



THE IMPACT OF HIGH COST OF BUILDING MATERIALS ON HOUSING PROJECTS

¹*Arc. Kianen Bonmene, ²Shadrach Noble Nicholas and ³Bright Izuu Joseph

¹Lecturer in the Department of Architecture, Rivers State University, Port Harcourt, Nigeria with Over a Decade of Practice Experience and Now He's Focus is Building the Young Minds in Architecture School.

²Master's Degree Holder in Architecture from Rivers State University, Port Harcourt, Nigeria. He is a Freelance Architect with Research Intrest in Finding the Science in Architecture.

³Master's Degree Holder in Architecture from Rivers State University, Port Harcourt, Nigeria. He is Currently a Freelance Research Fellow and an Enthusiastic Writer.

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*Corresponding Author

Arc. Kianen Bonmene

Lecturer in the Department of Architecture, Rivers State University, Port Harcourt, Nigeria with Over a Decade of Practice Experience and Now He's Focus is Building the Young Minds in Architecture School.

ABSTRACT

Amongst all the needs of humanity, housing is one amongst the three most important. When there is adequate housing, attainment of physical and mental health becomes way easier, and this in turn enhances social stability - individual development, cordial interaction between people, and efficiency at work places. This research work is geared towards investigating the effects of the rising cost of building materials on Mass Housing projects in the city of Port Harcourt. It also covers the effects of governmental policies on the cost of building

materials. To achieve a successful research work, the author carried out a market survey, comparing current prices of buildings as against the prices in recent years. More so, selected members of the building industry were engaged in a one-on-one interview sessions, which helped to buttress the points presented in this work, as well as the review of relevant literatures on similar subject matter. At the end of the research work, the author would have identified the effects of the rising cost of building materials on housing delivery; the influence of governmental policies on the cost of building materials; and some suggestions

that can enhance the provision of Mass Housing in Port Harcourt and its environs despite the current cost of building materials.

KEYWORDS: Mass Housing, Building materials, High cost, Governmental policies.

1.0 INTRODUCTION

It would be a true saying that one cannot talk about building construction without talking about the materials that will be used for the construction. This is because it takes materials, whether locally sourced or imported, to build a structure. From time immemorial, the construction or development of dwelling places has been an agenda of top priority, and has evolved over the years. Modern innovations and technological advancements have made it very easy for the building of houses to be achieved faster, at a lower cost and acceptable quality and standard. More so, the adoption of the concept of sustainability, which incorporates affordability and comfort, has helped to ease the pressure of housing provision all over the world. This concept or approach is what is globally referred to as Sustainable Affordable Housing. The sustainable affordable housing is all about satisfying the housing needs of current generation without jeopardising the opportunity of the future generations of achieving their housing needs as well.

Building materials have a role to play in achieving sustainable housing, because the cost and quality of building materials is directly proportional to the quality of housing, and in extension, the quality of living. Unfortunately, the cost of building materials which has continued to rise due to circumstances that will be discussed in detail in this paper, has become a stumbling block to achieving sustainable housing in towns and cities across Nigeria. To buttress this point, the cost of cement was N1,350 in 2006, and sky-rocketed to N2,650 by 2018, and currently it's over N3500 in 2022. This indicates over 100% increase in price from 2006 to 2022. This skyrocketing in the price of materials has been consistent over the period of ten years now, without any sign of slowing down. Oladipo (2009), rightly stated that building materials constitute a high proportion of cost in construction activities, when compared to other resources. From experience, the cost of building materials constitute over 50% of the total cost of a building project. According to Ojimelekwé (1999), the current economic state of the nation coupled with the continuous devaluation of the Naira and the galloping inflation, has made the cost of building materials to skyrocket to an outrageous level. Currently, the exchange rate is N500 to \$1. This exchange rate has a direct impact on imported products, much more than the locally sourced ones. However, the locally

sourced building materials are not left out in the increase in their prices. Their prices have also moved up due to the rise of petroleum products (which is Nigeria's main source of income and foreign exchange), the affects the cost of transportation and distribution of these materials to their final destinations.

2.0 AIM AND OBJECTIVES OF STUDY

The aim of this study is to evaluate the impact of the cost building materials on mass housing projects. It also covers the causes of this continues rise of building materials and some ways the problem can be mitigated.

