

THE PRACTICE OF PROCUREMENT SYSTEMS IN THE NIGERIA CONSTRUCTION INDUSTRY

KASIMU M.A*

KABIRU M.U*

JIBRIN I.A.M*

ABSTRACT

In most of the developed countries, different types of procurement systems were practice in the construction projects to achieved good quality project delivery. The construction industry in Nigeria is still facing the challenges of good quality projects delivery as a result of the selection of appropriate procurement system for a particular project. Therefore, the aim of this study is to examine the type of procurement systems practice in Nigeria construction industry. To accomplish this aim the study adopted the quantitative research approach, since it reasoning through the philosophies of deductive approach. The structured questionnaire was used since it is straight forward and faster compare to other methods. The questions were design in Likert scale format and distributed to the professionals in the construction industry in Abuja, the Nigeria capital. 310 questionnaires were distributed and 64.51% of the questionnaires distributed were the one filled correctly and returned, which represent the data used for the analysis. The result obtained from the analysis shows that the two methods of procurement systems were the commonest type practice in the construction projects in Nigeria, these are traditional method and build and design methods. Therefore, this study suggests that the management of the construction industry and other stakeholders should develop strategy that would influence the use of appropriate procurement system for a particular project.

Keywords: procurement system, project delivery, construction industry and professionals.

* School of Environmental Studies; Federal Polytechnic, Bida- Nigeria

1. Introduction

Procurement systems have become an important issue in the construction industry because of two reasons: the procurement of construction projects involves a series of processes that are interrelated and sequential. The effectiveness and efficiency of the processes have considerable impact on the success or failure of projects. Secondly, there are several procurement methods that are available for a developer to adopt in procuring a project. For this reason, one major challenge that the project developer faces is the method to adopt among the available procurement options (Bratt *et al.*, 2013). However previous researchers described procurement method as the management of the total process involved in the construction project delivery (Bratt *et al.*, 2013; Costa *et al.*, 2013; Eriksson, 2013). It is also ways in which a client or a sub-client may procure a building or other construction work varied and complex. Hashim *et al.*, (2013) further expressed that different variants of procurement are available for meeting different clients' needs and projects specifics. A number of factors have to be taken into account in determining the best method for a specific project. The variants of procurement methods available today metamorphosed from the need to improve construction project delivery, that is, project completion within budget and time.

Irizarry *et al.*, (2013) asserted that procurement methods is on optimizing all parameters involved in project delivery namely, time, cost and quality. Procurement of projects within these constraints has continued to be a challenge to the design team, the contractors, and managers of investments (Hugeset *al.*, 2006; Mok *et al.*, 2014). Traditionally, construction projects starts with the client's brief on which designs are based. The Architect and Engineers prepare designs, in collaboration with Quantity Surveyor who advises on the cost implications of design variables. Tender process afterwards produces the contractor for the execution of the work. On the award, the successful contractor executes the work as designed under the supervision of the consultants. Thus, the approach separates the design, tendering process and construction as separate tasks. This separation of activities also led to sequencing of activities in which design is completed before construction commences.

2. PROCUREMENT SYSTEMS

There are various kinds of project procurement systems being widely used in the construction industry which include traditional system and fast-tracking systems (turnkey; design and build; build-operate-transfer and management contracting, (Jim Smith *et al.*, 2004; Masterman, 1992; Hugeset *al.*, 2006).

