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BUILDING MATERIAL RISING COST: ANALYZING THE RISING CONSTRUCTION MATERIAL COSTS ON REAL ESTATE DEVELOPMENT ACTIVITIES IN ENUGU METROPOLIS, ENUGU STATE (2021 - 2025)

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ABSTRACT

This study examined the effect of rising building-material costs on property development activities in Enugu Metropolis, Enugu State, Nigeria. The study adopted a descriptive and correlational research design, using questionnaires to obtain data from key stakeholders in the property and construction sectors. A sample of 339 respondents was determined from a population of 2,203 using Yamane's formula and stratified random sampling. Of the 339 questionnaires distributed, 238 were validly retrieved, representing 70% response rate. Data were analysed using frequency distributions, percentages, mean scores and Spearman's rank-order correlation. Findings revealed that transportation costs constituted the most prominent factor responsible for rising building-material prices (MS = 4.8), followed by inflation (MS = 4.4), manufacturing costs (MS = 4.0), exchange-rate fluctuations (MS = 3.8), and government policies and regulations (MS = 3.7). Improved transportation infrastructure (MS = 4.8) and reduced import duties (MS = 4.7) were identified as the most preferred measures for reducing material costs, while stricter price controls ranked lowest (MS = 3.1). Furthermore, 84% of respondents reported a decline in property development activities, with 37% estimating the reduction at 41–60%. Spearman's correlation revealed a strong, positive and statistically significant association between perceived impact of rising material costs and the magnitude of decline in property development activities ($r_s = 0.780$, $p < 0.001$, $N = 238$). The study concludes that escalating building-material costs constitute a significant constraint on property development in Enugu Metropolis. It recommends integrated interventions focusing on transport infrastructure, domestic production, import policies, alternative materials, development finance and regulatory predictability to improve development resilience and housing supply.

Keywords: Building material costs; property development; construction industry; housing supply; Enugu Metropolis; Spearman correlation.

1.0 Introduction

Building materials play a vital role in building industry and rising building-material costs pose a significant threat in the industry; no specialty of engineering is conceivable without the use of these materials. Shortage of housing in Enugu Metropolis appears uncomfortable with increasing rural urban drift and as more civil servant is moving to capital of Enugu state. The rising cost of building materials pose as a huge threat to both aspiring house owners and construction industry (Anosike, 2009) for example a bag of cement which is valued at ₦4,000 in November 2021 goes as high as ₦9,500–₦11,500 in 2025.

The building industry is a vital component of economic development, with building materials forming a substantial part of project expenditures. It has been observed that a percentage, slightly above average, of the total cost of building projects is dedicated to acquiring these materials. In recent years, the rising cost of building materials has become a critical issue, leading to significant challenges within the industry. This high trend in prices is not only inflating project budgets but is also slowing down the overall growth of the building sector. Understanding the causes and consequences of these rising costs is essential for developing strategies to maintain the industry's growth and ensure the successful completion of future building projects.

While Adedeji (2010) found that about 60 percent of total housing expenditure goes for the purchase of building materials, Arayela (2005) averred that the cost of building materials constitute about 65 percent of the building cost. Cost of building materials has been one factor that prohibits quality and successful house delivery within the time scheduled. The high demand for housing of all types, coupled with high inflation rate and tight monetary supply has often been a huge challenge to the cost of building materials which is essential to the success of the real property development in any given economy.

Ofurum and Ihuah (2021) asserts that building materials form the main factors restricting the supply of housing and they account for between 50% - 60% of the cost of buildings, building materials prices have changed from time to time. The cost of building materials poses a significant threat to the construction industry thereby affecting other property development processes.

Enugu Metropolis has undergone growth in recent times. This expansion is driven by increased activities and a growing population. As a result there is a demand for both commercial real estate developments. Perhaps the soaring costs of building materials pose a challenge threatening the sustainability and affordability of property development in the area.

