

Quantity Surveyor's Impact: A Panacea to achieving Critical Success Factors in PPP Implementation

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ABSTRACT: Public-Private-Partnership (PPP) is an innovative infrastructure procurement system aimed at providing unique opportunities in the development and funding of public infrastructure facilities. The procurement system ranges from simple contracting of services to the involvement of private sector in financing, design, construction, operation and maintenance of infrastructure. However, organising PPP is not an easy task due to its complexity and long term contractual obligations that requires the involvement of stakeholders and professionals for its successful implementation. Procurement procedure under PPP is very complicated and more costly and time consuming than the traditional procurement approach. Therefore the need to address the roles of the Quantity Surveyor in providing the total cost and procurement management has been recognized and become necessary in developing efficient and effective sustainable PPP projects. Although many studies show that there has been no comprehensive study on the roles of the Quantity Surveyor in PPP concession projects which therefore indicate a knowledge gap in this particular area of the study. Hence, the aim of this paper is to explore the roles of professional Quantity Surveyor in achieving the critical success factors (CSF) for PPP concession projects. Findings in the study have shown that Quantity Surveyor has a great role to play in achieving the Critical Success Factors (CSF) for PPP concession projects in the areas of: detailed feasibility study; competitive financial proposal; effective procurement management; preliminary qualification evaluation & tendering phase; solid revenue & cost estimate; proper partner's selection criteria; and solid financial packaging. Findings from the study further revealed that the PPP contractual arrangement offers the primary role of a professional Quantity Surveyor within the PPP concept leading to the selection of the right concessionaire through: request for expression of interest, qualifications, proposals; negotiation with preferred bidders; and evaluation methods & criteria and also in the performance evaluation of the entire development and delivery process within the project objectives.

Keywords: Critical Success Factors, Public-Private-Partnership, Quantity Surveyor, Roles.

I. INTRODUCTION

The last decade has seen a dramatic increase across the globe in the involvement of private sector in the development and funding of public infrastructure facilities. Techniques are continuously being developed to draw the public and private sectors together with a view to sharing the risks and rewards associated with the joint investment. These various techniques are often referred to as Public-Private-Partnership (PPP) and ranged from the simple contracting out of services to the involvement of private sector in the financing, design, construction, operation and maintenance of infrastructural facilities on behalf of public sector. The concept is a procuring model design to develop and manage public infrastructures economically. Figure 1 depicts the PPP concept and also shows that there are some common goals as well as individual objectives of both the public sector agency and the private sector entity.

Studies indicate that public sector's financial outlay are very high in every nations across the globe (National Policy on PPP, 2008; Dahiru & Mohammed, 2013; BJORBERG *et al.*, 2013). Hence the need for private finance to carry out project development, which therefore is the main purpose and aim of PPP concept. The concept constitutes extended involvement of private sector partners compared to conventional procurement systems commonly adopted by the public sector agencies for procuring public infrastructures. In the recent past, PPP have proved its potentials to be more efficient procurement framework for public agencies looking after efficiency gains and extended value for money (VFM) in return for money invested. The development and use of PPP concept and framework differs from country to country in both developed and developing countries of the world. Despite the differences, the PPP procurement system has attracted the attention of many countries and has gathered momentum in the development of public infrastructure facilities globally. For instance in Nigeria, the PPP concept is viewed as a reform tool for solving the problems of inefficiencies and absence of dynamism in the provision of critical infrastructure facilities in the country in enhancing its economic development (National Policy on PPP, 2008).

PPP implementation involve complex tasks and responsibilities which makes the procurement system different from the conventional procurement approaches therefore, its implementation requires input from various professionals within the built environment for its effectiveness and successful implementation (Soomro & Zhang, 2013). For instance, at the early stage of PPP project development, Quantity Surveyor has the potentials and expertise in providing economic advise on the project. At this stage, the Quantity Surveyor is required to critically evaluate the Life-Cycle Costing (LCC) of the proposed PPP project. This will enable the professional quantity surveyor to get focused on the life-cycle investment rather than project procurement and management. LCC is defined as capital costs and annual costs related to management, operation, maintenance, and development (Bjorberg *et al.*, 2013). The life cycle perspective will not only improve the financial basis for project and investment decisions, but also ensure interaction between development competences and operational competences of the project. This interaction in the early stages of a project is very important in the development of efficient, effective and environmentally sustainable PPP projects.

