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Assessment of Public Private Partnership (PPP) Models and Their Compatibility in Bridging Infrastructure Gap in the Nigerian Tertiary Education System

Aminu Muhammad, BA, MSc Public Administration, ABU, Zaria

Abstract:- The Nigerian tertiary education system consisting the Universities, Polytechnics, Mono-technics and Colleges of Education have persistently faced myriad developmental challenges, with infrastructure deficit as a focal or cardinal point of reference, leading to series of industrial actions that consistently hampered their smooth operations and efficient service delivery. Several interventions from the Tertiary Education Trust Fund (TETFund), Petroleum Training and Development Fund (PTDF) and other governmental institutions have been unable to solve the problems; as such, Public Private Partnership (PPP), a contract arrangement between private and government parties, sharing responsibilities, resources, risks and rewards has been identified as a viable alternative and effective solution to infrastructure gap in the Nigerian tertiary education system. Upon this conviction, the research investigated and assessed possible PPP Models and their compatibility to different situations and peculiarities of the various tertiary education institutions. The research used only secondary data. So data from the Tertiary Education NEEDS assessment, Ministry of Education, Tertiary Education Trust Fund (TETFund), World Bank Documents on PPP, Documents from United Nations Economic and Social Commission for Asian and Pacific (UNESCAP) and Researches on PPP from both internet and printed Journals were utilized. It was discovered that PPPs if adapted to the education system in Nigeria can help to bridge the gaps in infrastructure finance, facilitate and expand equitable access, improve quality of service delivery (quality education) and revitalize all fabrics of educational supports in the system. Although most PPP Models can fit into the Nigerian Tertiary Education Institutions systems, however, the Built Operate Transfer (BOT) Model of Concession and contract and as such the peculiarities of the institutions determine the best possible PPP Option. It is therefore recommended that staff training on PPP be supported; PPP Units created; PPP funds be created by the Ministry of Finance and budget code be created to accommodate Viability Gap Fund (VGF) for easy execution of the PPP projects.

Keywords:- *Public Private Partnership (PPP) Model, Tertiary Education Institutions, Infrastructure, Viability Gap Fund, New Public Management (NPM).*

I. INTRODUCTION

The Nigerian tertiary education system like other sub systems in the state's institutional framework is faced with serious infrastructure vacuum that could not be filled by both regular and special governmental interventions. The over increasing demand by stakeholders to bridge this gap in the atmosphere of limited resources in the country has over the years led to disruption of academic activities through unions' strikes, lock up, demonstration and protest among other industrial actions in Nigeria. This necessitates a search for everlasting solutions to this unending problem through the instrument of the new public management otherwise known as the reinventing government.

The most promising and result oriented New Public Management (NPM) option for the Nigerian tertiary education is the PPP option. This is because it provides myriad short and long term sustainability effects that can arrest the slides in infrastructure and enhance its sustainability over long period of time. By way of definition, UNESCAP (2011) considers PPP as a long term contract between a private party and a government entity for the provision of public services and/or development of public infrastructure in which responsibility and rewards are shared. Additionally, Abdul Quium (2008) identifies four cardinal areas of partnership in PPP to be R4, meaning; Resources, Responsibility, Risk and Rewards. These cardinal areas are captured in the definition of PPP given by the Canadian Council for Public- private partnerships (2009) where it sees PPP as a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.

In PPP arrangements with potential low yields, the public authority intervene to provide financial and non-financial supports to mitigate risks, make the project viable and affordable (ability to pay by the users) for the users. These forms of supports can be in form of Viability Gap Funding, Subsidies and other concessions to the private partner. Traditionally, private partner is compensated through user charges such as toll, roads, airport or port charges; availability payments from the public authority such as PFI, Power Purchase Agreements (PPAs), Water Purchase Agreements (WPAs); and combination of the above in user-based payment structures (Egbewole Qasim Afolabi, 2011).

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Infrastructure being the facilitator for effective learning atmosphere, It is on record that sometimes back in year 2012 an elsewhere Committee on NEEDS assessment in the Nigerian tertiary education was constituted to identify the Gap in infrastructure. The Committee came with disturbing revelations. For examples, they observed that physical infrastructure such as lecture halls and hostel accommodations are severely overcrowded. Student-teacher ratios have skyrocketed and faculty shortages have become a major problem, with an estimated 40 per cent of university positions and 60 per cent of polytechnic positions currently unstaffed (NEED Assessment Report, 2013). The Committee therefore recommended ₦25 Billion Monthly intervention to address most of the gaps identified in the universities.

