



Influence of Fluctuation in the Cost of Building Materials on Residential Property Development in Minna, Niger State

Muhammad B. Yabagi*, **Abdulkareem Sekinat**

Department of Estate Management and Valuation, Federal University of Technology, Minna
belloyabagi@gmail.com

Abstract

This study investigates the Influence of fluctuations in the cost of building materials on residential property development in Minna. Data were collected from 242 individuals belonging to building material sellers association and civil servants from: Niger State Housing Cooperation, Niger State Ministry for Works and Infrastructural Development, Niger State Urban and Rural Development and Contractors with professionalism in property development and construction. The study comprehensively analyses historical data on annual average prices of various building materials and the construction costs of different types of residential properties which include one-bedroom flats, two-bedroom flats, and three-bedroom flats for eight-year period from 2015 to 2022 in Minna. The study revealed a critical upward trends in rising costs of building materials and a general increase in the construction costs of the different types of residential properties over the study period, which can pose substantial challenges to residential property development in the study area. Based on the statistical analysis conducted using Pearson chi-square test, the study shows that there is a significant relationship between the building material cost and construction cost of residential property development. In light of these findings, it is imperative that industry stakeholders, including builders, developers, government bodies, and professionals, collaborate to devise and implement effective measures to mitigate the impact of rising building material costs on residential property development. These measures should include diversifying material choices, exploring cost-effective alternatives, implementing risk management strategies, promoting sustainable practices, and advocating for government support and policies to stabilize material prices. Furthermore, continued market research, education, and training are essential to ensure the long-term sustainability and growth of the construction industry in Minna, Niger State.

Keywords: Fluctuations, cost, building materials, residential property, development

1. Introduction

The residential property development is a critical component of the global economy, contributing significantly to both urbanization and housing supply. However, this sector is highly susceptible to the volatility of building material costs, which can disrupt development timelines, affect property feasibility, and alter housing affordability (Babatunde *et al.*, 2021). Key materials such as cement, steel, and timber have experienced significant price fluctuations due to global supply chain disruptions, changes in energy costs and inflationary pressures (Li *et al.*, 2023). The relationship between material costs and property development is direct: as material prices rise, developers face increased financial burdens, leading to either scaled-back projects, delayed completions, or higher selling prices for residential units (Ofori and Toor, 2022). Conversely, unexpected drops in materials prices may encourage rapid project completions but also introduce uncertainties in long-term cost forecasting (Eithag *et al.*, 2022). These price variations often result from external economic shocks, currency exchange fluctuations and geopolitical factors, all of which can destabilize construction markets (Abioye and Oni, 2023). The fluctuation in the cost of building materials presents a significant challenge to the construction industry, thereby affecting various aspects of property development. Supporting this perspective, Jagboro and Owoeye (2014) highlighted that increases in building material prices have ripple effects across the industry. Based on the aforementioned, this paper aims to explore the extent to which building material cost fluctuations impact residential property development in Minna Nigeria. Building materials are essential components used in the construction of buildings. They encompass a variety of materials such as sand, gravel, wood, nails, clay, ladders, plywood, doors, reinforcement materials, cement, bricks, and various types of sand. Building and construction activities form the foundation upon which the infrastructural development of any nation is built (Ganiyu, 2016). Baker, Smith, and Evans, (2022) highlighted that it is undeniable that building materials play a pivotal role in property development. Property development, construed as a comprehensive business process, encompasses a multitude of activities. These activities range from the refurbishment and subsequent leasing of existing structures to the acquisition of undeveloped land and the subsequent sale of developed plots or parcels to other parties. By examining historical data and industry trend, this study seeks to offer insights into how stakeholders can mitigate risks associated with these fluctuations and

exploring potential strategies for maintaining stability in the residential property sector. Based on the aforementioned, this paper investigates the Influence of fluctuations in the cost of building materials on residential property development in Minna, Niger State.

2. Literature Review

Ogun, Ogunsina, and Ugochukwu (2022) examine the causes and effects of fluctuating construction material prices on project delivery in Abuja Metropolis. Semi-structured questionnaires were distributed to 331 construction professionals within Abuja. Utilizing Mean Index Score (MIS), the study ranked the severity of identified causes and effects of fluctuating construction material prices on project delivery. The study identified building material price inflation, crude oil price instability, and material hoarding by suppliers as the primary factors influencing changes in construction material prices, with mean scores of 4.78, 4.76, and 4.66, respectively. The study recommended giving due consideration to these mitigating measures to enhance project delivery within the Abuja Built Environment (BE) from the contractor's perspective.