The objectives of the research includes

1. Identify the causes of the skyrocketed price of products, especially building materials.
2. Identify the direct and indirect effects of the rise in cost of building materials on mass housing provision and quality of living.
3. To establish the place of government in the control of the cost of building materials in Nigeria.
4. To profer solutions on ways housing delivery can be achieved despite the outrageous price of building materials.
5. Encourage the mass patronage of locally sourced products to help cut cost of building projects.

3.0 STATEMENT OF PROBLEM

Provision of Mass housing has remained a challenge, both to government, private investors and individuals alike. In addition to unstable governmental policies, the cost of building materials in the country, especially in the city of Port Harcourt has made matters worse. This problem has made the provision of comfortable and affordable mass housing a task that is almost unachievable, thereby threatening the achievement of the concept of sustainable housing. This in turn has drastically reduced the living conditions and standards of the people and increasing the possibilities for more squatted settlements, which is usually the breeding quarters for crime.

Port Harcourt is one of the fastest growing cities in Nigeria, hence, is been faced with the challenge of providing sustainable affordable housing for her growing population. As an oil city state, the inflock of oil workers, investors and governmental activities has contributed in pushing up the price of things. This is why Port Harcourt is one of the most expensive cities

to live in in Nigeria. This fact is correct when compared with other major cities in the country, like Lagos, Abuja and Warri and Ibadan. And also when compared with other developing cities. Therefore, the government is called upon to take strict measures in controlling the cost of building materials to encourage the delivery of sustainable affordable housing in the state and nation at large.

4.0 RESEARCH METHODOLOGY

To achieve the objectives of the study, secondary data collection of data was adopted. These include the prices of building materials. In addition, the author consulted other authorities in the areas of monetary policies and foreign exchange rates. More so, in addition to secondary data collection, the author carried out a market survey within the city of Port Harcourt to ascertain the current prices of selected building materials, as well as one on one interview with some professionals of the building industry. In other to further enrich the work, other similar publications on related topics were also consulted.

5.0 OVERVIEW OF BUILDING CONSTRUCTION IN NIGERIA

The constructing and creation enterprise is a quick developing quarter and one of the maximum critical industries withinside the Nigerian economy. Obviously, it's far a few of the few commercial sectors presently taking part in a growth withinside the u. s. as Dantata (2008) The constructing and production enterprise in Nigeria is confronted with severa demanding situations together with scarcity of manpower, low ability utilization, and negative funding, loss of contemporary-day equipment, contractor bankruptcy, and managerial incompetence which frequently bring about the abandonment of tasks (Dantata, 2008). Olayiwola (2008) submits that the Nigerian production enterprise is characterised via way of means of numerous incomplete and deserted predominant capital tasks maximum of which might be owned via way of means of authorities businesses and public agencies in particular because of loss of continuity in authorities policy, bad strategic company plans, and inefficient use of ICT.

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Worthy of observe is that those are other than the various neighborhood and overseas agencies and businesses in rate of constructing and creation tasks withinside the nation's mining enterprise. According to Dantata (2008), Julius Berger (Nigeria) PLC is through a long way the most important participant withinside the Nigerian constructing and creation enterprise with sports unfold everywhere in the thirty six states of the Nigerian Federation in addition to withinside the Federal Capital Territory.

Strategic International Expansion Opportunities in Nigeria for Selected Finnish Industries additionally mentioned the big contribution of lean practices withinside the production enterprise in evolved and rising countries. In Nigeria, about 1.4% of the GDP is collected from the development enterprise and the dominant contractors are medium sized, running regionally and executing basically residential initiatives and However, those constructing initiatives had been characterised through shortfalls starting from negative pleasant of works, to challenge price and time overruns, that are results of bad planning, loss of particular production files variations, terrible webweb page control, unethical behaviour of experts and waste era due to bureaucracy. The problem of low productiveness as regards to time, pleasant and fee of handing over constructing tasks is a worrisome trouble withinside the constructing enterprise in Nigeria.

The region has been pivotal in its linkages with different sectors thereby having a multiplier impact on them, maximum substantially the actual property and constructing materials. The production enterprise predominantly includes medium sized contractors running domestically and executing in the main residential tasks. The contractors undertake conventional control strategies for paintings plan schedules.

This affirms the want to create allowing programmes as a way to assist experts construct a essential mass of information to sell sustainability withinside the constructed environment. The excessive adoption price of the ultimate planner method additionally helps the findings.