In this era of limited resources and pressing demands on the side of the government, it is almost impossible for the government to engage in sourcing and financing such gap. This necessitates another well thought and possible workable option which this research aims to uncover, the PPP Option. This paper documents the dominant PPP models, identified PPP risks and risks mitigation and then assesses the potential of these models to act as the 'anchor' of education reforms. The study therefore, aims to assess the PPP models and how such models could be used to bridge the infrastructure gap in the Nigerian Tertiary Education Institutions.

A. *Problem Situation*

The Nigerian Tertiary Education system consists of the Universities, Polytechnics and Colleges of Education. Nigeria presently has a total of 202 universities out of which 49 were federal, 54 state and 99 private (NUC, 2021); 152 polytechnics out of which, 37 Federal Polytechnics, 51 state polytechnics, 64 private Polytechnics (NBTE, 2021) and 205 colleges of education out of which 27 are federal, 51 state and 108 private.

Aggregately, federal government of Nigeria has a combined 113 tertiary education institutions where budgetary allocation by the parent ministry is expected and other regular and special interventions by the two major Federal Government Agencies of Tetfund and PTDF. In addition to the 113 Federal Governments owned institutions, the Tetfund and PTDF have as part of their mandates to finance projects in the States' tertiary educational institutions. With the number of Universities, Polytechnics and Colleges of education under the care of states government amounting to 156 (54 state universities; 51 state polytechnics; and 51 state colleges of education), the total Tertiary education institutions competing for funds from Tetfund and PTDF research grants and scholarships will be 269.

Generally, funding for infrastructure in the Nigerian Tertiary Education Institutions is majorly performed by the Tetfund and funding, prior to and in the aftermath of Tetfund creation has not been adequate. From 1999 to 2018, ASUU has gone on strike at least 15 times (Thecables Lifestyle, 2018). One of the major demands of the union is revitalization of the tertiary education institutions which majorly featured improved infrastructure. However, according to the Memorandum of Understanding (MoU) signed between FGN and ASUU in 2013, about 1.3 trillion is needed for revitalization of the public varsities. This excludes revitalization needs of the Polytechnics and Colleges of education whose reports were not made public. Generally, as captured by the Needs assessment reports of the Nigerian Public Universities (2014), the Nigerian Public Universities are faced with inadequate and dilapidated Physical infrastructure for teaching & learning which includes Lecture Theatres/Auditoria, Classrooms, Laboratories, Workshops/Studios/Gymnasia, Libraries, Staff Offices and Learning resources such as: Laboratory equipment and consumables, Information and Communications Technology (ICT) facilities and services, Books, journals and periodicals, Machines and other research equipment, etc.

The same infrastructure deficit is obtainable in the Polytechnics and Colleges of Education if not more worrisome widening gap than the Universities. These widening gaps in infrastructure and the increasing student enrollment that is adding pressure on the existing infrastructure make private sector involvement in the infrastructure provision not only a welcome development but a necessity for sustainable development and healthy atmosphere in the Nigerian Tertiary Education Institutions. The questions begging for answers are what PPP Models can fit in the Nigerian Tertiary Education Institutions? What are the risks associated with these PPP models and how can they be ameliorated? And finally, what are the possible recommendations for enhancing PPP in the Nigerian Tertiary Education Institution?

B. *Research Objective*

The broad objective of the research is to assess the PPP Models and its compatibility in bridging infrastructure gap in the Nigerian Tertiary Education Institution. The specific objectives are:

1. To examine the PPP Models and their operations
2. To assess the compatibility of the PPP Models to the Nigerian Tertiary Education Institutions
3. Examination of risks associated with the chosen models and ways to ameliorate them
4. To recommend possible ways to enhance the PPP Projects implementation

II. LITERATURE REVIEW AND THEORETICAL FOUNDATIONS

A. *Introduction*

The concept of PPP like many concept in the parlance of social and management sciences has myriads terminal and conceptual connotations as conceived by scholars and practitioners in the government and private circles. This has led the concept to be without universally acceptable definition. In fact, even within the ranks of academicians, there exist divergent views to what constitute the PPP and its associated terminologies. However, despite the disagreements, a common understanding acceptable to all can be deduced as risks allocation, responsibility sharing, rewards sharing and resource contributions are the crystal shining stones of the constituents of the PPP.