According to the Nigerian Institute of Quantity Surveyors (NIQS, 2024) these material prices have escalated by over 30% recently due to factors like inflation, currency devaluation and disruptions in supply chains. These cost hikes have had effects on property development projects leading to major delays in building timelines increased property costs and reduced affordability for housing. Even though people still build, there has been a reduction in the numbers of investors especially with the present unstable economy thereby leading to shortages of housing development. Most property owners tend to put their rents on a high-side and this is attributed to high cost of building materials as they are no longer sure of what the value of the building will be upon completion. This study is carried out to ascertain the effect of building materials cost in housing development within Enugu Metropolis Enugu state.

2.0 REVIEW OF THE EMPIRICAL STUDIES

2.1 Construction Industry in Enugu Metropolis, Enugu State

Among the challenges faced by investors is the escalating cost of building materials which according to Ubani, Okorocha and Emeribe (2013) contribute greatly towards time overruns and cost overruns in projects. Their study showed that "Price fluctuations of materials directly affect project feasibility and completion rates in Enugu state Nigeria."

2.2 Building Materials

2.2.1 Types of Essential Building Materials

Various materials are used in the building industry for different purposes during building. Structural, architectural and finishing components are the three categories of building materials according to Akanni, Oke, and Omotilewa (2014). Cement, stone, steel and timber make up the structural materials which are essential for stability and strength of any construction work. Bricks, glass and roofing materials are examples of architectural materials that contribute to form as well as function of structures while paints, tiles and electrical fittings among others complete aesthetic appeal or beauty aspects in buildings otherwise known as finishing touches.

Wanigi, Idris, and Ekpo, (2026), opined that cement is the most widely used building material in Abuja Nigeria, forming the basis for concrete and mortar in almost all construction projects. The authors also emphasize the growing importance of alternative materials, such as interlocking bricks and prefabricated components, which are gaining popularity due to their cost-effectiveness and

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ease of use. As sustainability becomes a more pressing concern, Pooja and Tarannum (2025) point out the increasing adoption of innovative materials like nano-engineered concrete and self-healing materials, which offer enhanced durability and energy efficiency.

2.2.2 Factors Influencing Prices of Building Materials

The cost of building materials is determined by a number of dynamic factors that interact in complex ways both within local and international contexts as stated by Oladiran (2015). These determinants include but not limited to availability raw inputs; production costs; transport charges from factories or mines to different markets where they will be used for building projects; fluctuations in currency exchange rates especially against dollar since most products used locally may have been imported either wholly or partly so their prices tend to vary depending on how much it was bought globally. Market structure and competition among suppliers also play essential roles in determining material costs. Anireddy (2024) observes that "the oligopolistic nature of some building material markets, particularly in cement production, can lead to price volatility and potential market manipulation." This situation underscores the need for robust market regulations and diversification of supply sources to ensure stable and competitive pricing in the building industry.

2.3 Rising Costs of Building Materials

2.3.1 Global Trends in Building Material Prices

World Steel Association (2023) state that steel prices experienced significant volatility, with sharp increases in 2021 followed by a gradual stabilization in subsequent years. The report attributes these fluctuations to a combination of factors, including supply chain disruptions, changes in global demand patterns, and geopolitical tensions affecting trade flows.

The Food and Agriculture Organization of the United Nations (2023) provided that timber prices have seen a general upward trajectory, driven by increased demand for sustainable building materials and constraints on harvesting in some regions due to environmental regulations.

Moreso, the Cement Manufacturers Association of Nigeria (2022) report a steady upward trend in cement prices, citing increased production costs, and growing demand from infrastructure projects. Additionally, cement which is one of the most critical products use in building project within

Nigeria's building industry recorded a major rise. According to the Cement Manufacturers Association of Nigeria (CMAN), between 2020 – 2022 cement prices went up exponentially. The association cites rising energy costs, particularly diesel fuel used in production, and transportation as a major contributor to these price increases.