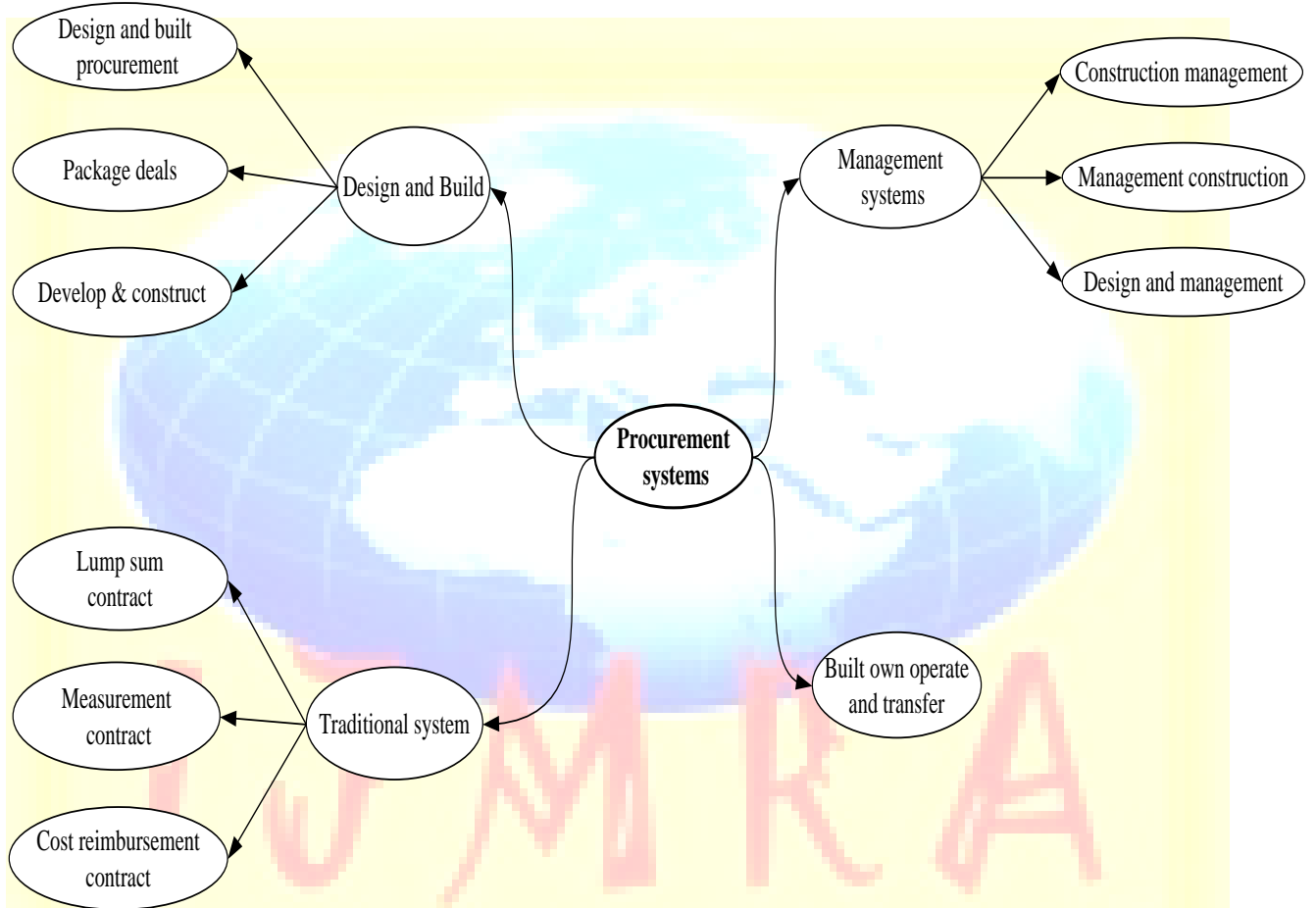


Figure 1: Types of procurement system practice in construction industry

2.1 Traditional System

The traditional procurement system is predominant in the construction industry. It is characterized by the contractor not being responsible for the design or the documentation work

(Goldfayl, 1999; Mok *et al.*, 2014; Ali *et al.*, 2009; Ali, *et al* 2011) and with a clear division between the design and construction process responsibilities (Rowlinson, 1999; Josephson and Lindstorm 2007). Peter *et al.*, (2008), stressed that there are three types of traditional procurement method which is consist of lump sum contract, measurement contract and cost reimbursement/cost plus contract. This method allows for all contractors that fill competent to bid for projects in a free and competitive atmosphere similar to competitive market environment. In a typical traditional approach, the client initiates the project and produces a written scope statement, identifying the projects objectives and verifying the scope definition by the architects. The architect is responsible for defining the project scope in order to facilitate a clear assignment of responsibilities and to monitor the scope change control with the project team. The design team produces complete design documents before engaging the contractor, often affecting quality by not taking into considering buildability, constructability and life-cycle costing. However, Rahman *et al.*, (2013) affirmed that there are certain conditions that warrant the use of traditional procurement, these include the followings:

- ❖ A programme allows sufficient time
- ❖ Consultant design is warranted
- ❖ A client wishes to appoint designers and contractors separately
- ❖ Price certainty is wanted before the start of construction
- ❖ Product quality is required and
- ❖ A balance of risk is to be placed between the client and contractor.

The main advantages of using a traditional approach of procurement is produces lowest bid, assuring quality control and familiar in the industry. The disadvantage of using traditional approach of procurement is that builders are not involved in the design process, slow nature of projects and potential adversarial (Peter *et al.*, 2008).