Theoretical foundation of the PPP can be traced to the spirit of the New Public Management, particularly the Public Choice Theory and the Agency Theory. In fact, even the PFI as practice in Britain can reliably depend on this foundation. Therefore, this section reviews the definitions of the Nigerian Tertiary Education Institutions, Infrastructure and conceptual and theoretical foundations of the PPP.

B. Polytechnic

A Polytechnic is technical institution offering post-secondary technical education programmes leading to the award of diplomas/certificates; such as the National Diploma (ND) and Higher National Diploma (HND). The products of these institutions will have entry level employment skills to function as technicians, higher technicians/technologists or professionals, depending on the level of training in their fields of specialization. A Polytechnic may also be involved in applied research, and perform any other functions that its council may require it to perform from time to time. (NBTE, 2021).

C. University

A University is an institution of higher education, usually, comprising a college of liberal arts and sciences and graduate and professional schools and having the authority to confer degrees in various fields of study. A university differs from a college in that it is usually larger, has a broader curriculum and offers graduate and professional degrees in addition to undergraduates degrees (Britannica, 2021)

D. College of Education

This refers to tertiary educational institutions established for the purpose of training future teachers whose services are needed at the basic and post basic levels. Certain arrangements in Nigeria has seen Colleges of Education providing post graduate training in education and degree programmes under University supervision.

E. Concept of PPP

Several meanings, interpretations and connotations were given by different scholars, practitioners and bureaucrats as to what PPP embodies. This is not unconnected with the multi-cultural and multi-dimensional nature of the concept. In fact, just like most social science concepts, the PPP concept is yet to have universal connotation and precision.

According to the South African PPP Manual (2004), the concept of PPP by way of definition is a contract between a public sector institution and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project.

A Public-Private Partnership is a contractual agreement between a public agency (federal, state or local) 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. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility (Nat. Council on PPP USA)

In Canada, the Council for Public–Private Partnerships (2004) defines a PPP as a "cooperative venture between the public and private sectors, built on the expertise of each partner, which best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards".

In Hong Kong, Efficiency Unit (EU) has developed another definition It introduced the concept of PPP for the maintenance of infrastructure facilities in Hong Kong, and defines a PPP as "arrangements where the public and private sectors both bring their complementary skills to a project, with varying levels of involvement and responsibility, for the purpose of providing public services or projects".

- *The European Commission (2011) has also adopted the following definition:*

PPPs are forms of cooperation between public authorities and the private sector that aim to modernize the delivery of infrastructure and strategic public services. In some cases, PPPs involve the financing, design, construction, renovation, management or maintenance of an infrastructure asset; in others, they incorporate the provision of a service traditionally delivered by public institutions. Whilst the principal focus of PPPs should be on promoting efficiency in public services through risk sharing and harnessing private sector expertise, they can also relieve the immediate pressure on public finances by providing an additional source of capital. In turn, public sector participation in a project may offer important safeguards for private investors, in particular the stability of long term cash-flows from public finances, and can incorporate important social or environmental benefits into a project.

From the foregoing definitions and connotations, PPP involves contractual cooperation and commitment of public and private parties to undertake a project or deliver a service where resources, risk, rewards, responsibilities shared at a proportion that best suit the participating parties. In a PPP arrangement, the private party can be single firm or consortium. At the same time, an entry of an NGO or not for profit organization can help to make a PPP project viable and implementable. One of the qualifying features of the PPP is the large financial muscles of the investment. That is also part of the basic reasons for private party involvement due lack or insufficient funds to deliver through the conventional (traditional) procurement process.

➢ *The Concept of Infrastructure/School Infrastructure*

According to Amanze Okere (2018), Infrastructure refers to those physical structures that facilitate the production of goods and services, without themselves being part of the production process. They are often referred to as the 'stock of capital goods', they include highways, airports, harbors, utility production and distributive systems, water and sewer systems, communication networks and energy networks. For example, an access road to an agricultural community facilitates speedy evacuation of agricultural products, but does not form part of the agricultural process itself.

The Oxford English Dictionary defines infrastructure as: "The basic physical and organizational structures and facilities (for example, buildings, roads, and power supplies) needed for the operation of a society or enterprise". This may include complete systems, but also parts of it, such as structures, plants, facilities or equipment generally necessary for the provision of a public service or subject to public use.

It can be deduced from the above definition that school infrastructure refers to those physical and non- physical structures that facilitate and enhance learning and research activities. They provide comfort and ensure easy transportation and communication learning and its associated collaborators.

