

Decision to Engage Nominated Subcontractors on Construction Projects in Nigeria

Anita Adamu and Winston Shakantu

Department of Construction Management

Nelson Mandela Metropolitan University, Port Elizabeth

Email: s213505622@nmmu.ac.za, winston.shakantu@nmmu.ac.za

Abstract:

Engaging subcontractors on construction projects is common practice in the building industry. Though nominated by the consultants acting on behalf of the client, nominated subcontractors must also be engaged under the main contractor. The decision to nominate this category of subcontractors rests with the client consultants of any given project. The objective of this study is to identify factors that influence decisions to nominate subcontractors on construction projects in Nigeria. The research adopts a quantitative method of inquiry, with the aid of closed-ended questionnaires. 10 factors identified from the related literature were placed on a five-point Likert scale to measure the relative importance of each factor when considering nominated subcontracting. A simple random sampling technique was used to self-administer the questionnaires to construction consultants within Abuja metropolis. A total of 34 duly completed questionnaires were analysed using descriptive methods (percentages, mean and coefficient of variation). Nature of specialist work and a need for speedy completion of the project were ranked very important factors that influence decision to nominate subcontractors on construction projects in Nigeria. However, factors such as project uncertainties, maintaining business relationships and site location have less influence on decision to engage these subcontractors. In conclusion, the study found that the most important factors relate to two of the three project parameters (cost, time, quality). While specialist works is to quality, speedy completion is to time, this suggests the need to encourage specialisation and skill consolidation by subcontractors rather than general contracting.

Keywords:

Construction projects, Decision, Nominated subcontractors, Subcontracting, Nigeria

1 Introduction

Subcontracting is common practice in the construction industry owing to the fragmented nature of construction Project. 'Fragmented' in this context refers to the work packages in a single project with each requiring specific skill to accomplish. In line with this, (Bamisile, 2004) reports that a variety of subcontractors that specialise in a wide range of work packages are engaged on most building projects in Nigeria, most of these specialists also possess specialised plants and equipment for their particular type of works.

Subcontractors are engaged to perform specific work on a project, while the main or general contractor performs basic work operations (Arditi & Chotibhongs, 2005). The extensive practice of subcontracting implies that project success is highly susceptible to the performance of subcontractors involved (El-Mashaleh, 2009). The success and performance of typical a construction project are determined by three key parameters which are time, cost and quality. The factors that influence decisions to engage subcontractors (third party) by the prime parties

(main contractor and client) on a building constructions projects are all linked to the project success parameters. The objective of this paper is to identify the factors that influence clients of projects to nominate particular subcontractors for some aspects of works.

The first section of the paper has provided a background and the objective of the study. The second section of the paper presents an articulated concept of subcontracting in the construction industry. A nested section reviews briefly nominated subcontracting which gently guides the survey method adopted and explained in the third section. The fifth section discusses the research findings from which conclusions were drawn.

2 Subcontracting in the Construction Industry

Subcontract work packages are usually included and clearly defined in the main contract of which qualified subcontractors for specific works may price (Peurifoy, Schexnayder, & Shapira, 2006). Nominated, named and domestic subcontracting are the three categories of subcontracting in the construction industry. Subcontract work packages are usually included and clearly defined in the main contract of which qualified subcontractors for specific works may price (Vilasini, Neitzert, Rotimi, & Windapo, 2012).

Provisions for subcontracts are included in the Joint Contract Tribunals (JCTs) that prescribes how each should be conducted. The contractual arrangements between the main contractor and the subcontractors are similar to those between the client and the main contractor. However, subcontractors are only responsible to the main contractor in the performance of their subcontracts (Nunnally, 2011). The construction industry in Nigeria has been shaped by the training and the operation over the years of British contract practices, procedures and procurement methods (Oladapo, 2003). Approaches to the construction procurement in the British construction industry are basically as follows:

- Traditional: Single stage and two stage tendering;
- Single source: Design and build; Package deal; Turnkey;
- Management: Management contracting; construction management, and
- Partnering.

The primary distinguishing features of all the different procurement systems can be accounted for by three basic characteristics. Firstly, the responsibility for the design and construction of the facility, and whether this should be placed on separate organisations or on a single organisation. Secondly, whether the principal contractor should construct the works or manage the construction process. The third feature is the remuneration basis for work done (Edum-Fotwe, McCaffer, & Majid, 1999). Subcontractors have been used in building projects to execute specialist operations, but, particularly during the post-1945 period, the use of subcontractors increased, notably in the basic building trades which were traditionally the provinces of contractors' directly employed operatives (Fellows, Langford, Newcombe, & Urry, 2009).