2.2 Design and Build System

The Design and Build refers to the procurement strategy that entails the contractor carrying out the work; the design works as well as the construction and completion of the work. The main advantages of using a design and construct approach to procurement is that

contractor act as single point of responsibility, price certainty, effective communication and multi-disciplinary approach. The disadvantages of design and build system are as follows: higher costs, the limitation of competition in the public section, difficulties in preparing an adequate and sufficiently comprehensive brief, requires early confirmation of conceptual design and absence of a bill of quantities (Vatalis *et al.*, 2012; Peter *et al.*, 2008).

2.3 Management Procurement System

Several variants of management procurement forms exist, which include; management contracting, construction management and design and manage. In the case of management contracting, the contractor has direct contractual links with all the works and a contractor is responsible for all construction work. In construction management, a contractor is paid a fee to professionals to develop a programme and coordinate the design and construction activities, and to facilitate collaboration to improve the project's constructability. The main advantages of using a management approach to procurement is to improved coordination and collaboration, time savings, roles, risks and also the responsibilities for all parties are clear and flexibility for changes in design. The main disadvantages are as follows: the client with proactive in nature is requirement, price fluctuation problems, loss of vital time and information and also inadequate brief to the design team (Peter *et al.*, 2008; Uttam *et al.*, 2014):

However, management contracting system is most appropriate for large and complex projects which exhibit particular problems that militate against the employment of fixed price contract procedures. Typical examples of which are: Projects for which complicated machinery and / heavy equipment are to be installed concurrently with the building works; Projects for which the design process will of necessity continue throughout most of the construction periods; Projects on which construction problems are such that it is necessary or desirable that the design and management team includes a suitably experienced building contractor appointed on such a basis that his interests are largely synonymous with those of the employer's professional consultants.

2.4 Built-Own-Operate-Transfer (BOOT)

Developers use their capital to construct public facility in return for the right to operate and transfer. This type of contract focuses on final service delivery and relies upon the required performance standards being properly documented. Building contractors involved in this type of development are usually part of a consortium (Department of Infrastructure Building Services Agency, 1998). BOOT procurement system is less implemented in Nigeria construction industry. The main advantage of using these approaches is time and cost savings whereby the disadvantages of BOOT procurement system is due to additional cost and inflexibility.

3. Research Method

This research adopted the quantitative approach in order to obtain a very large sample data. The objective of employing a quantitative method is to minimize personal prejudice or bias and to ensure that the social reality would be presented as it is. It is expected to have true value, applicable and consistency (Cresswell 2003). In addition, quantitative data collection procedures create epistemological statements that reality is objective and unitary. Since the research adopted quantitative approach, therefore, the survey questionnaire was employed based on the nature of the construction industry. As a result, 310 questionnaires were distributed to the professionals in the construction site in Abuja, the Nigeria Capital. These professionals are: Quantity surveyors, Architects, Project managers, Engineers, Contract administrator, contract manager builders and others stakeholders in the construction industry. The questionnaires distributed was designed in Likert scale format in order to allow the respondents to participate freely without bias. 310 questionnaires were distributed to the aforementioned professionals in the construction projects site, and only 200 questionnaires distributed were filled correctly and returned which represent 64.51% of the data used for the analysis. The descriptive analysis was employed for data analysis through percentage rating.

4. The discussion of results and findings

The results of the analysis in Figure 3 show the levels of procurement systems used in Nigeria construction industry. The result shows that 47.5% of the respondents have admitted that a traditional system is the most preferred system used in Nigeria construction industry. This

implies that majority of the contract awarded in Nigeria is through traditional systems. Peter *et al.* (2008) highlighted that contractors are more familiar with traditional system as it is the most common types of procurement use in construction industry. This result was supported by Walker and Hampson (2003), and (Wearne 1997) that traditional system is separated into different process with design and construction. The drawings, specification, and bill of quantities breakdown are provided by the client to the contractor during tender stage to make the pricing straightforwardness. It also gives the client to secure more competitive price, since the working drawings have been fully developed with full details for tendering. It eliminates any design or construction ambiguity or uncertainty that might causes the contractors to unnecessarily inflate the price. In a situation, where bill of quantities is used, the bidding tend to be more fair as such, the project cost is lower. The system also has a better cost control (Masterman, 1996; Walker and Brammer, 2012). However, 21% of the respondent's concurs that design and build system are used in the procurement system in Nigeria construction industry. In Design and Build system, the cost of the construction projects is often higher than the traditional contracting system. As a result, of lack of design, specification detailing and absence of bill of quantities during tender stage. Therefore this affects the cost of the construction project and thereby results in cost overrun. Although, the client is required to come out with a conceptual design at an early stage for design and build system which create forums for variations and claims during the construction stage. In addition, 12.5% of the respondents indicated that management procurement is used in the contract awarding system in Nigeria construction industry, since the clients are always curious about time and cost overrun. 11.5% of the respondents agreed that the built own operate and transfer was used in in Nigeria construction industry especially in building the hostel in the high institution and other infrastructure projects in the country. In conclusion, 7.5% of the respondents signifies that turnkey system is also used in road construction, bridges, railways and others infrastructure projects that the price are very high. Turnkey system sometimes is called fast-tracking project delivery system where design and construction is put in one hand and its pre-tender process can allow fast construction date. It also allows the details of the project to run almost at the same time to each other, this means that it is going to reduce the overall project development period considerably. The results was illustrate in Figure 3 below:

