rates, this in turn led to a host of subsequent problems such as maintenance, increased crime and stigmatization. The persistent issues of

destruction, escalating crime, and financial woes led to several attempts to revamp Pruitt-Igoe. In 1965, the complex received the first in a series of federal grants aimed at refurbishing the physical structure and initiating social programs to support the inhabitants and mitigate the increasing rent delinquencies (Kathrine, 1991, p166). Nevertheless, these initiatives had minimal impact: the decline in occupancy persisted, criminal activity rose, and basic management and upkeep were largely ignored. By 1969, tenants of Pruitt-Igoe and two other public housing developments in St. Louis engaged in an extensive nine-month rent strike, which further strained the Housing Authority's already limited fiscal resources and exacerbated the issue of vacant units, leading the Department of Housing and Urban Development (H.U.D.) to contemplate shutting down the project. To ascertain the most cost-effective method of demolition—whether through implosion or traditional wrecking ball techniques—all remaining residents were relocated to eleven structures within the complex (Kathrine, 1991, p166).

United states housing policy of 1949.

The 1949 US Housing Act initiatives broadened federal involvement and sculpted the contrast between suburban and city living. A key policy favored suburban development, enabling white families to pursue the American Dream in communities on the outskirts of cities (Bölükbaş, 2016). Another aspect of the act employed slum clearance for the revitalization of cities, seeking to substitute old city housing with fresh government-subsidized housing complexes. These projects, located in the very urban hubs that the legislation encouraged white families to leave, became a haven for African Americans moving northward from the South in search of a reprieve from the severe conditions of racism prevalent there.

The Act was anchored on three critical objectives. Firstly, it aimed to bolster the economy by rejuvenating the commercial districts at the heart of cities. This initiative was part of a broader endeavor to construct a post-war society atop the existing infrastructure and built environment, sparking physical enhancements through the stimulation of the private housing sector (Bölükbaş, 2016). Secondly, the Act sought to foster the emergence of a post-war American society. Public housing developments were designed for the poor, with the prospect of their eventual integration into the nation's economic and social fabric, bolstered by the affordability of low-rent accommodations and the application of technology to living arrangements. Lastly, the

strategy was to treat urban areas and buildings as consumer goods and instruments of ideological messaging within this competitive context. Consequently, the physical, economic, and social profiles of cities and their structures began to be viewed as symbols of modern progress and sound investment opportunities. In this light, public housing initiatives were promoted using the era's dominant tool, technology, to craft an image of sanitized urban life at the core of cities (Bölükbaş, 2016, p. 30).

Under the urban revitalization measures of the 1949 Housing Act, the Land Clearance and Redevelopment Authority of St. Louis set out to purchase and demolish large areas within the slums to resell them at a reduced price to private developers. The aim of these redevelopment plans was to create housing and commercial spaces primarily for the middle-income bracket, with the goal of enticing the middle class to return to the urban core. Concurrently, the St. Louis Housing Authority was tasked with preparing sites for public housing construction. These public housing initiatives were designed to offer an abundance of affordable housing options for the poor, with the dual objectives of curbing the spread of ghettos and providing accommodation for those uprooted by redevelopment and other slum clearance efforts (Katharine, 1991, p 164).

3.3.2 Villa Verde.

In 2009, inspired by the success of the Quinta Monroy project, Chilean company Arauco enlisted Elemental to conceive a housing scheme for its forestry workers near Constitucion, a small city in southern Chile. The outcome was Villa Verde, a planned estate featuring 484 homes, three communal structures, and public amenities including play areas and sports facilities. Elemental's proposal reflected a sophisticated design with elevated standards, supported by both private and public subsidies (Aravena, 2016). The project was directed at helping both company employees and those displaced by a recent earthquake, implementing the "half a good house" concept typically used in slum renewal within a mixed funding housing initiative, adding a dimension for post-disaster recovery. Funding from Arauco made it possible to construct homes of approximately 40 square meters each (Aravena, 2016).



Figure 11. Incremental Housing in Villa Verde, Chile.

(Elemental, 2012)

The design philosophy emphasized fostering property ownership over renting, leveraging the subsidies as a steppingstone to the private property market, thus enabling residents to enjoy potential capital growth. This incentive structure was meant to motivate homeowners to invest in their properties and enhance them with superior extensions (Zilliacus, 2016). Considering Chile's vulnerability to intense seismic activities, the resettlement project, prompted by a significant 2010 earthquake, incorporated lightweight timber framing in the construction. This method, suitable for the heavily forested region, provides seismic resilience and allows for gradual modification and enlargement by residents with moderate construction skills and local contractors, aligning with the incremental investment capacity of the community (O'Brien, Carrasco, & Dovey, 2020).

The primary architectural form employed is a "row house" configuration, using shared walls, uniform materials, and coherent design blueprints for both plan and façade. The base structure of each house measures 3 x 7 meters, resulting in a two-story dwelling of 42 square meters. Gabled roofs grant each unit its distinct appearance, with the gables largely forming continuous rows. Despite the urban layout being optimized for bulk production and utility provision, the alignment of the houses did not prioritize natural vistas or sunlight exposure, requiring extensive ground

leveling. Community buildings and leisure areas are interspersed throughout the estate (O'Brien, Carrasco, & Dovey, 2020).



Figure 12. Half house by Elemental.

(Elemental, 2013)

The base house: Elemental has considered the expectations and needs of households when implementing incremental housing projects. This approach is divided into four key phases:

Phase A - focuses on organizing families living in informal settlements and preparing them for their transition to new housing arrangements.

Phase B - entails providing these families with a basic structure known as a 'base house.' This is a rudimentary living space that includes the essentials but remains incomplete.

Phase C - is about supporting these households as they invest in expanding their base house to meet evolving needs, such as family growth or increased income.

Phase D - looks towards the future, allowing for the customization and personalization of the base house as the residents' circumstances and desires change.

The effectiveness of this incremental housing strategy hinges on the initial spatial framework of the base house. This initial unit is deliberately unfinished to allow for gradual investment and improvement by the residents, tailored to their unique requirements and financial abilities. Margarita Greene highlights that this phase—the

expansion and customization of the base house—is at the heart of the incremental housing process. It's where the residents' input and efforts transform the basic structures into homes that suit their personal lifestyles and aspirations (Marinovic, 2020).

Lo Espejo: incremental housing development project is a notable initiative aimed at transforming the living conditions of over three hundred low-income households in Vista Hermosa, an informal settlement within Lo Espejo, a commune in the southern part of the Santiago Metropolitan Region in Chile. The project's inception in 2003 was led by three women community leaders from Vista Hermosa. These leaders began discussions with the Ministry of Housing and Urban Development (MINVU) to establish a social housing project in their area. These pivotal discussions led to the involvement of young volunteers from Techno, a non-profit organization, and professional architects from Elemental, an architectural firm. Together, they worked on designing and preparing a condominium housing project that would be situated on a plot of one thousand square meters. This housing project was specifically constructed for thirty families from the Vista Hermosa settlement, located just to the north of the designated project site (Marinovic, 2020). The initiative represents a collaborative effort between community leaders, government representatives, volunteers, and architects to address the pressing housing needs of the residents.

Chile's housing policy

Throughout its history, the Chilean government has been actively addressing the lack of adequate housing and supporting families with lower incomes. In the 1960s, it took significant steps by establishing the Ministry of Housing and Urbanism (MINVU) in 1956. This ministry was tasked with formulating housing policies and overseeing public funding. It encouraged saving among the less affluent through initiatives like the Popular Savings Program (PAP) and the creation of Savings and Loans Associations (S&L). These public funds were channeled by MINVU into constructing affordable housing, sold to lower-income families through various subsidized loans tailored to their savings, and ability to repay. The S&L attracted savings from the middle and upper-middle classes, which were then used to provide mortgage loans for housing (Rojas, 1999). MINVU was central to shaping urban policy in Chile, coordinating various institutions with regulatory power over housing.

The housing policy underwent significant changes in the 1970s and 1980s with the introduction of direct demand subsidies paired with savings and mortgage credit systems (Ministry of Housing and Urban Development, 2004). Bruce Ferguson and colleagues observed that Chile pioneered direct demand subsidies in 1977, a move away from inefficient traditional housing programs funded by salary taxes (Ferguson, Rubinstein, Dominguez Vial, 2007). Post-1973, under the influence of Chicago school economics, the government had to play an active role in housing production for low-income groups due to a lack of developer interest and private bank loans, directly allocating houses and providing additional loans (Rojas, Greene, 1995).

This shift in government intervention reshaped the public housing landscape. Fernando Kusnetzoff noted that the ideological shift towards market forces and the construction industry's influence were decisive in shaping the housing programs, a sentiment amplified by the backlash against the pre-coup housing invasions (Kusnetzoff, 1987). There was also a need to move away from the public housing strategies of former President Salvador Allende, who favored large-scale construction by state enterprises (Kusnetzoff, 1990). During the 1990s and 2000s, there was a significant decrease in the prevalence of shantytowns and slums, contributing to a rise in homeownership. On average, about 90,000 families annually received housing subsidies in this timeframe (MINVU 2006). By 1996, the count of unauthorized settlements had fallen drastically, with 972 shantytowns housing approximately 500,000 individuals (MINVU 1996). Fast forward to 2006, after 16 years of governance by left-of-center political parties, shantytowns and slums had nearly vanished: Only about 120,000 individuals resided in such areas (Center for Social Research 2007), and the homeless population did not exceed 60,000, making up roughly 1.5% of the nation's total population (Salcedo, 2010).

Over the last two decades, Chile has witnessed a substantial enhancement in housing quality. The figure of families residing in inadequate housing or sharing homes with kith and kin plummeted from 780,000 in 1992 to under 500,000 by 2011 (Ministerio Desarrollo Social, 2013). This statistic, referred to as the 'housing deficit' in Chilean context, serves as a gauge for the additional housing required to ensure all families have suitable living conditions. This reduction in the housing deficit was predominantly due to the decrease in the presence of substandard housing. This occurred despite a minor uptick in the number of families cohabiting with relatives or

friends, known locally as 'allegados'. A significant drop in poverty levels from more than 33% in 1992 to just over 11% in 2011 (OECD, 2015), along with a corresponding surge in the demand for higher-quality housing, are likely contributors to the overall improvement in housing conditions within Chile (Salvi, 2016). In 2001, the Chilean government overhauled its housing policy, building upon the principles of the previous decade's approach with some notable modifications, as described by Fernández in 2007. The revised strategy introduced three significant changes:

Firstly, the policy introduced a full subsidy for the most impoverished, covering the entire cost of a housing unit. Families are now only responsible for saving approximately \$350 for a down payment to secure ownership of their home without the burden of a bank loan. Secondly, the 'Fondo Solidario de Vivienda' program was established, which initiated a new entity called the Social Development Management Enterprise (EGIS). This entity could be either a profit or non-profit organization tasked with identifying subsidy applicants within a particular area or municipality. EGIS organizes these applicants into groups, guiding them through the development of comprehensive housing projects. This concept revives the collective action for housing on a larger scale. These groups save money together, and with EGIS's assistance, they negotiate with developers over construction and location terms, obtain subsidies, and then individually repay the bank (Rodrigo, 2010). Thirdly, the Chile Barrio program was designed to assist families transitioning from slums to their new homes, focusing on their social integration into the broader society. These reforms in 2001 were in response to an ongoing and intensifying policy debate among scholars and politicians that began in the mid-1990s, as Rodrigo highlighted in 2010. The debate centered around the best ways to improve housing policy to meet the needs of the population effectively (Rodrigo, 2010).

Incremental housing is a concept that embraces a 'build-as-you-go' approach, offering a cost-effective solution for low-income families. Instead of the conventional method of developing and procuring fully completed houses, this method starts with a partially finished structure. Residents can then complete their homes gradually, as their resources allow with the assistance of small manageable microloans (Marinovic, 2020). This process aligns with the notion that housing for disadvantaged groups is an ongoing journey. The focus here is not on creating visually striking structures, but on providing practical lessons in living better. By offering a pathway to homeownership

that is otherwise out of reach for many, incremental housing emphasizes the importance of affordability. The concept introduces a 'preparing for design' phase in the early stages, suggesting that architects take on more responsibility to enhance the foundational designs of these 'base houses'.

A 'base house' typically includes essential living spaces like a kitchen, bathroom, dining room, and bedroom within a 40 square meter area. The idea is to allow each family to expand and customize their space on their own terms, financially and spatially, making each house a reflection of individual needs and circumstances (Marinovic, 2020). This approach to housing is significant in places like Chile, where the government has backed such initiatives for decades, enabling a substantial number of low-income families to build their own homes. Since 2004, the architectural firm Elemental has also championed this cause, advocating for a design process that is ethical and accountable. Incremental housing, thus, stands as a testament to a communal, flexible, and sustainable approach to urban living, emphasizing the homeowner's role in the creation and evolution of their living spaces (Salvia, 2016).