Nkeiruka, Okey-Ejiowhor, and Amakiri (2022) investigate the effect of rising building material costs on the construction industry in Port Harcourt. The study employed a survey method, distributing structured questionnaires to 1125 participants. Analyzing data using simple mean and standard deviation, the study revealed that inflation, government policy, dual taxation, and lack of production capacity as key factors driving material prices. The study recommended an enabling environment for private sector participation in building material production to enhance competitiveness.

Alabi and Fapohunda (2021) explore the effects of increased building material costs on the delivery of affordable housing in South Africa. The study employed a sequential mixed methods approach, surveyed construction professionals (project managers, site managers, architects, site engineers, quantity surveyors, contractors, building material suppliers, and government workers) in Cape Town, South Africa. The study revealed that fluctuations in construction costs and rising maintenance costs (attributed to poor workmanship) has significant effects of increased building material costs on affordable housing delivery. Adu and Ekung (2019) investigate the primary causes and potential effects of increased building construction material prices on project delivery in Uyo Metropolis. Data were collected through structured questionnaires from project participants, including project managers, quantity surveyors, procurement managers, and construction materials merchants. Findings revealed inflation, manufacturing costs, exchange rates, lack of locally produced materials, and transportation and distribution costs as major factors driving the increase in building material prices. The study recommended effective implementation of government policies to mitigate inflation's effects on material prices.

Ufuoma and Stanley (2019) examine the effects of building material costs on housing delivery in Akure. Through simple random sampling, data were collected from 125 participants with use of questionnaire in the city's core area. Findings indicated government policy, the country's economic situation, and building material sellers' attitudes as factors contributing to rising building material costs. The study recommended the government formulate policies encouraging research in local building material production to reduce dependence on imports.

Amos, Umbugala, Aminu, Yahaya, and Orjiako (2018) investigate the causative factors, effects, and inflationary trends of building material price fluctuation in Adamawa state, Nigeria. Primary data were collected through structured questionnaires from 210 respondents and mean ratings was used for the analysis. Results revealed general inflation between 2014 and 2016 due to the country's recession, leading to increased building material prices. They recommended reinforcing stability in the naira exchange rate to prevent material price instability.

Akanni, Oke, and Omotilewa, (2014) assessed the implications of rising building material costs in Lagos State, Nigeria. Data were obtained through questionnaire surveys from contractors, builders' merchants, and consultants, as well as from archival sources. Factors such as exchange rate fluctuations, fuel and power costs, and changes in government policies were found to be responsible for rising costs, with implications for the nation's GDP.

Yun, and Wong, (2017) highlighted that The cost of building materials plays a critical role in residential property development as it directly affects the overall budget and project feasibility. High material costs can lead to increased construction expenses, making it challenging for developers to maintain affordable pricing for homes. This, in turn, can reduce demand, especially in markets sensitive to housing prices. When costs rise, developers may scale back on the size or quality of projects to stay within budget, which can impact the desirability and value of the property. Additionally, fluctuating material prices introduce financial uncertainty, potentially delaying projects and causing developers to seek alternative, cost-effective materials or methods. Ultimately, material costs shape the scope, design, and accessibility of housing developments.

3. Methodology

This study utilized quantitative research design. This is a design in which groups of items or objects are studied, by collecting and analyzing data from only a few people considered being an exact representative of the entire group.

The use of descriptive design in this study is to understand what is in a specific situation with an identified population. Also, it was used to gain knowledge in identifying the problem in this study. The study population comprises of individuals belonging to building materials sellers association and civil servant from the Niger State Housing Cooperation, Niger State Ministry for Works and Infrastructural Development, Niger State Urban and Rural Development and Contractor with professionalism in property development and construction. These participants selected are believed to have the necessary and adequate experience in construction, with adequate years of experience and responsibilities in the construction sector. The historical data for the cost of residential property development from 2015 – 2022 were collect from data from Niger state Housing cooperation as well as data from building development contractors in Minna. While the data as regard cost of building materials where retrieved from sellers within the Minna Building material market. A closed ended questionnaire was used to collect data from the study population on the effects of rising cost of building materials on residential property development. Out of the total 242 questionnaires that were administered a total of 147 were well completed and found useful for analyses after accounting for missing information. The well completed questionnaires represent an overall 61% response rate as showed in Table 1.

