



Increase in Construction Cost of Residential Real Estate Investment and Developer's Profit in Uyo.

***Ekpo, Mbosowo Ebong; **Attai, Hosanna Moses; & ***Usip, Edidiong Elijah**

Department of Estate Management and Valuation, Akwa Ibom State Polytechnic, Ikot Osurua, Ikot Ekpene. Akwa Ibom State. **Department of Surveying and Geoinformatics, Akwa Ibom State Polytechnic, Ikot Osurua, Ikot Ekpene. Akwa Ibom State. *Department of Urban and Regional Planning, Akwa Ibom State Polytechnic, Ikot Osurua, Ikot Ekpene. Akwa Ibom State.*

Abstract

This research examines the effects of increase in construction cost on developer's profit in Uyo, Akwa Ibom State. In order to achieve the stated aim, the objectives were to examine the average increase in construction cost of residential real estate investment in the study area, to analyse the developer's profit of residential real estate investment in the study area and to ascertain the effects of increase in construction cost of residential real estate investment on the developer's profit in the study area. The research work adopted the cross-sectional survey type of design. The research population comprised residential real estate investments duly appraised by Estate Surveyors and Valuers who have offered professional services in the study area. Data was obtained through questionnaire survey. The sample size was 500. Findings from the study revealed that the average construction cost in the study area increased by 28.4%. the study also found out that the 24.8% increase in the cost of construction affected the developer's profit by leading to a loss of ₦1,551,861.97. The investment information provided in this study has significant implications for both local and foreign investors desiring to invest in the Nigerian property market and it is a useful resource for Sub-Sahara African growth and development in this era.

Keywords: *Construction cost, residential real estate, investment, developer's profit, Uyo*

Introduction

Increase in construction cost and developer's profit play a vital role in the physical and economic development of towns and cities all over the world. Nations and regions would be severely limited in development without construction materials, which is a key factor for physical and economic growth. In Uyo, most property investors consider best quality locations and other factors such as increase in demand for lettable space, supply of real property, size of the property, among others, while planning to carry out building construction (Ekpo, 2021). Little or no consideration is made concerning increase in construction cost and developer's profit. The present position concerning property development in Uyo, is that increase in construction cost has remained the key issue as it affects developers profit, due to the high inflationary trend in the country which has resulted in the irreversible increase in the prices of construction materials of which practicing Estate Surveyors and Valuers and investors are yet to fully exploit.

There is paucity of studies in the area of increase in construction cost and developer's profit. According to Wikipedia (2021), *Nigeria is ranked 16th among countries with the highest inflation rate of 16.910*. Possible effects caused by the increase in construction cost (building materials) and developer's profit have therefore elicited the interest of the researchers in this direction. It is against this background that this study was conceived. The aim of the study is to examine the effects of increase in

construction cost on developer's profit in Uyo. In order to achieve the stated aim, the following objectives have been stated:

- (i) To examine the average increase in construction cost of residential real estate investment in the study area.
- (ii) To analyse the developer's profit of residential real estate investment in the study area.
- (iii) To ascertain the effects of increase in construction cost of residential real estate investment on the developer's profit in the study area.

Literature Review

Construction cost form part of the overall costs incurred during the development of a building. Construction cost can also be seen as those costs incurred by the actual construction works themselves, and on some projects may be determined by the value of the contract with the main contractor. Construction costs can be classified into two categories namely; direct construction cost and indirect construction cost.

Direct construction costs entail the costs and expenses that are accountable directly on a facility, function or product. In construction projects, the direct costs are the cost incurred on labor, material, equipment etc.

These costs for a construction project are developed as estimates by means of detailed analysis of the contract activities, construction method, the site conditions and resources. Different direct costs in construction projects are material costs, labor costs, sub-contractor costs and

equipment costs. Indirect construction costs entail the costs and expenses that are not directly accountable for a particular facility, product or function. Indirect costs can be either variable or fixed costs.

The main sections coming under indirect costs are personnel costs, security costs, and administration costs. These costs do not have a direct connection with the construction project.