The Nigerian production enterprise is characterized through medium sized contractors running regionally. Based at the final results of the study, it's far endorsed that periodic education programmes have to be prepared through expert our bodies to equip experts at the technical capabilities and advantages lean construction exercise offers, in the direction of accomplishing set off constructing challenge shipping and discount of waste generated on such tasks.

5.1 Challenges of Lean Construction Practice In Nigeria: Architects' Perspective

Generally, literature on the restrictions of enforcing lean construction exercise withinside the Nigerian construction industry are limited. However, diagnosed scarcity of technical, professional and expert works, terrible remuneration, client's inconsistency, bad organizational shape and bad authorities rules as the important thing obstacles to the implementation of lean practices in Nigeria. Similarly, grouped the obstacles into six classes namely; financial, educational, governmental, attitudinal, managerial and technical issues. The fulfillment of this idea lies withinside the dedication of growing and imposing powerful plans and presenting sources accurately to aid its implementation. In general, the obstacles to the implementation of lean production exercise in Nigeria diagnosed in literature are without delay connected to control issues.

One of the primary helps of Nigeria's financial system is the development enterprise (Olowa et al., 2018). Basically, that is because, almost all different sectors of the financial system depend entirely on its products and services in a single manner or the alternative as a way to carry out their numerous operations or functions (Dantata, 2007). The enterprise is complex, dynamic, large, and has been an instrumental motive force of Nigeria's infrastructure and financial development.

Historically, the enterprise is attached with the method of urbanisation and industrialisation, and it's been discovered that there may be an affiliation among production funding and monetary growth (Lopes et al., 2011). The importance of this quarter is normally measured via way of means of thinking about its have an effect on on the quantity of employment it creates and its effect at the gross home product (GDP) (Dantata, 2007). And consistent with Soewin and Chinda (2018) affects of the enterprise at the economic system's GDP is extra than every other industries.

6.0 MASS HOUSING

6.1 Current Housing Situation in Nigeria

Characterised by tall thickness buildings, intense sterile problems, pollution of air, poor financial conditions within the rustic regions. The extent of the Nigerian illegally occupied self -allocated land, they are badly kept up but can be considered to be physicay great, and 44.% and 1.90% inadequate residences, and in a circumstance in which 60.0% of Nigerians can drift has occasioned the growing of make shift residences or squatter settements the houses are built with all sorts of refuse/second-hand materials in Besides the incidence of stuffing within the existinghousingstock, ruralurban basic necessities of ife ike clean offices, light, air and security. As prove be said to be “houseless persons” (Federal Government of Nigeria, 2004).

Other than the frequency of packing within the existinghousingstock, ruralurban characterised by tall thickness buildings, intense sterile problems, pollution ofair, illegally occupied self-aocated land, they are badly kept up and need the can be considered to be physicay great, and 44.0per centand 1.90per cent drifthas occasioned the growing of make move residences or squatter settements the houses are developed with all sorts of refuse/second-hand materials in basic necessities of ife ike clean offices, light,air and protection. As prove miion urban staying units are substandard, as it were 33.0per centof urban houses surface water, commotion and strong CAAccording to Olotuah (2002), an evaluated 2.3 in cities that are void of minimum structural and normative quaity. Majority of require minor and major repairs, respectively, to bring them to standardizing and by past investigates in lodging thinks about, most urban centres in the country are structural quaity.

6.2 Challenges affecting affordable housing in Nigeria

Let's take a keen look at some of the factors affecting mass housing in Nigeria

1. The Land Use Act

The Land Use Act of 1978 (LUA) has turn out to be an obstacle realised this and is reviewing the entire method of having access to mortgages, registration is automated, and techniques are minima. states investors are, generally comfortable in environments where they will do properly to repicate the enhancements performed withinside. The Abuja banking region remains as immoderate as 17.5% (Central ntelligence Agency'sthe World Factbook, 2017) and it is now no longer feasible to use such funds belongings registration from 274 to 80 days in Nigeria, but masses though dreams to

2. Property Registration and Title Documentation

Uncertainties regarding land easily available to all Nigerians has, indeed, emerge as a critical much less pricey housing is the shortage of primary infrastructure such as; roads, constraint to home ownership in Nigeria. The technique of obtaining a have delivered approximately a reduction within the time required to complete the way of increase detail began out out to art work with a number of registries.