Table 1: Breakdown of questionnaires administered to respondents in the study area

S/N	Description	Study Population	Questionnaires Administered	Questionnaires Retrieved	Percentage Retrieved
1	Niger State Ministry of Works	43	43	36	14.9%
2	Niger State Housing Cooperation	58	58	47	19.4%
3	Niger State Urban and Rural Development	37	37	29	12.0%
4	Business material Sellers	96	96	27	11.2%
5	Contractors at Maikunkele Housing Estate	8	8	8	3.3%
	Grand Total	242	242	147	61%

Source: Author's Field Survey (2023)

Aside the use of descriptive statistics such as frequency counts, percentages and mean. The extent of the effect of Rising Cost of Building Materials on Residential Property Development was measured using the Relative Importance Index. The Relative Importance Index was employed to determine the importance of each factor or attribute in the context. Below is the Relative Importance Index formula used.

$$\frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{A * N}$$

$$A * N$$

Where n_5 = Number of Respondents for Strongly Agree

n_4 = Number of Respondents for Agree

n_3 = Number of Respondents for Neutral

n_2 = Number of Respondents for Strongly Disagree

n_1 = Number of Respondents for Disagree

A (Highest Weight) = 5

N (Total Number of Respondents) = 147

Pearson Chi-Square was also employed to tests for the relationship between building material cost and residential property development in the study area.

4. Results

Table 2: Demographic Data of the Respondents

Item	Frequency	Percentage	Mean	Standard Deviation
Educational Background			2.10	1.167
Bachelor's Degree	64	43.5		
Higher National Diploma	34	23.1		
National Diploma	20	13.6		
Master's Degree	29	19.7		
Gender			1.30	0.460
Male	103	70.1		
Female	44	29.9		
Marital Status			1.47	0.715
Married	97	66.0		
Single	31	21.1		
Widowed/ Divorce	19	12.9		
Years of Experience			2.29	1.073
1-4 years	43	29.3		
5-9 years	45	30.6		
10-14 years	33	22.4		
15 years & Above	26	17.7		
Occupation			1.03	0.182
Public Servant	142	96.6		
Private Servant	5	3.4		

Source: Author's Field Survey, (2023)

This study had 147 respondents, 64 respondents with (43.5%) have attained Bachelor's Degree, 34 with (23.1%) have attained Higher National Diploma, 20 with (13.6%) have attained National Diploma, 29 with (19.7%) have attained Master's Degree 103 with (70.1%) of the respondents were males, 44 with (29.9%) were females, 97 (66%) were married, 31 (21.1%) were single, 19 (12.9%) were widowed/divorced, 43 (29.3%) were 1-4 years, 45 (30.6%) were 5-9 years, 33 (22.4%) were 10-14 years, 26 (17.7%) were 15 years and above, 142 (96.6%) were public servant and 5 (3.4%) were private servants respectively.

Table 3: Historical Data on Building Material Prices in Minna from 2015-2022

SN	MATERIALS	UNITS	PRICE PER YEAR (₦)								ANNUAL AVERAGE
			2015	2016	2017	2018	2019	2020	2021	2022	
1	Cement	50kg Bag	1,950	2,200	2,650	2,750	2,950	3,300	3700	3,950	2,931
2	Sharp Sand (Fine Aggregate)	5Ton (1 Tipper)	9,000	10,500	12,500	13,000	13,700	14,000	15,500	17,500	13,213
3	Smooth Sand (Plaster)	5Ton (1 Tipper)	8,500	10,700	12,800	14,750	15,500	17,000	21,000	22,700	15,369
4	Granite Stones	5Ton (1 Tipper)	10,000	11,700	12,500	13,700	15,300	17,500	19,700	24,500	15,613
5	225 mm Sandcrete Blocks	1piece	120	135	170	195	230	250	275	300	209
6	150 mm Sandcrete Blocks	1piece	90	115	135	155	180	215	240	265	174
7	Asbestos Ceiling	1piece (4ftx4ft)	1,050	1,200	1,350	1,550	1,700	1,950	2,400	2,700	1,738
8	Emulsion Paint	1bucket	N2,900	3,000	3,200	3,500	3,700	4,000	4,500	5,700	3,812
9	Corrugated Iron Sheet	1 Bundle	15,500	17,000	17,500	18,500	19,000	22,500	24,500	26,000	20,063
10	Long Span Aluminum	Meter square of (0.45mm)	1,100	1,350	1,650	1,900	2,100	2,400	2,650	2,900	2,006
11	Mild Steel Rode	1piece of 12mm	1,350	1,500	1,750	1,900	2,400	2,700	3,800	4,800	2,525
12	Mild Steel Rode	1piece of 16mm	2,850	3,300	3,700	3,950	4,400	4,700	5,200	6,350	4,306