Building material or construction material is any material that can be used for the construction of housing projects. It commonly includes steel, copper, cement, bitumen, lumber, masonry bricks/blocks, and sand among many others. The housing construction industry is one of the most important industries that underpins the economic development of a nation (Ganiyu,2016). The construction sector impacts socio-economic expansion development in the developing countries by contributing substantially to their gross domestic product (GDP) (Ofori,2012 and Chen,2017). As a result of this, it is crucial for the sector to understand the impact of the building materials cost in completing housing projects as scheduled. Building materials cost can actually comprise half (50%) of the total cost of all projects executed by a construction industry (Caldas *et al*,2015). Moreover, building materials cost, are being affected by quality, quantity, time, place, buyer, and seller during a construction production (San,2013). Other factors are currency exchange, material specification, inflation pressure, and availability of new materials in the country (Oladipo and Oni,2012). Generally, total cost of executing a housing project is hugely affected by improper material handling on the construction site, and all this impacts the quality and time scheduled for a project to be completed (Ghoddousi and Hosseini,2012). Durdysev and Hosseini (2019) conducted a survey and systematically reviewed studies on construction project delay; this revealed that the ten most common causes of this are climatic conditions, ineffective communication, deficiency in coordination and conflicts between stakeholders, improper planning, material shortages, financial problems, payment delays, equipment/plant shortage, lack required experience among project stakeholders, labour shortages, and poor site management.

According to some researchers, building materials play a vital role in building as a substantial input in the project development (Akanni,2014). In Nigeria, the incessant rising in price of building materials is a huge challenge towards the performance of the construction industry in delivering projects with quality and within the time scheduled. The fluctuating market value for building materials tends to cause high project risk to all stakeholders (suppliers, contractors, and clients) involved in the construction production (Doloi,2012; Ling,2010). The demand for housing of all types, coupled with inflation and tight monetary supply, has caused a big challenge to the cost of building materials in the construction industry (Esohofonie,2008). Therefore, an improved sustainable housing delivery within the budgeted time, cost, and expected quality, as well as taking into consideration the stakeholders' satisfaction and cost of building materials, is absolutely essential in the sense that it affects developer's profit.

Cost of Building Materials in Nigeria

Building materials play a vital role in the construction industry as they are those materials put together in erecting buildings; construction project is not feasible without the inclusion of building materials (Akanniet *et al.*, 2014). That is, building materials play an undeniable significant role in the housing industry as it is the most substantial input in project

development, without it which the developer's profit is affected. According to Adedeji (2012), about 60% of total housing expenditure is spent on building materials. Notably, Karana, Hekkert and Kandachar (2010) indicated that appropriate use of the building materials, in respect of the expertise involved in the building construction process, determines the strength, functionality and quality of the building. Building materials play a crucial role in enhancing sustainability of buildings and contributing to economic wealth of the nation. However, Donyavi and Flanagan (2011) observed that in order to reduce construction costs, and to improve productivity, quality and timely project delivery, material management effectiveness must be a main concern. The prices of building materials increase on a daily basis, due to instability of the Naira to the Dollar and general inflationary trends.

Effects of Increase in the Cost of Construction Materials on developer's profit.

Much work has not been done on this particular field. However, according to Onyejiaka *et al* (2018), the effects of the increase in the cost of construction materials are thus;

- (i) **Fluctuation in cost of construction:** Substantial growth in the construction industry is subjected to price stability in materials costs as these have increased at faster rates than the expected (Windapo and Cattell 2013). Akanni *et al.* (2014), in their study to assess the implications of the rising cost of building materials in Nigeria, determined fluctuation in construction costs as the most significant effect of increase in the cost of building materials. The authors also identified inflation as one of the key causes of the fluctuating cost of building materials, which affects construction industry development across the nation. This is in agreement with Windapo and Cattell (2013) who found out that the key issue affecting the development of the construction industry in Nigeria, is the increase in costs of building materials which is a significant factor affecting development of the construction industry.
- (ii) **Intensifying Growth in project abandonment:** According to Nwachukwu, (2016) Project abandonment is the unplanned suspension of the work progress especially at the execution stage such as the refusal or failure to complete a contract after practical completion time. He also stated that Numerous construction projects are temporarily or even permanently abandoned, and the predominance of many uncompleted and abandoned projects resulted from finance related crises and material related factors. Ayodele and Alabi (2011) and Idoro and Jolaiya (2010) identified inflation and high cost of building materials as major factors that lead to uncompleted and sub-standard buildings. Clearly, high cost of building materials gives no room for industrial performance in the construction industry Ghoddousi and Hosseini, (2012) while inflation is seen as the cause of progressive cost increase in building materials windapo, (2012).
- (iii) **Increase in Ultimate Cost of Building Products Compared to Estimated Cost of the Building:** Cost variation can be defined as the variance between the original cost and the actual cost when the project is completed, Lukale (2018) and Ikechukwu *et al.* (2017). Glaeser *et al* (2005) posited that cost variation can simply be described as the amount by which the actual costs surpass the accepted costs during the contract agreement. Cost variation can