Presently, there is no comprehensive study on the roles of professional Quantity Surveyor in the successful implementation of PPP framework for infrastructure development (Ofori, 2010). This indicates a wide knowledge gap in this particular area of the research. It is therefore against this background that this research is being conducted to explore the roles of a professional Quantity Surveyor in achieving the critical success factors in PPP implementation for infrastructure development. Although PPP procurement system is more complex, costly and time consuming than the traditional procurement approach (Ajayi, 2008; Kwak *et al.*, 2009 and Adetola, 2010). Figure 1 depicts the concept of PPP for infrastructure development.

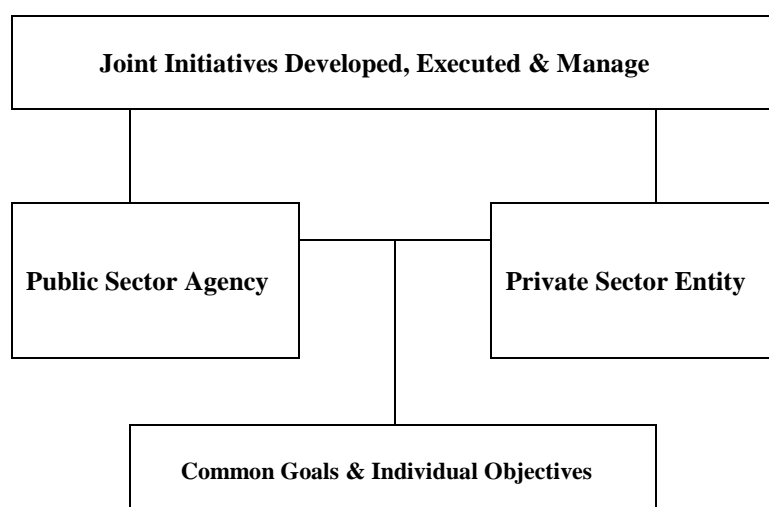


Figure1:The Concept of PPP

II. PPP IMPLEMENTATION

PPP accelerates infrastructure provision by attracting private funding especially in a situation of constrained public budgets thus bringing forward the much needed infrastructure investments in a country (Abubakar, 2010). Similarly, Grimley (2009) opined that a massive injection of resources through consolidated efforts in form of partnership arrangements between the public sector and private sector is highly required for the delivery of sustainable social-economic infrastructure that will adequately meet the infrastructure needs of the public. In view of this, it is possible for the public and private sectors to come together to resolve the issues of affordability and sustainability that are impairing the implementation of PPP framework in the development and provision of social-economic infrastructures in many countries of the world. However, it is evidenced from literature that PPP is widely accepted by governments for many reasons. Because according to ICRC (2012), the objective of PPP strategies in infrastructure development is to increase the availability of infrastructure facilities and to do so with greater efficiency than it could be achieved through the traditional public approach in infrastructure development. The goals and objectives of the PPPs in social-economic infrastructure development according to ICRC, (2012); Ndubisi, (2012) and Adamu *et al.*, (2015) include:

- i. Obtaining more value for money invested in the infrastructure project;
- ii. Better and appropriate risk allocation among the stakeholders in the infrastructure project;
- iii. Faster and better project implementation;

- iv. Improved service and quality delivery;
- v. Obtaining additional revenue streams for the economy;
- vi. Minimizing life-cycle costs and improving cash flow; and
- vii. Enhancing proper project management and reducing waste.

In order to achieve these PPP objectives, according to ICRC (2012) and Adamu *et al.* (2015), the PPPs are therefore structured in a manner that allows both the public and private sectors to take on certain roles and enjoy certain advantages in the infrastructure development relative to each other while performing their specific tasks in the infrastructure project development.

However, inspite these potential benefits of PPP that led to its wider acceptance and application world wide, the shortcoming against the procurement system have also been identified by many scholars including projects and economic analysts (Adamu *et al.*, 2015). Abubakar (2010) argued that governments with high indebtedness are often in a weak negotiation position when seeking a private partner for financial support for infrastructure development. This eventually weaken the power of the affected governments in control of public assets as they might have signed contracts with unfavourable conditions. The conventional long duration of PPP concession contracts may even lead to a legal constraint and difficulty in cancelling such contracts (Dahiru *et al.*, 2010).

Oyebanji *et al.* (2013) cited in Zamfir & Hotaran (2011) argued that a counter argument for PPP is the fact that some transformation technologies are too risky or costly to attract adequate private sector funding under PPP. Therefore, it is not in all cases that PPP can guarantee adequate funding. Despites the gains offered by PPP, Ibrahim (2006) observed that the progress of project execution could be much slower than expected, capital costs could be at a high level and economic sustainability could be a challenge. In a related development, Abubakar (2010) argued that lack of sufficient financial reserve could be a major reason why public authorities are making use of PPP as a way of obtaining finance for executing public infrastructures.