Subcontract arrangements may be categorised based on the outsourcing decisions made at project onset or functional participation among many others. Subcontracts based on outsourcing depends on capacity, specialisation and economic justification (Vilasini *et al.*, 2012). Subcontract arrangements in the context of the construction industry can be employed in all the different procurement procedures (Edum-Fotwe *et al.*, 1999). Management contracting procurement approach is based on 100% subcontracting because the main

contractor takes the role of general manager of the construction process while various subcontractors execute distinct work packages of the project (Murdoch & Hughes, 2002). Partnering approach to procurement is rooted in principles of collaboration, as such, involvement of subcontractors is minimised because the collaboration is between the client/consultants and the main contractor for a given project (Fryer, Egbu, Ellis, & Gorse, 2004).

2.1 Factors that Influence Subcontract Decisions

Site based nature of production in the construction industry makes activities highly prone to uncertainties in terms of climate and other site conditions, in addition to availability of resources required for works within the local environment. Therefore, decision to subcontract out aspects of works is a strategic plan to cope with long-term uncertainties (Usdiken, Sozen, & Enbiyaoglu, 1988). This allows the main contractor to avoid the employment of a stable workforce and invest in fixed resources under conditions of fluctuating demand, serving as an external buffering mechanism, absorbing uncertainties arising from the availability of resources and operational condition (Sozen & Kucuk, 1999).

The strategy (subcontracting) deals not only with long-term environmental uncertainties but buffer the technical core of the organization against short-term contingencies (Sozen & Kucuk, 1999). Moreover, the greater the complexity and uncertainty the greater the use of subcontractors, and in this way, specific services are bundled and presented to the main contractor and eventually to the client (Sözen & Kayahan, 2001). However, subcontracting can improve product quality because it uses specialized manpower; fixed costs are less because equipment maintenance and under-utilised manpower are eliminated (Shimizu & Cardoso, 2002).

Subcontracting is also driven by the lack of specialized capabilities and know-how, in addition to the need for reducing costs and legal risks. Building contractors tend to subcontract much of their production, because of the relatively wider range of technological inputs of building projects and liability concerns (Costantino & Pietroforte, 2004). A continuous project complexity and the highly competitive nature of the construction industry, often makes a construction project to be executed by several subcontractors (Wang & Liu, 2005)

2.2 Nominated Subcontracting

There are several circumstances under which an employer would wish to nominate or name a subcontractor with whom the main contractor must enter into a contract, these include:

- Ensure the chosen subcontractor has a proven track record for good work;
- Use a subcontractor with whom the employer has developed a long-term business relationship;
- Base the selection of the subcontractor on a basis other than the lowest bidder;
- Some specialist work requires a longer lead time than the project construction program would allow, and
- The design team may wish to ensure the quality of the design input from the specialist subcontractor (Murdoch & Hughes, 2002).

The practice of nomination is peculiar to the UK and certain parts of its former colonies. The procedure is also found in those countries whose standard building contracts are based on major UK forms. Nominated subcontracting for building works are done in accordance with the

conditions given in clause 35 of the JCT 1998, where the circumstances that permit nomination include; the expenditure of a provisional sum included in the contract bills or in any instruction of the Architect (acting on behalf of the employer) requiring a variation to the extent that:

- It consists of additional work to the contract drawings and specifications described by or referred to in the contract bill, and
- Any supply and fixing of materials or goods or any execution of work by a nominated subcontractor in connection with the additional work (Ndekugri & Rycroft, 2014).

3 Research Methodology

The first two sections are products of an intensive literature search that provided the background and theoretical underpinning of nominated subcontracting in the construction industry. The background of the paper clarified that the research seeks understanding factors that influence nominating subcontractors on building projects. However, some factors were identified during the review of related literature. Therefore, the need for adapting the quantitative method of research rather than qualitative for the next phase was justified because the factors have been identified.

3.1 Survey Design

A close-ended structured questionnaire was designed as the survey instrument which was administered to consultants of construction project clients within Abuja. The use of close-ended questionnaire in this study was embraced because of its ability to generate data extensively when administered to more respondents. The survey solicited the opinion of respondents on the importance of 10 identified factors that influence decision to nominate subcontractors on construction projects in Nigerian.

Twenty construction organisations that undertake consultancy services for building construction projects under the Federal Capital Development Agency (FCDA) were considered in the survey. A total of 100 questionnaires were self-administered randomly to professionals within these organisations. 52 were returned, however only 34 of the returned were completed correctly and therefore useful for the study. On a five-point Likert scale, respondents rated the degree of importance attached to each of the ten factors presented on the questionnaire. The scale was presented thus: 1= unsure; 2=Not Important; 3=Less Important; 4=Important; 5=Very Important.