However, cement and timber experienced significant price hikes; perhaps, each had its own reasons for the drive up of their costs during this period. The World Steel Association notes that in 2021 alone there was an unprecedented increase where certain markets saw a surge up to 200% above what they were before COVID-19 hit. This is because many countries had reduced output following lockdown measures imposed across different regions globally but there was also pent-up demand coupled with production cuts done by major producers alongside high raw material cost including iron ore.

2.4 Property Development

2.4.1 Stages of Property Development

According to Windapo and Cattell (2013) outline a general framework that can be applied in Nigerian context:

i. Project Inception: It involves identifying opportunities and conducting initial feasibility studies.

ii. Land Acquisition: Securing suitable land for development, which can be challenging in area like Enugu metropolis

iii. Project Planning and Design: Developing detailed plans(building/structural/sewage/electrical) and obtaining necessary approvals.

iv. Financing: Securing funding for the project.

v. Construction: This stage is heavily impacted by material costs and availability.

vi. Property Management: Ongoing maintenance and management of the property post-completion.

vii. Marketing and Sales/Leasing: Promoting and selling or leasing the building in completion state.

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2.4.2 Key Stakeholders in Property Development

Property development involves diverse stakeholders, each playing crucial roles in the process.

i. Developers: Individuals or companies that initiate and manage the construction process.

ii. Investors and Financiers: the provider of capital for the project.

iii. Government Agencies: Approval bodies, regulations, and sometimes as partners in public-private developments.

iv. Consultants: these are Valuers, Architects, Engineers, and Quantity surveyors who provide specialized expertise.

v. Contractors and Subcontractors: Responsible for construction activities.

vi. Material Suppliers: Provide essential building materials.

vii. End-Users: The ultimate occupants or buyers of the developed property.

Modibbo, Sule, and Ismail, (2026) state the importance of effective collaboration among these stakeholders, noting that successful property development in Nigeria often relies on strong networks and partnerships to navigate the challenging business environment.

2.5 Effects of Rising Building Material Costs on Property Development

Rising cost of building materials has a significant impact on project feasibility and planning in the building industry sector. Oladipo and Oni (2012) state that fluctuations in material prices directly affect the accuracy of cost estimations and project budgets. This uncertainty often leads to overestimating costs as a precautionary measure, potentially making projects appear less viable, or underestimating costs, which can result in financial strain during construction.

Windapo and Cattell (2014) affirms that unpredictability of material costs complicates the decision-making process for developers, especially in long-term projects. The authors noted that the volatility in material prices forces developers to reassess project feasibility at various stages, sometimes leading to mid-project design changes or even project abandonment. This situation not only affects the developers but also has broader implications for the property market and urban development. Investors are increasingly required to conduct thorough market analysis, explore alternative materials, and implement more flexible design strategies to accommodate potential cost

increases. This shift towards more detailed planning, while beneficial in many ways, can extend project timelines and increase initial development costs.

2.6 Effects on Construction Timelines

The continuous rising of building material costs has a profound impact on construction timelines, often leading to delays and extended project durations. Okoye, Ngwu, and Ugochukwu (2015) found that when faced with unexpected price hikes, developers and contractors may pause procurement to negotiate better prices or seek alternative suppliers.

Perhaps, search for cost-effective alternatives in response to price increases can lead to changes in construction methodologies or material specifications and as such, often require additional time for redesign, approval processes, and potential retraining of construction workers.

The literature review has provided a concise overview of the effects of rising building material costs on property development, particularly in the context of Nigeria and specifically Enugu Metropolis, Enugu State, from 2021 to 2025. The building industry, a vital sector of the economy, has faced significant challenges due to the volatile nature of material costs, impacting various aspects of property development.

3.0 Research Methodology

This includes the use of questionnaire and interview. The questionnaire was designed to gather quantitative data, featuring both closed-ended and Likert scale questions to measure variables such as building material costs, property development rates, and perceived impacts on the housing market. It was structured to address each research question.

Descriptive analysis was used to summarise the data collected. Tables and simple percentages including Frequency Distribution, Mean Ranking were used.