III. PROFESSIONAL QUANTITY SURVEYOR AND PPP IMPLEMENTATION

The construction industry which creates the built environment is arguably the main vehicle through which the PPP concession project development can be realised. Professionals within the built environment have taken action to realise the successful development of PPP concession projects in the recent time all over the world. Ofori (2010) observed that Quantity Surveyor as professional within the built environment has the potentials of modifying and managing the processes in which PPP concession projects are being procured and managed for sustainable economic growth. This therefore suggested that: (i) project identification should be in line with national, local or sectoral plans and/or based on public consultation; (ii) the whole life-cycle costs of the project should be considered during planning and design, and a maintenance strategy developed; (iii) social objectives should be identified at the planning stage and fed in to the project design; (iv) an appropriate procurement approach to deliver the specified social objectives should be chosen; (v) the bidders' social performance and capacity to deliver social objectives should be considered; (vi) contractual obligations must be monitored and enforced through incentives and/or sanctions.

Each PPP concession project calls for the formation of a dedicated team of professionals capable of crafting and implementing the project (HDR, 2005). Once a project's milestones are set, the key players must be identified, as well as the specific roles that each player will assume. Ultimately, the players include members of both the public and private partners of the PPP, as well as constituents of the project and other stakeholders. For example, according to HDR (2005), PPP players include the tenants or users of the finished or renovated structure, finance and accounting experts, legal counsel, architects, quantity surveyors, engineers, developers, builders, brokerage and real estate, marketing experts, and property managers. Figure 2 illustrates the roles of these players in realizing the success of PPP concession projects.

Quantity Surveyors are generally responsible in offering economic advice and procurement management on the development of PPP concession projects. The QS also offer cost advice on the likely cost of the project especially at the inception stage. Being cost and value management experts in the built environment, the main responsibilities of QS in PPP projects include advising the stakeholders on the total costs and value implication of design decisions and controlling of procurement and construction costs and also the life-cycle cost see fig.2.

In a related development, Amunike (2011) noted that Quantity Surveyors also provide services in the areas of risk management, procurement and whole life-cycle cost advice in the development and funding of PPP concession projects. Specifically, the roles of the Quantity Surveyor in PPP transaction especially when

involved as private sector partner includes: (i) advice on procurement; (ii) general costs advice; (iii) review bids before submission; (iv) advice on whole life-cycle costs; and specialist services. Similarly, when Quantity Surveyor is involved in public sector partnership of PPP arrangement, the QS provides: (i) procurement advice; (ii) outline business case – risk issues; (iii) advice on facilities management; (iv) monitoring construction to ensure compliance to contract. PPP funders also engage Quantity Surveyor to provide due diligence – in aspects of both technical and commercial risks, scrutiny of design integrity and contractual robustness of projects under PPP (Amunike, 2011).

Quantity Surveyors, with their practical background, commercial sense, cost knowledge and legal undertaking, have much to offer in PPP delivery by providing accurate and timely cost advice throughout the duration of a PPP concession project. PPP needs assessment and option appraisal. At its initial stage of project formation, the need for a particular infrastructure facility is identified, normally by the government or more often by the project executing organization.

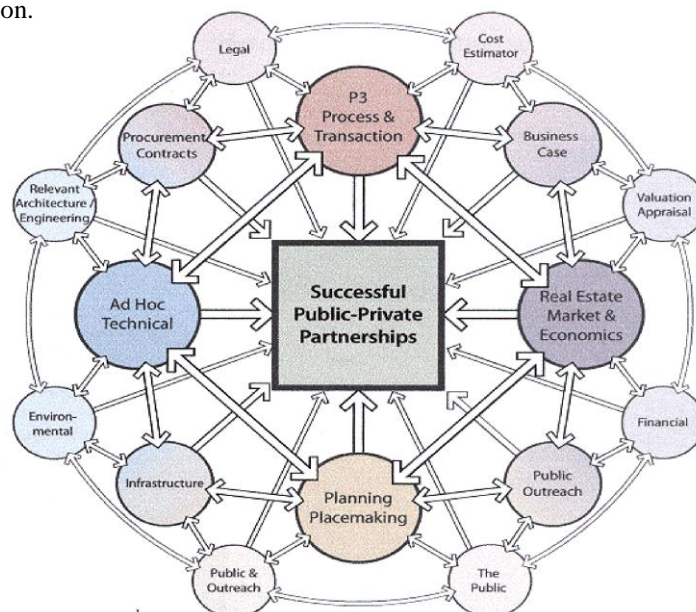


Figure 2: Roles of Professionals in PPP concession Projects

The needs assessment of proposed project are usually carried out and evaluated by Quantity Surveyor in form of cost-benefit analysis (CBA) in determining the source of financing the PPP project. Quantity Surveyor will also consider the procurement method to be employed by undertaking a preliminary qualitative PPP test and analysis in determining the suitability of procuring the project under PPP by investigating the legal, political, economic and technical character of the partnership. If the project proves the primary feasibility to PPP solution, the preparation works proceed by a detailed development of the PPP option in order to enable a comparison with the traditional one. At this stage, the Quantity Surveyor will now assist the government in drawing its decisions for PPP based transaction on greater efficiency the private sector will deliver in comparison to the traditional public procurement. In some countries, PPP concession projects are compared to traditional public sector finance (Onwusonye, 2012).

