

THE IMPACT OF SUBCONTRACTING SYSTEM ON PROJECT DELIVERY IN NIGERIA.

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by

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Abstract

The construction industry holds a very important position in the economy of Nigeria and can be regarded as the driver of economic development. Subcontractors executes some of the works that makes a contract, therefore, the success or failure of construction projects are partly determined by the performance of subcontractors. The study examines the impact of subcontracting system on project delivery. Primary data were obtained through questionnaires administered on Professionals in Contracting and Consultancy Firms in Lagos State. Secondary data were collected through review of relevant literature and Contract documents. Thirty questionnaires were retrieved out of a sample of Fifty-five professionals selected from the register of the Nigerian Institute of Quantity Surveyors (NIQS) Lagos chapter and Nigerian Institute of Builders (NIOB) Lagos chapter using Simple Random Sampling techniques. Data obtained from the survey were analyzed using the measure of central tendency and weighted Average method of data analysis. The result revealed that high technical skill, devotion and competence of subcontractor has a significant effect on the overall success of a project and the effect of low productivity are cost overrun and extension of project duration. Hence, the study concluded that the involvement of highly specialized subcontractor in construction project enhance the quality and standard of project delivery.

Keywords: project, contracting system, project delivery.

Introduction

The construction industry is vital for the development of any nation and the physical development, such as buildings, roads and bridges, is the measure of their economic growth (Jaman, 2013). In addition, Aje (2009) attest that construction industry is a prime motivator of any national economy. For many years, public and private owners have been faced with many challenges in an attempt to ensure successful completion of construction projects, on time, within budget and meeting quality standards set in the contract documents (Aje, 2009).

As a result of this, successful delivery of the construction project is a fundamental issue to most governments, users and communities. Doloï (2009) reported significant challenges for both clients and contractor to deliver the project successfully due to increasing complexity in design and the involvement of a multiple stakeholders.

In addition to the above stated complexity of construction project, defining project delivery itself is a complex issue (Toor and Ogunlana 2010; Lam 2008; Wang and Hang, 2006). Chan and Chan (2004) reported that the concept of project delivery success is set criteria and standards to aid project participant to complete project with the most desirable outcome.

Construction project and their successful delivery are highly related to performance of contractors (Banki 2009; Palaneeswaran and Kumaraswamy 2004). According to Doloï (2009), the engagement of a competent subcontractor to handle subcontract works will not only ensure the overall quality of the project but also have the opportunity of saving on-cost.

In the construction industry, General contractor enter to public and private contract to deliver construction project and between 75% and 100% of the construction project is subcontracted to specialty subcontractor (Ogunlana, 2002).

Aje (2009), identify reasons subcontracts are used on a project: 'specialized labour for particular construction tasks, lower cost for subcontract works and reduced risk for the general contractor'. Because these specialist contractors execute most of the tasks involved with a construction project, they have a significant impact on the general contractor's success or failure which also reflects in the delivery of the construction project. Karim (2002) added that successful project performance depends on the legal and business relationship between the prime contractor and subcontractors and suppliers as much as any other factors.

However, inadequately in the delivery of the construction project, (as in meeting the owner's expectation, timely delivery and expected standard of quality) has been the major challenge faced by public and private owner of the construction project in Nigeria, as a result of the subcontracting system being practiced in the industry. It is on this premise that this study is set out to evaluate the impact of subcontracting practice on project delivery.

The Construction Industry

The construction industry is a collection of loosely integrated sub-sectors that collectively construct, alter and repair a number of building and civil engineering works. The uniqueness of the industry is derived from types of physical products, demand pattern novelty and varying site condition (Andawei, King 2001).

The construction industry holds a very important position in the economy of Nigeria and can be regarded as the driver of economic development. Idoro (2004) considered construction as the leading industry in developing economies and a big player in economic development. Ogunlana (2002) estimated that share of the construction industry to the GDP of Nigeria from 1967/1968 – 1972 as 56% - 66% and that from 1974/1975 - 1979/1980 as 71% - 79%, while the Federal Government of Nigeria (1984, 1985, 1986) estimated the average share of construction to GDP as 60% - 80%. The importance of the industry is also reflected in its capacity to create employment and serve as a vocational training ground for employees to acquire skills in several areas. The product of the industry such as building, roads and other infrastructural facilities and development are stimulants that can hinder or accelerate the growth of other countries.