F. PPP Models/Forms of PPP

PPP models are basically classified in relation to ownership of capital assets, responsibility for the investment, assumption of risks, and duration of contracts (primer, 2008). Broadly speaking, there are five categories, types, forms or models of the PPP. These are:

- Turnkey Projects
- Affermage/Lease
- Supply and Management Contracts
- Concessions
- Private Ownership of Assets.

➢ *Turnkey/Design Build*

Turnkey is just conventional or traditional public sector procurement model for infrastructure facilities where a private contractor or company is selected through a competitive bidding process. The private contractor or company designs and builds a facility for a fixed fee, rate or total cost, which is one of the key criteria in selecting the winning bid. The design and construction risks are assumed by the private contractor. However, the private sector investment is usually low as the total investment costs are paid by the public authority, though instalmentally during the construction phase. Typically, in this type of arrangement there is no strong incentive for early completion of a project because the private contractor waits for the public authorities to assess and make payment at every stage of work progress during the construction time. This type of private sector participation is also known as Design-Build.

➢ *Design Build Finance (DBF)*

A DBF is almost similar to a DB contractual arrangement as just like the DB, the government receives the asset once construction is completed and also retains the long term responsibilities and risks potentials. However, in a DBF PPP arrangement, the Public authority defers payment to contractor and thus makes him a lender. So, payments only begin when the construction is completed. The striking difference between DB and DBF contracts is in the timing of payment and the status of the DBF contractor.

➢ *Concessions*

Concessions are types of PPP in which the Public authority defines and grants specific rights to private company (s) to build and operate a facility for a fixed period of time. It involves the responsibility for the full delivery of services in a specified area, including construction, operation, maintenance, collection, management, and rehabilitation of the system. The Government mostly, retains the ultimate ownership of the facility and/or right to supply the services. In concession arrangements/contracts, payments can take the form of concessionaire paying the government an agreed fee from the generated user charges for the concession rights or the government paying the concessionaire an agreed amount as contained in the contract agreement.

Government usually make payments to concessionaire to make projects commercially viable, makes the service affordable by the end users or reduce the level of commercial risk taken by the private sector. These kinds of governmental intervention are usually called Viability Gap Fund or subsidies and they provide a window for Government role in ensuring that the Concessionaire meets performance standards (output specifications) and value for money for the user fees. Typical concessions rely on user charges and cover the periods range between 5 to 50 years. However, Concessions may be awarded to concessionaires under two types of contractual arrangements of Franchise and BOT arrangements.

➢ *Build Operate Transfer (BOT):*

The Build-Operate-Transfer model is the most popular PPP model that is sometimes referred PPP itself or used interchangeably with the PPP. In the BOT model, the private partner (concessionaire) builds and finances the construction of the public facility and uses it to provide service under the control of the public entity. The private partner operate the facility under the long-term concession and upon the expiration of the concession period, the facility is transferred back to the public partner.

➢ *Finance Only (FO)*

In the Finance Only partnerships, the project is funded directly by the private partner or through long-term leases, bonds or tax subsidy. A private company can finance a public project in return for tax breaks, reduced tax exposure, publicity, or statutory requirements. The latest arrangement between the Federal Government of Nigeria and Dangote Group of

Companies on concrete roads is a typical example of finance only arrangement.

- *Build-Rehabilitate-Operate-Transfer (BROT)*

Under the Build-Rehabilitate-Operate-Transfer arrangement, a private developer builds an add-on to an existing facility or completes a partially built facility and rehabilitates existing assets, then operates and maintains the facility at its own risk for the contract period. BROT is a popular form of PPP in the water sector. The Kaduna Polytechnic Hostels Renovation Project though tagged BOT, is a clear picture of BROT PPP arrangement.

- *Design Build Operate (DBO)*

DBO is a PPP arrangement where the private partner designs and builds a government facility according to the requirements and specifications of the public partner and at an agreed fixed price. The public entity bears financing and costs and once the construction is completed, the private partner takes the property in a long-term lease to provide service.

- *Buy-Build-Operate (BBO):*

In the Buy-Build-Operate model, the private partner buys the public facility under the contract that the assets are to be upgraded and operated for a specified period of time. The private partner also provides services to the public partner and/or end users. By expiration of the term, the private partner retains ownership over the public asset. This is the kind of agreement entered to prior to privatization of the Nigerian Telecommunication Companies (NITEL).