be determined when the final cost of the project exceeds the original estimate cost. According to Elinwa and Buba 1993, the considered cost of materials and variation of materials prices are the key factors causing a high final cost of building products in Nigeria.

Methodology

This research work adopted the cross-sectional survey type of design. Target population was investments in residential properties and data was collected from principal partners of firms of Estate Surveyors and Valuers in the study area. Out of the 116 registered Estate Surveyors and Valuers practicing in Uyo, fifty (50) were found to have carried out appraisal in residential real estate investment in the study area. It was also found that each of the 50 firms surveyed has about ten (10) appraised residential real estate investments in their portfolios, making the total number of appraised investments under study to be 500; thus, the sample size for this study is 500. Data was compiled on properties which have been duly appraised and managed by the firms of Estate Surveyors and Valuers under study. Copies of questionnaire were distributed to respondents to collect data for subsequent analysis. Opinions on the change in rental value, lending rate and constructions costs as well as returns were given by the principal partners of all estate firms surveyed.

Data Presentation and Analysis

Examining the average increase in construction cost

In this section, an attempt was made to find the average increase in construction cost by selecting mostly used building materials and as well as that of professional services for analysis.

Table 1. The changes in the prices of major building materials in the study area

Building materials	2018 prices	2021 prices	Percentage (%) increase
Plaster sand (7 tons)	25,000	28,000	12%
Sharp sand (20 tons)	45,000	60,000	33%
Ceramic tiles (40×40)	1,500	1750	16.7%
Cement (50kg)	2,800	3,600	28.6%
Hand mold block (6-inches)	120	130	8.3
Vibrated block (6-inches)	150	160	6.7
Timber 2×3×12	200	270	35
Timber 2×4×12	250	300	20
Timber 2×2	200	350	75
Timber 3×4	660	750	13.6
1/2 -inch obeche	3,500	3,700	5.7
3/4 -inch obeche	3,000	4,600	53.3
Aluminum roofing sheet 1 piece (0.45mm)	3,500	3,700	5.7
Professional services	3,000,000	4,600,000	53.3
20 tons Granite (1-inch)	85,000	90,000	5.9
8mm steel rod (1)	750	850	13
3-inches nail (1 pack)	900	1,000	11

2-inches nail (1 pack)	800	900	12.5
4-inches nail (1 pack)	1,000	1,200	20

Source: Researchers' analysis, 2021

Table 1 shows the average building construction cost in the study area. it was found out that the average construction cost is in the average of 24.8%

Analysis of the Developer's Profit before Investment Decision Period

Data from the records of the Central Bank of Nigeria showed that the average lending rate was 18% between the period of January 2018 and December 2021. The analysis in Table 4.2 represents the appraisal report prepared for detached 3-bedroom bungalows under study. It was prepared in January 2018, but due to the increase in construction cost, the development was delayed for almost two years. The average period of development (taken to complete and let) the properties under study was approximately 6 months.