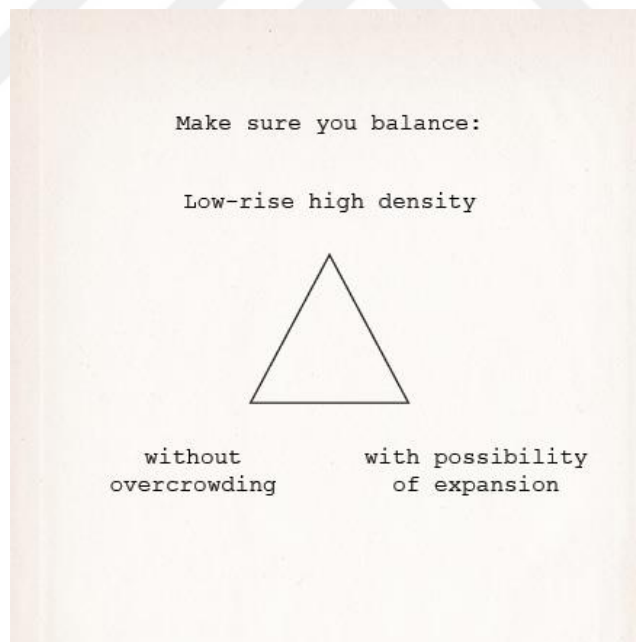


Figure 13. Principle of Elemental when designing incremental houses.

(Elemental, 2013)

The collaboration between the Chilean government and the architecture firm Elemental is a significant initiative in urban development and social housing. It's not

just a matter of constructing buildings, but rather developing a holistic approach to create sustainable, incremental housing solutions for low-income families (Gray, 2014). Here's a breakdown of the key components of these projects:

- Economic and policy foundations:
 - Chile's economy: The strong economic backdrop of Chile allows for experimentation and innovation in housing projects. This economic stability is essential as it ensures there is funding available for these long-term investments.
 - Public housing policy: The government's responsive policy framework enables Elemental to work on projects that are not only architecturally sound but also socially responsible. Laws incentivize private sector investment, and policies like capital subsidies and savings programs help families afford these homes.
 - MINVU's role: The Ministry for Housing and Urban Development's creation in 1965 marked a significant shift in housing production from individual self-help efforts to a more coordinated, government-led approach.
- Incremental housing and design innovation:
 - Elemental's approach: The architecture firm takes a participatory design process, involving residents in the development of their homes. This ensures that the homes meet the specific needs and preferences of the families.
 - Incremental construction: The model of incremental design is particularly innovative. Families start with a basic, half-built home and expand it over time as their resources allow. This is a practical solution to the issue of limited funds and the need for housing expansion as family dynamics change.
- Adaptability and resiliency:
 - Evolving projects: Each of Elemental's projects is tailored to the size, geography, and budget of the community. This adaptability is crucial for the sustainability of the housing solutions.

- Learning and iteration: The firm's method involves learning from each project and applying those lessons to future ones, showcasing an iterative process in design and policy implementation.

These projects go beyond mere construction; they are about community building and empowerment. The key is in the details: from the consideration of geographical constraints to the financial mechanisms in place, and the social support programs that accompany the physical structures. The approach Elemental and the Chilean government are taking can serve as a model for other countries facing similar challenges with urbanization and housing for low-income families (Gray, 2014).

3.3.3 Conclusion from case studies

The stories of Pruitt-Igoe and Villa Verde, which I've discussed, reveal opposite paths in the case of public housing. They represent different eras and locales, along with varied philosophies toward community and architectural design. Pruitt-Igoe, erected in the 1950s in St. Louis, Missouri, initially emerged as a beacon of hope against urban impoverishment but ultimately became synonymous with crime, segregation, and design flaws. Its underlying policy, steeped in the era's modernist urban planning principles, prioritized efficiency, and large-scale housing solutions without adequately addressing the social and communal needs or integrating the residents with the surrounding city. This oversight led to its downfall and eventual demolition in 1972.

On the other hand, Villa Verde in Chile, a brainchild of Elemental initiated in 2009, took a different stance. Rather than creating isolated units, it fostered inclusivity and community growth, encouraging residents to customize and expand their homes as their financial situations improved. Elemental's "half a good house" concept provided a basic framework for residents to extend, reflecting a dynamic and responsive housing model. The project also served as a relocation solution for those displaced by Chile's earthquake, thanks to its straightforward building technique. Examining Pruitt-Igoe and Villa Verde side by side, we learn a crucial lesson in the progression of public housing strategies: success is largely based on their alignment with the real-life experiences of inhabitants. Quality public housing goes beyond merely supplying shelter; it requires a deep understanding of the community's essence, its cultural heartbeat, and the economic conditions that define the residents' lives.

Pruitt-Igoe neglected these vital elements, culminating in its ruin. It stands as a stark warning against the dangers of housing policies that overlook the very people they are meant to support. On the contrary, Villa Verde shines as a beacon of innovation, championing a vision where residents are co-creators of their environment. Its policy laid a robust foundation for housing while also enabling residents to build upon it, creating a profound sense of ownership and community. Moving towards a more adaptable, inclusive, and gradual approach in public housing isn't just about enhancing living spaces; it's about creating resilient, evolving communities. It's an acknowledgment that the success of public housing is linked to the social, economic, and cultural protection of its residents. When inhabitants are regarded as collaborators rather than just recipients, public housing transforms into a powerful engine for community advancement and a cornerstone for improved life quality. In essence, when public housing policies are conceived with compassion, respect for local nuances, and a dedication to inclusivity, they establish a solid foundation for neighborhoods that are not only enduring but also cherished and nurtured by the people who dwell within them. Community engagement is crucial for the success of housing projects. Involving residents in the planning and design process ensures that the housing meets their needs and preferences, leading to greater satisfaction and long-term sustainability. Housing designs that allow for customization and incremental expansion are more likely to succeed. This flexibility enables residents to adapt their homes to changing needs and financial situations, promoting a sense of ownership and investment in the community. Resident input is vital in creating practical and sustainable housing solutions. Adaptable designs that accommodate residents' evolving needs and preferences contribute to the long-term success and resilience of housing projects.

Chapter 4

Housing Policies in Nigeria

This chapter discusses the current state of housing in Nigeria. Then it explains the regulatory and legal framework which organizes the housing sector. Then it explores some of the housing policies that have been used in Nigeria, some issues in the housing sector and challenges currently facing the housing sector in Nigeria.

Housing is arguably the most important type of construction globally, drawing significant attention from architects, urban planners, and critics (Ismail, 1988). Its roots trace back to the Stone Age, primarily because it offers humans the essential protection against severe weather and potential threats. Beyond its physical benefits, housing plays a crucial role in our daily lives, given its psychological and social implications (Glaeser and Gyourko, 2013). This underscores its importance as one of the most critical developmental concerns in contemporary times. The availability of decent shelter for most of the population determines the level of development that a nation has reached, since housing right is one of the basic human rights existing, in terms of existence, law, and democracy (Ural, 2002).

With the growth of a country's economy comes accelerated urbanization, increase in demographics, which is one of the biggest problems faced by developing countries. The inability of rural lands to offer employment opportunities drives individuals to migrate to cities, seeking greener pastures and escaping the barren soils or societal inequities of their native regions. Upon arriving in urban centers, these impoverished migrants typically encounter a lack of both jobs and affordable housing. Consequently, they frequently end up in ever-growing squatter settlements or slums (Sanyal, 2002). Between 2015 and 2023, under the previous administration, the Federal Ministry of Works and Housing completed 8,938 housing units. Additionally, during this period, the Ministry processed and distributed 6,685 Certificates of Occupancy. In a concerted effort to narrow the housing deficit, the Federal Mortgage Bank of Nigeria (FMBN) has been active in financing the development of numerous housing estates throughout the country. As part of the National Affordable Housing Delivery Program, FMBN unveiled 1,071 fully finished housing units in January 2023.

Further achievements include the completion of 404 housing units in Enugu State, 257 in Katsina, 180 in Anambra, and 72 in Ogun State. As of 2023, the Family Homes Funds Limited (FHFL) has constructed over 8,146 homes, which has resulted in the creation of more than 80,000 job opportunities. There are 7,576 homes currently under construction, with plans underway to initiate the building of an additional 9,240 residences.

4.1 Evolution of Housing Policies in Nigeria

A national housing policy is a comprehensive set of guidelines, principles, and strategies established by a government to address housing-related issues within a country. The main aim of a national housing policy is to ensure that adequate, safe, and affordable housing is available to all citizens. These policies aim to create a framework for housing development, regulation, and financing to meet the housing needs of the population (Anyakora, 2012). The role of Government is to provide a conducive policy, legislative and regulatory framework for policy implementation, monitoring and evaluation and its periodical review for effective and efficient policy implementation (UNCHS, 2000).

There have been several housing Policies in Nigeria since independence, initially there were the National Development Plans which were supposed to be used to plan the development of the country after independence. Then in 1991 the National Housing Policy was formulated due to the ineffectiveness of the various development plans. These policies/plans were introduced at various points in Nigeria's history to provide for the ever-growing population. Nigeria's housing policy has always emphasized that housing must be seen in the context of overall national development including social development, generation of employment opportunities, geographical distribution of population, and location of industrial, commercial, and agricultural activities (EFinA, 2010). Generally, the intent of these policies was simply to enact laws to assure construction and environmental standards are met, provision of public housing programs through mortgage institutions, to provide credit or funding for house ownership to those eligible through the housing fund. These policies include:

4.1.1 National development plan 1(1962-1968)

The first National Development Plan of Nigeria was established for the years 1962-1968, it marked the beginning of a series of four plans aimed at significant development. The focus of this plan was to transition from social and infrastructure sectors to productive sectors. The plan did not give the housing much significance instead it viewed housing as part of industrial estates, land acquisition and town planning. The government planned to build 24,000 housing units around the whole country during that period but only 500 were built due to the outbreak of the civil war in 1967 (Sanusi, 2003).

4.1.2 National development plan 2 (1970-1974)

During the second development plan, the government accepted that housing the population was part of its social and political duties. The federal and state government set out to build 54,000 housing units across the 11 states. These would be affordable houses that would be rented out to all the social groups in the country. The Federal Housing Authority (FHA) was established in 1973, it was to supervise and manage the National Housing Programs. However, FHA did not kick off until 1976. The delay in takeoff and the government bureaucracy hindered the achievement of this development plan.

4.1.3 National development plan 3 (1975-1980)

Under the third National Development plan, the government created the Ministry of Housing, National Development and Environment with the sole purpose of providing quality and affordable housing for the population. The federal government allocated N1.83 billion naira for the ministry of housing which planned to build 202,000 housing units per year. The FHA would provide the necessary infrastructure and work with the different state governments to directly construct low-cost housing and increase construction quarters for government officials. During this period, only 28,500 housing units were completed around the federation (Sanusi, 2003).

4.1.4 National development plan 4 (1981-1985)

This Development plan was designed to tackle the housing deficit during that period. The government set out to construct 40,000 units annually nationwide while

also constructing 2,000 units in each of the 19 states of the country. N1.6 billion was allocated to the housing sector to make sure this was achieved, however only 47,200 units were completed around the whole country and only N600 million Naira was expended (Waziri, 2013).

4.1.5 National housing policy (1991)

The National Housing Policy of Nigeria was introduced in 1991 with the purpose of tackling the housing problems in the country. The aim of the policy was that every Nigerian would be able to own or have access to decent affordable housing before the year 2000. To achieve that, 700,000 housing units would be built annually around the country. The policy mandated the Federal Housing Authority to develop and manage real estate on a commercial and profitable basis in all states of the federation. The FHA would also provide sites and services schemes for all income groups with special emphasis on low-income groups in the major cities of the country. Some other objectives of the policy include providing incentives for the capital market investment in property developments and to provide long term loans for mortgage institutions. There would be a mandatory contribution of 2.5% of the income of every employee, 10% of commercial and merchant bank loans. The government encouraged and promoted active participation in housing delivery by all the tiers of government and the private sector. The Federal government established the National Housing Fund in 1992 with the aim of providing funding for low-cost housing finance. It was provided with a takeoff grant of N250 million naira (Sanusi, 2003). However, despite these efforts, many Nigerians remained homeless or lived in substandard houses. The policy's implementation has been criticized for its lack of inclusiveness and sustainability.

4.1.6 National housing program (1994-1995)

The National Housing Program was introduced in 1994 because of the failure of the National Housing Policy of 1991. The Federal government aimed to build 121,000 housing units for all income groups. The 9 newly created states were to receive 5,000 housing units while the remaining 21 states would share 76,000 housing units. Only 1,014 housing units were eventually built around the country (Waziri, 2013).

4.1.7 National housing policy (2002-2006)

The federal government in 2002 adopted the National Housing Policy which led to the creation of the Federal Ministry of Housing and Urban Development. The policy was to increase the mortgage flow which would lead to home ownership. It would encourage real estate developers to participate in the development of affordable housing for the population. It restructured the Federal Mortgage Bank of Nigeria which is responsible for providing mortgages to low- and middle-income earners to facilitate long term loans for mortgages (Waziri, 2013). The policy encouraged state housing agencies to be more active in the provision of affordable housing for the people. This policy also focused on empowering the private sector to spearhead housing delivery in Nigeria while the government would focus on providing the infrastructures on the new housing development (Waziri, 2013). In 2006 the government rolled out another Housing policy which would focus on institutional reform, increased financing for the housing sector, capacity building, local building materials production to reduce the cost of building materials. There were adjustments on amortization periods from 25 to 30 years, NHF interest rates were reduced from 5% to 4%. Lastly, the new policy would provide access to adequate land for construction (Waziri, 2013). This new policy was meant to reduce the bureaucracy in government which hampered the housing market. It also emphasized the private sector lead housing initiative (Idaeho, 2022). The policy's failure has been attributed to a lack of political will and poor implementation.

