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# STRATEGIC VARIABLES FOR IMPLEMENTING SUSTAINABLE HOUSING UPGRADES IN THE COMING ERA

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**Abstract:** Housing ranks very high in Maslow's hierarchy of needs pyramid. Various housing policies in Nigeria have failed to make decent accommodation accessible and affordable to the urban dwellers. While the Nigerian teeming urban population continues to groan under the challenges of inadequate shelter, statistics indicate no evidence of improvement in the housing conditions in terms of affordability, standards, and availability of services. The paper uses literature review to establish the housing status quo in Nigeria, and leverages on the community study series of the Department of Architecture, Imo State University Owerri to identify variables that impact on residential upgrading to uplift housing development and delivery in the next millennium. The paper makes recommendations on the implementation of the variables, and concludes that existing housing stock in the study area would be rejuvenated to the benefit of humankind in the coming millennium if the recommendations are adopted and implemented.

**Keywords:** housing policies, housing status quo, variables impacting on housing upgrading

## INTRODUCTION

Abram Maslow identified shelter as one of the basic needs for functioning and well-being. Housing needs are strong source of meaning and pleasure for man and cannot be neglected without negative consequences (Desmet & Fokkinga 2020). Housing patterns and affordability problems of humankind, urbanization, and population pressure combine and make governance a nightmare for stakeholders with conscience because of apparent inability to provide shelter for the people. While the cost of construction materials continues to soar, the problems of the urban dwellers worsen because of ageing, decaying, and neglected urban environment (Kalu et al 2014). Corbum and Sverdlik (2016) aptly observed that health implications of housing upgrading are often overlooked, and suggested that urban health inequalities can be ameliorated by responsive governance and multi-sectoral initiatives in slums.

The UNCHS (2020) estimated that almost 50 percent of the world's total population will be living in urban areas, while urban dwellers will outnumber rural dwellers as the global urban population doubles from 2.4 billion in 1995 to 5 billion in 2025. Sun et al (2020) identified uneven urbanization of large cities globally, and dearth of information about characteristics of urbanization in large cities across the globe. The findings are that urban

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expansion still lags behind urban population growth, and that low-income countries could undergo serious urban problems, such as slums and crowding.

These statistics indicate that urgent action and strategies must be put in place to stem the tide, especially in a developing country such as Nigeria. This paper therefore seeks to investigate housing upgrading in the place of housing development and delivery in the next millennium.

The aim of the paper is to investigate the variables that for housing upgrading in the next millennium in Nigeria. To develop decent, affordable housing in the neighbourhood; create a userparticipatory initiative where everyone would be involved in the decision-making process; and phasing of the construction process.

## **LITERATURE REVIEW**

Adegoke (2020) identifies the role of housing in the national economy of Nigeria, and shows that housing policy can be made more effective in national development if strategies are put in place for low-income families to have more access to shelter. Growing housing deficit has resulted to slum and squatter developments, while housing affordability has deteriorated in urban areas. In the past three decades, Nigeria has deployed public housing schemes with limited success, while the teeming population continues to groan under the challenges of inadequate shelter. According to UN DESA (2018) it is projected that by 2050, India will have added 416million urban dwellers, China 255 million, and Nigeria 189 million. The knowledge of the key trends and variables in urbanization over the coming years is important to the implementation of the 2030 Agenda for sustainable Developments including a new framework of urban development. To optimally exploit the benefits of urbanization, policies to manage urban growth must ensure access to physical infrastructure and social services for all, especially the urban poor and the vulnerable.

The poverty implications on the living and housing conditions among Nigerian urban dwellers was identified in Akinyode and Martins (2017). The study established statistically that majority of the housing exhibit deterioration condition, occasioned by socio-economic situation and high poverty level of the residents. The study concluded that urban housing attributes are critical for the safety and comfort of the urban dwellers, and urgent attention must be made to ameliorate the status quo.

Kalu et al (2014) identified acute shortage of habitable housing in Nigeria urban fabric and the resultant effects of deplorable environment, overcrowding, inadequate and poor infrastructure. The study concluded that rural areas should be planned and developed with provision of necessary sustainable infrastructure to bridge rural-urban drift, a strategy to deflate slum-developing tendency.