- *Design Build Finance Operate Manage (DBFOM)/DBFM*

DBFOM contractual situation is an arrangement where the private partner develops the infrastructure with equity and loans and manages the infrastructure for its life cycle assuming life-cycle cost risks in addition to current maintenance and operations risks. Usually, to mitigate risks, the private partner establishes an SPV to conduct all businesses.

The contractor is often referred to as a DBFM partner when operations are not included in the scope of the contract.

- *Design, Build, Operate and Maintain (DBOM)/ DBM*

DBOM is PPP contract which is financed by the government against the traditional budgetary allocation, following the conventional procurement method but in which the private partner carries out the construction works, future operations, and maintenance.

However, if the private partner is not responsible for operating the facility, the contract is usually referred to as a DBM. In a DBOM contract, maintenance work is pre-contracted and is paid for directly by the government at a pre-agreed price. Also, construction work is paid for directly as work progresses and the Operation and Maintenance (O&M) price is tied to performance.

- *Build Own Operate Transfer (BOOT):*

In this model, the private partner designs, builds, finances, and operates the public facility, while retaining its ownership under the franchise given by the public entity. The private partner charges fees to the public entity and/or end users for the provided services. At the end of the franchise period, the ownership of the facility is transferred back to the public partner without compensation to the private partner.

- *Franchise/Private Ownership*

Franchise is an arrangement where ownership of asset is relinquished partially or fully by the public authority to the private partner. In this kind of arrangement, three PPP models can be identified to fit into the franchise/Private ownership contract. These are the BOO, PFI and Divestiture.

- *Build-Own-Operate/ Design-Build-Finance-Operate*

In the Build-Own-Operate (BOO)/Design-Build-Finance-Operate, the private sector builds, owns and operates a facility, and sells the product/service to its users or beneficiaries. In this kind of arrangement, the public authority participates only in control and licenses. This is the most common form of private participation in the power sector in many countries including Nigerian Power Sector (Distribution Companies). The BOO model requires the private partner to build and manage the properties and facilities needed by the public in ownership without obligation to transfer the assets to the public partner while the regulation and control of services provided by the private partner are to ensure standards, safety and affordability.

- *Private Finance Initiative (PFI)*

The Private Finance Initiative (PFI) model, the private partner just like in the BOO model, builds, owns and operates a facility but the public authority purchases the services from the private company through a long-term payment agreement. PFI projects therefore, bear direct financial obligations to government in addition to certain specified and unspecified contingent liabilities that may arise due to loan guarantees provided to lenders and failure of the public or private party to discharge certain contractual responsibilities, particularly in terms of loan repayments.

In the PFI model, asset ownership at the end of the contract period may or may not be transferred to the public sector depending on the contract entered between the public and private partners. Annuity model for financing is another variant of PFI where a selected private bidder is awarded a contract to develop a project, like a section of the highway and to maintain it over the whole contract period for an annual or semi- annual fixed payments for his investments in the project. This means that concessionaire will not bear the commercial risks involved with project operation as no user charges are collected by him.

- *Divestiture*

Divestiture implies government relinquishing certain ownership stake in a public entity to the private partner (i. e. a private entity buys an equity stake in a state-owned enterprise).

However, the private stake may or may not imply private management of the enterprise. True privatization (full privatization), involves a transfer of deed of title from the public sector to a private undertaking (Primer, 2008). However, PPP is not Privation, as such; divestiture in the PPP sense means joint ownership. So Joint venture (JV) is an example of divestiture in the PPP parlance. Divestiture can be done either through outright sale or through public floatation of shares of a previously corporatized state enterprise.

➢ *Lease/Affermage*

Lease arrangement in PPP is a contractual condition whereby the operator also named the leaseholder is responsible for operating and maintaining an existing government infrastructure facility and services, but generally the operator is not required to make any large investment. Lease arrangement are usually short, however, where a long term lease contract is signed in an arrangement such as the build-rehabilitate-operate-transfer, the operator may be required to make a significant level of investment for the sustainability of the business.

Affermage is similar to lease in contractual form. The basic difference is in technicality. In a lease arrangement, the leaseholder retains revenue collected from users of the public facility and makes a specified lease fee payment as contained in the contractual agreement where in affermage, the operator and the public authority share revenue from users of the public facility.

In a lease/affermage arrangement, the public authority bears the investment risks while the operator bears the operational risks.