4.1.8 National housing policy (2012)

This new policy was introduced to replace the previous housing policy which did not have a lot of success (Idaeho, 2022). Production of mass housing was introduced into the policy to provide housing for all Nigerians irrespective of their financial status. The aim was to construct 1 million houses annually to meet up with the housing deficit in the country. It was structured so that the private sector would take central role while serve as the regulators for a sustainable development of the housing sector. The policy introduced social housing with the aim of providing housing for no or low-income earners by constructing low-cost housing. The policy called for a collaboration between all the tiers of government to produce a uniform and integrated infrastructure development strategy for housing. The National Housing and

Urban Development Regulatory Commission was established to provide coordination and improvement of housing. There was the establishment of a National Housing Data Bank which would generate data to capture trends and other defining factors in the housing sector. It re-examined the role of the FHA to incentivize it to compete with other players in the housing sector to provide adequate funding through budgetary allocations (FGN, 2012)

4.1.9 National development plan (2021):

This plan was supposed to be a continuation of the national economic recovery plan which the Buhari administration started during their first term in office. The National Housing Program, which commenced in 2017, has successfully completed the construction of 2,287 housing units, with an additional 2,591 units currently under construction across 34 states and the Federal Capital Territory (FCT). Furthermore, the Federal Mortgage Bank has played a crucial role in the advancement of the housing sector by providing 5,446 mortgage loans amounting to N46.677 billion, as well as granting 62,061 loans for home renovations, totaling N55.198 billion. Additionally, the bank has successfully funded the completion of 4,435 houses through the cooperative housing scheme.

To drive a substantial reduction in the housing deficit, it is imperative to implement a systematic approach aimed at increasing the annual housing supply rate. This can be achieved by expanding the funding base and promoting capital formation within the real estate sector. The objective is to enhance capital formation and funding mechanisms specifically tailored for the real estate industry, with a focus on bolstering the mortgage finance sector. This will be achieved through a collaborative effort between the government and the private sector, aiming to establish a market that offers diverse and sustainable long-term funding options (Ndp, 2021).

The government aims to promote cooperation between the manufacturing and construction industries, in conjunction with private sector institutions, to identify areas of deficiency in skills and competencies that are crucial for the sustenance of the housing sector. To realize the objectives delineated within the housing sector, a projected sum of N3.53 trillion is required for public investment during the period of 2021 to 2025. This allocation encompasses an estimated N1.68 trillion designated for public investment specifically in urban road development (Ndp, 2021).

4.1.10 Renewed hope agenda on housing (2023)

In May 2023, a new government was inaugurated headed by President Bola Ahmed Tinubu. The new government introduced the renewed hope agenda for housing where it pledged to provide housing for the population within a short period of time. It said there would be strengthening of institutional capacity of federal housing agencies which would increase the supply of decent affordable housing. The national social housing fund (NSHF) was established to provide access to funds for low-income earners for housing (FMHUD, 2024). Land reforms were implanted to ease land administration and access for the private sector. The government also pledged to set up building materials manufacturing hubs to reduce the cost of construction materials. The renewed hope agenda would develop new cities that would be integrated, and demand driven to provide access to decent and affordable housing for the population (FHA, 2024). In the 2024 budget, Housing sector was allocated N100 billion which would be used to deliver housing across the country through different programs. N700 million, however, was budgeted for the provision of affordable housing. The government also pledged to build 5.5 million housing units in 10 years to try and mitigate the housing deficit in the country with 1 million low-cost housing is said to be built in 7 years for the vulnerable population (FMHUD, 2024). The ministry of Housing and Urban Development pledged to partner with the private sector to provide 100,000 homes, the renewed hope cities and estate program would build 50,000 units in the first phase of the project across the country. Single digit and up to 30-year mortgage loans to be provided by the Federal Mortgage Bank of Nigeria, Rent-to-Own options where beneficiaries could move in and pay towards homeownership in monthly, quarterly, or annual instalments.

4.2 Effects of Past Housing Policies

It is true that certain past policies and programs pertaining to housing and urban development in Nigeria were contextually and practically relevant in addressing the needs of the population (Jiboye, 2011). Undoubtedly, some of the initiatives implemented by the government at both the federal and state levels to meet the housing requirements of the people represent positive steps forward. These actions, although

limited in their impact, have mitigated the severe deficiencies in housing services and facilities, as well as alleviating the persistent housing tensions among the low-income demographic in major urban areas. However, given the extensive scale and magnitude of the housing challenges brought about by rapid urbanization, it is evident that the pace and substance of official intervention in addressing this developmental dilemma are lacking. Consequently, some of the outcomes resulting from these actions are nearly indiscernible. Several factors have been identified as responsible for these shortcomings, which are delineated as follows.

In Nigeria, it is apparent that the formulation, execution, and enforcement of the housing policy and programs are plagued by inconsistencies in planning and weak organizational structures, stemming from political factors and an excessively centralized decision-making and implementation mechanism. An example is the fact that a significant number of government-built houses which were designated as low-income housing are usually expensive for the intended low-income demographic. Furthermore, numerous housing units are situated several kilometers away from the individuals in need and far removed from the functionally active boundaries where socio-economic activities thrive within urban areas. The public sector's involvement in housing in Nigeria has primarily focused on policy formulation rather than actual housing delivery. Despite significant budget allocations to the housing sector in the National Development Plans, there has been minimal progress in achieving the specified targets for housing construction. This is particularly evident in the direct house construction program. Several factors contribute to this lack of progress, including a misconception of the housing needs of low-income earners, who make up most urban dwellers (Jiboye, 2011). Additionally, the proposal of standardized housing that does not consider Nigeria's diverse climatic, cultural, and socio-economic environments, as well as inadequate planning and execution of housing policies and programs, further hinder progress. The politicization of government housing programs and a lack of political will and expertise to effectively implement these programs, along with the government's insensitivity to the private sector's role in housing delivery, also contribute to the challenges faced in this sector.

There is a quantitative housing need in Nigerian, and this is compounded by the rapid population growth and the rate of urbanization in the country. Moreover, the government's inconsistent approach and strategies towards achieving the goals of the

National Housing Policy further compound the issue. Housing matters are frequently shifted between different government ministries as one regime replaces another. For instance, during the period of the Federal Government from 1999 to 2007, housing reforms were initiated leading to the establishment of the Federal Ministry of Housing and Urban Development. This ministry was responsible for overseeing the operations of the Federal Mortgage Bank of Nigeria, particularly in the disbursement of loans from contributions into the National Housing Trust Fund (Jiboye, 2011). However, the ministry has since been abolished, and the Federal Ministry of Works and Housing was established to take its place during the Buhari administration. But in 2023, the Tinubu administration had reinstated the ministry back to Federal Ministry of Housing and Urban Development. The necessity of public sector intervention in housing delivery, particularly for low-income individuals, must be underscored despite the numerous shortcomings within Nigeria's current housing policy framework. Housing is an essential element for human existence and the cultivation of human potential. Its sufficiency, both in terms of quality and quantity, enhances the individual's health, well-being, and productivity, consequently contributing to the nation's wealth. Therefore, the government bears a social responsibility to ensure adequate housing provision for its citizens. To achieve this objective, it is imperative to redirect and redefine the existing policy framework, aligning it with the current developmental needs and realities, and within the context of global sustainable housing and urban development perspectives.

Numerous scholars have made efforts to analyze the reasons behind the failure of previous state-sponsored housing schemes in Nigeria. These reasons predominantly revolve around inadequate funding, corruption in the implementation and allocation of housing units, political interference, and insufficient monitoring and evaluation of the programs (Ibem et al., 2011). For instance, Opoko, and Aduwo (2013) conducted a study on the outcomes of the Presidential Mass Housing Scheme (PMHS) initiated by the Obasonjo administration. The aim of this scheme was to provide 18,000 low-cost housing units between 2004 and 2006, utilizing local building materials. However, the scheme was only implemented in a few states, resulting in a significantly low number of housing units being provided. The challenges faced by this scheme were attributed to inadequate design and implementation strategies, insufficient funding, and limited organizational capacity of the three public agencies responsible for its implementation:

the National Building and Road Research Institute (NIBRRI), Association of Housing Corporations of Nigeria (AHCN), and the Federal Mortgage Bank of Nigeria (FMBN).

Government-sponsored mass housing schemes are intended to be based on a three-tier institutional framework involving the federal, state, and local governments, as outlined in the National Housing Policy of 1991 and 2012. However, while the Federal Housing Authority (FHA), Federal Ministry of Land and Housing, and various State Housing Corporations have actively participated in previous schemes, the involvement of the third tier of government, namely local government authorities (LGAs), and community-based organizations such as housing co-operative societies, which are meant to represent the interests of grassroots communities, has been lacking. We argue that the absence of participation from these local urban authorities and non-governmental organizations has greatly contributed to the significant failure of these programs in effectively improving the housing conditions of low-income individuals in Nigeria. This suggests that the housing programs targeted at low-income citizens were destined to fail from the beginning due to a dysfunctional institutional framework (Egidario, 2016).

The lack of sufficient data regarding the precise number of low-income households in need of housing in Nigeria is a significant concern. Inadequate data collection pertaining to the rate of urban population growth has hindered effective planning and programming efforts in the country (Jiboye, 2011). Despite the implementation of various population censuses in Nigeria, the accuracy and reliability of the results have often been contested. Consequently, there exists a dearth of precise and dependable data regarding the number of low-income households residing in urban areas, which necessitates provision for their housing needs. The absence of accurate data poses challenges in formulating effective plans and programs that can truly impact the lives of individuals (Egidario, 2016). This predicament has played a prominent role in the failure of many public housing initiatives aimed at assisting low-income individuals in Nigerian cities.

4.3 Regulatory Framework in Nigerian Housing Sector

For the provision of a robust housing system, there must be an efficient housing finance system as well as a strong legal framework (Farinde, 2023). The quality and

tenure of housing consumption, as well as the overall financial portfolio of the public, are greatly influenced by housing finance. When it comes to funding, individuals primarily rely on their income. This source of funding is often the least expensive since there are no additional costs in the form of interest payments. However, individuals in developing countries such as Nigeria face a challenge due to generally low-income levels.

The legal framework in Nigeria regarding mortgages and property transactions is influenced by the English common law system. The Land Use Act of 1978 governs land ownership, granting the state's Governor the authority to possess all lands. They can then distribute land via a leasehold system, typically lasting 99 years minus a day. A Certificate of Occupancy legalizes this lease, though obtaining it can be time-consuming and expensive (EFinA, 2010). Across Nigeria, 65% to 70% of land remains under traditional ownership. To repurpose such lands for development, communities or families must adhere to the Act's provisions. Lands leased under this system must be developed within three years; otherwise, the Governor has the authority to reclaim them. However, in cases of non-compliance, landowners are usually given warnings.

The regulation of the housing sector at the federal level is primarily the responsibility of the Federal Ministry of Housing. This ministry oversees two key agencies: the Federal Mortgage Bank of Nigeria (FMBN), which serves as the top mortgage institution, and the Federal Housing Authority (FHA), which aims to provide housing for those with lower incomes. The FHA falls under the regulatory purview of the Federal Ministry of Housing, whereas the FMBN is regulated by the Central Bank of Nigeria (Farinde, 2023). Additionally, within each of the 36 States, there is a dedicated housing ministry that manages policy and regulation. These states also have housing corporations focused on delivering homes for the middle class. There are also institutions that play a role in housing finance such as:

4.3.1 Federal mortgage bank of Nigeria (FMBN)

The beginning of mortgage banking in Nigeria could be traced back to the formation of the Nigeria Building Society in 1956. However, society was unable to continue its operations into the early seventies due to its failure to perform its statutory roles. This led to a governmental decision to rebrand it as the Federal Mortgage Bank of Nigeria (Oduwaye, 2008). Established in 1977 by decree, the FMBN was tasked to

act as the principal wholesale and housing finance institution in Nigeria. The bank's responsibilities included providing long-term credit to mortgage institutions, fostering the growth of these institutions at both state and national levels, overseeing their activities, mobilizing savings through the National Housing Fund, encouraging investment in building material manufacturing, and supporting research in construction and mortgage finance (Farinde, 2023).

Originally, the FMBN's core mission was to expand and organize national mortgage lending, using funds from deposits and contributions by the Federal Government and the Central Bank of Nigeria (CBN), offering loans at interest rates that were below the market average. However, the FMBN's responsibilities have since expanded to include debt collection, and it continues to face challenges with underfunding as the demand for loans significantly outstrips the supply of available funds (Oduwaye, 2008).

4.3.2 Commercial banks

Before the implementation of the National Housing Fund Decree, commercial and merchant banks held a significant share of mortgage assets in the formal lending market (Onabule, n.d). These deposit money banks are required to accept both small and large term deposits and to provide lending services across various maturities to cater to the needs of different sectors of the economy. Due to the nature of their operations, with deposits being repayable on demand, these banks typically show a preference for engaging in short-term transactions. Consequently, only a handful of banks offer mortgage products, and those that do tend to serve a limited clientele (Onabule, n.d).