Once the government has determined to proceed with PPP, the Quantity Surveyor will decide on the PPP procurement method to be employed given the applicable laws and policy. Commonly the Quantity Surveyor will employ competitive bidding procedure which will include detailed output specifications as to the infrastructure facility and the length and terms of the PPP contract in the invitation to tender. Accordingly, prospective sponsors, usually acting as consortia i.e. special purpose vehicle (SPV), will carry out their own feasibility and bankability studies and prepare to submit bids. The Quantity Surveyor will evaluate these bids and select a number of preferred bidders for negotiation, during which the terms of the project will be discussed and redrawn. At the end the contract is awarded to the bidder that best conforms to the defined awarding criteria.

IV. ACHIEVING CRITICAL SUCCESS FACTORS FOR PPP CONCESSION PROJECTS

Due to the complexity of PPP concession projects, the assessment of success and failure of these projects is not an easy task (Dahiru *et al.*, 2010; Oyebanji *et al.*, 2013). Therefore, various researchers across the globe are inspired to create the framework for Critical Success Factors (CSFs) to assess and explain why it is the case.

Some of these factors are: political will, legal and operating frameworks including proper partner's selection criteria (Oyebanji *et al.*, 2013). Tiong *et al.*, (2002) characterizes 6 CSFs for winning PPP contract. These factors include: entrepreneurship; picking the right project; a strong stakeholder teams; an imaginative technical solution; a competitive financial proposal; and inclusion of special features in the bid.

Zhang (2005) defines five CSFs of PPP project in general with a number of sub-factors in each, containing (1) favorable investment environment (11 sub-factors), (2) economic viability (5 sub-factor), (3) reliable concessionaire consortium with strong technical strength (12 sub-factors), (4) sound financial package (10 sub-factors), and (5) appropriate risk allocation via reliable contractual arrangement (9 sub-factors). Cuttaree (2008) presents nine CSFs from the experiences of World Bank in conducting PPP projects worldwide, including (1) careful planning of PPP project, (2) solid revenue and cost estimate, (3) user willingness to pay and communication plan, (4) extensive feasibility study with use of PPP experts, (5) compliance with contractual agreement, (6) appropriate legal and regulatory framework, 7) strong institutions with appropriate resources, 8) competitive and transparent procurement, (9) mitigation and flexibility in managing macro-risks.

Li *et al.*, (2005) groups 17 CSFs into five principle factors including (1) effective procurement (7 sub-factors), (2) project implement ability (5 sub-factors), (3) government guarantee (2 sub-factors), (4) favorable economic conditions (2 sub-factors), and (5) available financial market (1 sub-factor) for PPI projects in UK. Jefferies *et al.*, (2002) gives 15 CSFs through Stadium Australia case study, consisting of environmental impact, approval process efficiency, technological innovation, developed legal and economic framework, political stability and support, selecting the right project, strategic alliances, trust, community support, feasibility study, transfer technology, financial capability, complimentary skills, and consortium structure.

Xiong *et al.*, (2006) analyzes 21 successful factors which grouped into 5 generic CSFs for PPP project in China. These factors are (1) reasonable risk-sharing mechanism, (2) financial system and policies for PPP projects, (3) the improvement of regulation and policy, (4) rational pricing mechanism, (5) effective supervising mechanism. Tam (1999) presents the successful conditions for PPP projects in Asia after empirical studies from various projects in Hong Kong and Thailand. These factors are (1) viable projects, (2) flexible toll fee adjustment, (3) qualified consortium, (4) technical competent, (5) equitable and experienced government authority. Qiao *et al.*, (2001) create the framework for CFSs of PPP projects in China according to 6 project phases: preliminary qualification evaluation phase, tendering phase, concession award phase, construction phase, operation phase and transfer phase.

Koppenjan (2005) conducts the extensive research from 9 transport infrastructure project in the Netherlands. He recognizes 6 general factors to enlighten the success/failure cases from the upfront PPP project phase, the formation process in his research population. These factors include (1) project characteristic (project attractiveness), (2) a clear political administrative commitment to the project, (3) joint image building and mutual trust, (4) convincing and motivating plan, (5) good process management, and (6) good process arrangement.