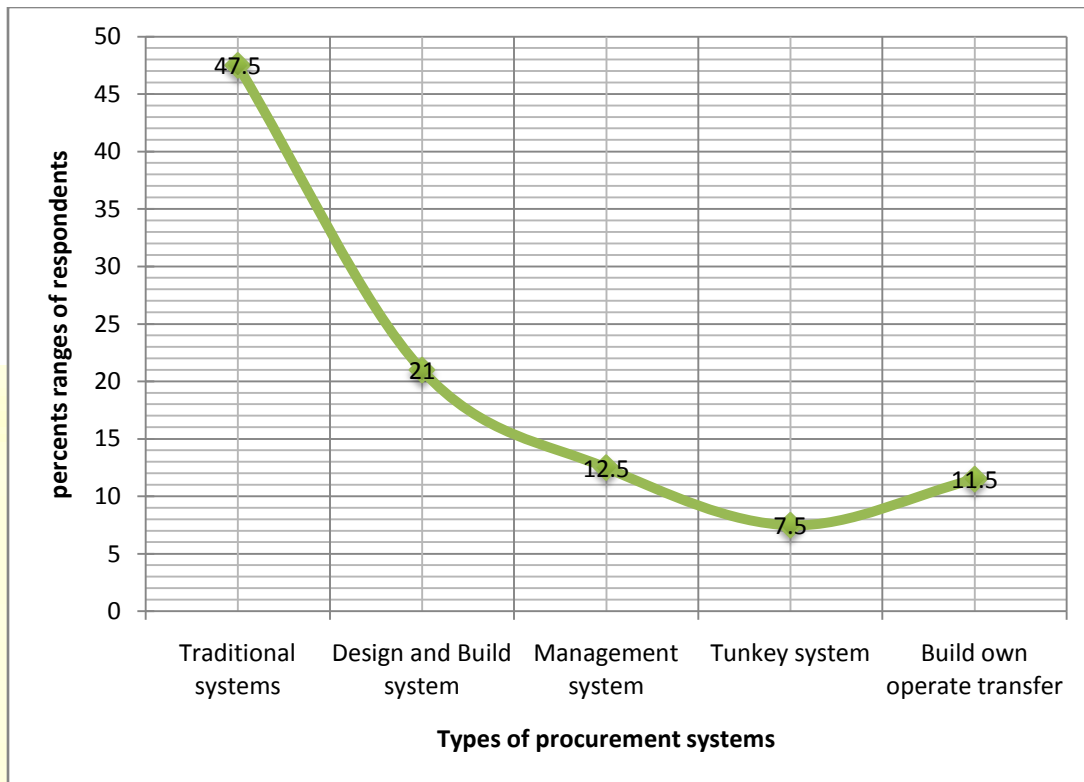


Figure 3: Procurement systems in Nigeria

5. Conclusion

From the results obtained from the analysis show that traditional method, design and build system and management contracting system are the major types of the procurement system commonly used in Nigeria construction industry. This is because Nigeria is a developing country with many challenges in the construction sectors especially inconsistency policy of the Government, change of leaderships, lack of continuity in the government actions and policy, corruption, lack of trust, poor working relationship and security problems. These are some of the factors that militate against the uses of the other method of the procurement system. Although, in some few projects in Nigeria the other method were used to avoid delays and for certain purpose. Therefore, the research suggests that the Government should create conducive environment that would facilitate the effective use of the other methods in order to avoid unnecessary delays, poor planning and disputes, conflicts, cost overrun. The management should develop a proactive strategy that would influence the use of right procurement method at the appropriate time.