4.3.3 National housing fund (NHF)

The National Housing Fund (NHF), established in 1993 following the National Housing Fund Decree No. 2 of 1992, is primarily a compulsory savings scheme managed by the Federal Mortgage Bank of Nigeria, designed to gather affordable long-term funds for housing (Anayochukwu, 2011). This Fund forms the monetary bedrock of the national housing policy introduced in 1991. The NHF aims to foster the growth of housing finance institutions, enhance the accumulation and allocation of long-term funds, and extend loan accessibility to a wider audience. Furthermore, the Fund's goals

include stimulating the capital market to invest in property development, promoting specific programs for efficient housing finance, and providing long-term loans to mortgage institutions for on-lending to contributors of the Fund. It also strives to shield the housing finance system from the historical volatility tied to governmental interventions.

For eligibility under the NHF for a mortgage loan, employees must contribute 2.5% of their monthly income to a Primary Mortgage Institution (PMI) for at least six months. However, the scheme has seen limited success due to the modest amounts collected through contributions, which are only enough to finance a small fraction of eligible applicants (Anayochukwu, 2011). Another challenge is the stipulation that borrowers must have a clear title to the property to secure a loan.

These different institutions play different roles in ensuring that the housing and the housing markets in Nigeria are safe, fair, and well regulated. They cover various responsibilities which include provision of and allocation of lands, regulations of safety standards, zoning and land use, financial regulation, affordability, and environmental impact (Farinde, 2023). There are also a number of legislations in existence in the Nigerian housing sector, they include the Central Bank Act, the National Housing Authority Act, Federal Mortgage Bank Act, the Land Use Act, the Banks and Other Financial Institutions Act, the Nigeria Social Insurance Trust Act, the Federal Housing Authority Act, the National Housing Fund Act, the Investments and Securities Act, the Mortgage Institutions Act, and the Trustee Investment Act. With Proper implementation of these Acts by the key regulatory agencies, there would be quality and affordable housing in Nigeria (Waziri, 2013).

4.4 Housing Supply and Demand in Nigeria

Even though the real estate sector made a substantial contribution of 5.34% to GDP growth in the first quarter of 2022, there remains a significant shortage of housing supply. The federal government allocated N470 billion naira for housing in 2022, yet it's estimated that N21 trillion naira would be required to address the staggering 28 million housing deficit across the country (Waziri, 2013). Several factors hinder housing supply, including the escalating costs of building materials and the high price of land in urban areas. A heavy reliance on imported construction materials leaves the

construction sector vulnerable to fluctuations in exchange rates. In 2021, Nigeria spent over N386.3 billion naira on importing iron and steel, and it's estimated that approximately 65% of construction materials are imported. To combat rising construction costs, the federal government has partnered with major cement producers like Dangote, BUA Cement, and Lafarge to offer cement at a 30% discount. Typically, a 50kg bag of Dangote cement is sold at N4,050 naira, while the cost of land in urban centers in Lagos State ranges from N550,000/m² to N1 million/m². A minimum residential plot size in urban areas is 463.6m², which is often half the size of a standard plot (Waziri, 2013).

The Federal Mortgage Bank of Nigeria (FMBN) issued over 4,985 mortgages and disbursed home renovation loans totaling N49.3 billion naira to 60,500 beneficiaries between 2017 and 2022. FMBN has also financed the construction of at least 9,500 affordable houses across Nigeria. The National Housing Program (NHP) of the Ministry of Works and Housing has completed a minimum of 4,652 housing units in 34 out of Nigeria's 36 states. Regarding land supply, the Minister of Works and Housing reported that 5,000 certificates of occupancy (C-of-O) have been issued since 2017, with a total of 2,738 applications for consent to transfer land approved. Public-private partnerships have played a pivotal role in housing development. For example, FMBN and various private sector entities have collectively built 8,700 new homes between 2017 and 2020. To execute the federal government's housing program, all states have been encouraged to contribute land for affordable housing. Consequently, 24 states donated over 2,000 hectares of land with titled documents in 2021. The social housing program aims to provide 1.5 million houses for low-income earners.

Chapter 5

Research Survey

This section provides a comprehensive explanation of the questionnaire survey, encompassing the sampling technique and questionnaire administration. The trends in the results are highlighted and the results are discussed.

The methodology used in this survey was to ensure a decent representative sample of the population and to gather comprehensive insights into the perceptions and get the opinions of people regarding social housing policies in Nigeria. Random sampling technique was used to allowed for the selection of respondents of both genders, as well as different demographic backgrounds, age groups and occupations, encompassing students, unemployed individuals, government, and state officials, as well as those working in the private sector. This sampling approach helps to capture a broad spectrum of perspectives and experiences related to social housing, enhancing the validity and reliability of the survey findings. The survey questionnaire was designed to cover various aspects of social housing in Nigeria. It includes respondents' familiarity with social housing policies, their perceptions of the effectiveness of current policies, factors contributing to the neglect of social housing, and potential strategies for improving accessibility to low-income earners. The questionnaire also included questions related to the role of architectural design in addressing the housing crisis and the importance of community involvement in housing projects. By utilizing a structured questionnaire with multiple-choice and open-ended questions, the survey aimed to gather quantitative data on respondents' opinions while allowing for qualitative insights through open-ended responses in Nigeria.

Regarding the questionnaire analysis, the focus was on the 185 valid responses. A descriptive analysis was conducted to examine the attributes of the study's variables. The findings of the analysis were visually represented through graphs and expressed as percentages. Furthermore, the relationship between the variables was assessed using tests of statistical significance.

1. How effective do you believe the current social housing policies in Nigeria are in providing housing opportunities for low-income earners?

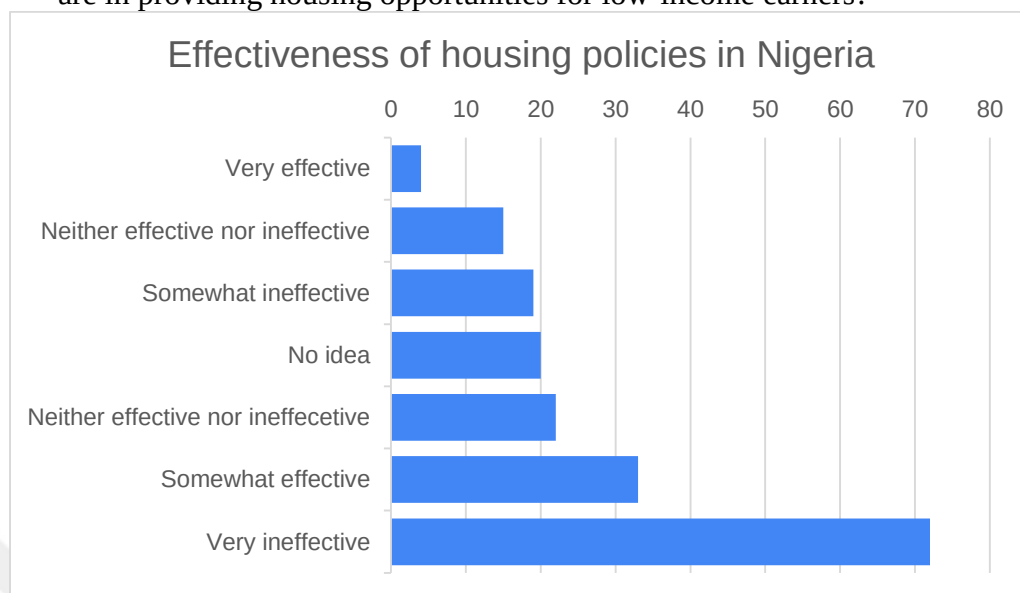


Table 2.

Effectiveness of Housing Policies in Nigeria

This survey shows a striking consensus among most respondents, with 72 individuals perceiving the current social housing policies in Nigeria as very ineffective while 19 of those respondents said they believe the housing policies are somewhat ineffective in providing housing options for the population. This overwhelming agreement highlights a widespread dissatisfaction with the existing policies and their outcomes. It suggests a huge gap between the intended objectives of these policies and their actual impact on population. Despite the dominant perception of ineffectiveness, the data also reflects a multiplicity of opinions among respondents. We recorded 33 respondents who considered the policies somewhat effective while 22 believed that the policies were neither effective nor ineffective. This difference underscores the complexity of the issue and the different lenses through which individuals view social housing policies.

Notably a portion of respondents (41) showed uncertainty about the effectiveness of social housing policies or thought about them as being neither effective nor ineffective. This finding suggests that there is potentially a lack of awareness or perhaps understanding among some respondents regarding the impact of

these housing policies. Addressing this knowledge gap through sensitization and awareness campaigns could contribute to more informed discussions. The results also show that there is a varying opinion among the respondents regarding the effectiveness of housing policies in Nigeria.

2. Distribution of age with occupation

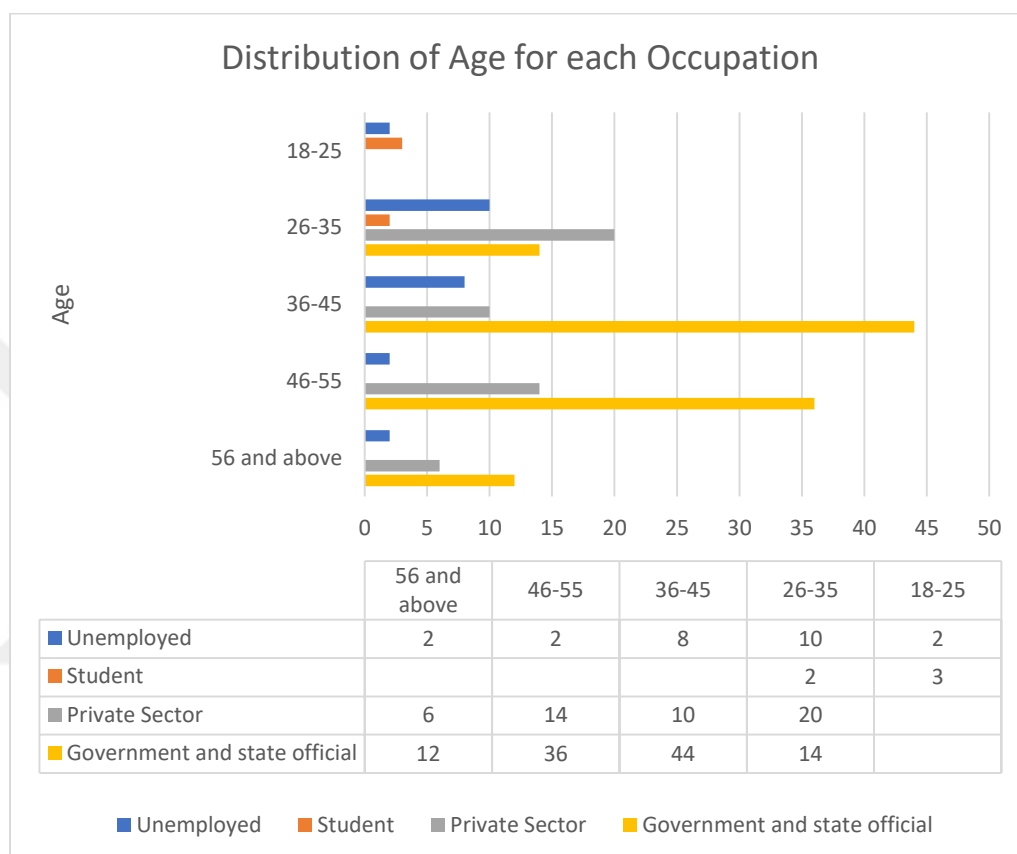


Table 3.

Distribution Of Age Groups with Occupation

The age distribution for occupation category provides additional insights into the demographics of the respondents. It shows that the majority of respondents are government and state officials with 106 respondents, which also falls within the age range of 36-45 followed by the age range of 46-55. On the other hand, respondents in the Private Sector are more evenly distributed across the age ranges of 26-35, 36-45, and 46-55. The respondents who are unemployed are relatively fewer and their age distribution is spread across multiple age groups but mostly 26-35.