Table 1: The population of the study

S/No	Target respondents	Population	Source
1	Real Estate Builders and construction company	226	Smartscrapers 1/4/2025
2	Building Material Dealers (New Kenyatta Enugu)	711	Market association member

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3	Prospective Homeowners (2025)	1213	From list of submitted application in the ministry of lands 2025
4	Relevant Government official (i. Ministry of Works and Infrastructure ii. Ministry of Housing iii. Office of the Surveyor General iv. Ministry of Lands and Urban Development v. Enugu Capital Territory Development Authority)	5	Enugu state government house 2025
5	Registered Estate Surveyors and Valuers Firms in Enugu State	48	The Nigerian Institution of Estate Surveyors and Valuers Firms Directory 2025 Enugu State

The population of the study 2,203 was drawn as shown in table 1. Since the study population has different characteristics, they were stratified and sampled for study as shown below.

Sample Size and Sampling Technique

This study will employ a stratified random sampling technique to ensure a representative sample. The population will be divided into strata based on stakeholder categories:

Real Estate Builders and construction company, Building Material Dealers (New Kenyatta Enugu), Prospective Homeowners (2025), Relevant Government official, and Registered Estate Surveyors and Valuers Firms. From each stratum, participants will be randomly selected.

To determine the sample size, we will use Yamane's formula:

$$n = \frac{N}{1+N(e)\text{^}2}$$

Where:

n = sample size

N = total population size

e = margin of error (assumed 5% or 0.05 for this study)

Population data as shown in Table 1:

- Real Estate Builders and Construction Company: **226**
- Building Material Dealers (New Kenyatta Enugu): **711** (1.Black cement, 2.Sand, 3.Stone, 4.Rod, 5.White Cement, 6.Timber, 7.Block, 8.Bamboo, 9.Glass, 10.Aluminum, 11.Tile, 12.Nail, 13.Zinc, 14.Asbestor sheets, 15.Damp Proof membrane, 16.Binding wire, 17.Eletrical wire, 18. PVC pipe, 19.Metal or Wooden door, 20. Thunder arrestor, etc)
- Prospective Homeowners (2025): **1,213**
- Relevant Government Official: **5**
- Registered Estate Surveyors and Valuers Firms in Enugu State: **48**

Total population (N) = 2,203

Solve

Applying Yamane's formula:

n = 2,203 / (1 + 2,203 * 0.05^2)

n = 2,203 / (1 + 2,203 * 0.0025)

n = 2,203 / (1 + 5.5075)

n = 2,203 / 6.5075

n = 339

This sample will be distributed proportionally across the strata as follows:

- Real Estate Builders and construction company: 35
- Building Material Dealers (New Kenyatta Enugu): 109
- Prospective Homeowners (2025): 187
- Relevant Government official: 1 (since the Staff serve the same government with the same mandate, one staff from any of the relevant government official is ok)

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- Registered Estate Surveyors and Valuers Firms in Enugu State: 7

This stratified sampling approach ensures that each subgroup within the population is adequately represented, allowing for more precise data collection and analysis that reflects the diverse perspectives within Enugu State's property development sector.

4. Data Presentation and Analysis

4.1 Distribution of Questionnaire and Retrieval

Table 2: Questionnaire Administration and Retrieval

Respondents	Distributed	Retrieved	% of success
Real Estate Builders and construction company	35	28	80
Building Material Dealers (New Kenyatta Enugu)	109	84	77
Prospective Homeowners (2026)	187	119	64
Relevant Government official	1	1	100
Registered Estate Surveyors and Valuers Firms in Enugu State	7	6	86
Total	**339**	**238**	**70**

A response rate of 70% as shown in Table 2 was achieved on Questionnaires to all the Real Estate Builders and Construction Company: 28, Building Material Dealers (New Kenyatta Enugu): 84, Prospective Homeowners (2026): 119, Relevant Government official: 1, and Registered Estate Surveyors and Valuers Firms in Enugu State: 6.