Source: Author's Field Survey, (2023)

The above table shows the annual average of the price of building materials from year 2015-2022 in the study area. From the table, the study revealed that cement have an annual average price of ₦2,931, Sharp Sand (Fine Aggregate) with annual average price of ₦13,213, Smooth Sand (Plaster) with annual average price of ₦15,369, Granite Stones with annual average price of ₦15,613, Sandcrete Blocks (225mm) with annual average price of ₦209, Sandcrete Blocks (150mm) with annual average price of ₦174, Asbestos Ceiling with annual average price of ₦1,738, Emulsion Paint with annual average price of ₦3,812, Corrugated Iron Sheet with annual average price of ₦20,063, Long Span Aluminum with annual average price of ₦2,006, Mild Steel Rode (12mm) with annual average price of ₦2,525, Mild Steel Rode (16mm) with annual average price of ₦4,306 respectively.

Implication of findings is that, cement maintained a relatively stable price over the eight years' period of study, with an annual average price of ₦2,931. This suggests that cement prices were less susceptible to significant fluctuations during this time frame. More so, it was found that different types of sand had varying price trends. Sharp Sand (Fine Aggregate) was relatively expensive, with an annual average price of ₦13,213, while Smooth Sand (Plaster) was even more expensive, averaging at ₦15,369. This indicates that construction projects relying heavily on these sand types may have faced increased material costs.

Additionally, the study found that granite stone had an annual average price of ₦15,613, which was comparable to smooth sand. This suggests that materials like granite were also relatively costly and could significantly contribute to construction expenses. So also, the study found that sandcrete blocks (225mm) had an annual average price of ₦209, while sandcrete blocks (150mm) were somewhat cheaper, with an average price of ₦174. These variations may be indicative of differences in demand or production costs between the two block sizes.

Furthermore, the study found that asbestos ceiling had a relatively low annual average price of ₦1,738, which might make it an attractive choice for ceiling materials due to its cost-effectiveness. So also, emulsion paint was moderately priced, with an annual average of ₦3,812, suggesting that painting projects were relatively affordable in Minna during this period.

In addition, the study found that roofing materials like corrugated iron sheets (₦20,063) and long-span aluminum (₦2,006) had varying costs, but both were relatively expensive. This indicates that roofing could be a significant contributor to the overall construction budget. So also it was found that the annual average prices of steel rods also varied. Mild Steel Rods (12mm) had an annual average price of ₦2,525, while Mild Steel Rods (16mm) were pricier, with an average of ₦4,306. This difference could affect the structural costs of construction projects. The aforementioned residential properties are all constructed using modern building materials mention from the above table.

Table 4: Historical Data of Construction Cost for Residential Properties in Minna from 2015-2022

Year	One Bed Room Flat	Two Bed Room Flats	Three Bed Room Flats
2015	550,000	1,850,000	2,750,000
2016	680,000	2,170,000	3,100,000
2017	700,000	2,500,000	3,790,000
2018	950,000	2,840,000	4,200,000
2019	1,010,000	3,070,000	5,700,000
2020	1,110,000	4,400,000	6,130,000
2021	1,330,000	4,870,000	6,600,000
2022	1,580,000	5,050,000	7,000,000

Source: Author's Field Survey, (2023)

The table above shows the construction cost of residential properties in the study area, which is as follows; one bedroom flats, two bedroom flats and three bedroom flats. There is a consistent upward trend in construction costs for all three types of residential properties from 2015 to 2022. This indicates a general increase in the cost of construction in Minna over these years. The high-end residential properties consistently have the highest construction costs, followed by mid-range and low-end properties. The gap between the costs of low-end and high-end properties has widened over the years. While there is an overall upward trend, there are variations in the rate of increase from year to year. For example, there is a significant increase in costs from 2020 to 2021, especially for mid-range and high-end properties. Implication of findings is that there is a significant variation in the construction costs of different types of residential properties in Minna, including one-bedroom flats, two-bedroom flats, and three-bedroom flats. This suggests a consistent upward trend in construction costs over the study period eight years, from 2015 to 2022, This indicates that the cost of building these residential properties has been on the rise during the study period.