3. Factors contributing to the neglect of social housing in Nigeria.

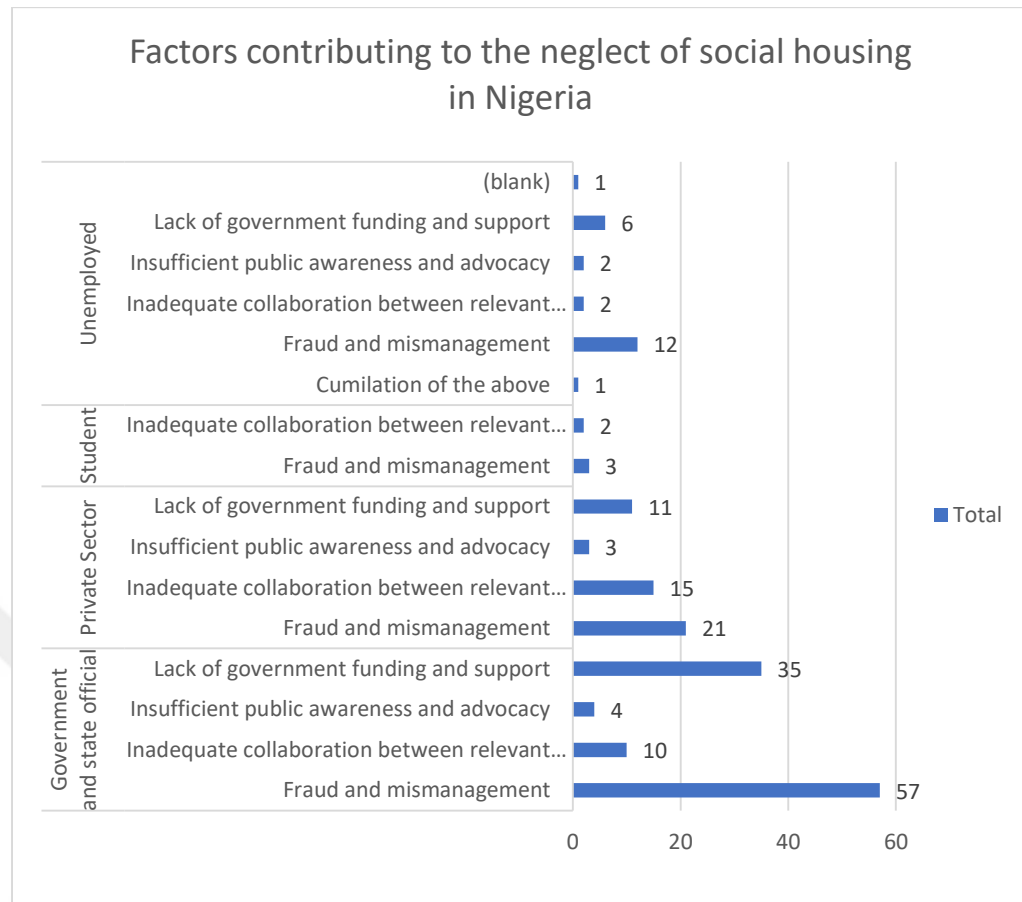


Table 4.

Neglect of Social Housing by Occupation

The result from the survey shows that 57 officials of the government and state are of the opinion that fraud and mismanagement are the reasons behind the neglect of social housing in Nigeria, 35 of them believe that lack of government funding and support is the reason for that neglect. It is a similar observation in the private sector where 21 of the respondents believed that fraud and mismanagement are the reason for the neglect, then 15 of them believed that inadequate collaboration between relevant stakeholders. This indicates a widespread perception of corruption or inefficiency within housing-related institutions. Lastly, 9 of the respondents across the different occupation's groups sited that insufficient public awareness and advocacy as some of the reasons for the decline is social housing in Nigeria.

4. Effectiveness of architectural prototypes to solve the housing issue.

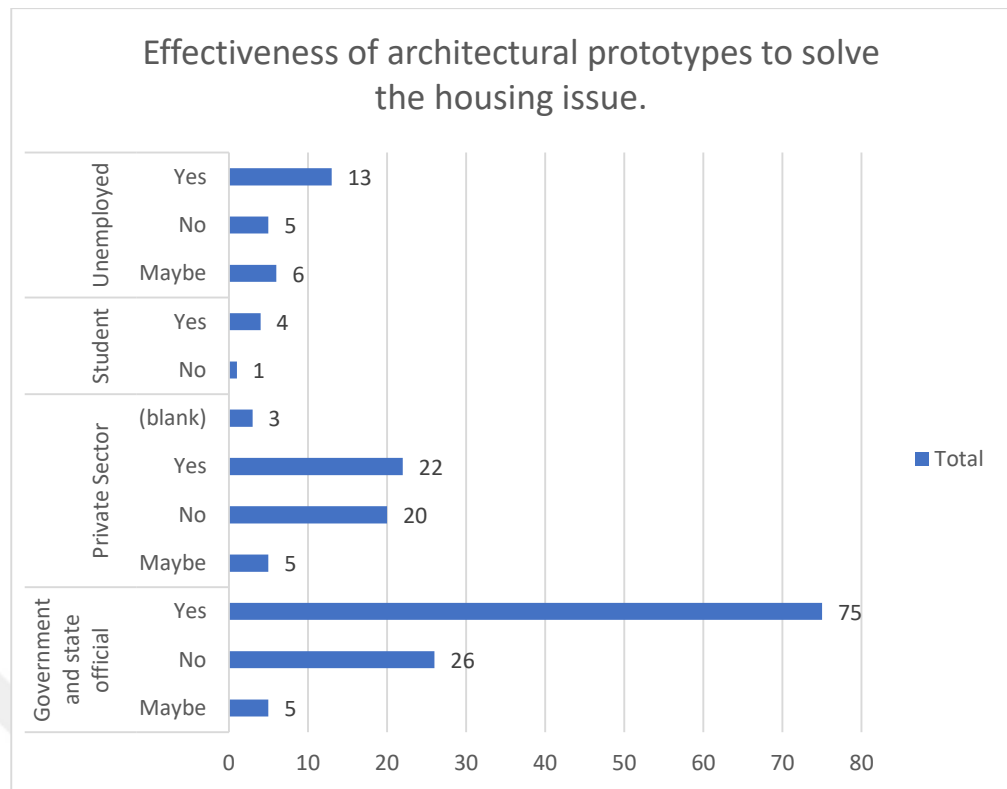


Table 5.

Effectiveness of Architectural prototype Design

Based on the data, it can be observed most respondents across different occupations believe that introducing new architectural prototypes can effectively solve the housing crisis in Nigeria. 75 respondents who work in the government believe that new architectural prototypes can effectively address the crisis, while 5 respondents are unsure, and 26 respondents disagree. This suggests that there is a considerable level of support for exploring new architectural prototypes among professionals directly involved in policymakers. In the private sector there was not much in between as 22 respondents agree that architecture prototype could make a difference while 20 respondents disagreed, and 5 respondents are unsure. Among students 4 of them agreed as well as 13 respondents who are unemployed said yes.

5. Importance of community engagement in social housing development

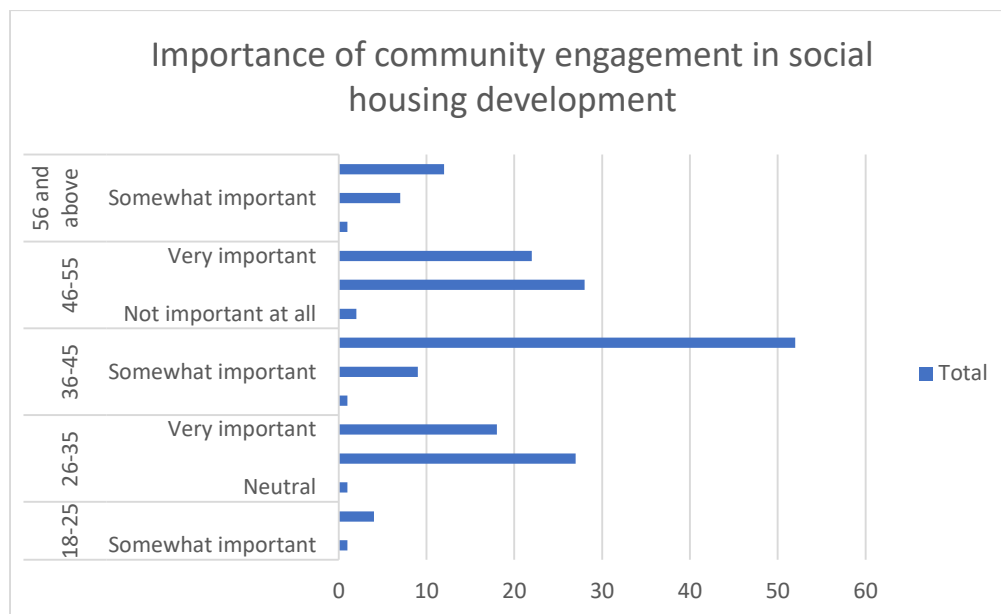


Table 6.

Community engagement in social housing

According to the data gotten, it is evident that there is a strong consensus regarding the importance of community involvement in the planning and development of social housing projects. Most respondents across all age groups of 18-25, 26-35, 36-45, 46-55, and 56 and above, all view community involvement as either somewhat important or very important. Specifically, among respondents aged 26-35, 18 individuals consider it very important, while 27 view it as somewhat important. Similarly, among respondents age group of 36-45, 52 respondents regard community involvement as very important, with 9 considering it somewhat important. Individuals aged between 46-55 also emphasize the importance of community involvement, with 22 respondents describing it as very important, and 28 as somewhat important. Lastly, even among older respondents aged 56 and above, 12 of the respondents view community involvement as very important, with 7 describing it as somewhat important.

This data emphasizes the widespread recognition among respondents of all age groups that community involvement plays a very crucial role in the planning and development of social housing projects. It suggests that involving communities in these processes is perceived as vital for ensuring the success, relevance, and sustainability of social housing initiatives.

6. Interests among individuals on living in social housing developments they helped design.

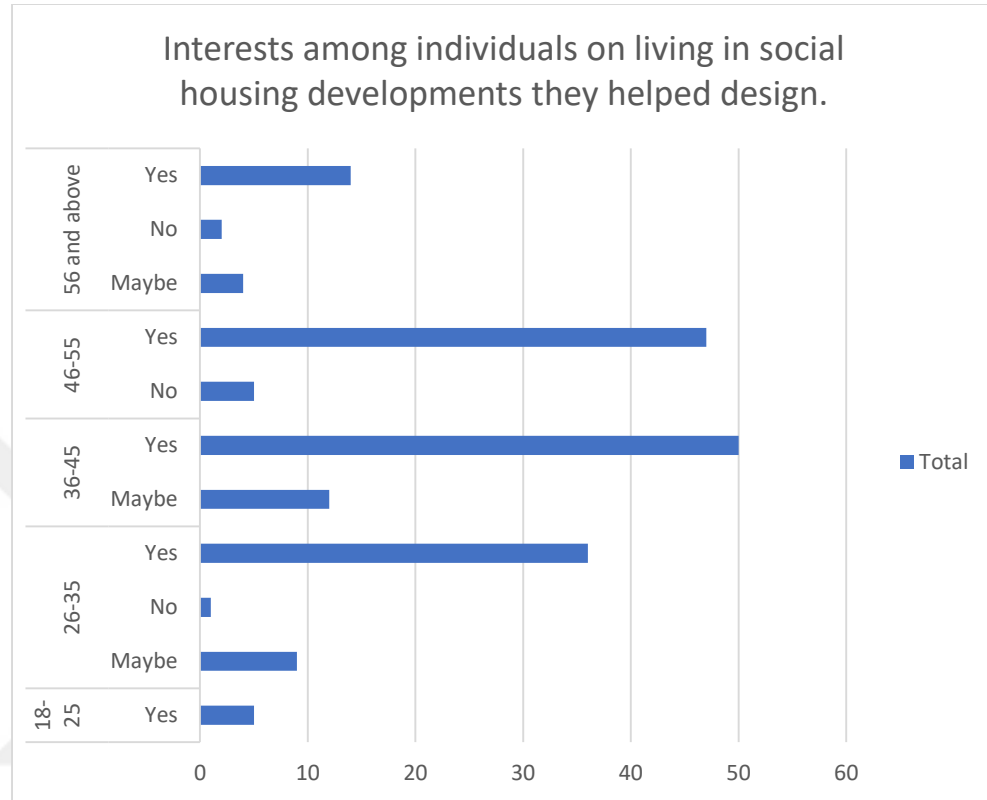


Table 7.

Interest in Participatory design of social housing

The data reveals a significant level of interest among respondents in the prospect of living in a social housing development they helped design. Younger respondents of age group 18-25 all expressed a definite interest in living in a social housing development they contributed to its design. This suggests that there is a strong sense of enthusiasm and engagement among the younger population who may see this as an opportunity to actively shape their living environment and contribute to their community.

Middle-aged respondents of ages 26-55 also showed interest in living in such a development. In particular, the 26-35 and 36-45 age groups had the highest number of respondents expressing definite interest with only a small percentage of the respondent's expressing uncertainty or lack of interest. This indicates a strong desire

among individuals in their prime working years to be involved in some form of community driven housing initiative.

Older respondents 56 and above While the level of interest decreases slightly among older respondents, a notable portion still expressed interest in living in a social housing development they helped design. This suggests that even among older individuals there is recognition of the value of community involvement in housing projects and a willingness to consider alternative housing options.

In General, this data highlights the importance of community involvement in the planning and development of social housing projects. It reflects a positive attitude towards collective action and a recognition of the potential benefits of actively participating in the design and implementation of housing solutions.



Chapter 6

Design Proposal

This chapter will explore the design proposal which would include the concept of incremental housing using prefabricated construction. It would define these concepts, highlight the advantages, explore case studies, and then lastly come up with a prototype design.