Research Question 1. Rank those factors that are responsible for high cost of building materials in Enugu metropolis, Enugu state?

Respondents' responses analysed with mean score (MS). Respondents' responses were in terms of Strongly Agreed (SA), Agreed (A), Undecided (U), Strongly Disagreed (SD), and Disagreed (D) for the analysis in assigned 5, 4, 3, 2 and 1 respectively.

Table 3: Ranking of those factors that are responsible for high cost of building materials

Factors	SA W=5	A W=4	U W=3	SD W=2	D W=1	Total	MS	Ranking
Exchange rate fluctuations	0 WF=0	210 WF=840	0 WF=0	28 F=56	0 WF=0	238 (896)	3.8	4th
Inflation	91 WF=455	147 F=588	0 WF=0	0 WF=0	0 WF=0	238 (1,043)	4.4	2nd
Transportation costs	199 WF=995	39 F=156	0 WF=0	0 WF=0	0 WF=0	238 (1151)	4.8	1st
Scarcity of raw materials	0 WF=0	0 WF=0	211 WF=633	0 WF=0	27 WF=27	238 (660)	2.8	6th
Manufacturing costs	20 F=100	200 WF=800	8 WF=24	10 F=20	0 WF=0	238 (944)	4.0	3rd
Government Policies And Regulations	90 WF=450	80 F=320	10 WF=30	27 F=54	31 F=31	238 (885)	3.7	5th
Market speculation	0 WF=0	0 WF=0	210 WF=630	18 WF=36	10 F=10	238 (676)	2.8	6th

Key: WF = Weighted frequency. Table 3 reveals that 'Transportation costs' ranked first (MS = 4.8). This was followed by 'Inflation', which ranked second (MS = 4.4). And followed by 'Manufacturing costs' (MS = 4.0). Then, followed by 'Exchange rate fluctuations' which ranked fourth (MS = 3.8), followed by 'Government Policies and Regulations' (MS = 3.7) and the last are 'Scarcity of raw materials and Market speculation', which ranked sixth (MS = 2.8) and the results measure perceived low importance to the high cost of building materials. The 1st to 5th ranks shows that they are above average and as such it explained that the 1st to 5th ranks (variables) results measure perceived importance to the high cost of building materials in Enugu. From this analysis, it reveals that the Transportation costs' which ranked first is the most importance factor to the high cost of the building materials and this does not rule out other variables effect as observed in the analysis and as such they play substantial roles.

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Research Question 2. Rank the measures to be put to reduce the cost of building materials to ensure adequate property development in Enugu metropolis, Enugu state?

Table 4: Ranking of the measures to be put to reduce the cost of building materials

Measure	SA W=5	A W=4	U W=3	SD W=2	D W=1	Total	MS	Ranking
Improved transportation infrastructure	181 WF=905	57 WF=228	0 WF=0	0 WF=0	0 WF=0	238 (1133)	4.8	1st
Reduce Import duty	199 WF=995	30 WF=120	0 WF=0	0 WF=0	9 WF=9	238 (1124)	4.7	2nd
Stricter price control measures	2 WF=10	28 WF=112	207 WF=621	0 WF=0	1 WF=1	238 (744)	3.1	4th
Encouragement of alternative building materials	101 WF=505	83 WF=332	27 WF=81	0 WF=0	27 WF=27	238 (945)	4.0	3rd
Government subsidies for local production	86 WF=430	110 WF=440	4 WF=12	38 WF=76	0 WF=0	238 (958)	4.0	3rd

Key: WF = Weighted frequency. Table 4 reveals that 'Improved transportation infrastructure' ranked first (MS = 4.8). This was followed by 'Reduce Import duty', which ranked second (MS = 4.7). And followed by 'Encouragement of alternative building materials and Government subsidies for local production which ranked third (MS = 4.0). Then, followed by 'Stricter price control measures' which ranked fourth (MS = 3.1).

