

# Assessment of Critical Constructs for Adopting Partnership Procurement Approach for Sustainable Urban Water Supply Projects in Nigeria.

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**Abstract**— Partnership procurement approach is increasingly been adopted as an innovative approach for infrastructural procurement in developing countries. This paper assessed critical constructs for the adoption of partnership procurement approach for sustainable development of water supply projects in Nigeria. In most Nigerian urban cities majority of the citizens have no access to safe drinking water, the existing public water source manage and operated by states water boards is challenge with unsteady power supply, dilapidated treatment plants and pipes and lack of basic maintenance procedures. Quantitative research method was adopted, questionnaire was used in collecting data from randomly selected construction procurement parties. 71 retrieved usable questionnaires out of the 100 copies distributed were analyzed with descriptive statistics and relative important index (RII), items were ranked in order of importance towards adopting partnership procurement approach for water supply projects. From the RII results obtained, three factors with the highest RII were “partnership procurement enable preparation of standard bidding documents”, “partnership procurement approach support policy development and implementation” and “partnership procurement ensures close monitoring and evaluation of projects”. The study has contributed to the emergent research in procurement of projects through partnership, the findings has pin pointed at the main critical constructs that influence the adoption of partnership approaches for successfully water supply projects in Nigerian urban cities as a developing economy.

**Keywords**— Constructs, Partnership Procurement, Sustainable, Urban Water, Nigeria

## I. Introduction

Procurement of public water supply projects in Nigeria especially in urban cities and state capitals has been a burdensome task to the authorities concern. There is serious dearth of urban water supply systems like most other public infrastructural facilities in Nigeria, availability is obviously inefficient both in terms of delivery and maintenance [8]. Generally, one of the major challenges of water supply projects in most African urban cities and especially in Nigerian state capitals is the inability of the public authorities to deliver and maintain water supply projects for the growing population (UNDP, 2006).

Previously in 2008 a report by the UNICEP revealed that, Nigeria requires more than \$ 120m to provide 62 million citizens access to portable water supply, sanitation and

hygiene by 2015. The statistics were provided by the UNICEF “D” field office in Bauchi in response to a National survey on sanitation and hygiene undertaken by the News Agency of Nigeria [2], Bauchi is the state capital where the current research was carried out. Public authorities in Nigeria has been putting ample effort to comply with the World Bank recommendation that, “developing countries should devoted 7-9 percent of the GDP for the procurement of infrastructure”. Yet it has become obvious that, the government alone cannot even at its optimal level of revenue, satisfy the infrastructural needs of the society [8]. Hence the need for partnership between the public sector entity and the private investors with a view to combining resources to provide the infrastructure necessary for the social and economic development of the country. Therefore the need for partnership for the procurement of infrastructural facilities especially water supply projects. Perhaps the private is hypothesised to initiate, implement effective management, improve quality of water supply, provide scheme in restoration of deteriorated pipe network and plants, and establish sustainable water supply projects [12]. This paper aimed at assessment of critical constructs for adopting partnership procurement approach for sustainable urban water supply projects in Nigeria, the study mainly focused in Bauchi state located in north eastern Nigeria.

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## II. Literature Review

### A. *Partnership Procurement*

Partnership procurement entails project contractual approaches between public sector entity and one or more private entities or investors [3]. In most of the partnership procurement types, the private investor provides funds, design and develop the intended project, while public sector entity may retain ownership of the project procured after an agreed concession period of time. Partnership procurement approaches vary according to the size and complexity of the project; risk and its distribution among the partners; the required degree of each partner's specialization in contracts negotiations; the potential consequences for taxpayers; duration of concession, and finally the financing details [9]. There are three major categories of partnership procurement approaches namely: Concession contracts, Joint Venture partnership and Hybrids contracts. Their common contents are the long-term legitimate relationship, the full or partial private financing in complex patterns and the presumption is that, the main role of the private sector partner is to assure the project financial parameters are clear and reliable. The public sector's competence is to assure the public interest determining goals quality and pricing policy are dully observed, the risk transfer from the public to the private sector partners, combining their best capabilities for mutual benefit [9]. Partnership procurement are often recommended in the perspective of urban infrastructure development especially water supply projects.

