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COST ESCALATION IN THE BUILDING INDUSTRY: IMPLICATION FOR EFFICIENT PROJECT DELIVERY

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Abstract

Efficient project delivery is ubiquitous in the construction ecosystem. There is a growing concern about the effect of cost escalation in completing building projects in Nigeria. The current study assessed cost escalation in the building industry and the possible implication in project delivery. Ninety-eight professional engineers conveniently selected from building sites and other related venues completed a self-report instrument to ascertain the effect of cost escalation on a building project. The percentage scores of the data revealed that cost escalation contributes a large percentage of the delay in building projects (40.9%). The analysis also indicated that cost escalation contributes to the reduction in most building scope (33.4%) and accounts for the minimal implication relating to building project termination (24.5%).

Keywords: *cost escalation, building industry, project delivery*

INTRODUCTION

The construction industry is among the crucial sector in any economy. The industry is estimated to account for over 30% of the extraction of natural resources, as well as 25% of solid waste generated worldwide. (Benachio et al., 2020). Thus, the sector is responsible for significant raw material consumption and environmental footprints (Al-Hamrani et al., 2021). The construction industry plays an important role in economic growth due to its significant contribution to GDP and other sectors (Alaloul et al., 2021). It makes a significant contribution to the national economy and employs a large number of people. Similarly, most nation around the globe endeavors to achieve sustainable growth in their various industries. The construction industry has an enormous contribution to the economy (Amri & Marey-Pérez, 2020) and is primarily considered a significant bases of economic growth, development, and economic activities (Alaloul et al., 2021; Boateng et al., 2020; Liu & He, 2016; Oladinrin et al., 2012; Shibani et al., 2021). Indeed, the industry provides infrastructure for other productive schemes, including shelter to the people and employing people of different levels of knowledge and skills. (Abubakar et al., 2018).

Nigeria has a significant infrastructure deficit, with its total stock making up only 30% of GDP, falling short of the global standard of 70% of GDP established by the World Bank. The current infrastructure in the country will probably soon be overwhelmed because Nigeria's population is expected to reach 400 million people by 2050 and is growing at a rate of over 2.5 percent annually. Thus, the construction industry in Nigeria is mainly significant in developing the country. Indeed, the construction ecosystem in Nigeria is mainly perceived as a developmental component and avenue for social change. Indeed, it provides the requisite potential for job creation and better living conditions. (Iheme et al., 2011). The construction industry contributes over 3% to the annual gross domestic product and about one-third of the total fixed capital investment. (Abubakar et al., 2018). The construction industry accounts for about 60 % of the nation's capital investment and 30 % of the Gross Domestic Product (G.D.P). Furthermore, the construction industry is said to have contributed about half of the total stock of fixed capital investment in the Nigerian economy (Olaloku, 2007). The construction industry also generates employment opportunities, which place it second to the Government in labor employment.

Nevertheless, numerous authors have emphasized the various challenges affecting the growth of the construction industry in Nigeria (e.g., Akinradewo et al., 2021; Amade & Nwakanma, 2021; Arum et al., 2019; Dorcas et al., 2019; Ezeokoli et al., 2021; Oduola, 2010; Ogunsanya et al., 2022; Okafor et al., 2022; Oke et al., 2022; Sa'eed et al., 2020; Sholanke et al., 2019). For instance, Babalola et al. (2018) noted that the global construction industry faces challenges of time overrun, cost overrun, and material wastage. Accordingly, Ogunmakinde et al. (2019) identified a lack of synergy, material shortage, unethical practices, unstable prices of materials, project delays, and poor management as the challenges in the construction industry in Nigeria. Additionally, a study conducted by Mudi et al. (2015) revealed that the lack of a national infrastructure blueprint, unclear political direction, and support for project development had a negative impact on the majority of Nigeria's infrastructure project development, which was also reflected in the ineffectiveness and inefficiency of the country's construction industry. Weak regulatory and enforcement powers of Nigeria's infrastructure concession regulatory commission, inadequate financial modeling and value for money assessments, technical capacity gaps, lack of institutional framework for PPP project preparation, inconsistency in PPP project pipelines, and lack of standardization, hindering replication. These challenges and limitations have therefore culminated to poor performance of Nigerian construction industry in infrastructure development and invariably led to resultant high cost and time overruns experienced on infrastructure development in Nigeria.