Table 2: Analysis of the Developer's Profit in the study area

Period	Item	Net Flow (₦)	P.V. of ₦1 @ 5.6%	P. V. of Cash Inflow (₦)	P. V. of Cash Outflow (₦)
0	Land Cost	1,700,000.00	1		1,700,000.00
1		1,500,000.00	0.9469		1,420,350.00
2		1,380,000.00	0.8967		1,237,446.00
3		1,300,000.00	0.8491		1,103,830.00
4		1,120,000.00	0.8041		900,592.00
5		1,150,000.00	0.7615		875,725.00
6		1,050,000.00	0.6853		719,565.00
7	Capital Value (sales price)	1,100,000.00	@ 5%	0.6828	15,021,600.00
		₦22,000,000.00	=		
Total				15,021,600.00	7,957,508.00

Developers profit = ₦7,064,092.00

From Table 2, it was found that the developer's profit was ₦7,064,092.00. Current rental income of similar properties is ₦1,100,000.00 with an investment return of 5% in Uyo. It was also found out from the records of the Central bank of Nigeria, that the cost of finance before the development period was 18%, which was converted into three-months period using the formula $(1 + i)^{1/n} - 1$. The analysis in Table 4.1 may be referred to as the base case where references will be made in relation to changes in the construction cost in order to achieve the aim of this research work.

Analysis of the Effect of increase in Construction Cost on Developer's profit in Uyo.

Data from the records of the firms of Estate Surveyors and Valuers showed that the average construction cost increased by 24.8% between the period of January 2018 and June 2021. The analysis is shown in Table 3. The average period of development (taken to complete and let) the properties under study is also approximately 6 months.

Table 3: Analysis of the Effects of increase in Construction cost

Period	Item	Net Flow (₦)	P.V. of ₦1 @ 5.6%	P. V. of Cash Inflow (₦)	P. V. of Cash Outflow (₦)
0	Land Cost	1,700,000.00	1		1,700,000.00
1		1,872,000.00	0.9469		1,772,596.80
2		1,722,240.00	0.8967		1,544,332.60
3		1,622,400.00	0.8491		1,377,579.84
4		1,397,760.00	0.8041		1,123,938.81
5		1,435,200.00	0.7615		1,092,904.80
6		1,310,400.00	0.6853		898,017.12
7	Capital Value (sales price)	1,100,000.00 @ 5% ₦22,000,000.00	@ 0.6828 =	15,021,600.00	
Total				15,021,600.00	9,509,369.97
Developers profit = ₦5,512,230.03					

From Table 3, it was found that the developer's profit was ₦5,512,230.03. The construction cost in period 1 to 7 are respectively increased by 24.8%. Land cost and sale value are not affected by the increase in construction costs. From the first 3month period, there was an increased from 1,500,000 to 1,872,000, 1,380,000 to 1,722,240, 1,300,000 to 1,622,400, 1,120,000 to 1,397,760, 1,150,000 to 1,435,200 and 1,050,000 to 1,310,400 relatively. Sensitivity indicator towards the Net Present Value is 21.9%, calculated as $[(7,064,092.00 - 5,512,230.03) / 7,064,092.00]$. This indicates a great effect of the change in the construction cost on the developers' profit, brought about by the increase in the prices of building materials in the study area.

Discussion of Findings

The study reveals that the increase in the prices of construction cost between the year 2018 and 2021 was 24.8% as a result of high inflationary trend in the country, exchange rate, lack of local building materials and high cost of labour.

The study further revealed that the effect on increase in the construction cost by 24.8% resulted in an increase in the net flow for every 3months from period 1 to 7, thereby causing a decrease in the developers profit from ₦7,064,092.00 to ₦5,512,230.03. This indicates a loss of ₦1,551,861.97.

Summary. Conclusion and Recommendations

The study examined the effects of the increase in construction cost on developers profit in Uyo. This study was carried out as a result of the observation that most real estate developers who embarked on residential real estate investment without considering the increase in construction cost and how it affects the developers' profit. The study has shown that increase in construction cost has a negative effect on the developers' profit in residential real estate investment in Uyo. The study further reveals the importance of every real estate developer in considering the effects of the increase in construction cost on the developer's profit because every real estate investor has the aim of making profit from

every investment embarked upon. Increase in the construction cost of residential property development has been linked to the economic instability in the study area.

Based on the findings from the study, it is recommended that practicing Estate Surveyors and Valuers should encourage their clients to carry out feasibility and viability studies on every investment that they (client) want to embark on. Prospective real estate investors should always allow trained professionals to guide them while making investment decision.

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