According to UNCHS(2020) there is no evidence of improvement in the housing conditions in terms of affordability, standards, and access to services. It is against the foregoing that this paper seeks to propose housing upgrading as a tool to reinforce housing development and delivery in the next millennium in order to improve on the equilibrium of housing demand and supply.

Ezeanah (2021) opines that public authorities should control the housing delivery process in order to reduce housing deficits, and also improve on the quality of housing. The study identifies high level of urbanization, poor policy programmes, and housing finance among housing challenges in Nigeria. The Federal Housing Authority (FHA) was empowered under the National Housing Policy 1991 to develop and manage real estates on commercial and

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profitable basis in all the states of the federation, and to provide sites and services schemes for all income groups (Akanji, 1990). While the ultimate goal of the National Housing Policy is to ensure that every Nigerian owns or has access to a decent accommodation at affordable price by the year 2000AD, very little success has been recorded at all tiers of government. To achieve the desired goal the 1991 National Housing Policy stated that appropriate agencies at the three levels of government shall be funded to perform the following functions:

- i. Provide residential layout for low-income housing through the Local Planning Authorities within its jurisdiction;
- ii. Assist in the formation of housing cooperatives;
- iii. Provide infrastructure through loans from the infrastructure development fund;
- iv. Maintain urban and rural infrastructure and be responsible for environmental sanitation;
- v. Determine the housing needs of the rural population; and upgrade existing residential areas; and
- vi. Upgrade existing residential areas in collaboration with State Government

The National Housing Policy concludes that the present housing finance system and sources of credit for residential property development are inadequate. Awotona (1990) concurs that ineffectiveness of public policy and programmes were engendered by lack of incentives for the private sector to be involved, and inadequacy of mortgage finance institutions in Nigeria. Certain factors such as high cost of building materials have worsened the challenges of housing supply, creating huge deficits in the chain. Ibimilua and Ibitoye (2015) examined housing in the context of sustainable development, and identified housing problem in Nigeria as emanating from the housing policy. According to Ajayi (2020), the Federal government should not be directly in housing provision as it is not cost effective. The paper opined that a conducive macro-economic environment must be created by government to stimulate housing delivery process, and also simplify transactions in land allocation and registration of titles.

### Residential Upgrading:

The variables identified for the study as shown in Table 1:

**Table 1: Variable Definition**

S/N	DESCRIPTION
V1.	Roof Replacement/Repairs
V2.	Natural lighting - inadequate
V3.	Poor Plumbing
V4.	Routine Flooding
V5.	Dangerous Electrical Wiring
V6.	Furniture: Refinish
V7.	Frequent Rodent Infestations.

Building upgrades are veritable ways to enhance liveability, energy - efficiency, cost effectiveness, and resale value. Some building upgrades may turn out to be more costly in the long run, home improvement projects include: drainage installation; updating of kitchen and appliances; replacement of doors; windows; bathroom fixtures - broken; service pits - dilapidated; refresh walls, flooring, comtertops; improve interior and exterior lighting; landscaping - informal; replacement of roofs.

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Housing enhances increase in productivity for many of the urban self employed. In Nigeria, as in many developing countries the dwelling is also the workplace of many residents. Convenient access to housing promotes employment opportunities and options for members of the household. Housing development involves the following processes: conception, predevelopment, construction, and occupancy. The concept in component of housing involves information gathering and evolution of a development strategy. The predevelopment component of housing is made up of site analysis, evolution of design drawings, and the obtaining of necessary relevant permits for the construction process which ultimately delivers the housing into available housing stock for occupancy and operations (NURP Decree 1992). In addition, the importance of improvement, rehabilitation, renewal and upgrading are other objectives for effective and efficacious development of the built environment. The planning authority is mandated to declare an area as an improvement area, and hence produce a gazetted local plan to facilitate rehabilitation, renewal, and upgrading of physical environment, and infrastructure of the neighbourhood to enhance better environment for living, working and recreation.

According to Awotona (1990) Nigeria's urban population was estimated in 1970 as 16.3% of the total population, while in 1980, the urban population rose to about 20.2%. Although the Nigeria third National Development Plan (1975-1980) identified the housing problem as an urban phenomenon, no statistics are available in terms of the quantity and quality of the housing stock. However, Awotona (1988) posits that the problems of housing in Nigeria should not be absolutely categorized in terms of housing costs, building materials, manpower availability, and land tenurial systems. Societal structural inequality, and understanding of users' disposition of minds towards housing policies is necessary to articulate meaningful reforms to reduce housing inequality.