3. Scarcity of Long-Term Funds

Currently, the excessive completing price within the changes within the Nigerian housing quarter to developing and available for housing development. The LUA intended to be completed because it takes fine 1 day in some special global places such as of lending difficult to enhance or sustain. It have become for the ones reasons that the to bring it within acquire of beneficiaries. time can be attributed to improvements in assets registration, which land transactions tedious, time ingesting and high priced.

4. Infrastructural Inadequacy

Another maximum vital undertaking to providing Certificate of Occupancy and the consent provisions of the LUA make for housing development. It is pertinent to word that the government has development of land and belongings markets and made the development water, electricity, etc, which money owed for about 30 percent of housing

6.3 Recommendations for mass housing

1. Advance the continued partnership among the Mortgage Banking regards to the underwriting requirements that could growth housing and utilise inexperienced method in production which integrates topography into trainees; developments; enterprise gamers to decorate mass housing provision and affordability;
2. To installation an organization which include a countrywide housing council to be the focal factor for housing research, coverage development and implementation, Mortgage Banking Association of Nigeria (MBAN) and the Centra Bank of Nigeria (CBN) with integrate, optimise and enlarge expertise set to fulfill current and mortgage affordability for the masses;
3. Creating widespread facts base in African countries, in particular in Nigeria improvement of appropriate housing financial modes that suits into universally accepted to collate data, identify data gaps, integrate, optimise and expand knowledge set to meet current demands;

4. Policy creation, adoption and financing of sustainable homes that demands; spearheaded with the aid of using non-public quarter enterprise participation for adoption of that may be universally prevalent to collate records, pick out facts gaps, loan affordability for the masses;
5. Building the proper talent environment thru jobdriven education programmes;
6. Institutionalisation of coaboration and partnerships among massive scale contexts and tracking of the housing zone;

7.0 BUILDING MATERIAL IN NIGERIA

Instances of the country, the downward patterns of Building Material Cost the price of the Naira and galloping inflation, made Generally, it's been anticipated that constructing cloth price to improve at a miles better charge. It might be an additives represent among 50 to 60 percent the overall value of production. But in line with CBN position that nowadays the alternate price is set N555 to one US Dollar. The direct impact of this trade price being (2020) the value will be approximately seventy five percentage extra on imported materials. He mentioned elements contributing to this appening ones. More so, the charges of the obviously insufficient infrastructural centers like terrible roads which might also additionally boom the fee of shipping of materials happening materials have additionally been stricken by the chronic upward thrust in oil charges which have an effect on their price lists charged at the substances that still shoot transportation to the very last consumers. According to Oladipo (2009), constructing substances Vernon (1992) opined that one of the maximum vital represent an excessive percentage of expenses in production elements affecting the choice and use of constructing sports than different resources.

This view turned into shared via way of means of materials is price and its availability. In many cases, Jagboro and Owoeye (2004) who mentioned that boom in buy price of constructing materials bills for approximately the costs of constructing materials has multiplier consequences 1/2 of the overall price of the construction undertaking. The enterprise withinside the feel that it'll cause financial weather in Nigeria annoyed through the fluctuation in production expenses and the eventual advent of the SAP withinside the past due eighties has located abandonment of projects.

8.0 CONCLUSION AND RECOMMENDATION

This paper has examined the nations mass housing need, cost of materials and inflation as a mojour challenge in mass housing needs on projects. The paper further notes that despite

several efforts towards ensuring adequate organizational challenges, public housing agencies have so far provided insufficient number of poor quality housing in Nigeria.

Having diligently studied the causes and effects of the cost of building materials, the author hereby makes the submission that the following are responsible for the rise in cost of building materials in the state and nation at large.

1. Exchange rate: This is the price of a country's currency as compared with that of another country. This is the basis of determining the strength of one over another.
2. Inadequate manufacturing of building materials: When the manufacturing and supply of even the locally sourced materials is inadequate, there will be rise in cost of products.
3. High rise in housing demand: With the growth of urban population, the demand for housing also grows, which directly affects the cost of building materials.
4. Government policies: There is a popular saying that 'everything rises and falls on leadership'. This is because the onus lies on the government to come up with policies that will check mishappenings in the society. Government policies on interest rates, taxation, importation, local manufacturing, transportation, and budgeting have huge impacts on the cost of building materials.

Therefore, the issue of price control of products, especially building materials is the responsibility of government. The government has a serious role to policy making and the strengthening of these policies, to ensure the stability and affordability of prices of building materials. In the nutshell, the impact of the continuous rising cost of building materials is not only anti-sustainability, but has greatly contributed to the deplorable state of living in the society, contributing to the emergence of squattered settlements, which serve as breeding grounds for criminal acts. There author hereby sustains that the government should step up their game in global economic activities by boosting local production and encouraging the patronage of made in Nigeria products.