These explained that the five analysed variables are necessary variables to apply to reduce high cost of building materials in Enugu. From this analysis, this suggests that Improved transportation infrastructure, Reduce Import duty, Encouragement of alternative building materials and Government subsidies for local production are viewed as the most effective measures to reduce building material costs. A stricter price control measure is also seen as important strategy.

Table 5: Estimated Percentage Decrease in Property Development Activities

Percentage Decrease	Frequency	Percentage
0-20%	35	15%
21-40%	62	26%
41-60%	88	37%
61-80%	40	17%
81-100	13	5%
Total	238	100%

The observed decrease of impact of high costs of building materials shows that the majority (37%) estimated the decline in property development activities to be between 41-60%. This substantial decrease further emphasizes the significant impact of rising building material costs on the building sector in Enugu Metropolis, Enugu State.

Table 6: Decrease Observed in Property Development Activities

Response	Frequency	Percentage
Yes	200	84%
No	29	12%
Unsure	9	4%
Total	238	100%

Majority of respondents (84%) have observed a decrease in property development activities due to rising building material costs. This strong consensus among respondents indicates a significant slowdown in the building sector.

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Hypothesis Testing

H_0: There is no significant association between rising building-material costs and property development activity.

The use of spearman's rank-order correlation was applied in testing this hypothesis impact of building material costs on property development activity.

The 238 respondent-level observations are below:

Table 7: Variables and Coding

Impact Rating Score	Interpretation
1	Very Low
2	Low
3	Moderate
4	High
5	Very High
Decrease Category Code	Percentage Decrease
1	0–20%
2	21–40%
3	41–60%
4	61–80%
5	81–100%

Table 8: Cross-tabulation of Impact Rating and Percentage Decrease in Property Development Activities

Impact Rating	**0–20%**	**21–40%**	**41–60%**	**61–80%**	**81–100%**	**Row Total**
1 – Very Low	27	18	3	0	0	48
2 – Low	7	22	19	2	0	50
3 – Moderate	1	22	45	8	0	76
4 – High	0	0	20	22	4	46
5 – Very High	0	0	1	8	9	18
Column Total	**35**	**62**	**88**	**40**	**13**	**238**

Interpretation:

The cross-tabulation demonstrates a clear positive pattern between perceived impact rating and the percentage decrease in property development activities. Respondents with very low impact ratings (1) were concentrated mainly in the lower percentage-decrease categories, with 27 respondents reporting a 0–20% decrease and 18 reporting a 21–40% decrease. In contrast, respondents with very high impact ratings (5) were concentrated in the higher decrease categories, with 8 respondents reporting a 61–80% decrease and 9 reporting an 81–100% decrease.

Similarly, the high impact rating (4) was predominantly associated with the 41–60% and 61–80% decrease categories. Overall, the pattern suggests that as the perceived impact of rising building-material costs increases, the reported percentage decrease in property development activity also tends to increase.

Spearman Correlation Calculation
Spearman's rank-order correlation was calculated from the paired respondent-level ordinal scores.

N = 238
Spearman's rho (r_s) = 0.7798 ≈ 0.780
p-value = < 0.001

Table 9: Coefficient

Variables	N	Spearman's rho	Sig. (2-tailed)
Impact rating vs. percentage decrease	238	0.780	<0.001

Interpretation: The coefficient indicates a strong positive association. Higher impact ratings tend to be associated with higher percentage-decrease categories.

Decision: Since $p < 0.001 < 0.05$, the null hypothesis is rejected. The result is statistically significant ($r_s = 0.780$, $p < 0.001$, $N = 238$).

Conclusion: Spearman's rank-order correlation was employed to examine the relationship between respondents' perceived impact of rising building-material costs and the estimated percentage decrease in property development activities. The analysis produced a Spearman correlation coefficient of $r_s = 0.780$, with $p < 0.001$ and $N = 238$. The result indicates a strong positive and statistically significant relationship between the impact rating of rising building-material costs and the percentage decrease in property development activities. This implies that higher perceived impacts of increasing building-material costs are associated with greater reductions in property development activities. Since the p-value is less than the 0.05 significance level, the null hypothesis is rejected. For this study, the finding indicates a statistically significant association

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between increasing building-material costs and reductions in property development activities in Enugu Metropolis, Enugu State.