Going by these literatures, it is recognized that some researchers try to create CSFs to assess PPP projects in general while others pay attentions to specific CSFs for PPP in their countries such as UK, Australia, the Netherlands, China and Thailand. These CSFs are varied from countries to countries; it is reasonable because the factors for PPP project success in these countries cannot be appropriately applied for others due to its potential differences and environmental impacts. However, there are a number of critically generic factors (proper partner's selection criteria; competitive financial proposal; solid financial package; solid revenue & cost estimate; effective procurement; and preliminary qualification evaluation & tendering phase) agreed among various researchers (Cuttaree, 2008; Li *et al.*, 2005; Qiao *et al.*, 2001; Tiong *et al.*, 2002; Zhang, 2005) that explained the relevance of Quantity Surveyor due to their unsubstituted position for a successful PPP concession project.

V. QUANTITY SURVEYOR IN THE ACHIEVEMENT OF PPP CRITICAL SUCCESS FACTORS (CSFs)

The roles of Quantity Surveyor in achieving the CSFs for PPP projects can better be presented in accordance with the Fishbone CSFs framework. This technique illustrates the contribution of a Quantity Surveyor in collaboration with other relevant experts or professionals in PPP project development. The framework was designed through extensive literature reviews and management technique of PPP projects. The CSFs framework is depicted in figure 3 bellow.

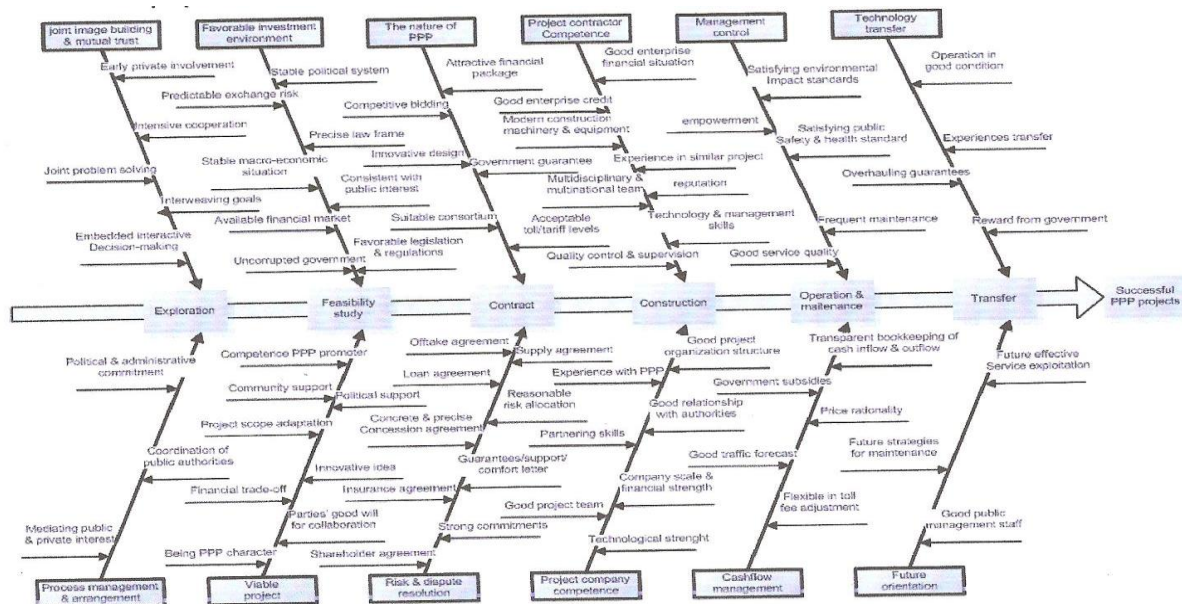


Figure.3: Quantity Surveyor's roles in Fishbone Framework for CSFs of PPP

The arrow in the middle of the figure shows that the successful PPP concession project will require the successes of the six project phases (exploration, feasibility study, contract, construction, operation & maintenance, and transfer phase). The Quantity Surveyor plays a greater role that will achieve PPP success. For example, at the exploration phase, the Quantity Surveyor will critically evaluate the needs for the project to be executed under PPP transaction. While at feasibility phase, the Quantity Surveyor will critically determine how possible the proposed project will be run under PPP. Contractual arrangement of PPP projects is one of the primary roles of the Quantity Surveyor leading to the selection of the right concessionaire through: request for expression of interest; qualifications; proposals; negotiation with preferred bidders; and evaluation methods & criteria. At the construction phase, the Quantity Surveyor usually exercise cost control among other techniques that can lead to achieve value for money (VFM) under PPP arrangement.