Rather than allowing it to degenerate into a developmental predicament; it must of necessity addressing the housing problem in several ways. But due to cost of imported building materials, political and be turned into opportunities for growth and development. Challenge to sustainable urban growth and cities' development. It underscored the fact that urbanization process is housing to the people, the poor urban dwellers are still deprived access to decent and affordable shelter. It is delivery of low cost housing in Nigeria. The paper recognizes the

problem of inadequate housing as a critical therefore expected that the findings and recommendations emanating from the study have advanced our.

REFERENCES

1. Adamu, P.A., The Inflation and Economic Growth Nexus In Ecowas Countries: An Empirical Investigation. West African financial and Economic review, 2013.
2. Abdul-Rahman, H., Wang, C. & Yap, J.B.H. (2015). Impacts of design changes on construction project performance: Insights from a literature review. In 14th Management in Construction Research Association (MiCRA 2015) Annual Conference and General Meeting.
3. Adedeji, Y.M.D. Sustainable housing provision: preference for the use of interlocking masonry in housing delivery in Nigeria. *Architecture Research*, 2012; 2(5): 81-86.
4. Adebowale, O.J., (2014). Framework for effective management of the construction workforce towards enhancement of labour efficiency during the building production process in South Africa (Doctoral dissertation, Cape Peninsula University of Technology).
5. Adekoya, S. O. Housing development in Nigeria, which way forward. The Professional Builders, 2003.
6. Agapiou, A., Clausen, L.E., Flanagan, R., Norman, G. & Notman, D. The role of logistics in the materials flow control process. *Construction Management & Economics*, 1998; 16(2): 131-137.
7. Akanni, P.O., Oke, A.E. and Omotilewa, O.J., Implications of Rising Cost of Building Materials in Lagos State Nigeria. *SAGE Open*, 2014; 4(4): 2158244014561213.
8. Anosike, P. (2009). Nigerian groans under high cost of building material. *The Daily Sun*.
9. Chitkara, K. K. (2006). *Construction Project Management, Planning, Scheduling and Controlling*. New Delhi: Tata McGraw-Hill Publishing Company Limited.
10. Chinedu, C.C. (2016). Fundamentals of Project Materials.
11. Du Plessis, C. Agenda 21 for sustainable construction in developing countries. CSIR Report BOU E, 2002; 204.
12. Froeschle, L.M. Environmental assessment and specification of green building materials. *Construction Specifier*, 1999; 52: 53-57.
13. Ganiyu, B.O. (2016). Strategy to enhance sustainability in affordable housing construction in South Africa (Doctoral dissertation, Cape Peninsula University of Technology).

14. Idoro, G. I., & Jolaiya, O. (2010). Evaluating material storage strategies and their relationship with construction project performance. Proceedings of CIB International Conference on Building Education and Research, University of Cape Town.
15. Ihuah, P.W., Kakulu, I.I. & Eaton, D. (2014). A review of Critical Project Management Success Factors (CPMSF) for sustainable social housing in Nigeria. *International Journal of Sustainable Built Environment*.
16. Jagboro, G.O. & Owoeye, C.O. A model for predicting the prices of building materials using the exchange rate in Nigeria. *The Malaysian Surveyor*, 2004; 5(6): 9-14.
17. Kasimu, M.A. Significant factors that cause cost overruns in building construction project in Nigeria. *Interdisciplinary journal of contemporary research in business*, 2012; 3(11): 775780.
18. Nega, F. Causes and effects of cost overrun on public building construction projects in Ethiopia. Unpublished doctoral dissertation, Addis Ababa University, Ethiopia, 2008.
19. Ogunlana, S.O., Promkuntong, K. & Jearkjirm, V. Construction delays in a fastgrowing economy: comparing Thailand with other economies. *International journal of project Management*, 1996; 14(1): 37-45.
20. Oladipo, F.O. & Oni, O.J. Review of Selected Macroeconomic Factors Impacting Building Material Prices in Developing Countries—A Case of Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 2012; 5(2): 131-137.
21. Rajaprabha, R., Velumani, P. & Jayanthi, B. (2016). Factors Affecting the Cost of Building Material in Construction Projects. *International Journal of Science and Engineering Research*.