REFERENCES

- Ali, A. S., Kamaruzzaman, S. N. and Salleh, H. (2009). The characteristics of refurbishment projects in Malaysia. *Journal Facilities management*. 27(1/2), 56-65.
- Ali, A. S., Zakaria, N. and Che-Ani, A. (2011). (2011). The Effect of Procurement System towards the Performance of Refurbishment Works. *Faculty of Built Environment, University of Malaya, Kuala Lumpur, Malaysia Conference*.
- Bratt, C., Hallstedt, S., Robèrt, K. H., Broman, G. and Oldmark, J. (2013). Assessment of criteria development for public procurement from a strategic sustainability perspective. *Journal of Cleaner Production*. 52(0), 309-316.
- Costa, A. A., Arantes, A. and Valadares Tavares, L. (2013). Evidence of the impacts of public e-procurement: The Portuguese experience. *Journal of Purchasing and Supply Management*. 19(4), 238-246.
- Creswell, J. W. (2003). A framework for design, in *Research design: qualitative, quantitative and mixed methods*. Sage Publications, Thousand Oaks, CA.
- Eriksson, P. E. (2013). Exploration and exploitation in project-based organizations: Development and diffusion of knowledge at different organizational levels in construction companies. *International Journal of Project Management*. 31(3), 333-341.
- Goldfayl, G. (1999). *Construction Contract Administration*. Victoria: . Deakin University Press. .
- Hashim, N., Said, I. and Idris, N. H. (2013). Exploring e-Procurement Value for Construction Companies in Malaysia. *Procedia Technology*. 9(0), 836-845.
- Huges, W., P., Hillebrandt, D., Greenwood and W, K. (2006). *Procurement in Construction Industry. The impact and cost of alternative market and supply process*. Taylor & Francis is an imprint of the Taylor & Francis Group, an informa business, published in the Taylor & Francis e-Library
- Irizarry, J., Karan, E. P. and Jalaei, F. (2013). Integrating BIM and GIS to improve the visual monitoring of construction supply chain management. *Automation in Construction*. 31(0), 241-254.
- Josephson, P. E. and Lindstrom, J. (2007). Measuring Performance in Construction Projects. . *Proceeding of the CIB World Building Conference on Construction for Development, Cape Town, South Africa*,. 383-394.

- Masterman, J. W. E. (1992). An Introduction to Building Procurement Systems. *London: E & FN Spon.*
- Mok, K. L., Han, S. H. and Choi, S. (2014). The implementation of clean development mechanism (CDM) in the construction and built environment industry. *Energy Policy.* 65(0), 512-523.
- Peter, D., Peter, L., David, B., Geoff, W. and Robert, L. (2008). Capital Works Procurement: The Selection of a Building Procurement Method. *Project Affiliates Curtin University of Technology Western Australia Department of Housing & Work Royal Melbourne Institute of Technology Research Program: Deliver and Management of Built Assets*
- Rahman, I. A., Memon, A. H. and Karim, A. T. A. (2013). Examining Factors Affecting Budget Overrun of Construction Projects Undertaken through Management Procurement Method Using PLS-sem Approach. *Procedia - Social and Behavioral Sciences.* 107(0), 120-128.
- Rowlinson, S. (1999). A Definition of Procurement Systems. In *Procurement Systems. A Guide to Best Practice in Construction (ed).* 27-51. *London: E & FN Spon.*
- Smith, J., Zheng, B., Love, P. E. D. and Edwards, D. J. (2004). Procurement of construction facilities in Guangdong Province, China: factors influencing the choice of procurement method. *Journal Facilities management.* 22(5/6), 141-148.
- Uttam, K., Balfors, B. and Faith-Ell, C. (2014). 9 - Green public procurement (GPP) of construction and building materials. In Pacheco-Torgal, F., Cabeza, L. F., Labrincha, J. & Magalhães, A. d. (Eds.) *Eco-Efficient Construction and Building Materials* (<http://dx.doi.org/10.1533/9780857097729.1.166pp>. 166-195) Woodhead Publishing.
- Vatalis, K. I., Manoliadis, O. G. and Mavridis, D. G. (2012). Project Performance Indicators as an Innovative Tool for Identifying Sustainability Perspectives in Green Public Procurement. *Procedia Economics and Finance.* 1(0), 401-410.
- Walker, H. and Brammer, S. (2012). The relationship between sustainable procurement and e-procurement in the public sector. *International Journal of Production Economics.* 140(1), 256-268.
- Wearne, S. (1997). Innovations in Procurement – Why, and to Where? Questions for Research. In *Procurement, A Key to Innovation, 781-790.. Canada: CIB Proceeding.*