➢ *Management Contract/ Service Contract/Maintenance Contract*

Management Contract is a contractual arrangement for the management of a part or whole of a public enterprise by the private sector company. This helps to bring skills and expertise of the private sector to public organization in service design and delivery, operational control, labour management and equipment procurement. Ownership of the enterprise still belongs to the public authority, likewise commercial risks. The private sector partner is paid a performance based agreed fees for the management of the enterprise.

Supply/Service Contract is a variant of the management contract where a private partner is contracted by a public authority to supply equipment, raw materials, energy and power, and labour to the public organization on an agreed terms. Catering, cleaning, medical, luggage handling, security, and transport services for staff can be undertaken by private sector service providers. These arrangements are usually known as outsourcing.

Maintenance Contract is an arrangement where a public facility or assets is contracted to be maintained by a private company for an agreed fees. Such companies are usually called asset management companies or maintenance agencies. Maintenance contract are usually entered into by the public companies due to their poor maintenance culture.

G. Other Models of PPP

➢ *Tripartite Partnership (Non-Governmental Organization (NGO), Private Investor and Government)*

This is a newly proposed framework which is called Public Private Not-for-profit Partnerships (PPNP) and is an innovation in facilitating and enhancing viabilities of the PPP projects by introducing a third party (NGO) in the PPP framework. According to Erick Solana (2014), the model distributes responsibilities to each partner in a way that a project in a developing country can obtain the most value for money. The NGO's intervention in most developing countries, according to PPNP is to reduce the high cost of capital for private companies which withhold many infrastructure projects by increasing their cost of maintenance; accept the allocation of certain risks being a risk taker and facilitate their goal of humanitarian and social provision of goods and services.

➢ *Property Swap Model*

The property swap model is the innovation and discovery of the researcher having observed over time the history and positions of certain government institutions, particularly the tertiary education institutions and specifically Kaduna Polytechnic having in its possession high value properties residing in the choice centres of Kaduna Metropolitan cities. A professional valuation has proven that new PPP Model for revitalization of the Polytechnic and other sister institutions is viable and obtainable using the model.

The property swap arrangement is conceived as arrangement where a governmental property is given for a project to be delivered by the private partner. Valuation for each of the project/ property must be ascertained, profit margin established, project output specification documented, project delivery and timeline put in place and exchange (Swap) takes place through the handover of the property for the project.

H. Theoretical Foundations of the PPP

➢ *New Public Management Theory*

The New Public Management (NPM) refers to a series of novel approaches to public administration and management that emerged in a number of OECD countries in the 1980s. The NPM model arose in reaction to the limitations of the old public administration in adjusting to the demands of a competitive market economy. While cost containment was a key driver in the adoption of NPM approaches, injecting principles of competition and private sector management lay at the heart of the NPM approach. The key elements of the NPM can be summarized as follows (Osborne, 2006):

- An attention to lessons from private-sector management;
- The growth both of hands-on "management", in its own right and not as an offshoot of professionalism, and of

"arm's-length" organizations where policy implementation is organizationally distanced from the policymakers (as opposed to the "inter-personal" distancing of the policy/administration split;
- A focus upon entrepreneurial leadership within public service organizations;
- An emphasis on input and output control and evaluation and on performance management and audit; The disaggregation of public services to their most basic units and a focus on their cost management; and
- The growth of use of markets, competition and contracts for resource allocation and service delivery within public services.
- The PPP models can be said to be birth child of the NPM and as such, the inherent characteristic of the PPP are geared towards fulfilling the mandates of the NPM. Private sector participation and management style can be found in Management Contracts and all other PPP Model. Competition is enhanced in the PPP arrangement through competitive bidding process during the procurement phase while innovation and entrepreneurship are distinctive characteristics of the private partners that lead to PPP arrangement.

III. CHALLENGES OF THE PPP IN NIGERIA

A. Weak Government Sponsors:

In Nigeria, there is generally inadequate understanding of the PPP concept and its related effects at addressing most financial and infrastructure problems. Most governments' officials including the bureaucrats in the MDAs lack the skills required to drive PPPs. That has resulted to rejection of advances of the private sector including well-structured proposals like the Outline Business Case.

B. Institutional Problems/Absence of PPP Units in MDAs

Most MDAs have no PPP Units as no jurisdiction is given in the Public service to its creation. Due to this, there is absolute no knowledge of PPP in most MDAs. Where such exists, fear of loss of control, reductions in staff numbers and limited PPP experience make some staff of MDAs skeptical about it.