According to [7], the number of partnership projects reported per year in a middle and low-income countries has been on the rise from 4 in 1991 to 29 in 1999. Partnership procurement in the water sector started in the 1990s and the number is still increasing. [18] stated that, the significant role of partnership procurement in water supply services and management lies in the consideration of water as both an economic and a public/social good, requiring a balance between returns generated to private shareholders, social and environmental considerations. Generally water households' water consumption increases with income level [3].

There are successful cases of water projects developed under partnership procurement approach around the world, for example in the Middle East and North African regions, successful water projects procured through partnership can be sighted in Jordan and Morocco. These partnership-based projects have proved to have decrease government expenditure and improvements in the water performance reductions in unaccounted-for water, higher water revenues, and lower operating costs.

Some of the challenges to successful implementation of partnership procurement approaches are the long planning-horizon, complex structure of the projects, and ethnical or cultural differences between the participating entities [17].

Critical success factors and policy requirements for effective implementation of partnership projects were identified by [8], his findings concluded that trust, openness fairness and mutual respect are the major critical factors for adopting partnership procurement approaches.

### B. *Roles and Responsibilities of Stakeholders in Partnership Procurement*

Different project parties as stakeholders are engage in any partnership procurement approach with different roles and responsibilities to ensure efficient delivery, sustainable operation and effective maintenance of the project. [2] highlighted the following as the basic roles and responsibilities of project parties and stakeholders in a typical partnership procurement.

- **Public Entity:** Government as the public entity provides sites to appropriately locate the project site or facility in addition to providing enabling environment and project regulatory policies for project successful implementation.
- **Private Investor:** Private party play the funding role, by providing funds to finance the intended project, operate and maintain the project throughout the concession period.
- **Stakeholder Engagement:** Engagement of various stakeholders and project parties is the responsibility of the private entity or NGO located in the sites designated for the construction of public facility to ensure support and ownership of the project.
- **Cleanliness and Sanitization Awareness:** Stakeholders are educated about

basic healthiness, cleanliness and hygiene requirements and the link between dirty environments and unsafe sanitary practices with the aim of bringing about behaviour of change towards appropriate usage of the intended projects.

There after a memorandum of understanding is signed to enable the transfer of the project to the public entity or community in the target area for the management and ownership through a governing council or key stakeholder representatives.

### C. *An Overview of Partnership Procurement in Nigeria*

The goal of promoting partnership procurement for effective delivery of infrastructural projects through private sector funding is the motive of establishing the Infrastructure Concession Regulatory Commission (ICRC), 2005 in Nigeria. This was considered necessary to assist the Federal Government of Nigeria and its ministries, departments, agencies (MDAs), and various public organizations to implement and establish effective

partnership procurement [3]. The regulations provides for the participation of private sector in financing the construction, development, operation and maintenance of infrastructure or public projects facilities by the Federal government via partnership procurement and concession contracts arrangements. In addition to the establishment of the commission to regulates, monitor and supervise the whole project development. The state governments as a semi-autonomous public administrative authority in Nigeria, are increasingly considering partnership procurement for the development and maintenance of infrastructural projects. Each state government is responsible for its own investment projects, financed with the support of a guarantee by the Federal Government. In providing any such guarantees, the government will have regard to best practices as exemplified by its own partnership procurement policies and guidelines.

#### ***D. Urban Water Supply Projects through Partnership Procurement Approach***

According to [1], water is fundamental to human social and economic existence. Lack of access to safe drinking water is a deprivation that threatens human life, destroys prospects and demoralize human self-worth [16]. Water is generally massively consumable products, and access to water is perceived to be more of a social and basic services rather than just a utility service [3]. Despite the call by the United Nations' general assembly to government of all nations to recognize water as a fundamental human right, yet access to sufficient water supply in developing countries including Nigeria has been a major challenge to the authorities concern. Water supply services for domestic use share three basic characteristics with other utilities services, which make it more challenging to provide through perfectly competitive markets which are; huge capital cost, economic scale, and massive demand and consumption.