5.0 Findings, Discussion and Conclusion

5.1 Findings and Discussion

The study examined the effect of rising building-material costs on property development activities in Enugu Metropolis, Enugu State. Data were obtained from 238 valid respondents comprising real estate builders and construction companies, building-material dealers, prospective homeowners, government officials, and registered estate surveyors and valuers. The findings are presented in relation to the research questions and hypothesis.

5.1.1 Factors Responsible for the Rising Cost of Building Materials

The findings indicate that the increasing cost of building materials in Enugu Metropolis is attributable to a combination of transportation, macroeconomic, production and regulatory factors. Among the factors examined, transportation costs emerged as the most prominent factor, with a mean score of 4.8. This was followed by inflation (MS = 4.4), manufacturing costs (MS = 4.0), exchange-rate fluctuations (MS = 3.8), and government policies and regulations (MS = 3.7). Scarcity of raw materials and market speculation recorded comparatively lower mean scores of approximately 2.8 each.

The dominance of transportation costs suggests that the cost of moving building materials from production centres and distribution points to construction sites constitutes a major component of material-price escalation in the study area. This finding is particularly relevant in the Nigerian context, where high fuel and logistics costs can substantially increase the final market price of cement, steel reinforcement, timber, blocks and other construction inputs.

Inflation ranked second, indicating that the general increase in the prices of goods and services has transmitted strongly into the construction sector. Similarly, the relatively high ranking of manufacturing costs and exchange-rate fluctuations demonstrates the importance of production costs and macroeconomic instability in determining the prices of construction inputs. The findings therefore suggest that material-price escalation should not be viewed as an isolated market phenomenon but as the outcome of interacting macroeconomic, logistical and production-related pressures.

5.1.2 Measures for Reducing Building-Material Costs

The findings further demonstrate strong respondent support for interventions aimed at reducing building-material costs. Improvement of transportation infrastructure ranked first, with a mean score of approximately 4.8, followed by reduction of import duties (MS ≈ 4.7). Encouragement of alternative building materials and government subsidies for local production both recorded mean scores of approximately 4.0 and jointly ranked third, while stricter price-control measures ranked fourth (MS ≈ 3.1).

The ranking indicates that respondents place greater emphasis on interventions that address the structural determinants of material costs than on direct administrative price controls. Improved transportation infrastructure can reduce distribution costs and supply-chain inefficiencies, while lower import duties may reduce the landed cost of imported construction inputs and raw materials. The support for alternative materials and subsidies for local production also points to the importance of strengthening domestic productive capacity and reducing excessive dependence on imported inputs.

The comparatively lower ranking of price-control measures suggests that respondents may perceive direct price regulation as less effective than interventions directed at transportation, trade policy, local production and material substitution. Consequently, policies aimed at stabilizing building-material prices should adopt a multidimensional approach rather than relying predominantly on administrative price controls.

5.1.3 Effect of Rising Building-Material Costs on Property Development Activities

The empirical evidence indicates that rising building-material costs are associated with a substantial reduction in property development activities in Enugu Metropolis. The estimated magnitude of the decline reported by respondents shows that 37% perceived a reduction of between 41% and 60%, representing the largest response category. A further 26% estimated a reduction of 21–40%, while 17% reported a reduction of 61–80%. Fifteen per cent reported a relatively smaller reduction of 0–20%, whereas 5% estimated a reduction of 81–100%.

Taken together, the results indicate that a considerable proportion of respondents perceived moderate-to-severe contraction in property development activity. This provides evidence that escalating material costs extend beyond their immediate effect on construction budgets and may

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influence developers' decisions regarding whether, when and at what scale to undertake development projects.