## FINDINGS

### **Common Variables Identified by Empirical studies precipitating Residential Upgrading**

Empirical studies conducted between 1985-1999 with the architecture students of Imo State University, Etiti/Okigwe, Abia State University, Owerri identified seven common variables among the informal urban settlements which would prompt interventions using housing upgrading techniques as follows:

**Variable 1: Dilapidated Roof:** The empirical studies revealed that roof leakages were rampant in, with the very dilapidated timber carcass.

**Variable 2: Natural lighting:** Natural lighting was grossly inadequate in more than 75% of the buildings studied over the years. In a few buildings with modern glass windows, empirical studies indicated various degrees of dilapidation.

**Variable 3: Poor plumbing:** In more than 60% of the buildings studied over the period, plumbing was either very poorly done or non-existent. The use of pit latrine was rampant, and in about 60% of the buildings there were no underground service pits.

**Variable 4: Routine Flooding and External Works:** Formalized motorized and non-motorized traffic networks were non-existent, and there were no flood water drains. Routine flooding was common place engendering erosion in the ecologically sensitive areas.

**Variable 5: Dangerous Electrical Wiring:** In 80% of the buildings there were no formal electrical wiring. Building owners adopted make-shift "tapping" of power from nearby public power mains to energize their facilities.

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**Variable 6: Furnishings:** In about 75% of the buildings studied basic furnishings were inadequate. Make-shift items were deployed as furniture and furnishings.

**Variable 7: Frequent Rodent Infestations:** Frequent rodent infestations was commonplace in the informal settlements studied. There were no formal demarcations between vegetation and hard landscaped areas in more than 80% of the building studied.

## RECOMMENDATIONS

### Variable 1: Dilapidated Roof

Based on the findings from empirical studies It is recommended that in upgrading the specific buildings the extent of dilapidation of roof covering be measured to ascertain if total replacement, partial replacement or control of leakages using available sealants in the market would suffice.

### Variable 2: Natural Lighting

Where natural lighting was inadequate, it is recommended that;

- i. new fenestrations be created s appropriate on external walls
- ii. window shutters may be converted to aluminum or timber framed glass type complete with insect screens and other accessories.

### Variable 3: poor plumbing

It is recommended that underground service pits, be installed as appropriate where they are nonexistent. In situations where the existing underground service pits were dilapidated it is recommended that satisfactory remedial action be made to rejuvenate same.

### Variable 4: Routine Flooding and External Works

- i. It is recommended that motorized and non-motorized traffic routes be formalized.
- ii. Storm water drainage channels should be installed as appropriate along the road network.
- iii. Pedestrian walkways should be installed, where available spaces permits to separate motorized and non-motorized traffic.
- iv. Where available spaces permit, ornamental trees and hedge plants should be planted to enhance green building, and to add dynamism to the environment.
- v. Effort should be made to install street lights as appropriate to enhance surveillance of the environment at night.

### Variable 5: Dangerous Electrical Wiring

- i. It is recommended that building owners install standard electrical wiring and installations in their buildings using the services of qualified artisans and professionals.

### Variable 6: Furnishings

- i. It is recommended that kitchens be updated where they exist. Where there are no existing formal kitchens, space should be appropriate created for at least a gas kitchenette, and appliances deployed as part of the furnishings.
- ii. Broken bathroom fixtures and kitchen countertops should be replaced or repaired as appropriate.

### Variable 7: Frequent Rodent Infestations

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- i. It is recommended that homeowners comply with frameworks focused as total eradication of rodent infestation in their communities using integrated pest management (IPM) strategy as follows:
  - a. identify and remove enabling factors (food, water, shelter) which empowers rodents inhabit and multiply in an environment; create collection points for solid wastes which must be carted away regularly, while all liquid wastes must be appropriately channeled to service pits.
  - b. Block rodent ingress by sealing all holes and crevices in the dwellings.
  - c. Use bait traps, rodenticides, and rodent predators, such as cats.

## CONCLUSION

The paper concludes that if the recommendations for the improvement of the identified variables for housing upgrading are adopted, and implemented the existing housing stock in the study area would be rejuvenated to the benefit of humankind in the coming millennium.

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