Abuja being the Federal capital city of Nigeria, its geographical location in the heart of the country is the major reason for its selection for the survey. Moreover, most of the strong and reputable construction firms operate head offices in the capital city, besides a lot of construction activities are following the on-going development of the model city and other infrastructural expansion.

Data Analysis

The Mean Score (MS), a measure of central tendency was used to analyse responses on the importance of the 10 factors that influence decisions to nominate subcontractors to undertake aspects of construction projects. The mean score of the responses to each factor is compared to the hypothesised mean of the 5-point Likert scale used in this study (hypothesised mean is the mid-point value of 3). The significant importance or otherwise with the notion being tested was determined by comparing the mean score with 3 (Coakes & Steed, 2009). This implies that any

result significantly different from this value of 3 is assumed to be either positive or negative to the notion being tested (Pullin & Haidar, 2003). The coefficient of Variation (COV) was used to compare the variability of means expressed as a percentage. The factors were ranked based on the MS, but the COV was very useful in ranking the factors especially where the factors had same MS.

4 Findings and Discussion

In order to determine the personal profiles of the individuals who provided information during the field survey, respondents were asked to provide details of their professional and educational qualifications, years of experience in active construction projects.

Table 1. Certified Specialisation of Respondents

Profession	Response (%)
Architecture	29
Building	24
Civil engineering	9
Electrical engineering	6
Quantity surveying	32
Others	-
Total	100

Source: Researcher

Table 1 presents the primary certified profession of the respondent in a construction related field. Quantity surveyors out-numbered other professionals that participated in this survey (32%), although architects constitute 29% of the total respondents and 24% are builders. Only 9% and 6% of the total respondents are civil engineers and electrical engineers. The statistics gives an indication of a relatively wide sampling of within key professions (Architecture, Building, Quantity surveying) in the building construction industry.

Table 2. Educational Qualification of Respondents

Qualification	Response (%)
Doctorate	-
Masters	44
Bachelors	38
Post Graduate Diploma	9
Higher National Diploma	9
Ordinary National Diploma	-
Others	-
Total	100

Source: Researcher

The level of educational training of those that constitute the various groups involved in subcontracting is revealed by their qualifications. Table 2 shows that 44% of the respondents hold a Masters degree in their specific construction related profession. 38% hold a Bachelors degrees, while those with Post graduate diploma (PGD) and Higher national diploma (HND) summed up to only 18% .

Table 3. Experience of Respondents

Experience	Response (%)
Less than 5years	14

5 to 10years	18
11 to 15years	18
Above 15years	50
Total	100

Source: Researcher

Experience acquired over the years in projects execution tends to sharpen the technical skills of the project participants there by having a positive impact on project delivery. The results shown in Table 3 on the experience of the respondents revealed that half (50%) of those from the clients' organisations have over 15years of experience, 18% of them have between 10 and 15years work experience, another 18% have between 5 and 10years, the remaining (15%) have less than 5years work experience.

Table 4. Respondents Position

Position	Response (%)
Director	27
Project Manager	47
Technical Staff	26
Total	100

Source: Researcher

The highest percentage of the respondents (47%) are project managers in the respective organisation and 27% are directors. Therefore, majority (74%) of the respondents are members of strategic management of the construction organisations where the surveys were conducted. This implies that the data generated has high credibility with high level of reliability. In selecting any aspect of works for subcontracts, certain factors must be considered which will aid in deciding and justifying the need to nominate subcontractor(s) for specific work items.

Table 5. Importance of factors that Influence Decision to Nominate Subcontractors

Factor	MS	CV (%)	RANK
Nature of Specialist work	4.09	18.4	1
Speedy completion of project	3.65	24.6	2
Better quality of workmanship	3.65	27.7	3
Project complexity	3.59	24.8	4
Main contract procurement method	3.15	36.8	5
Scope of work	3.38	37.2	6
Site location	2.79	37.1	8
Project uncertainty	2.79	37.4	7
Maintaining good business relationship	2.74	45.7	9
Reduced overall contract sum	2.41	48.1	10

(Source: Adamu and Shakantu, 2016)

Nature of specialist work (4.09) has the highest mean score based on the result of analysis conducted in this study, it also returned the least coefficient of variation (18%) and therefore ranked number 1 factor amongst the 10 factors understudied. Need for speedy completion of project and achieving better quality of workmanship had the second highest mean score (3.65), however, speedy completion of project is ranked number 2 factor based on its coefficient of variation (24.6%) against (27.7%) better quality of workmanship. project complexity, main

contract procurement method and scope of work were ranked 4th and 5th factors respectively. Reduced overall contract sum (10th) and maintaining good a business relationship (9th) are least likely to influence decision to nominate subcontractors on construction projects.