The finding is further reinforced by the direct-response measure in Table 6. 84% of respondents reported that they had observed a decrease in property development activities due to rising building-material costs, compared with 12% who reported no decrease and 4% who were unsure. The high proportion of respondents identifying a decline suggests that rising construction-input prices have become a significant constraint on property development within the study area.

The observed contraction can plausibly manifest through postponement of projects, reduction in development scale, redesign, substitution of materials, slower construction progress and, in more severe circumstances, abandonment of projects. These outcomes have implications for housing supply because sustained increases in development costs can discourage new investment and increase the cost of completed properties.

5.1.4 Relationship between Building-Material Costs and Property Development

The hypothesis test provides statistical evidence of a strong association between respondents' ratings of the impact of rising building-material costs and the estimated percentage decrease in property development activities. The Spearman rank-order correlation produced a coefficient of: $r_s = 0.780$, $p < 0.001$, $N = 238$.

The positive coefficient indicates that respondents assigning higher impact ratings to rising building-material costs also tended to report higher categories of decline in property development activity. The magnitude of the coefficient represents a strong positive association.

Since the significance level is below the 0.05 threshold, the null hypothesis that there is no significant association between rising building-material costs and property development activity is rejected. The study therefore finds a statistically significant relationship between rising building-material costs and reductions in property development activities in Enugu Metropolis.

However, the result should be interpreted as evidence of a statistical association rather than proof of causality. The descriptive and correlational design does not, by itself, establish that material-price increases are the sole cause of the observed reduction in development activity. Other factors, including interest rates, land costs, access to finance, inflation, household purchasing power, planning regulations and broader macroeconomic conditions, may also influence development decisions.

5.2 Conclusion

This study investigated the effect of rising building-material costs on property development activities in Enugu Metropolis, Enugu State. The findings establish that escalating construction-input prices constitute a significant constraint on property development and have implications for the supply and affordability of housing.

The study identifies transportation costs as the most highly ranked factor contributing to the increasing cost of building materials, followed by inflation, manufacturing costs, exchange-rate fluctuations, and government policies and regulations. These findings demonstrate that material-price escalation is driven by a combination of logistical, macroeconomic, production and institutional factors. The problem therefore requires coordinated interventions rather than a single policy response.

The study also establishes strong support for improved transportation infrastructure, reduced import duties, promotion of alternative building materials and government support for local production as mechanisms for reducing building-material costs. These measures have the potential to improve supply-chain efficiency, reduce input costs, strengthen domestic manufacturing capacity and enhance the resilience of the construction sector. The comparatively weaker ranking of direct price-control measures suggests that structural interventions may be more sustainable than relying primarily on administrative controls.

Importantly, 84% of respondents reported observing a decline in property development activities, while the largest proportion of respondents (37%) estimated the decline to be between 41% and 60%. This suggests that escalating material costs have moved beyond being a construction-cost concern to becoming a broader property-market and housing-supply challenge.

The inferential analysis provides additional support for this conclusion. The Spearman correlation coefficient of $r_s = 0.780$ ($p < 0.001$; $N = 238$) indicates a strong and statistically significant positive association between perceived impact of increasing building-material costs and the reported magnitude of decline in property development activities. Accordingly, the null hypothesis is rejected.

Overall, the study concludes that the persistent escalation of building-material costs is significantly associated with declining property development activity in Enugu Metropolis. If the trend continues without effective intervention, it may constrain new housing supply, increase development costs, reduce investment incentives and ultimately undermine housing affordability.

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Addressing the problem requires an integrated policy framework involving improved transport infrastructure, support for domestic production, appropriate trade and import policies, promotion of cost-effective alternative materials, improved access to development finance and greater predictability in the regulatory environment.

From a property-development perspective, developers and investors should incorporate material-price volatility into feasibility studies, development appraisals and project risk assessments. Greater use of cost-sensitive designs, alternative locally available materials, phased procurement and appropriate contingency allowances may also improve project resilience. At the policy level, government intervention should focus on reducing the structural costs of production and distribution rather than depending exclusively on price regulation.

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