



A FRAMEWORK FOR THE MANAGEMENT OF CONSTRUCTION COST ESCALATION IN ECONOMIC DOWNTURN IN NIGERIA

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ABSTRACT

Cost management functions to monitor costs and initiate corrective action to keep the costs within budget. Construction cost management act as a discipline medium throughout the life cycle of an infrastructural development for effective and efficient procurement process. Construction cost escalation in economic downturn is influenced by lagging economic indicators of GDP, inflation, foreign exchange rate, interest rate, unemployment rate, balance of trade, corporate profit and income and wages. Economic downturn in Nigeria and its impacts on construction cost escalation has become a major problem to both the public and private sector, contractors and clients, as this has resulted in the increase in number of abandoned or delayed projects, difficulty in achieving cost estimates, increase in dispute arising from contractual arrangement and loss of jobs by construction workers which has made developers hesitant to enter into construction contracts in which they cannot manage the long-term impact their investment (Savills, 2016). The overall impact of construction project cost management is to achieve value for money and provide an affordable infrastructural facility. This paper aims to propose a framework for the management of construction cost escalation in economic downturn.

Key words: Economic downturn, construction cost escalation, construction cost overruns, construction cost, Management and construction cost management framework.

INTRODUCTION

The construction industry is a major consumer of capital resources by virtue of the magnitude, complexity and nature of the works it executes. Due to dwindling resources as a result of economic downturn, it is imperative to manage construction cost with the aim of formulating management framework or mechanism including innovations to minimise the impact of economic downturn on construction project delivery in Nigeria (Eichengreen, 2010). Abimbola, (2017) asserted that construction cost estimate is becoming difficult to achieve as the cost of construction consistently maintains an upward trend as a result of economic downturn. Nicholas (2012), also corroborated that economic downturn is the scarcity of funds and the high cost of accessing funds, which is worsened in Nigeria's circumstances by the decrease and fluctuation in the value of naira against dollar/pounds leading to a high cost of construction and difficulty in managing construction project cost. Economic downturn has a direct impact on construction cost escalation by creating uncertainty in construction cost estimates, building market losing patronage, the contraction of investment activity and loss of job by construction workers with long term implications on the national economy (Al-amin, 2017). This study used structured questionnaires and publications to solicit for information from construction industry professionals with experience of not more than 3 years in the industry in order to assess the scale of construction cost escalation in economic downturn and develop a



framework for the management of construction cost escalation in economic downturn Nigeria.

Economic Importance of the Construction Industry

The construction industry is one of the most potent economic sectors in the country such that it is used as a yardstick for assessing the growth of an economy. The fragmentation and heterogeneous nature of the industry distinguishes it from other sectors of the economy (Eichengreen, 2010). Benjamin, (2017) opines that the construction industry is one of the most vibrant sectors of the economy, which employs, trains home skills and keeps closely in tune with the pulse of the general economy. Since it is a means by which the society expresses their assets, a booming economy has a booming construction industry while empty sites and idle cranes mark an economy in economic downturn because the construction sector is the largest employer of labour in the private sector, representing 60% of the capital investment in Nigeria (Avinash, 2011). The contribution of the construction sector to the national economy is significant. For example, according to Federal Office of Statistics (FOS) report (2018), the value added to the economy of Nigeria from 2007 to 2013 is quite substantial and the same applies to the contribution of the sector to the GDP and fixed capital formation of the Nigerian economy.

Construction Cost Escalation

Construction cost escalation is the changes in the cost or price of construction project over a specific period of time. Cost escalation may contribute to a project cost overrun but it is not synonymous with it. Construction cost escalation can account for a substantial part of construction costs and construction cost overruns (Eshofonie, 2014). Therefore forecasts of budgetary and bidding purposes. Construction cost escalation remains a risk to be borne by either the contractor or the owner, or both, depending on the terms of the contract; any logical approach to minimize the risk is worthwhile (Elinwa and Silas, 2018). Construction projects; private and public alike, have a long history of cost escalation because they have long lead times between planning and construction as approximately 50% of the construction projects in Greece have cost overrun over their initial budgets during the recent economic recession (Stefanos, Nikolaos, Agapi and Linos, 2016).