Table 5: Effect of Rising Cost of Building Materials on Residential Property Development using Relative Importance Index

S/N	Effects of Rising cost of Building Material on Residential Property	Strongly Agree (5)	Agree (4)	Neutral (3)	Strongly Disagree (2)	Disagree (1)	Total	Total Number N	A * N	RII	Ranks
1	Its leads to delay in projects or complete termination of building projects.	325	220	0	36	9	590	147	735	0.802721	7
2	Brings about long term abandonment of construction projects.	345	232	0	26	7	610	147	735	0.829932	6
3	The rising cost of building materials significant impact on the overall feasibility of residential property development.	415	184	0	18	9	626	147	735	0.851701	4
4	Increased building material costs have led to a noticeable reduction in profit margins for residential property developers.	245	248	0	48	12	553	147	735	0.752381	9
5	Decrease the number of individual bidder as completed project attracts higher price of disposal.	450	176	0	26	0	652	147	735	0.887075	1
6	Brings about developers facing challenges in managing budget overruns due to the volatile nature of building material prices.	490	108	0	28	8	634	147	735	0.862585	3
7	It leads to decline in the number of professionals employed in constructions projects.	355	156	0	40	17	568	147	735	0.772789	8
8	It decreases the volume of construction output.	320	128	0	48	27	523	147	735	0.711565	10
9	It causes building collapse were materials are not used to the right ratio.	425	204	0	12	5	646	147	735	0.878912	2
10	The quality of residential properties would be compromised as developers look for cheaper building materials.	425	160	0	32	6	623	147	735	0.847619	5
11	The increased cost of building materials has led to a shift towards smaller, more efficient residential property designs.	165	128	0	116	24	433	147	735	0.589112	11

Source: Author's Field Survey, (2023)

From table 4 above, it could be seen that item 1 has a Relative Importance Index value of 0.802721, item 2 with Relative Importance Index value of 0.829932, item 3 with Relative Importance Index value of 0.851701, item 4 with Relative Importance Index value of 0.752381, item 5 with Relative Importance Index value of 0.887075, item 6 with Relative Importance Index value of 0.862585, item 7 with Relative Importance Index value of 0.772789, item 8 with Relative Importance Index value of 0.711565, item 9 with Relative Importance Index value of 0.878912, item 10 with Relative Importance Index value of 0.847619, and item 11 with Relative Importance Index value of 0.589112 respectively. From the above, it could be depicted that the following finding "Decrease the number of individual bidder as completed project attracts higher price of disposal." has the highest importance index and the implication that the number of prospectus to bid for properties decreases or decline more and more.

Table 6: Pearson Chi-Square Tests Relationship Between Building Material Cost and Residential Property Development cost

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	24.540 ^a	1	.000		
Continuity Correction ^b	21.771	1	.000		
Likelihood Ratio	20.376	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	20.317	1	.000		
N of Valid Cases	8				

Source: Author's Field Survey, (2023)

- a. 1 cells (20.0%) have expected count less than 5. The minimum expected count is 3.36.
- b. Computed only for a 2x2 table

As showed in table 4 above, the Pearson chi-square value is 20.317, with a significance or probability (p) value of .000 which is smaller than the alpha level of .05. This means that the probability of this distribution of values occurring by chance is less than .01 - or 1 in 100, so probability (p) = .000. This shows that there is significant relationship between building material cost and construction cost for residential property development in the study area.

This finding of this research confirmed the earlier findings of Ayodele and Alabi (2011) who revealed that building materials price fluctuations have very important effect on the real estate development and project abandonment because when there is a hike in the price of building materials, a lot of projects get abandoned due to insufficient funds, thus affecting construction output and economy growth (GDP). More the findings of Oghenekevwe, Olusola, and Chukwudi, (2014) corroborates that of this research where they stated and indicated that inflationary increases in building material cost are the main cause of construction cost overrun. The finding also indicated that exchange rate of Rand and interest rates are additional factors responsible for increase in the cost of building materials and thus affect building development.