5 Conclusions

The 1st ranked factor in the order of importance (Nature of specialist work) in this study suggests that quality is paramount and has a major influence on clients' decisions to nominate particular specialist subcontractors, perhaps the contractors has an outstanding record on executing that particular work on previous projects. A logical conclusion on the 2nd ranked most influential factor (Speedy completion of works) is that subcontractors that specialise on certain work aspect acquire intensive skill on that particular works and acquire and continually improve on technological skills in the area and also acquire necessary resources which may not be economical for the main contractor to purchase and tie down finances. The result also implies that the need to cut down project cost is the least factor that would influence nominating subcontractors, similarly maintaining good a relationship with a particular subcontractor is a top factor in considering nominating a subcontractor.

6 References

- Arditi, D., & Chotibhongs, R. (2005). Issues in Subcontracting Practice. *Journal of Construction Engineering and Management*, 131(8), 866-876. doi:doi:10.1061/(ASCE)0733-9364(2005)131:8(866)
- Bamisile, A. (2004). *Building Production Management*. . Lagos-Nigeria: The Professional's Instruction Manual Foresight Press limited,.
- Coakes, S. J., & Steed, L. (2009). *SPSS: Analysis without anguish using SPSS version 14.0 for Windows*: John Wiley & Sons, Inc.
- Costantino, N., & Pietroforte, R. (2004). Production arrangements by US building and non-building contractors: an update. *Construction Management and Economics*, 22(3), 231-235.
- Edum-Fotwe, F., McCaffer, R., & Majid, M. (1999). *Sub-contracting or co-contracting: Construction procurement in perspective*. Paper presented at the 2nd International Conference on Construction Industry Development, and 1st Conference of CIB TG29 on Construction in Developing Countries, Construction Industry Development in the New Millennium., In University of Singapore, Singapore.
- El-Mashaleh, M. S. (2009). A Construction Subcontractor Selection Model.
- Fellows, R. F., Langford, D., Newcombe, R., & Urry, S. (2009). *Construction management in practice*: John Wiley & Sons.
- Fryer, B., Egbu, C. O., Ellis, R., & Gorse, C. (2004). *The practice of construction management* (3rd ed.): Blackwell publishing.
- Murdoch, J., & Hughes, W. (2002). *Construction contracts: law and management*: Routledge.
- Ndekugri, I., & Rycroft, M. (2014). *JCT98 Building Contract: Law and Administration*: Routledge.
- Nunnally, S. W. (2011). *Construction Methods and Management*: Prentice Hall.
- Oladapo, A. M. (2003). *Overview Of Procurement Systems And Project management*. Paper presented at the The NIQS 2-day Workshop on International Procurement Systems and Project Management, Abuja-Nigeria.
- Peurifoy, R. L., Schexnayder, C. J., & Shapira, A. (2006). *Construction Planning, Equipment, and Methods* (7th ed.): McGraw-Hill Higher Education.

- Pullin, L., & Haidar, A. (2003). Managerial values in local government-Victoria, Australia. *International Journal of Public Sector Management*, 16(4), 286-302.
- Shimizu, J. Y., & Cardoso, F. F. (2002). Subcontracting and cooperation network in building construction: a literature review. *Proceedings IGLC-10, Gramado-RS*.
- Sözen, Z., & Kayahan, O. (2001). Correlates of the length of the relationship between main and specialist trade contractors in the construction industry. *Construction Management & Economics*, 19(2), 131-133.
- Sozen, Z., & Kucuk, M. A. (1999). Secondary subcontracting in the Turkish construction industry. *Construction Management & Economics*, 17(2), 215-220.
- Usdiken, B., Sozen, Z., & Enbiyaoglu, H. (1988). Strategies and Boundaries: Subcontracting in Construction. *Strategic Management Journal*, 9(6), 633-637.
- Vilasini, N., Neitzert, T., Rotimi, J. O., & Windapo, A. O. (2012). A framework for subcontractor integration in alliance contracts. *International Journal of Construction Supply Chain Management*, 2(1), 17-33. doi:DOI 10.14424/ijcscm201012-17-33
- Wang, W.-C., & Liu, J.-J. (2005). Factor-based path analysis to support subcontractor management. *International Journal of Project Management*, 23(2), 109-120.