Construction Cost Overruns

Cost overruns can be defined as when the project objectives have not been achieved within the estimated budget (Elinwa and Silas, 2018). A construction project comprises two distinct phases: the preconstruction phase and the construction phase. There is no particular element in any project solely responsible for cost overruns however; the construction phase holds a wider proportion of major troubles. Construction activity requires major investment outlays in most developing countries; moreover, cost overruns are frequent phenomena and are almost associated with nearly all projects in the construction industry (Karunakaran, Abdullah, Nagapan, Sohu, and Kasvar, 2012). Cost is one of the key drivers for construction projects and cost overruns are considered as the major concern within this industry.



Construction Cost Management

Management means control, so cost management means understanding how and why costs occur and promptly taking the necessary response in light of all the relevant information. Management means control, so cost management means understanding how and why costs occur and promptly taking the necessary response in light of all the relevant information. Cost management may be considered from either the client's or the contractor's point of view. This paper would address it from the client's point of view. Cost management functions to monitor costs and initiate corrective action to keep the costs within budget or acceptable limits. This is the main management imperative. Cost control as a long serving discipline from project conception to completion and commissioning and even operation is at the heart of the management of the construction process and its importance does not have to be justified.

Causes of Escalating Cost of Construction Projects in Economic Downturn in Nigeria

Nkwachukwu, Ibeawachi, and Okoli (2017), observed the factors leading to high cost of construction project in economic downturn in Nigeria, ranges from; Inflationary trends and economic downturn, Unforeseen transportation cost, Project difficulty and size, Project location, Insufficient drawings, Weather conditions, Inaccurate establishment of unit rate, Quality of materials, Ground conditions, Unrealistic schedules, Number of changes and extra work / rework orders, Time required by clients to take a decision on issues, Relationship of the new crew or gang at works, Quality of workmanship, Market conditions, Cost records, Availability of materials and labour, Political decisions in terms of government policies, Unrealistic programme of work and turnover, and Corporate extortion and contract inflation. These are some of the obvious reasons for high cost of construction, though the tendency is that each of these factors had a more than singular effect in some situational applications.

Practices around the World on Management of Construction Cost Escalation in Economic Downturn

A review of construction industry and government policies shows that there is no deliberate attempt by the government, construction professionals or stakeholders aimed at addressing the challenges of escalating cost of construction in economic downturn. The government Economic Recovery and Growth Plan (ERGP), a 7 years policy document of the Federal Government on the economy which was designed in 2016 do not have any policy statement for the construction sector to address the challenges of escalating cost of construction in economic downturn. While the banking sector is stimulated with bail-out funds; the agricultural sector with anchor borrowers scheme; the manufacturing and trade with low interest rate on loans; mining and quarrying tax holiday and tax waiver; oil and gas local content act and tax waiver for equipment importation, while the eight (8) construction firms which have their share values quoted on the floor of the Nigeria Stock Exchange drop by an average of 19.23% the other sectors drop by a single digit and also sector by sector review of the Nigerian economy shows that the construction industry has the highest rate of unemployment within this period and this can be attributed to the lack of direct government intervention in the construction sector. Countries that have

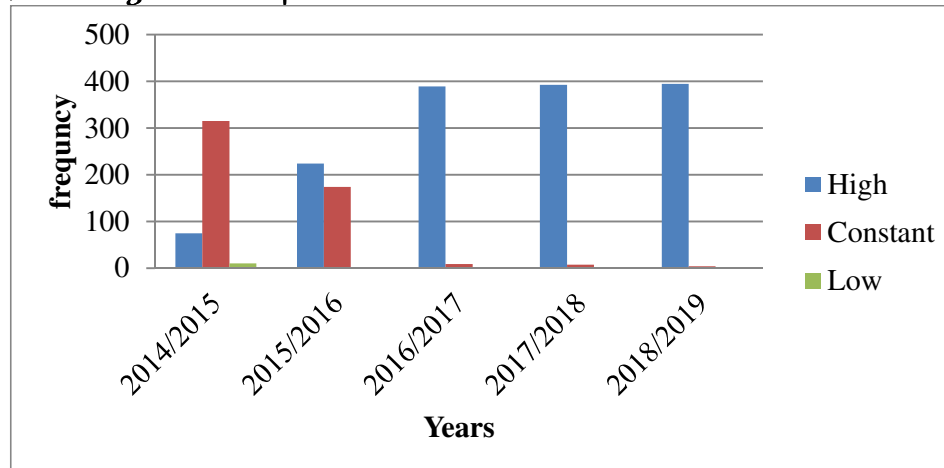


experience economic downturn in recent times and policy options adopted are: Greece – 2013: Interest rate, Taxes, Time & quality clause, Hong Kung – 2011: Property right act, RBV theory, mobilization fee, Zimbabwe – 2010: Innovation, PPP, Divestment & monetization, Kenya – 2012: Import duty, Incentives & Liberalization of procurement process, USA - 2007 : Innovation, Subsidy, Interest rate.