5. Conclusion and Recommendations

The study analyzed fluctuations in the cost of building materials and effects on residential property development in Minna, Niger State, this study sheds light on several significant findings that bear important implications for the construction industry in the region. The study comprehensively analyzed the annual average prices of various building materials over eight-year period from 2015 to 2022 and revealed several critical trends. The rising costs of these building materials can pose substantial challenges to residential property development, emphasizing the need for strategic cost management and alternative material exploration. The research findings also pointed to a consistent upward trend in construction costs over the study period. This long-term trend highlights the need for the construction industry to adapt and innovate in the face of escalating costs, emphasizing the importance of cost-effective material selection and resource management. Furthermore, from the statistical analysis conducted, using the Pearson chi-square test shows a significant relationship between building material cost and construction cost for residential property development in the study area.

In light of these findings, it is imperative that industry stakeholders, including builders, developers, government bodies, and professionals, collaborate to devise and implement effective measures to mitigate the impact of rising building material costs on residential property development. These measures should include diversifying material choices, exploring cost-effective alternatives, implementing risk management strategies, promoting sustainable practices, and advocating for government support and policies to stabilize material prices. Furthermore, continued

market research, education, and training are essential to ensure the long-term sustainability and growth of the construction industry in Minna, Niger State.

Reference

- Abioye T., Oni A., 2023, Geopolitical Factors and the Impact on Building Material Prices: A Global Perspective. *Journal of Real Estate and Construction Management*, 12(1), 45-60.
- Adu E.T., Ekung S.B., 2019, *Mitigation Measures of Price Increase of Building Material in Uyo Metropolis, Nigeria*. *Ethiopian Journal of Environmental Studies & Management* 12(1): 112 - 122. ISSN:1998-0507
- Akanni P.O., Oke A. E., Omotilewa O. J., 2014, Implications of Rising Cost of Building Materials in Lagos State Nigeria. *Journal of Building Performance* 4(4):7-12
- Alabi B., Fapohunda J., 2021, Effects of Increase in the Cost of Building Materials on the Delivery of Affordable Housing in South Africa.
- Amos C. H., Umbugala D.M., Aminu M., Yahaya H.Y., Orjiako M.O., 2018, *Analysis of Building Materials Price Fluctuation in Adamawa State, Nigeria*. Department of Estate Management, Baze University, Abuja, Nigeria.
- Babatunde S. O., Perera S., Zhou L., 2021, The Role of Material Price Fluctuations in the Nigerian Construction Industry: Implications for Project Delivery. *Construction Management and Economics*, 39(6), 482-499.
- Baker D., Smith P., Evans R., 2022, Post-Pandemic Building Material Shortages and Price Volatility: Implications for the Construction Industry. *Journal of Construction Economics*, 31(2), 115-130.
- Elhag T., Boussabaine A.H., Alshawi M., 2022, The Effect of Material Price Fluctuations on Construction Project Profitability. *Construction Innovation*, 23(3), 283-296.
- Ganiyu B.O., 2016, *Strategy to Enhance Sustainability in Affordable Housing Construction in South Africa* (Doctoral dissertation, Cape Peninsula University of Technology).
- Jagboro G.O., Owoeye C.O., 2014, *A model for predicting the prices of building materials using the exchange rate in Nigeria*. *The Malaysian Surveyor*, 5(6): 9-14.
- Nkelruka O.A., Okey-Ejlowhor C.H., Amakiri I.T., 2022, *Effect of Building Materials Cost on Housing Delivery in Port Harcourt*. *International Journal of Innovative Scientific & Engineering Technologies Research* 10(2):22-33.
- Ofori G., Toor S.R., 2022, Construction Industry Challenges: Navigating the Rising Costs of Materials and Labour. *Journal of Construction in Developing Countries*, 27(2), 195-210.
- Ogun O., Ogunsina O., Ugochukwu S.C., 2022, *An assessment of the impact of inflation on construction material prices in Nigeria*. *PM World Journal*. Vol. III, Issue IV.
- Ufuoma L.E., Stanley P.M., 2019, *Effect of Building Material Cost on Housing Development in Akure*. Department of Urban and Regional Planning, Rufus Giwa Polytechnic, Owo Nigeria
- Yun T., Wong, J., 2017, The Impact of Interest Rates Upon Housing Prices. In Spiros, T. (2020). *An Assessment of Relationship Between Key Economic Indicators and The African Residential Property Market*. Retrieved from <http://eprints.qut.edu.au>