VI. QUANTITY SURVEYOR'S ROLES IN THE SELECTION OF CONCESSIONAIRE

Concessionaire is a consortium formed particularly for a PPP concession project. As a principle participant in a PPP project, the concessionaire responsibilities include the financing, design, construction, operation, and maintenance of the infrastructure facilities and the transferring of the facilities to the client in operational condition at the end of the concession period. Fapohunda & Windapo (2008) have collectively identified in order of priority the most important criteria for choice of private partner in PPP concession projects which include: financial capability; technical expertise; operational/management capability; risk bearing; and the concession period. These factors are usually considered in the process of selecting the most suitable private concessionaire. It is also emphasized that the concessionaire must be capable technically, financially and administratively; and be willing to perform; take responsibilities; display the required experience and skills and dynamic in the proposed project development (Oyebanji *et al.* 2013) . PPP requires visionary concessionaire, who will not compromise; ready to make sacrifices and using his skills and resources to develop projects that will transform the society and impact the masses only for fair rewards (Oyebanji *et al.*, 2013).

However, many studies revealed that the tendering processes of PPP concession projects are more complicated and more costly than those of traditional procurement approaches (Ibrahim, 2006; Kwak *et al.*, 2009; Dahiru, 2011; Onwusonye, 2012). Well-structured tendering processes that can minimize tendering costs and encourage competition therefore become imperative. In view of this, many governments utilized the services of experience Quantity Surveyor to adopt a multi-stage tendering process composed of stages such as inviting expression of interest, prequalifying tenders, evaluating tenders, and negotiating with the preferred tender(s) to select the most suitable concessionaire. In Nigeria, the Infrastructure Concession Regulatory Commission (ICRC) has developed step-by-step guidelines and standardized tendering documents and contracts to facilitate the tendering process in PPP concession projects.

According to Kwak *et al.* (2009), a tender should only be selected as the preferred tenderer and subsequently awarded the contract when it satisfies the following criteria which includes: meeting output specifications, whole life value for money, acceptance of key contract terms and required transfer of risks, confirmation of access to finance, unitary charge affordable to the public client, and a cohesive consortium. A number of tender evaluation methods and criteria are developed by the Quantity Surveyors to assist government in selecting such a right concessionaire:

- ***Request for Expression of Interest***

This is the stage where the Quantity Surveyor prepares to advertise the project to potential private investors. Such advertisement is often published in national newspapers and on government websites. This aspect of procurement signals to the market that a PPP is being considered, and it can be used to test the feasibility of a partnership by gauging the level of private sector interest. Request for expression of interest also can be used when the public entity is unsure of its needs or the best way of achieving them. The request for expression of interest includes a brief description of the projects requirements and solicits a response from developers or contractors who believe they have the ability to deliver the project. As an option, respondents are then invited to an expression of interest meeting where potential solutions are discussed and strategic alliances are encouraged. In this respect, the request for expression of interest is an information gathering tool for the potential partners as opposed to a short-listing tool. The information gathered from the request for expression of interest process can then be used by the public entity to draft a request for qualification or request for proposal.

- ***Request for Qualifications***

This section displays the relevance of the Quantity Surveyor in evaluating the qualification, experience, management approach, and financial viability of the PPP bidders. The aim of this prequalification stage is to reduce the number of interested tenders to a shortlist, which consist only of reputable and experienced tenders. This process can ensure that weaker tenders do not incur unnecessary tendering costs. The tool is used when the scope of the project is well defined but it is not known which private sector partners, if any, have the skills required to deliver the project. Submissions are evaluated on their qualifications, experience, management approach, financial viability and references as opposed to how they would provide the service in question which normally will be requested through a request for proposal. The request for qualification submissions are used to develop a shortlist of candidate firms which are then issued a full request for proposal document.

- ***Request for Proposals***

Public sector entity usually engaged Quantity Surveyor and other relevant specialists to select PPP partners through this proposal process. This tool is used when the public entity knows what needs to be done but is looking for input from the private sector on the actual methodology. The public entity then invites responses from the private sector that will be evaluated against a preset list of criteria established by the public entity. Best value, as opposed to lowest cost usually is the key to selecting a partner through the request for proposal process.

- ***Negotiate with Preferred Tenders***

Quantity Surveyor usually selects one or a few preferred tenders to negotiate with. During the negotiation stage, provisions in agreements are carefully reviewed. Once the agreement is signed, a contract award notice will be published and the contract is implemented.