We have already established in previous chapters that there is a huge housing deficit in Nigeria. The country would have to build almost a million homes annually to mitigate this housing crisis. Most people in Nigeria face challenges in accessing formal financial instruments to purchase complete homes, resulting in limited options for realizing their housing needs. The availability and accessibility of mortgage markets in Nigeria are limited, making them expensive and primarily accessible to higher income earners. This situation creates a significant barrier for low to lower-middle-income households in acquiring completed housing units through formal financing channels such as mortgages. As a result, these households often resort to informal means of housing construction and financing to meet their housing needs. This has necessitated the response for inventive and sustainable resolutions that can effectively tackle this problem. This thesis design proposal aims to tackle this issue by suggesting an integration of two strategies: incremental housing and prefabricated construction. By combining the principles of incremental housing and the use of prefabricated construction the proposed solution aims to provide a general approach to addressing the housing deficit in Nigeria. The integration of these strategies allows for the construction of initial basic structures that can be expanded and customized over time through the incorporation of prefabricated modules. This approach not only provides immediate housing solutions which could see the time of construction significantly reduced but also allows for future growth and adaptation as the needs of the inhabitants change.

6.1 Incremental Housing

An incremental approach in architecture is characterized by a step-by-step process of construction where changes are made to the layout and structure of a building based on the specific needs of the inhabitants taking into consideration the availability of resources, finance, and time. This architectural strategy primarily aims to provide affordable living spaces for low-income families (Adhikari, 2019). Additionally, incremental housing is also known as self-help housing, assisted self-help housing or self-managed housing when viewed from the perspective of low-income households. The term "incremental housing" has gained significant prominence since 2000, as it has been recognized as a highly important phenomenon. The concept of incremental building should not be confused with the construction of small, fully finished houses that can be expanded at a later stage (Wainer et al., 2016). Incremental building, on the contrary, entails the provision of partially finished houses that are habitable but require further improvements and gradual completion by the owner over time (Wainer et al., 2016). This developmental approach actively involves individuals and communities, promoting the utilization of local resources and fostering local businesses (Bredenoord, 2019). The primary objective of this approach is to mitigate the initial capital expenditures associated with constructing a house, thereby enabling the construction of a house (Wainer et al., 2016). Nonetheless, it also empowers homeowners to tailor crucial aspects of their house to cater to their specific requirements and enhance not only the occupancy capacity but also the refinement and interior design of their residences as their incomes and preferences evolve (Wainer et al., 2016).

The integration of housing policies and programs that support incremental housing can effectively contribute to the achievement of the universal provision of suitable housing for all households within cities or countries (Greene & Rojas, 2008). This can be facilitated through the recognition and appreciation by governments and communities of the methods employed by most of the population to construct and enhance their homes. It is important for these stakeholders to acknowledge that while the rapid construction of incomplete housing solutions may only offer a fraction of the amenities provided by finished homes, it effectively addresses the urgent requirement of households for basic shelter (Greene & Rojas, 2008).

Incremental housing as a strategy for housing could provide numerous advantages which include:

- **Affordability:** Incremental housing enables individuals to start with a basic housing unit and gradually expand the unit. If the house is developed incrementally, it would also decrease the cost of the infrastructure (Delgado & Antipova, 2008). Most of the population struggle to access formal financing instruments such as mortgages so by breaking the construction process into manageable stages families can spread the cost of construction over time. The primary benefit of incremental construction lies in its ability to adapt the process of home building according to the financial capabilities of the household (Greene & Rojas, 2008). For example, low-income families who have limited resources and have to choose between a complete house which is above their income or sending their wards to school for example can cut the cost of what they would pay for the full house and the remaining balance they could still send their wards to school. This incremental approach offers a more realistic pathway to homeownership for low- and middle-income families in Nigeria as they would be able to start with a simple and affordable unit as opposed to paying for a fully finished home.
- **Flexibility and customization:** Another big advantage of incremental housing is that it allows residents to customize their homes according to their specific needs and preferences (Greene & Rojas, 2008). They could start with a simple livable structure and then accordingly add more rooms or features as the family grows or as resources become more available. A family could start with the most important spaces such as kitchen, toilet and a room, then by next year they could add another room to the building. Each family has its unique needs and cultural requirements when it comes to housing. Incremental housing allows for active participation in the design and construction which would enable the families to customize their homes according to their

requirements (Hasgöl, 2016). By being able to customize the house, the residents have a sense of ownership and social connection to the house.

- **Community engagement:** Incremental housing encourages community participation and involvement in the planning and construction processes (Adhikar, 2019). By actively being involved in the decision-making process, the residents contribute their knowledge, skills, and resources to improve the housing situation in the community. Incremental housing often prioritizes the use of local resources and involvement of local business to support local businesses. Incremental housing projects often emphasize using local resources and engaging local businesses. This strategy not only boosts the local economy but also opens up avenues for skill development and job creation within the community. Supporting local artisans and businesses which would drive sustainable economic growth and strengthen the community's social fabric. Community led programs would result to a more culturally appropriate design that would meet the needs of the individuals. By involving the community in the planning and construction processes the units can be tailored to meet the unique social and cultural needs of the residents. This participatory approach ensures individuals involved in the planning and construction are more likely to maintain and take care of their properties and the community.
- **Incremental upgrades:** This housing approach makes it possible for residents to make gradual improvements and upgrades to their homes. By allowing residents to invest in upgrades at their own pace it reduces the financial burden and encourages long-term investment in housing (Greene & Rojas, 2008). As financial resources become more available the residents can add more room or functional spaces to enhance comfort and functionality of the home. Incremental housing gives residents the flexibility to adjust their living spaces as their needs and financial capabilities evolve over time (Hasgöl, 2016). Incremental upgrades act as a driving force for sustained investment in residential

properties. Homeownership is transformed from a one-time financial venture into an ongoing opportunity for families to invest in their homes as their finances allow. This method cultivates a deep sense of ownership and pride, leading to better maintenance and care over the long term.

- Scalability and rapid deployment: Another key advantage of incremental housing is its scalability which is due to the modular nature of the housing units. Incremental housing can be easily replicated and scaled up to meet the high demand for housing (Delgado & Antipova, 2008). By adopting a standardized approach to construction and utilizing prefabricated components, the process can be streamlined and accelerated. This means that multiple housing units can be constructed simultaneously, this would significantly address the urgency of the housing deficit and provide homes to a larger number of people in a shorter period (Amoako & Boamah, 2016). Incremental housing can be cost-effective due to the potential for bulk purchasing of standardized components and reduced labor expenses. Nigeria can significantly reduce the backlog of housing demand and provide affordable and adequate housing leveraging on the scalability of incremental housing.

6.2 Prefabricated Construction

The construction method commonly referred to as off-site construction or prefabrication housing construction, is characterized by the construction of structures at a location separate from the designated construction site (Gibb, 1999). In the context of housing, prefabrication involves the manufacturing of building components within a controlled production facility, as opposed to the traditional on-site fabrication, followed by the transportation of these components to the intended location for assembly (Li et al., 2017). This method encompasses the construction of all constituent elements that form an integral part of the ultimate assembly and is characterized by its offsite manufacturing approach.



Figure 14. Precast construction.
(Otway precast)



Figure 15. Casting of EPS mold.
(Lcf center)

Prefabrication is said to provide close to 52% savings in global construction waste (Elkaftangui & Basem, 2018). This would in turn not only make it sustainable but very cost effective on a larger scale because of the reduction in waste. Since all the

modules that would be used are manufactured in a factory, there is standardization across all parts which would also help in accelerating the building process. Prefabricated constructions have numerous benefits over conventional construction methods, some of them include:

- **Speed and efficiency:** Prefabricated construction involves producing building components off-site in a controlled manufacturing environment (Savvides et al., 2023). By production the building components off site, it allows for quick and efficient construction process. This method allows for simultaneous work on the construction site and in the factory which significantly reduces construction time. The speed factor is very important as the country is trying to reduce the housing deficit and in meeting the annual target of homes built. Streamlining the construction process and minimizing the time needed for building can lead to the construction of a greater number of homes in a shorter time frame. This scalability is crucial for addressing the significant housing demand and could greatly mitigate the national housing shortage (Ogeye, 2014). There is greater efficiency in the construction method and material usage since the components are mass produced in factories. The whole construction process becomes more environmentally sustainable and economically viable with the reduction in material waste. The components are manufactured with precision ensuring consistency and quality in the final product. This is crucial in addressing the issue of substandard construction practices often witnessed in Nigeria (Bello et al., 2023) . By implementing quality control measures at every stage of production, the construction industry can ensure that the resulting structures are long-lasting and compliant with the required standards.
- **Cost-effectiveness:** Prefabrication techniques can lead to cost savings in the construction process through various means such as the reduction in the time spent on site and less materials used on site due to its efficiency. The controlled factory environment optimizes material usage reducing waste and allows for bulk purchasing which would

further reduce overall construction costs (Savvides et al., 2023). The accurate production of precast concrete elements enables savings in reinforcement and concrete, as the materials are used more efficiently. This reduction in material usage decreases the production costs of precast concrete elements. Additionally, the shorter construction time minimizes labor expenses further contributing to cost savings (Li et al., 2017). Precast concrete structures are durable rendering them impervious to the need for maintenance over an extended span of at least 50 years which makes them more cost efficient on the long run (Prilhofer Consulting GmbH & Co. KG, 2015). The architectural design of these buildings involves load-bearing walls and floors which would result in a less supporting system for the building. During construction, the utilization of scaffolding is rendered unnecessary in precast concrete building construction, as solely a temporary bracing of the precast concrete elements suffices.

- **Quality control:** Prefabricated construction methods allow for an elevated degree of quality control throughout the manufacturing process. The production of building components takes place within a regulated factory environment enabling meticulous fabrication and assembly. The employment of cutting-edge technology and automated machinery guarantees precise measurements and unwavering production quality. In contrast to conventional construction techniques, prefabrication presents a notable advantage by reducing the potential for errors and inconsistencies arising from onsite errors. Prefabricated construction serves as an effective strategy to address prevalent concerns related to substandard construction practices. This is particularly crucial in Nigeria, where the durability and longevity of buildings are vital due to the climatic and environmental conditions.
- **Flexibility and customization:** Another very important benefit is that prefabricated components can be easily assembled and disassembled. This makes it adaptable to various housing needs and allows for future

expansion (A & F, 2019). The use of prefabricated construction means there is effortless reconfiguration and modification of the building's layout. This inherent flexibility empowers homeowners to personalize their residences in accordance with their specific needs and preferences. It also offers the potential for future expansion or modification of the building as the demands of the residents fluctuate over time. New prefabricated modules can be seamlessly incorporated into the preexisting framework. This flexibility enables incremental housing where homes can be gradually expanded as the residents' needs and financial capabilities grow over time. The prefabricated components can be seamlessly integrated with diverse design elements and finishes, thereby presenting an extensive range of architectural styles and finishes.

- **Sustainability:** Prefabricated construction often incorporates sustainable design principles. The controlled manufacturing environment permits efficient use of resources and waste reduction (Li et al., 2017). Minimal waste is generated during the production of precast concrete elements owing to the efficient utilization of materials facilitated by computer-operated production. Any unused fresh concrete is reintegrated into the production cycle, achieving a near 100% recycling rate. Furthermore, the necessity for packaging materials is reduced as precast concrete elements are stored and transported to construction sites without packaging. Additionally, the use of eco-friendly materials can be integrated into the prefabrication process, minimizing the environmental impact of construction (A & F, 2019). The utilization of a standardized manufacturing process facilitates the integration of insulation materials and energy-efficient systems into the prefabricated components thereby leading to enhanced thermal performance and diminished energy consumption in the finalized structures (De Engenharia, 2023). The utilization of prefabricated construction methods can serve as a significant catalyst for sustainable urban development. The notable efficiency and speed

allow for a swifter project completion thereby reducing effects of prolonged construction process which causes pollution (Franco, 2023). Additionally, prefabrication presents the opportunity for the creation of modular and adaptable structures which could be partly or disassembled instead of demolished.

6.3 Expanded Polystyrene (EPS)

EPS, also known as Expanded Polystyrene, is a type of thermoplastic material that is made from styrene monomer. It is produced through a polymerization process that creates round and translucent beads of polystyrene. EPS material is incredibly beneficial for promoting sustainable development as it helps decrease the extraction of natural resources like wood and stones from the environment (Okumu, 2014). This makes EPS a sustainable building material. Because of the effectiveness of plastic materials in both commercial and residential construction over the last thirty years, there is a significant rise in the use of plastic within the design and construction industry. This trend is attributed to the enhanced performance of materials as well as the growing demand for construction materials that are lightweight, durable, sustainable, and cost effective (Ede, 2014).



Figure 16. Expanded Polystyrene mesh.