The Construction Cost Escalation Framework

The construction cost escalation framework will be based on the results from the research paper and a modification to Murtala, (2016), which is aimed at effective application of professional and technical expertise to plan and control resources, costs, profitability and risk through a systematic approach to managing cost escalation in economic downturn throughout the life cycle of an infrastructural project. The construction cost escalation framework will have a structured annotated process map or schematic drawing that explains each practice area of the cost engineering field in the context of its relationship to the other practice areas including allied professions. It will provide a process for applying the skills and knowledge of cost engineering to reduce cost escalation. The key feature of the framework is that it highlights and differentiates the main cost management application areas, project control and strategic cost management. This framework will be a conceptual representation that provides a structured and integrated overview of construction cost engineering based on the construction cost management framework designed by Murtala,(2016).

Assessing the scale of construction cost escalation in economic downturn



Variations in construction cost from 2014 to 2019

The multiple bar charts shows the trend in construction cost from 2014 to 2019. From the figure, it can be seen that 18.75% (75) respondents opined that the cost of construction was high while 78.75% (315 respondents) opined that the cost of construction was constant. Only 2.5% (10 respondents) opined that the cost construction was low. This implies that the general cost of materials, labour, plant and overhead was fairly constant between 2014



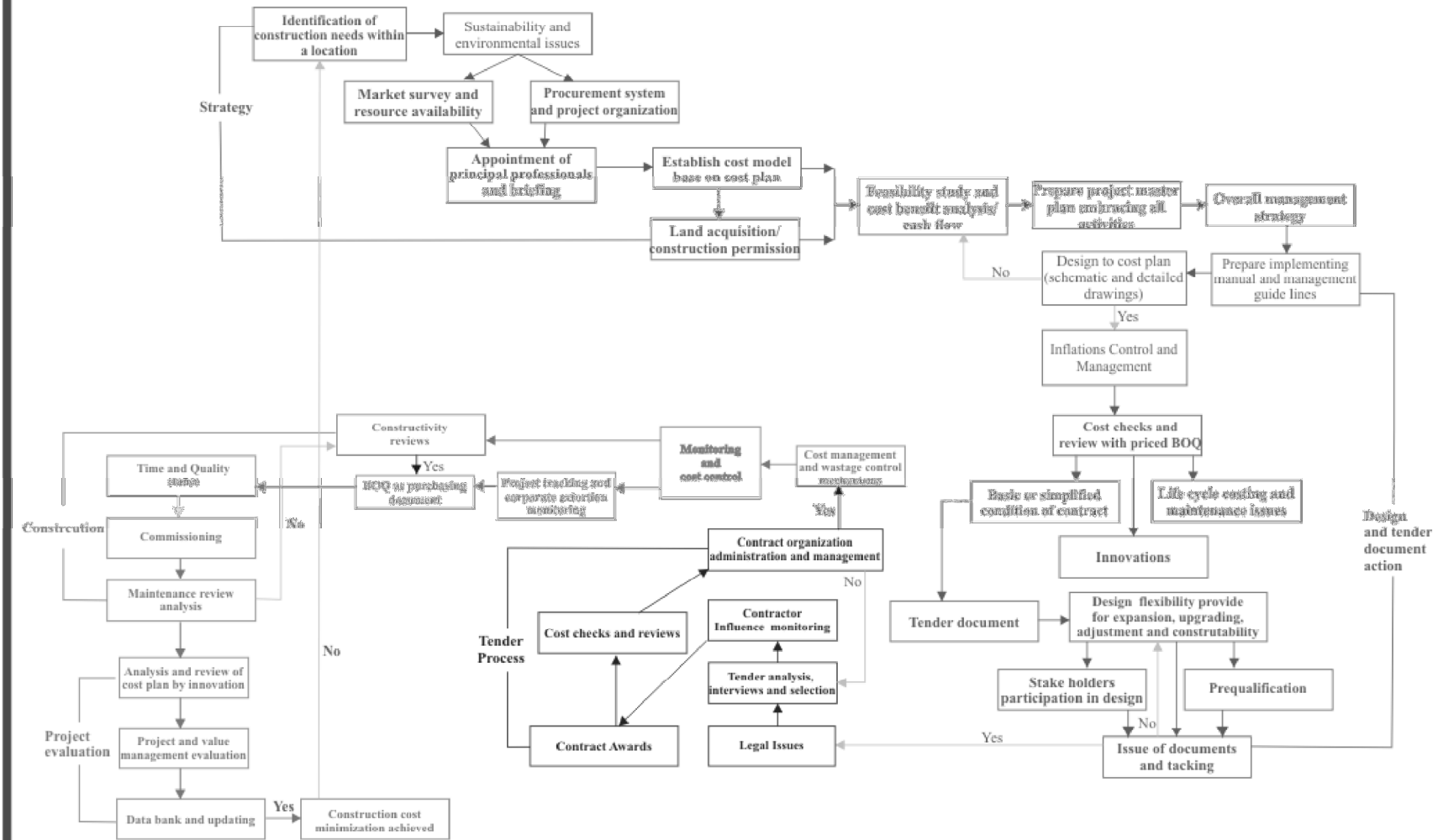
and 2015 in the Nigeria construction industry. From 2015 to 2016, it can be seen that 56% (224) respondents opined that the cost of construction was high while 43.5% (174 respondents) opined that the cost of construction was constant. Only 0.5% (2 respondents) opined that the cost construction was low. This implies that the general cost of materials, labour, plant and overhead was fairly high between 2015 and 2016 in the Nigeria construction industry. From 2016 to 2017, it can be seen that 97.2% (389 respondents) opined that the cost of construction was high while 2.2% (9 respondents) opined that the cost of construction was constant. Only 0.5% (2 respondents) opined that the cost construction was low. This implies that the general cost of materials, labour, plant and overhead was high between 2016 and 2017 in the Nigeria construction industry. From 2017 to 2018, it can be seen that 98% (392 respondents) opined that the cost of construction was high while 1.7% (9 respondents) opined that the cost of construction was constant. Only 0.3% (1 respondent) opined that the cost construction was low. This