Public authorities in developed economies such as Nigeria, chose water privatization policies mainly because the public sector has not been efficiently equal to the task. Corrupt practices, insufficient funds to finance infrastructure works or even the imposition of private companies from financing organizations to provide water and sanitation services are the main reasons many cities privatized their water services [9]. Full privatization of public water supply services was widely practiced by public authorities earlier before the idea of partnership came into being. Unfortunately, full privatization of water supply services have not brought significant changes to the sector. After a wave of privatization of many water services in the 1990s, mostly in developing countries, experiences show that global water corporation has not brought the promised improvements in public water utilities. During the privatization period the following problems arose:

enormous profit margins; unequal access to water; water prices increase; scandalous concession terms; non-compliance to the contracts terms; environmental risks; personnel layoffs; and loss of expertise [13]. Instead of lower prices, large volumes of investment and improvements in the connection of the poor to water and sanitation, water tariffs have increased out of reach of poor households [10]. For example the privatization of water of Paris city has failed to fulfil its mandate, and at the end of year 2009 the contract was not renewed.

Across the globe, the private sector investors have made significant long lasting solution towards delivering reliable and safe urban water supply. As at 2007, over 160 million people were being supplied with water by private water operators, in specific over 24 million people were provided with water access through partnership procurement approach since 1999 [16]. In developing and transition countries a sample of 1200 water and energy projects procured through partnership operated by the private investors have evolved to meet the needs of the people in the most affected areas. Generally, water projects procured through partnerships varies and are builds on the ability of the private investor to enhance supply, quality and efficiency of access [11].

### **III. Research Methods**

his study is descriptive in nature as it seeks to identify and assess critical constructs for adopting procurement approach for sustainable urban water supply projects in Nigeria. Simple purposive sampling method was used in selecting the study sample. The following sections described approaches used in data collection and subsequent analysis.:

#### **A. Data Collection**

Questionnaire survey instrument was used in collecting data from the randomly selected construction procurement professionals practicing within Bauchi State where the study was conducted. The instrument allows the gauge of insightful information simultaneously [18]. It was designed in three sections: Section A was designed for personal and background information of the respondents which include sector they belong to; designation, profession; level of education, years of experience in construction industry; knowledge about partnership procurement approaches. Section B provides the identified critical constructs for adopting partnership approach for water supply for the respondent to rank. In section C, a space was provided requesting for additional suggestions and comments from the respondents based on their professional opinion and personal experience. The instrument uses a ranking scale of 1 to 5 (1= strongly disagree, 5 = strongly agree) in ascending degree of agreement. The randomly selected respondent were requested to rank the constructs as listed based on the five ordinal measures. Generally open-ended questions and demographic information are included to assess respondent's opinion and background.

## B. Data Analysis

Background information of the respondents and their basic knowledge on partnership procurement systems was analyzed using descriptive statistics mainly frequencies and pie charts. The numerical scores of the respondent provided an indication of the varying degree of the identified critical constructs towards adopting partnership procurement approach for water supply projects. Relative Important Index (RII) was used to rank the constructs in order of their influence. Relative important index (RII) was used in determining the relative importance of the critical constructs based on the responses obtained from the survey. The RII ranges from zero to one, while some constructs have very high influence towards adopting partnership procurement approach others do not. Table 4 provides full list of the critical constructs, their respective RIIs and ranking scores. This was calculated using the following formula ( $0 < RII < 1$ ):

$$\text{Relative importance index (RII)} = \frac{0n1 + 1n2 + 2n3 + 3n4 + 4n5}{5N}$$

Where: N = Total number of responses

5 = Highest weight of Score (0, 1, 2, 3, 4, 5)

n1 = number of respondents for 'strongly agree';

n2 = number of respondents for 'agree'

n3 = number of respondents for 'neither agree nor disagree';

n4 = number of respondents for 'disagree';

n5 = number for 'strongly disagree'.