The construction industry is being adversely affected in numerous ways by the ongoing rise in global inflation. The volatile market for construction materials is the most significant factor contributing to the decline in the contractor's bottom line. In recent years, the cost of building materials has skyrocketed to levels that have never been seen before because there is a shortage of materials due to impacts on global supply chains and increased production costs and tariffs. For example, the cost of construction supplies like steel, cement, lumber, engineered wood products, and roofing-based materials has experienced a wild price fluctuation over the past few months that has not been seen for decades. When a project is delivered using the conventional method of hard bid, fixed price contracting, the contractor is typically responsible for bearing the financial risk of fluctuating material prices. This volatility puts a contractor's profit margin on a given project and some construction companies' continued viability at risk. Cost escalation describes an increase in the amount required to construct a project above the initially budgeted sum. It also arises if the actual construction cost exceeds the initially estimated amount.

Cost escalation and building industry.

Construction projects are commonly delayed due to the price escalation of building materials (Ejaz et al., 2013). Cost escalation has become a common problem in various construction projects worldwide (Rashed & Shaqour, 2014), forcing building contractors to compromise on the quality and completion time of building projects. Some projects are being completed at a cost higher than the initial budget, creating an unsuccessful project delivery. Indeed, cost escalation becomes necessary due to the increasing variations in the cost of building materials. Thus, building contractors are motivated to scale up monetary demand given price-related contingencies. Although, researchers have attributed cost escalation to numerous reasons (see., Ikechukwu et al., 2017; Khanal & Ojha, 2020; Maran et al., 2011; Muhammad et al., 2015). In some cases, projects are awarded to the lowest bidder, resulting in various problems. Some of these low bidders may have inadequate management skills and have less regard for contract plans; cost control; overall site

management; and resource allocation. On the other hand, the project owners are likely to be budget-based and offer little attention to material-related cost variations. This scenario challenges the contractor-client relation (CCR) and opens the channel for project disruptions. The present paper aims to highlight the possible implication related to cost escalation in the building industry, including delays in building projects, reduced project scope and projects termination.

Method

The study aimed to examine the implication of cost escalation in the building industry. Thus, a survey research design was adopted for the study. The target population of the study included professionals in quantity surveyors, structural engineering, architects, and builders. The participants were conveniently pooled from building construction companies, construction sites, and members of professional bodies such as the Nigerian Society of Engineers (NSE) and the Council for the Regulation of Engineering in Nigeria (COREN) in Edo State, Nigeria. Subsequently, the participants were approached in building sites, offices, NSE, and COREN offices and asked to participate in the study to understand the implications relating to cost escalation in the building industry. One hundred and nine engineers consented to participate in the study and were handed a Likert-type questionnaire to fill on the spot. Consequently, only the properly filled questionnaires (i.e., 98) were utilized for the study.