Subcontracting System

This is the practice of assigning part of the obligation and tasks under a contract to another party known as a subcontractor. According to Mbachu (2008), subcontracting arrangement is a common practice in construction industry, and all procurement route recognize such arrangement as part of the overall procurement strategy. He stated further that projects are rarely completed without the involvement of the subcontractors. Mbachu (2008), found that 85% of construction project are subcontracted out. This statement indicates the significant impact of subcontractors on construction project and explain the availability of many researches on subcontracting approach in general.

Subcontracting is very useful in situation where the range of required capabilities for a project is too diverse to be possessed by a single general contractor. In such cases, subcontracting parts of the project that do not form the general contractor core competencies may assist in keeping costs under control and mitigate overall project risk.

Banki (2009), stated that the main contractors usually have limited skills and capabilities for which they are driven to procure part of the project work to specialist subcontractors. Mbachu (2008), emphasized on the benefit of subcontracting such as obtaining higher quality, improving the cash flow, transferring the risks and decreasing the overhead. He further stated that the involvement of subcontractors in projects requires the engineer's prior consent who is usually concerned with the performance of subcontractors. However, the main contractor has no right to sublet the whole work unless the contract allows.

There are many risk involved in subcontracting, Karim (2006), argued that the quality is still critical factor in subcontracting. Other researchers found that 12% of construction projects are

generally wasted for quality rectification. This statement contradicts one of the reasons of which the main contractor may decide to sublet. It also noted that involving a large volume of subcontractors on the job require outstanding managerial skills to ensure appropriate performance. Cooke and Williams (1998), asserted that more risk may be borne by the main contractor who may physically act as a construction manager in case of subletting more works. Cooke et al (1998), advised the main contractor to make sure that they have the managerial capabilities that can lead the show, coordinate and control the performance of subcontractors.

There are different types of subcontracting: Domestic, Named and Nominated subcontracting. According to Shoemith (1996), the two most familiar subcontracting procurement method are the domestic form (a subcontract between the main contractor and a subcontractor of his choice) and the nominated (a subcontract between the man contractor and a subcontractor nominated by the Employer/Engineer). Sometimes, the main contractor is given list of specialist subcontractors in the contract known as ‘named subcontractors’ to give the employers some control on the selection. Greenhalh and Squires (2011), stated that named subcontractor are usually treated as domestic ones. Selecting the appropriate method is part of the engineer’s duties as early design stage depending on the nature of the project and design requirements.

During the project lifecycle, the employer may select a contractor to provide particular services in the project by issuing a letter of nomination through the engineer to the main contractor instructing him to enter into subcontract agreement with the selected subcontractor; such subcontractor is contractually known as a nominated subcontractor. Many forms of contract give the employer the right to nominate under certain procedures for such nomination such as FIDIC and ICE condition of contract (Wilkie and Walker, 2002).

Research Method

A survey of the impact of subcontracting system on project delivery in Nigeria was conducted using a well-structured questionnaire. The questionnaire was designed and administered to a randomly selected contracting and consultancy professionals i.e. Architects, structural and Services Engineers, Quantity Surveyors etc. in Lagos State, South – West Nigeria.

A total of thirty (30) questionnaires representing 54.54% were properly completed and returned out of fifty-five (55) questionnaires distributed. The survey addressed the view of respondents on the frequency of subcontractors’ engagement in construction activities, the required attributes of a competent subcontractor, the impact of subcontractor’s attribute to the overall success of construction projects and the benefits of subcontracting / subletting work to a competent subcontractor. Relevant secondary data were obtained from literature and contract documents. The statistical tool used for the questionnaire analysis was descriptive statistics such as frequency counts and percentages, mean item score and ranked in order of their proximity. The data were analyzed using the framework 1 – 4 Likert ordinal scale to measure a range of opinions of the

respondents from Rare (1), Occasional (2), Often (3) and More Often (4). The analysis therefore employed the following statistical steps:

- a. Computation of the mean using weighted average formula

$$\text{Weighted average} = \frac{\sum W_i \times X_i}{N}$$

Where:

i is the number of option (from 1 for 'Rare' to 4 for 'More Often')

W_i is the weight assigned to the i th option

X_i is the number of respondents who selected the i th option

N is the total number of the respondent

Results and Discussions

Tables 1 i- iii represent the demographic information of the professionals (respondent), Table 2 represent frequency of subcontractors' engagement in construction activities. Table 3 presents the required attributes of a competent subcontractor while Table 4 represent the benefits of subcontracting / subletting work to a competent subcontractor.