## C. Result and Findings:

### D. Relative Important Ranking of Constructs for Adopting Partnership Procurement

Relative Important Index (RII) was used in ranking the critical constructs based on the responses retrieved from the survey. As presented in table 4 below, the construct with the highest RII (RII=0.8204) is "Partnership procurement approach enable preparation of standard bidding documents" and was ranked as the most relative important construct that influence the adoption of partnership procurement approach for water supply projects. Traditional procurement system is usually prone to abuse of all kinds, most of which are directly linked with altering the bidding documents. In contrast, partnership procurement as an innovative modern procurement approach offers a wide range of advantages in terms of bidding arrangement and especially preparation of appropriate unique bidding documents as indicated by the outcome of the current study. The ranking also indicated that "Partnership procurement approaches support policy development and implementations" was the second relative most important construct with the second highest RII (RII=0.8133), and it is ranked second in table 4. This is probably because of the involvement of private sector investors that ensures dually compliance to policy and regulatory framework unlike purely

public procurement projects where traditional procurement system are been used without appropriate compliance to regulatory guidelines. Subsequently the construct "Partnership procurement ensures close monitoring and evaluation of projects" was ranked as the third most important constructs (RII=0.7957) for adopting partnership procurement for sustainable water supply projects in Nigeria. Findings of the current study coincided with the findings of [8].

**Table 4: RII Ranking for the Construct for Adopting Partnership Procurement for Sustainable Water Supplier**

S/No	Critical Constructs	RII	Ranking
1	Partnership procurement approach enable preparation of standard bidding documents	0.8204	1
2	Partnership procurement approaches support policy development and implementation of policies	0.8133	2
3	Partnership procurement ensures close monitoring and evaluation of projects	0.7957	3
4	Public benefits more from partnership projects than full privatised projects	0.7887	4
5	Partnership procurement ensures strict compliance to condition of contracts at all levels	0.7852	5
6	Partnership procurement guidelines warrants prompt delivery of projects	0.7816	6
7	Partnership procurement gives priority to public needs as the end users	0.7781	7
8	Partnership procurement make certain awareness and compliance with code of conduct	0.7605	8
9	Effective communication among partnering stakeholders is guaranteed in partnership procurement	0.7605	8
10	Preparation of partnership procurement and development plan attracts the public entity to participate	0.7605	8
11	Identification and sharing of risk according to ability of the partners attract stakeholders' interests	0.764	9
12	Partnership procurement approaches provides enabling environment for identifying appropriate project parties	0.757	10
13	Partnership procurement approach provides a reliable cost recovery strategy	0.757	10
14	Partnership procurement approach influence the establishment of concession regulatory bodies	0.7429	11
15	Partnership procurement strategy offers a wide range of procurement methods (e.g. D&B, BOOT etc.)	0.7394	12
16	Partnership procurement allocates risk appropriately to all project parties	0.7077	13

## IV. Conclusion & Recommendation

This paper assessed the critical constructs for the adoption of partnership procurement approach for sustainable development of urban water supply projects in Nigeria. This is with a view to drawing lessons on the influencing power of the identified critical constructs towards adopting partnership procurement for development water supply projects in Nigerian urban cities and state capitals. Urban water supply projects in most Nigerian urban centres mainly delivered through traditional procurement system has not been performing well, therefore researching the likelihood of shifting to partnership-based procurement approach is timely needed. Following a thorough literature exploration and review the study identified sixteen constructs that influence the adoption of partnership procurement approach, which were used as the main study variables in collecting data. The Data was collected from the construction procurement stakeholders practicing within Bauchi state been selected study area, afterwards analysis was achieved using descriptive statistics and relative important index (RII). Three constructs with the highest RII ranks were identified and discussed, these include: Partnership procurement approach enable preparation of standard bidding documents, partnership procurement approaches support policy development and implementation and partnership procurement ensures close monitoring and evaluation of projects. The study has contributed the limited available literature in partnership procurement research cluster by identifying the utmost critical constructs that distinguishes the later from the traditional procurement approaches for water supply projects delivery. The study recommended that, state and other public authorities responsible for delivering infrastructure to the populace in Nigeria, should consider partnership as answers to the unrequited dilapidation states of public facilities especially urban water supply.

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