C. Absence of PPP Funds

In most developed economies of the world, there exist PPP Funds that help to advance the course PPP projects development, procurement and implementation. In Nigeria, such funds are not established. This has led to high cost of PPP project development. In some countries like India and China, the funds help to provide incentives such as the VGF and Subsidies.

D. Lack of Understanding of the PPP by the Private Sector/ Financial Institutions

Investment in PPP usually fetch some handsome of profits/. However, most private companies and specifically, financial institutions have become skeptical about conducting businesses with the SPVs due to its project finance characteristics, risks disposition and lack of long tenor funding (loans). This is why most PPPs in Nigeria were not financed by debt from local financial institutions.

E. Affordability to Pay by Users

Due to low purchasing power of the average Nigerians, there is always concern and skeptical in the social circle for any PPP in the social infrastructure that involves user charges. This is because tariffs and fees are likely to increase when PPPs are implemented.

F. Shortages and Disorganization of Transaction Advisers

Transaction advisers are individuals and corporate organizations that specialize in PPP project structuring. However, in countries like Canada and China, there exist for a of PPP experts that sit to deliberate on issues surrounding PPP and at times work to develop projects for the PPP markets. Apart from lack of any forum for PPP discussions, PPP transaction advisory roles are mostly provided by corporate experts not PPP trained and licensed experts. This is due to the inadequate number of the TAs and lack of certified association of PPP practitioners.

G. Roles of PPP in Education

PPP plays significant roles in educational provision right from the crèche to post graduate studies. Basically PPP in Education can be investment in physical, non-physical infrastructure like the social infrastructure and public goods. Specifically, PPP in Education involves investment in the four areas of educational provision and support. These are as follow:
- Facilitation of service delivery
- Additional finance for education,
- Expansion of equitable access and
- Improvement of learning outcome i.e. quality of education.

H. Project Risks in PPP

Risks are inevitable in business undertaking. Risks in PPP cut across the PPP project life circle starting from Project Identification in the development stage, to project procurement and implementation at the closing stage. Just like any other infrastructure project finance arrangement PPP Projects have some identifiable risks characteristics.

Padiyar *et al*. (2008) came with twelve (12) risks associated with the PPP project; these are: market risk, financial risks, commercial risks, technological risk, political and social risks, legal and regulatory risks, force majeure risks, operational and maintenance risks, cost overrun risks, land acquisition risks, environmental risks and delays in project development. Similarly, Antonio Estache and John Strong in UNESCAP (2011) identified 19 different PPP projects risks that are shared among PPP parties. These are: construction overruns/delays, change in legal regimes, land acquisition, approvals/licences/permits, variations, taxation, tariffs and charges, revenue/traffic/demand, operation, maintenance, defects liability, natural disaster, industrial action, environmental, civil disobedience, insurance, force majeure, confiscation and interest rate risk.

Land acquisition risks, approvals and licensing, taxations, environmental concerns and interest rates are some of the risks can be best handle by the public party. However, construction risks, operation, maintenance and finance are usually left to the private partner. Certain risks are shared among the participation parties on the principle that risks are allocated to the party that can best manage them.

I. PPP Risks Mitigation

Risks mitigation in the PPP arrangement is usually pre-determined. This is because Private and public partners in collaboration with Transaction advisor usually undertake due diligence design and analysis to achieving good balancing in identifying, sharing, and mitigating risks. These are done in risks allocation prior to financial close. So, it suffice to say that PPP has the advantages in addressing risks, which is a sharing/allocating risk to the party that is best equipped to manage the risks even during feasibility and project development phase.

Despite its inherent ability to mitigate risks, PPPs need the services of the TAs for effective due diligence and risks allocation. Also, existence of PPP funds will help to settle any contingent liability that may hamper the smooth running or execution of the PPP project.

Sincerity, openness, flexibility as well as effective documentation of contractual agreements help to mitigate PPP Risks.

In addition, introduction of the 'third sector', that is the NGOs can help to facilitate international collaboration and lure low interest long term loans that usually make PPPs financially viable.

Private partners' professionalism and maturity can go a long way in mitigating PPP risks.