implies that the general cost of materials, labour, plant and overhead was high between 2017 and 2018 in the Nigeria construction industry. From 2018 to 2019, it can be seen that 98.7% (395 respondents) opined that the cost of construction was high while 1% (4 respondents) opined that the cost of construction was constant. Only 0.3% (1 respondent) opined that the cost construction was low. This implies that the general cost of materials, labour, plant and overhead was high between 2018 and 2019 in the Nigeria construction industry. The bar charts clearly shows that since the Nigerian economy experience a downturn in 2016, the cost of construction have been increasing steadily, showing the impact of the economic downturn on the construction industry.

The Proposed Construction Cost Escalation Framework

This construction cost escalation framework is based on the results from the research and a modification to Murtaga, (2016), which is aimed at effective application of professional and technical expertise to plan and control resources, costs, profitability and risk through a systematic approach to managing cost throughout the life cycle of a construction project in economic downturn. The construction cost escalation framework will have a structured, annotated process map or schematic drawing that explains each practice area of the cost engineering field in the context of its relationship to the other practice areas including allied professions.



A PROPOSED CONSTRUCTION COST ESCALATION FRAMEWORK





CONCLUSION

Construction projects requires high level of expertise in the establishment of a cost management, and these expertise will include identification of construction needs, procurement organisation, feasibility analysis, design and cost planning, construction management as well as project analysis evaluation. The framework will provides the basis for sustainability of construction projects in economic downturn through the financial and cost planning mechanisms which is the basis for construction management by professionals. The proposed framework provides an appropriate cost monitoring mechanism for the management of construction cost in economic downturn. Thus, the framework is capable of being used in the management of construction costs within the formal and informal procurement systems. The paper clearly established that cost of construction is escalating as a result of economic downturn and that the management of construction cost in economic downturn to the success of every construction project. Infact, there is a need to develop a set of mechanism and framework for cost management in economic downturn as opines by 75%, which will be based on appropriate feasibility study, financing plans, technology, labour intensive methods, local materials as alternatives waste and wastage management and standardization of all construction processes.

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