(Lcf center)

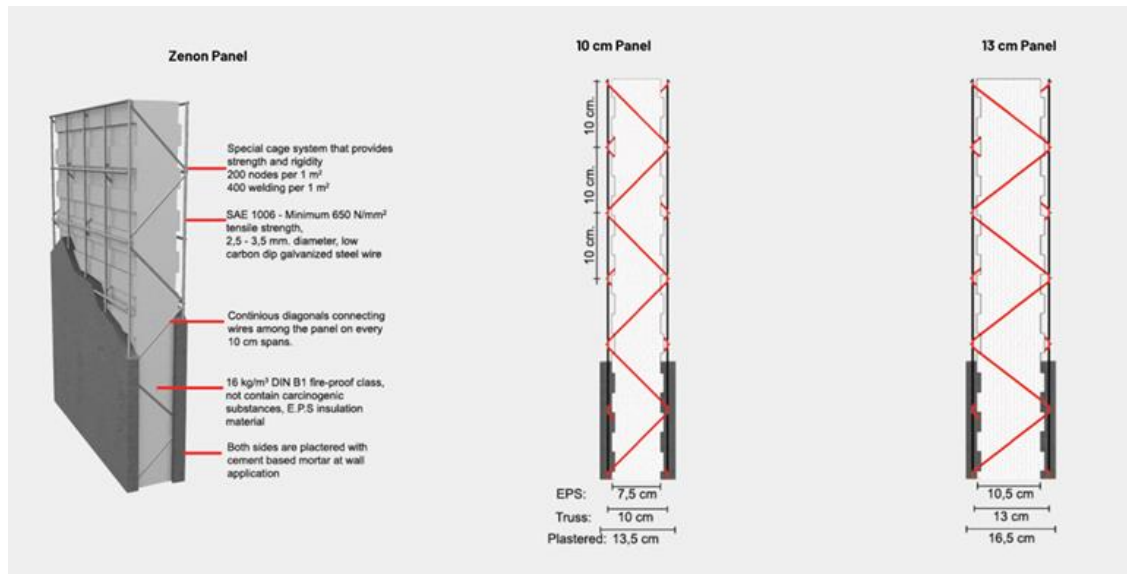


Figure 17. Cross section of EPS panel.

(Zenon, 2024)

EPS material offers excellent strength capabilities in building construction, making it a reliable choice for both low and high-rise structures. It has been used in buildings up to ten floors. Using EPS material in construction offers a multitude of advantages for users, investors, and the environment. It facilitates quicker construction times and shortens building periods due to its ease of handling and the option to obtain it in various lengths. The lightweight panels are simple to manoeuvre and install at any height, whether inside a factory setting or elsewhere. Moreover, despite their reduced weight, structures made with EPS panels possess the strength to better resist natural disasters compared to those made with traditional stone and mortar. The large-scale manufacture of prefabricated houses with EPS panels is projected to reduce both the cost and the time required to construct a home (Okumu, 2014).

6.4 Urban Planning

With the rapid urbanization in Nigeria, the urban areas have become increasingly overcrowded. The abundant expanse of land resources in Nigeria offers a promising prospect for the implementation of incremental housing strategies by building horizontally thereby dispersing communities across the available land. Horizontal expansion provides the opportunity to construct extensive housing developments

without the limitations imposed by building vertically, thereby potentially facilitating the accommodation of a larger number of households (Patel, 2018). Horizontal expansion optimizes land use by utilizing available space efficiently. In Nigeria, urban centers frequently encounter severe housing deficiencies, resulting in escalated property values and rental costs.

The proposal to construct incremental housing in suburban regions of Nigeria, where prefabricated material factories are located offers a strategic approach to tackle housing shortages while capitalizing on the advantages of prefabrication. This approach effectively promotes the dispersion of population housing distribution, thereby alleviating the strain on overcrowded cities. By situating housing developments in suburban areas, they become closer to where prefabrication factories are located, the construction process can be streamlined through the reduction of transportation costs and logistical complexities associated with long-distance material transportation. The proximity to manufacturing facilities helps efficient supply chain management, ensuring a consistent and dependable supply of prefabricated components to construction sites. This logistical benefit translates into cost savings and expedited construction timelines, ultimately expediting the provision of housing units to meet the escalating demand. Incremental housing initiatives implemented in suburban areas have the potential to stimulate comprehensive development within these areas. As the demand for housing escalates, the necessity for fundamental infrastructure becomes apparent. Consequently, this promotes a state of balanced regional growth and development.

The construction of the incremental housing units would be in clusters as it enables the efficient utilization of land thereby optimizing the available space. Through the clustering of housing units, the provision of essential infrastructure and services such as water supply, sanitation, and transportation, would be carried out in a more effective manner there by benefiting multiple households (Typologies and Cluster Planning, 2020). These units would be built in suburban areas which has the potential to contribute significantly to the development and enhancement of public infrastructure. This presents an opportunity for local governments and urban planners to prioritize and allocate resources towards the essential infrastructure required to support housing developments in these areas. Consequently, this can lead to the gradual upgrading of neighborhoods and the provision of enhanced services for both

existing and new residents. It facilitates the establishment of shared spaces and facilities, such as parks, community centers, and playgrounds, thereby augmenting the overall livability and well-being of the inhabitants (Archi Com, 2022). The promotion of incremental housing in suburban areas serves as a viable solution to mitigate the burden on housing resources within densely populated urban centers. This strategic approach effectively fosters the decentralization of population housing distribution by offering alternative housing options beyond the confines of overcrowded cities. This approach effectively promotes the dispersion of population housing distribution, thereby alleviating the strain on overcrowded cities.

6.5 Design and Construction

By integrating the principles of incremental housing and EPS prefabricated construction, this proposed approach has the potential to revolutionize the housing sector in Nigeria. It not only addresses the immediate housing needs but also prioritizes affordability, adaptability, and sustainability in the long run. By integrating the strategies of incremental housing with the EPS prefab construction as the method of construction, this would significantly help with the problems the housing sector is experiencing.

The concept of providing "half a good house" as shared by Aravena narratives illustrates how Elemental constructed the essential half of a home that a family might struggle to build on their own such as plumbing and wiring. Faced with the challenge of limited resources they would have to decide whether to prioritize access to hot water or allocate space for a private bathtub (Hustwit, 2011). This anecdote showcases participatory design in action, emphasizing the importance of consulting with homeowners early in the design process. While homeowners can save for amenities like a water heater and plan for ongoing expenses, having a private bathing space immediately enhances their sense of individual well-being. In another scenario would be the allocation of space within the home which developers may usually prioritize a larger common area for entertaining guests. However, through participatory design we discover families might express a preference for a dedicated study area. This example underscores the significance of involving homeowners in the decision-making process to ensure that the final design aligns with their lifestyle preferences and enhances their

overall quality of life. This strategy would mean that families would not have to put down a lot of money because they are only getting half of a house so the cost implication would be significantly reduced.

The fabrication process would be done in factories by sandwiching the EPS between concrete. This use of prefabricated construction technique would be used to significantly cut the time of construction and reduce the cost of the building. The idea is to have the wall panels in grids which would make it easily interchangeable and allow for flexibility in planning the layout. The building's foundation, core and structure would be made of prefabricated slabs, this would mean that the whole house could be assembled in record breaking time with less labor involved. Integrating these together would mean the half houses would be easy to assemble, the prefabricated components would be mass produced and ready for assembly. This would make it possible to build mass housing units at the same time across the country, thereby helping to reduce the housing deficit.

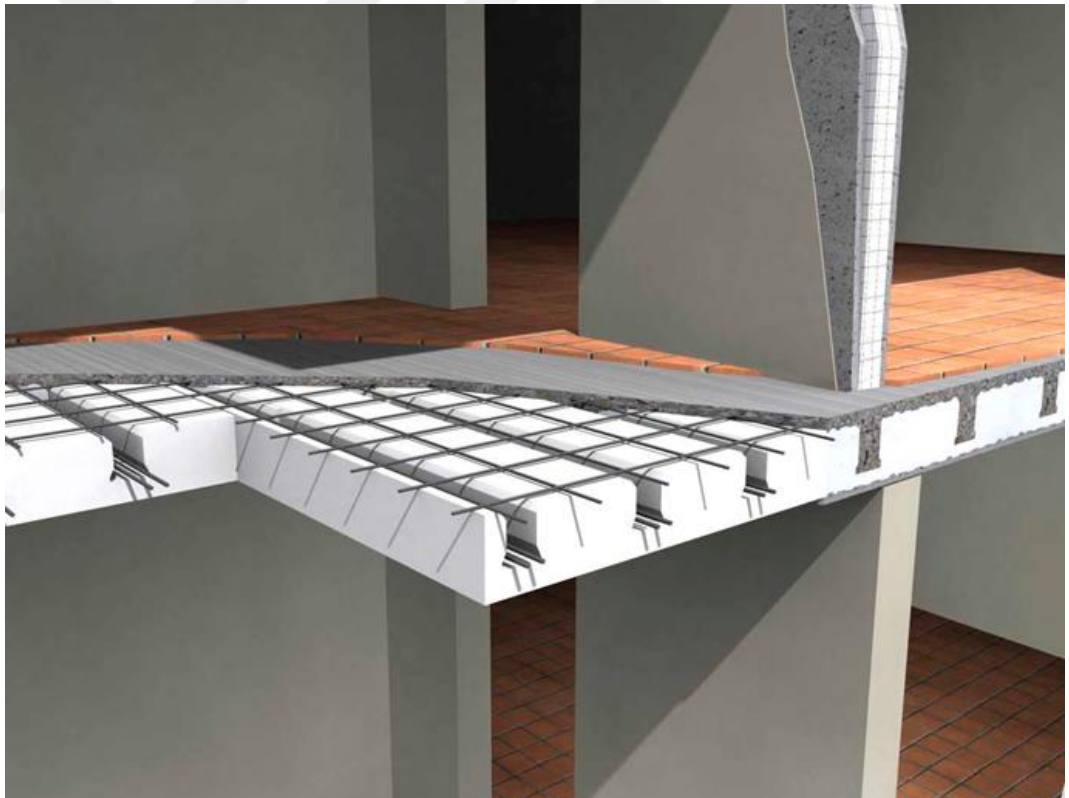


Figure 18. Prefab EPS walls and floor.

(NIDYON Construction)

The proposed design incorporates a grid system allowing for modular construction. The initial module, which was constructed first, encompasses essential living spaces such as kitchen, toilet, stairs, and a sitting room. This layout ensures that the basic needs of the residents are met from the start. Moving to the upper floor, the design includes one room and an additional toilet. This floor provides suitable accommodation for the family, offering privacy and comfort. The layout of this floor takes advantage of the available space within the grid. However, the unique aspect of this design lies in the flexibility for expansion and customization. Residents have the freedom to modify and extend their housing unit based on their evolving requirements. Using the same grid system, the residents would be able to easily add extra modules to the structure. They may choose to add extra bedrooms, create additional functional spaces, or even rearrange the existing layout. The design offers versatility and empowers the residents to personalize their living environment. With incremental expansion families can gradually enhance their homes according to their financial capabilities and evolving needs. This approach allows for a sustainable and affordable process of home improvement, as the costs can be distributed over time. The modular design and prefabricated construction methods enable efficient assembly and integration of the additional modules.

These houses would be constructed in segments starting with the foundations which would be prefabricated and installed reducing the time it would usually take to cast Insite and allow to cure. Next you have the ground floor slab and walls which would serve as the structure that holds the building in place. Then the first-floor walls and slab are installed, after that the roof is mounted which concludes the structure of the building. The next phase would be the addition of internal partitions as well as windows and doors. The roof extends above an empty part of the building, this is to allow for expansion of the floors below. The ground floor entrance could be customized to accommodate another room, study, or garage. While on the first-floor residents can decide to also add another room where there is a void.

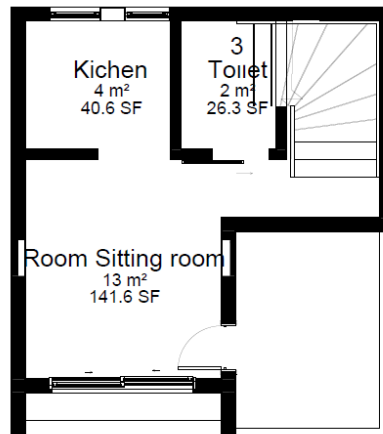


Figure 19. Ground Floor plan.

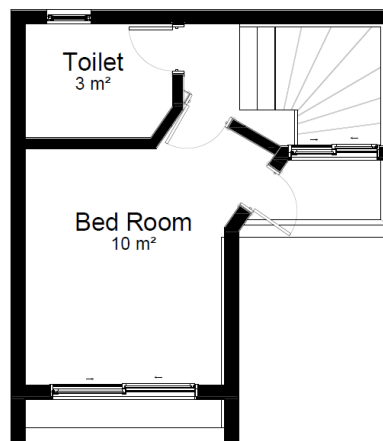


Figure 20. First floor plan.

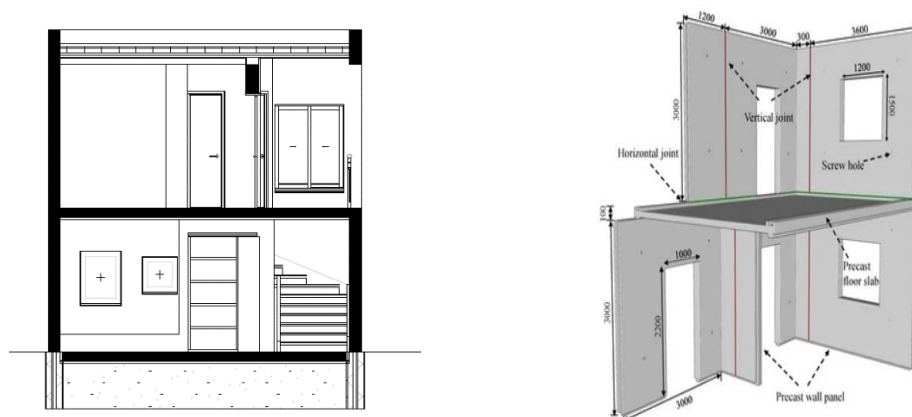


Figure 21. Section and details.