J. Compatibility of Each Model to Different Situations in the Nigerian Tertiary Education System

Private sector engagement in Pubic Educational systems is practiced all over the world with much success stories. For example in Canada, the Province of Nova Scotia used a P3 model to build 39 schools in the late 1990s; UK, Australia, US, Colombia, Pakistan, Philippine, New Zealand at one point and another have domesticated the PPP in their educational provision and management, with New Zealand government giving independent private schools government subsidies that are estimated at 25 to 35 percent of the average per pupil cost of educating a child in a government school (LaRocque, 2008 and Patrinos, et al. 2009)

The following PPP Models can be rest assured to be practicable and compatible to the Nigerian Tertiary Educational system:

- *Concessions*

The most popular concession model of the PPP is the BOT. The BOT can be used in students' Hostels Provision, Laboratories and school clinics. This is because these three key infrastructure needs of the Nigerian Tertiary Education System allows for user charges for their services. However, PPPs are expected to raise standards and improve service delivery and as such, higher charges may be experienced. To mitigate that, a VGF window should be incorporated in the Financial Model where NGOs or Public authority will intervene to make the Project viable and affordable to the investor and students (users) respectively.

The DBFM can best fit in the class room, office and lecture theatre infrastructures. Here, the private partner builds the infrastructure and collect annuity payment from the government that will be spread over some numbers of years. Through this, several infrastructure facilities can be built and educational access, delivery and infrastructure will be provided within the shortest possible time. Also, a similar deferred payment for infrastructure buildings and facilities in schools can be found in PPP arrangement typical of DBM.

Finance Only (FO) Model can be adapted to facility development in the Nigerian Tertiary Educational Institution in such a way that giant companies are enjoined to submit infrastructure project proposals to the government in exchange for tax holidays, subsidies or future payments. Here, in order to maintain orderliness and cost management, proximity should be considered and competition enhanced to ensure maximum or at least optimum value for money is achieved.

The BOO and PFI Models can also be supported by policy to enhance competition in Hostels provision, development of sport facilities and heritage centres (Social centres) in the school premises. Also, independent ICT centres can be established using these models as services can lure payments from users. However, where business viability cannot be achieved under the projected financial analysis, interventions can be sought to make the business financially viable. This is because the investment will have both economic effects and improve presence of infrastructure. PFIs in school infrastructure can be found in many PPP arrangements in the UK.

Lease/ affermage can also be utilized by the Nigerian tertiary educational institutions in areas such as school assets built for business sake. These includes; hostels, hotels and guest inn, lands used for agricultural activities, farm machineries, shops, conference centres and other structures established for economic purposes.

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PPP schools and department can also be established in a joint venture arrangement. Here services can be provided by the public partner while management of the project including facility maintenance left with the private partner. Here, right programmes must be selected to allow for the participation of substantial number of students to cut down fees and ensure affordability principle.

IV. SUMMARY AND CONCLUSION

PPPs in Educational Infrastructure has been acknowledge and practiced all over the world, Nigeria inclusive. However, best practices in infrastructure provision in education are done according to certain procedures tagged as models of the PPP. PPP models provide simple explanatory procedure for project development, procurement and implementation. Challenges to PPP in Nigeria can be seen in weak government supports, absence of organized TAs, weak institutional and financial institutions and lack of PPP funds, among others. To mitigate that, concerted effort must be made by government in training of bureaucrats, establishment of PPP oriented policies including the PPP funds; while NGOs intervention and Organization of TAs and reorientation of the local financial institutions will go a long way in mitigating the challenges in PPP project circle. The BOT, PFI, BOO and other models mentioned can help to reduce infrastructure gap in the Nigerian Education Sector if implemented.

In conclusion, the research observed that PPP are effective ways to reduced or solve infrastructure problems Nigerian Tertiary Education Sector which impedes its smooth running and leads to recurring industrial disputes.

RECOMMENDATIONS

In line with the research findings the following steps are recommended for the realization of PPP in Nigerian Tertiary Education Sector for effective running of its activities and reduction in infrastructure gap:

- The government should by way of legislation established PPP funds to help in the PPP project development and settling of the possible VGF
- Also, legislation be made to allow for low interest on loans for PPPs as well as the establishment of professional certification organization for the PPP practitioners.
- There should also be the establishment of PPP Units in all MDAs with recurring training being institutionalized for effective PPP processing in Project identification, development, screening and implementation.
- The TAs should establish an annual discussion forum for deliberations on development in the spheres of the PPP
- NGOs should improve participation in the PPP processes including seeking for intervention from their international collaborators.
- Nigerian Tertiary Education Institutions who have properties in choice areas can trade should trade that for more productive school facilities in an open competitive procurement process.

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