- ***Evaluation Methods***

Some tender evaluation methods that are usually employed by the Quantity Surveyors in PPP concession projects include: the simple scoring method, NPV method, multi-attribute analysis, Kepner-Tregoe decision analysis technique, two-envelope method, NPV method plus scoring method, and binary method plus NPV method (Kwak *et al.*, 2009). Zhang (2005) observed that, the binary method, simple scoring method, and two-envelope method may be more appropriate for small and simple PPP projects; on the other hand, the NPV method may be more appropriate for projects with no technical problems; while, the multi-attribute analysis and the Kepner-Tregoe decision analysis technique may be more suitable for complex PPP concession projects. Though, many Quantity Surveyors in different countries may use different methods or a combination of multiple methods to evaluate tenders. For instance, the Hong Kong government uses the Kepner-Tregoe decision analysis technique to select the suitable concessionaire for its BOT projects; the UK government uses both the NPV method and the multi attribute analysis to evaluate tenders for PFI projects (Kwak *et al.*, 2009). Although different methods have their advantages and disadvantages, among these methods, the NPV method and multi-attribute analysis are the two most commonly used methods. They are also the two that are most recommended by experts and experienced practitioners.

• **Evaluation Criteria:**

A variety of tender evaluation criteria have been previously explored by many Quantity Surveyors in different countries within the PPP context. These evaluation criteria are classified into four packages: financial; technical; environmental; and managerial. A proper set of evaluation criteria should be determined on the basis of the public clients' objectives, the project characteristics, and the uniqueness of the particular PPP scheme. In addition, weights that reflect the relative importance of each set of criteria should also be assigned.

VII. CONCLUSION

Public-Private-Partnership (PPP) is a contractual agreement between a public agency (federal, state or local government) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. PPP is a complex technique as compared to conventional procurement approaches, and therefore its development requires inputs from experts within the built environment in order to realize its economic potentials. Quantity Surveyor is amongst such experts responsible in providing total costs and procurement management of PPP project development. This usually makes such project to be economically viable and financially attractive to PPP investors. Moreover, the Quantity Surveyor played an active role in achieving the Critical Success Factors (CSFs) for PPP concession projects. Such factors (CSFs) include: extensive feasibility study; competitive financial proposal; effective procurement; preliminary qualification evaluation & tendering phase; solid revenue & cost estimate; proper partner's selection criteria; and solid financial package. Importantly, the contractual arrangement of PPP concession project is the primary role of the Quantity Surveyor within the PPP context leading to the selection of the right concessionaire through: request for expression of interest, qualifications, proposals; negotiation with preferred bidders; and evaluation methods & criteria.