Table 1 : Demographic Information of the Respondents

| Category | Frequency | Percentage. |
|--|-----------|-------------|
| i Experience of the Respondent | | |
| 1 – 5 years | 2 | 6.7 |
| 6 – 10 years | 10 | 33.3 |
| 11 – 15 years | 6 | 20.0 |
| 16 years and above | 12 | 40.0 |
| Total | 30 | 100 |
| ii Organization of the Respondents | | |
| Construction Firm | 15 | 50.00 |
| Consultancy Firm | 6 | 20.00 |
| Maintenance, Ministry etc | 9 | 30.00 |
| Total | 30 | 100 |
| iii Highest Academic Qualification of The Respondent | | |
| Msc | 2 | 6.66 |
| BSc | 12 | 40.0 |
| HND | 15 | 50.0 |
| Cert. | 1 | 3.33 |
| Total | 30 | 100 |

Source: Field Survey (March, 2016)

Table 1 above revealed the demographic information of the respondents, indicating that majority of the respondents had above 16years working experience (40.0%), while 33.3% had worked between 6 - 10years. 50.0% and 30.0% work with construction firms and maintenance / ministry respectively while 20.0% work with consultancy firms. The educational qualification of the respondent varies between Msc, Bsc, HND and Cert. representing 6.66%, 40.0%, 50.0% and 3.33% respectively.

Table2: Subcontractors engagement in construction activities.

| Industry Activities | Mean | Rank. |
|----------------------------|-------------|--------------|
| New Building Works | 3.30 | 1 |
| Maintenance Works | 2.90 | 2 |
| Civil Engineering Works | 2.40 | 3 |

Source: Field Survey (March, 2016)

Table 3: Attribute of a competent subcontractor

| Attributes | Mean | Rank |
|--|-------------|-------------|
| Specialism | 4.30 | 1 |
| Devotion | 4.13 | 2 |
| Creativity | 3.90 | 3 |
| Honesty | 3.80 | 4 |
| Cordial relationship with the prime contractor | 3.73 | 5 |
| High Technical Skill | 2.50 | 6 |

Source: Field Survey March, 2016.

Table 4: Benefit of subletting work to a competent subcontractor

| Benefits | Mean | Rank |
|---|-------------|-------------|
| Good Workmanship | 3.50 | 1 |
| Timely Delivery of Project | 3.50 | 1 |
| Ability to provide the specialist services needed | 3.43 | 3 |
| Project completion within budgeted cost | 3.27 | 4 |
| Reduction in Material Wastage | 3.00 | 5 |
| Risk Reduction | 2.93 | 6 |

Source: Field Survey March, 2016.

Table 5: Effect of low productivity of subcontractors on subcontract

| Effects | Mean | Rank |
|---|-------------|-------------|
| Cost Overrun | 4.50 | 1 |
| Untimely delivery of project | 4.40 | 2 |
| Defective work | 4.27 | 3 |
| Additional cost of rectification | 4.23 | 4 |
| Unacceptable project outcome | 4.03 | 5 |
| Inability of the project to meet expectations | 3.90 | 6 |

Source: Field Survey March, 2016.

Subcontractors are mostly used in new Building works, Maintenance and Civil Engineering works. The highest in hierarchy of a competent subcontractor's attributes is their specialism, devotion and creativity. High technical skill and devotion are the attributes of a competent subcontractor that has the significance impact on the overall success of construction project. Good workmanship and timely delivery of project are some of the benefits subletting portion of the main contract work to a subcontractor.

The effect of low productivity of subcontractors on subcontract and which might also affect project delivery are cost overrun, untimely delivery of project and defective works amongst others.

Conclusion/Recommendation

The study examined "The Impact of Subcontracting System on project Delivery in Nigeria". The study concludes that that main contractors in Nigeria construction industry frequently sublet majority of their works subcontractors, which implies that subcontractors carry out the majority of building works and therefore, playing a very significant role in quality of building project in the construction industry.

However, inadequacy in the delivery of construction project as in meeting the owner's expectation, quality and actualization of the project within the budgeted cost has been a major challenge facing public and private owners.

High technical skill and devotion of subcontractors has a significant impact on the overall success of construction project, also the effect of subcontractors low productivity leads to cost overrun on construction project, untimely delivery of project and defective works.

The paper therefore recommended as follows:

1. Due to the strict timelines and technical expertise required in construction project, highly specialized subcontractors should be engaged for subcontract works.

2. Good workmanship and timely delivery of project should be the main contractor's prospect in subletting portion of the main contract work to subcontractors, as this will facilitates the actualization of the project within budget.
3. The employer should request from subcontractors, a kind of substantial security in form of bond, insurance, indemnities and liabilities for liquidated and ascertained damages from their delays so as to motivate them to discharge their expected services diligently.

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