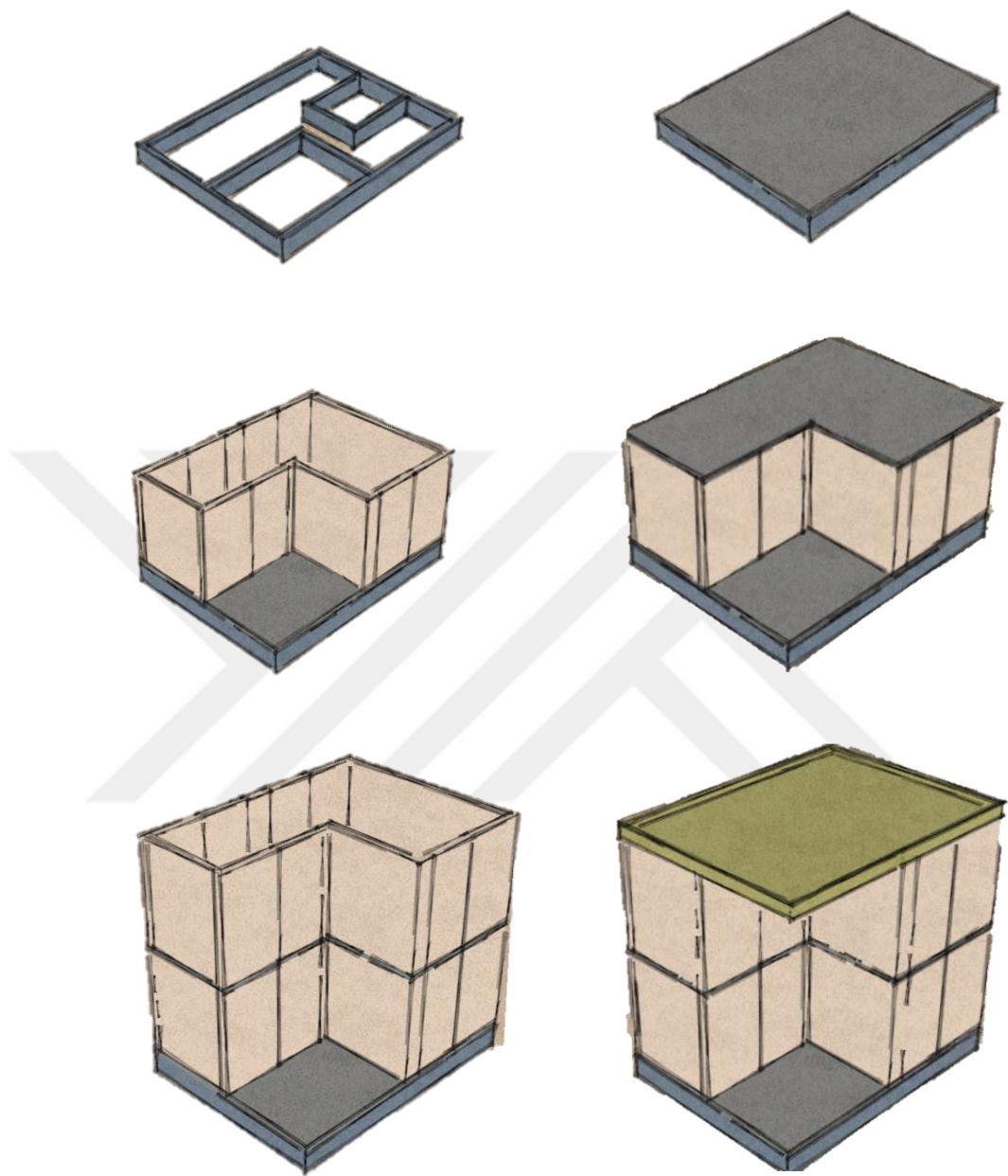


Figure 22. Stages of construction using EPS prefab.



Figure 23. Renders showing Incremental housing communities.

Chapter 7

Recommendation and Conclusion

This Chapter reflects on the research paper and discusses its main findings and observations and then it concludes by highlighting its recommendations.

This study examines the various initiatives and policies implemented by the past and present government in address housing provision in Nigeria. It discusses the urbanization challenges and proposes an architectural solution to help reduce the housing deficit by providing affordable housing for the low-income earners. The paper explores the introduction of alternative building materials as a potential solution. The high cost of construction emerges as a significant barrier to meeting policy targets, as building costs are influenced by the economic climate. The paper also analyzes the role of institutions involved in housing provision and their impact on the overall progress.

Nigeria faces the challenge of rapid urbanization which puts pressure on the already low housing stock. The demand for adequate and affordable housing in Nigeria keeps growing just as the population of the country is also increasing. Nigeria has a population of more than 220 million people and a housing deficit of 28 million units, which is one of the highest in Africa. Current housing delivery efforts fall short of meeting the demands due to the population growth, that is why it is very important to put heads together with the necessary stakeholders in the housing sector to mitigate this issue now. Addressing the housing demand is no easy task especially with the current cost of construction in the country. The exchange rate in the country is at an all-time high which makes procurement of building materials more expensive. This means that developers have to spend more on construction materials and when the houses are finished the end users would also have to pay more for it. The cost of housing has been one of the biggest problems in the provision of housing for the population. Low-income earners and the most vulnerable in the country cannot build their homes from scratch, most of them cannot even buy the land in the first place. Rent is sometimes very expensive for the low-income earners, especially in the urban areas. In Nigeria, the access to housing finance and mortgages favors the high-income

earners who often do not need it. That is why there is a need for the government to ensure that these housing finance and mortgages are accessible to the low-income earners who need it the most.

Addressing the housing challenge of the low-income group in the country would significantly reduce the country's housing deficit, this is simply because the low-income earners make up a significant percent of those faced with the challenge of housing in Nigeria. It could be said that the housing deficit is largely attributed to policy planning and implementation which is somewhat due to the lack of political will of the stakeholders. The housing ministry was allocated N100 billion naira in the 2024 budget which would be used to build about 50,000 units. For a country that is required to build close to 1,000,000 housing units annually to reduce the 28 million housing deficit in the next 20 years, the budget would be inadequate in meeting that goal.

The government must take charge of the situation, but it cannot do it alone, it would have to lay the foundation and provide the necessary enablement that would stimulate private sector involvement in housing. Government efforts need to be supported by the private sector and civil society to tackle the significant housing issues facing the nation. Foster partnerships between government, private developers, and non-governmental organizations (NGOs) to leverage resources, expertise, and innovation in housing projects. PPPs can bring together the strengths of different sectors to deliver more effective housing solutions. The only way of achieving the lofty goal of providing decent and adequate housing at affordable prices is making substantial changes in the mechanisms of housing provision and income distribution. This requires a deliberate and effective governance strategy to ensure policy implementation rather than just policy establishment. Basic infrastructure like security, roads and power should be made easily available to invite investors. The housing interests of the low- and middle-income households should be prioritized by the government and policymakers during housing policy reforms. The government should develop affordable housing policies tailored for the low-income earners and the vulnerable in the population. Subsidies should be provided in various ways to both the developers as well as the end users. Provide tax breaks, subsidies, and other incentives to private developers who invest in incremental and prefabricated housing projects aimed at low- and middle-income families. These incentives can encourage more

private sector involvement and investment in affordable housing. There are subsidies now in the housing sector, but they are not getting to the most vulnerable who need it the most, instead those in charge of providing the subsidies fraudulently allocate them. The current surplus in the budget which results from high crude oil prices and petroleum subsidy removal presents a unique opportunity to make substantial investments in the National Housing Trust Fund and other housing initiatives. This will facilitate significant mortgage investments and promote the development of affordable housing in the country. The Renewed hoped agenda has noted that it would partner with the private sector in providing adequate housing for the population.

Other challenges the government must address in the housing sector include mismanagement of funds, fraud, and bureaucratic bottlenecks. Based on the results from the survey, it is determined that fraud and mismanagement are major issues facing the housing sector. The process involved in the acquisition of land and property registration is never straightforward. When you are developing, the process of obtaining construction permits is plagued with bottlenecks. These processes need to be digitized and made simpler to encourage investors and to keep up with international standards. The government should also encourage the use of local building materials and practices to reduce the cost of construction. Almost all the conventional building materials used in the construction industry today are imported. Because of the high exchange rate used to procure these materials, they become very expensive. That would not be the case if local materials are used in the construction process because they are devoid of problems of exchange rate. More developing countries are going this route, the government of Nigeria must encourage entrepreneurs to set up building materials production through tax cuts and incentives.

Governments at the national and state levels should integrate incremental housing into their housing policies. This strategy involves constructing basic, habitable units that can be expanded over time as the residents' financial situation improves. This approach allows for a gradual and affordable way for low- and middle-income families to achieve homeownership. Results from the research shows that incremental housing principle could be an applicable way of providing adequate and affordable housing to the Nigerian low-income earner. The idea is that the average worker who does not have enough to build a full house, would pay for half of a house instead. That half of a house would contain the basic living amenities such as a room, kitchen, and

bathroom, then along the line the resident would be able to save and expand the house to their preference. This provides the chance for future development and the best chance of home ownership for these low-income earners. Due to the participatory nature of incremental housing, the residents can alter and customize their house to meet their social and cultural needs. This principle would provide the most cost-effective solution to reducing the housing deficit in Nigeria. The government would provide the land for communities with the necessary infrastructure, then private firms would build half the houses which would not be as expensive as a full house and lastly the residents would finish up their houses on their own. This saves a lot of cost for all the parties involved.

Implement standardized designs and quality control measures for prefabricated components to ensure consistency and durability. Prefabricated construction allows for the mass production of high-quality building components, reducing variability and ensuring high standards. These houses would also be using prefabricated construction which would significantly cut the time of construction. This is because unlike the conventional cast in site block work construction, you don't have to wait for the concrete slabs to cure or pay extra labor for the construction process. Use prefabricated construction methods to quickly scale up housing projects, aiming to meet the annual housing demand of nearly a million homes. This approach can help bridge the housing deficit more effectively than traditional construction methods. With prefabricated construction, the EPS-enhanced concrete manufactured in factories and simple transported to site and installed. This is a game changer in the construction industry in Nigeria because it would cut the time spent build a house significantly. Because these panels are mass produced, they would be cheaper and the EPS which is in between the concrete reduces the amount of concrete that would normally be used. the prefabricated panels could be easily customized or molded to any form in the factories, this makes for a variety of design options. The design of the house is done using grids which are the same size as the prefab panels, this makes for very easy installations and flexibility. The integration of incremental housing with EPS-Prefabrication presents a cost effective and sustainable approach to housing in Nigeria. Therefore, the integration of incremental housing strategies with EPS-enhanced concrete prefabrication proposals represents a new way of approaching the housing deficit. Such a model not only immediately solves the existing problem of urban dwellers but

also introduces the concept of sustainability, adaptability, and cultural appropriateness. Finally, the extent of this thesis encourages policymakers, architects, and urban planners to work together to bring the vision to life, so all Nigerians can have equal and honorable housing. This model also speaks to the role of community engagement, the use of local resources, and priorities of affordability, as described in this design for a paradigm shift in housing. As our nation continues to urbanize, so too does the basic human need for housing take on increased significance. In terms of the insights gleaned from such an inquiry, stakeholders are therefore provided with feasible and relevant tactics.

Engage communities in the planning and design processes to ensure housing solutions meet local needs and cultural preferences. Community participation fosters a sense of ownership and ensures that the housing provided is appropriate and sustainable. Develop community facilities like schools, healthcare centers, and recreational areas to enhance the livability of new housing projects. These facilities support the well-being of residents and foster community cohesion. Provide financial incentives such as micro-loans and grants to support low-income households in gradually improving and expanding their homes. These financial tools can help alleviate the initial financial burden and support long-term investment in housing. Develop micro-finance products tailored to the needs of low-income households, enabling them to incrementally finance the expansion and improvement of their homes. Micro-finance provides flexible and accessible financial support for housing improvements. Introduce flexible mortgage schemes with low-interest rates and longer repayment periods to make homeownership more accessible. These schemes can help more families afford their own homes without facing overwhelming financial strain.

By integrating incremental housing and prefabricated construction techniques, Nigeria can develop a housing strategy that is not only sustainable and scalable but also cost-effective. These two approaches complement each other in addressing the multifaceted challenges of the housing deficit. These recommendations are designed to foster collaboration among various stakeholders, including government agencies, private sector developers, non-governmental organizations, and local communities. Such collaboration can pool resources, expertise, and innovative ideas, leading to more effective and comprehensive housing solutions. In conclusion, the integration of incremental housing and prefabricated construction techniques presents a viable path

forward in addressing Nigeria's housing crisis. Through strategic policy alignment, community involvement, technological innovation, and collaborative efforts, Nigeria can create sustainable, affordable, and adaptable housing solutions that meet the needs of its growing population. This holistic approach not only addresses the immediate housing deficit but also lays the foundation for long-term, inclusive urban development.



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