REFERENCES

- [1] Abubakar, A. (2010) Overview of PPP in Nigeria. Proceedings of the 3- day international workshop on Public-Private-Partnership approach to infrastructure provision in Nigeria, organized by the Nigerian Institute of Quantity Surveyors, Abuja.
- [2] Adamu, M., Lowe, J. & Manase, D. (2015) "Conceptual Framework for Public-Private Financed Road Infrastructure Development in Nigeria" International Journal of Engineering Research and Technology, 4(8), pp.586-590.
- [3] Adetola, F.O. (2010). An over view of Public-Private-Partnership and concession in the delivery of public services and infrastructures. A paper presented at the international seminar on infrastructure concession organized by NIQS FCT chapter held at merit house, Abuja.
- [4] Ahmed, M. (2010). Infrastructure concession: A tool for sustainable economic stability: prospects and challenges. A key notes address by the ICRC director general at the international seminar on infrastructure concession organized by NIQS FCT chapter held in Abuja.
- [5] Ajayi, O. (2008). Ensuring a supportive legal framework for PPP application in Nigeria. Paper presented at the Nigeria Infrastructure Summit, Abuja.
- [6] Amunike, E.B. (2011) The changing roles of the Quantity Surveyor in national development. Proceedings of the 2011 Quantity Surveying assembly and colloquium, organized by the Quantity Surveyors Registration Board of Nigeria (QSRBN), Nigeria.
- [7] Cuttaree, V. (2008) Successes and Failures of PPP Projects.
- [8] Dahiru, A., Bala, K. and Bustani, S.A. (2010) Assessing the Critical Success Factors of BOT Projects in Nigeria. Proceedings of the Second International Conference on Construction in Developing Countries (ICCDC- II) held at Egypt.
- [9] Dahiru, A. (2011) Appraisal of BOT Procurement processes in infrastructure project financing in Nigeria. unpublished PhD Thesis, Department of Building, ABU Zaria.
- [10] Dahiru, A. and Mohammed, I.Y. (2013) Knowledge Transfer Challenges in Public-Private-Partnership Projects in Nigeria. Proceedings of the 2nd International conference on Infrastructure Development in Africa, Johannesburg, South Africa.
- [11] Dong, V.P. (2009). Breaking the Iceberg of Public-Private-Partnership in Vietnam.
- [12] Unpublished MSc Thesis, Delf University of Technology (TUDelf), Netherlands.
- [13] Fapohunda, A.A. and Windapo, A.O. (2008) Infrastructure Procurement through Public-Private-Partnership (PPP). Building Abroad: procurement of construction and reconstruction projects in the international context.
- [14] Gadzama, J.K. (2010). An over view of Draft National Policy on PPP as a legal framework for infrastructure concession. Being a paper presented at the Nigerian Institute of Quantity Surveyors workshop, merit house, Abuja.
- [15] Gidado, Kassim (2010). A model for PFI implementation in the Sub-Saharan Africa-Nigeria as a case study. A paper presented at the third international world of construction project management conference held in Coventry University, UK
- [16] Grimley, V.A. (2009) Affordable Housing: How to Achieve New Provision. Property Intelligence, Autumn 2009. www.gva.co.uk/worldArea/DownloadAsset.aspx?id=214748. Site accessed on 16/01/2013.
- [17] Hamilton, A. (2006) Public-Private-Partnership: The case Against. A snap Shot of Ireland's PPP Buy-in. construction and Property News. http://berthamilton.com/uploadedfiles/cpn_2006.07.pdf. Site accessed on 26/02/2013
- [18] HDR (2005) Creating Effective Public-Private-Partnerships for Building and Infrastructure in today's Economic Environment. A white paper prepared by HDR, a firm committed to helping clients do more with less through Public-Private-Partnerships.
- [19] Ibrahim, A.D. (2006) An analysis of success factors for Public-Private-Partnerships in Infrastructure Projects in Nigeria. Journal of construction procurement, Vol. 2, No. 1, pp 51-69.
- [20] Infrastructure Concession Regulatory Commission (2005) "Nigeria Public-Private Partnerships Manual" ICRC PPPToolkit.
- [21] Infrastructure Concession Regulatory Commission (2012) "Nigeria Public-Private Partnerships Manual" ICRC PPPToolkit.
- [22] Kwak, Y.H., Chih, Y. and Ibbs, C.W. (2009) Towards a comprehensive understanding of Public-Private-Partnerships for Infrastructure development. California management review. Vol.51, No. 2.
- [23] Koppenjan, F.M. (2005) The Formation of Public-Private-Partnerships: Lessons from nine Transport Infrastructure Projects in the Netherlands, Public Administration, Vol. 83 No. 1 pp 135-157.

- [24] Li, K., Qiao, X. and Ying, R. (2005) Critical Success Factor for PPP/PFI Projects in the UK Construction Industry, *Construction Management and Economics*, Vol. 23, pp 459-471
- [25] Ndubisi, C. (2012) "Public Private Partnership: The Nigerian Experience" Paper presented at the Capacity Building Programme for PPP in Infrastructure, ICRC Mbamene, Swaziland July 2012.
- [26] Ofori, G. (2010) Built environment research and the millennium development goals. Proceedings of the West Africa Built Environment (WABER) conference, held at Accra, Ghana.
- [27] Onwusonye, S.I.J. (2012) Project Costing in the Public-Private-Partnership Procurement model. Proceedings of the first National Project Cost Reduction Submit, organized by the Quantity Surveyors Registration Board of Nigeria (QSRBN), Abuja.
- [28] Oyebanji, A.O., Akintoye, A. and Liyanage, C.L. (2013) Sustainable Social Housing Provision: Public-Private-Partnerships as a viable option. Proceedings of PPP International conference body of knowledge held between 18 – 20 March, 2013. University of Central Lancashire, Preston, UK.
- [29] Qiao, X., Zhing, R. and John, Q. (2001) Framework for Critical Success Factors of BOT Projects in China. *Journal of Project Finance*.
- [30] Soomro, M.A. and Zhang, X. (2013) Vulnerability in the transportation of Public-Private-Partnerships. Proceedings of PPP International conference body of knowledge held between 18 – 20 March, 2013. University of Central Lancashire, Preston, UK.
- [31] Tiong, L.K. and Alum J. (1997) Evaluation of Proposal for BOT Projects *International journal of Project Management* Vol. 15 No.2 pp 67-72.
- [32] Xiong, Y., Kumaraswamy, M.M. and Ying, J. (2006) Critical Success Factors of Infrastructure Projects under PPP Model in China.
- [33] Zhang, X. (2005) Critical Success Factors for Public-Private-Partnerships in infrastructure Development. *Journal of Construction Engineering and Management*, Vol. 131, No. 1, pp 3-14.