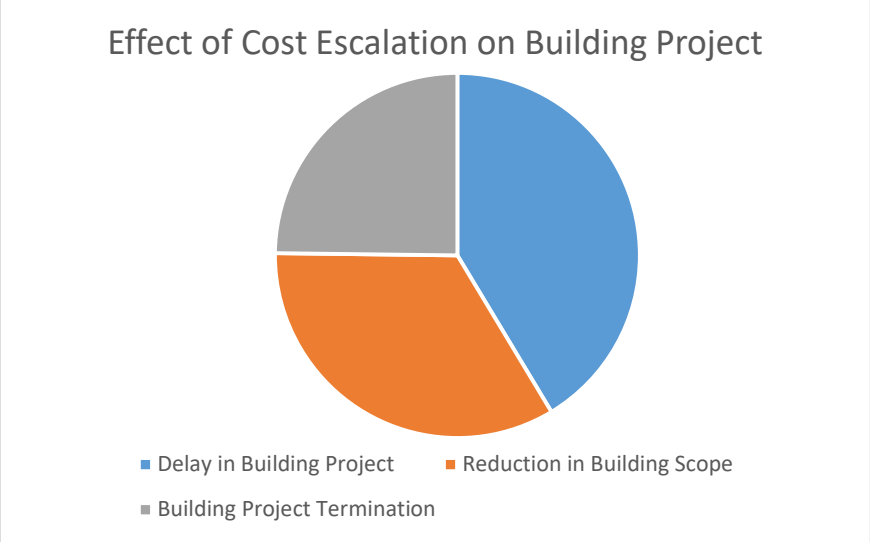
Result

The study adopted a descriptive method. Data from the respondents were analyzed using the statistical package for social sciences SPSS, Version 23. The result is presented in percentages, as shown in the table below.

Table 1: shows the percentage score of the respondents on the implication of cost escalation in the building industry.

Source	Frequency	Percent
Delay in building projects,	41	40.9%
Reduced building scope	34	33.4%
Building projects termination	25	24.5%

The study aimed to gain more knowledge of the challenges of cost escalation in the building industry in Nigeria. The percentage scores of the data revealed that cost escalation contributes a large percentage of the delay in building projects (40.9%). The analysis also indicated that cost escalation is a contributory factor in the reduction in most building scope (33.4%), while cost escalation may account for the minimal implication relating to building project termination (24.5%).



Discussion

The current study assessed cost escalation in the building industry and the possible implication in project delivery. Ninety-eight professional engineers conveniently selected from building sites and other related venues completed a self-report instrument to ascertain the effect of cost escalation on the building project. The percentage scores of the data revealed that cost escalation contributes a large percentage of the delay in building projects (40.9%). This means that the effect of cost escalation in the building industry is more likely to cause a delay in the building project. Indeed, project owners are mainly motivated to complete their projects. Likewise, building contractor gains more in completing existing projects. Therefore, the contradictions associated with cost escalation are more likely to be resolved. However, the impact is mainly noticed in project delays. The finding agrees with previous studies that established a relationship between cost escalation and delay in building projects (Anerao, 2017; Ejaz et al., 2011; Gebrel et al., 2021).

The findings indicated that reductions in most building scopes (33.4%) result from cost escalation in the building industry. The present finding indicates that cost escalation propels change in building scope. The finding agrees with previous

studies (Gil & Fu, 2022). Although, change is inevitable in any project. Thus, alterations relating to additions, deletions, or revisions to project goals and scope are considered changes, whether they increase or decrease the project cost or schedule. Most commonly, lack of timely and effective communication, lack of integration, uncertainty, a changing environment, and increasing project complexity drive project change. Also, the result found that cost escalation may account for the minimal implication relating to building project termination (24.5%). This means that cost escalation on construction projects can lead to disputes among construction parties leading to contract terminations (Bhatia & Apte, 2016). The finding shows that cost escalation of commitment might lead to inefficient allocation of funds, higher costs, and more severe project disruption and failures (Chulkov, 2009). The present study provides insight into the possible outcomes associated with cost escalation in the building industry.

Conclusion

The result of the study indicates that cost escalation is inherent to project chaos, which is one of the key drivers of project failure and subsequent termination. The study found that delays in building projects, reduced scope of the original contract, and termination of construction projects are more likely to occur due to cost escalation. Thus, the study concluded that cost escalation is a pathway to several construction fallbacks, including delay, modification, and termination. The result has implications for efficient project delivery and provides valuable data to construction engineers and owners. The study recommends that appropriate project management practices are thus required to curb the effects of cost escalation in building projects. Estimating the cost of building construction projects with minimum error at the conceptual stage of project development is essential for planning (Nazif et al., 2021). Future researchers might explore other construction hang-ups associated with cost escalation.

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