



## Analyzing the environmental impact of public-private partnerships in Nigeria

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### Abstract

The use of Public-Private Partnerships (PPP) in Nigeria as a procurement method for the public projects came with great expectation that the critical social and economic infrastructures would be addressed soon. But after a few years of implementation, there is still no appreciable progress in exploring the PPP method to develop the critical public infrastructure. The objective of this paper is to determine the impact of PPP projects on the socio-economic factors in the immediate community. The study was carried out using the review of case studies of ongoing PPP projects. Four cases were reviewed to obtain the relevant information. The study revealed that the projects improved the socio-economic status of the immediate community significantly due to an increase in economic activities. The value of properties also improved exponentially. It is recommended that government should help address the challenges of the implementation and provide possible solutions for more project deliveries.

**Keywords:** Developing countries; environmental impact; public infrastructure; public-private partnership.

## 1. Introduction

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The discussion of the post-2015 development agenda by the United Nations Organization revived the debate over the effectiveness of Public-Private Partnerships (PPP) as a construction procurement method (Ruiz-Nunez *et al.*, 2016). This agenda focuses on economic growth, jobs, income distribution, and poverty reduction. PPP is a method of construction that could assist governments in delivering public projects for economic growth and development. This may lead to job creation and a reduction in the poverty rate, especially in developing countries. However, it is a fact that construction investments contribute significantly to the development and growth of local and national economies, as well as adding social value (Ibrahim and Price, 2020).

The noticeable characteristics of the international development project environment create special problems for the construction managers (Kwak, 2002) while the governments around the world differ greatly in their social and economic structure, especially on their infrastructure endowment (Galilea & Medda, 2009). Also, the economic and financial sectors depend on the level of general economic activity with the available resources to carry out the work and it includes the economic competition of various degrees around the appointment of all the parties to the building project (Akanni *et al.*, 2015).

The introduction of the public-private partnership (PPP) method of procurement to deliver public projects in developing countries came with the hope of improving infrastructure and economic growth. In Nigeria, public opposition to PPP projects is prevalent (Amadi *et al.*, 2018) and this contributes to the low level of PPP projects implementation for infrastructural projects. However, the objective of this study is to determine the impact of PPP projects on the socio-economic factors in the immediate community.

### **1.1. Literature Review**

Public-Private Partnership is a procurement method that is increasingly becoming a preferred option among various countries both developed and developing nations for different purposes and in different forms (Ahadzi and Bowles, 2004; Leiringer, 2006; Dulaimi *et al.*, 2010; Song, 2019; Wang and Guo, 2019). The different types and models of PPP have been adopted by many government agencies across the world while past studies have highlighted various types and models of PPP contract arrangements (Earl and Regan, 2003; Cartlidge, 2006; Levinson *et al.*, 2006; Cheung, 2009; Kwak *et al.*, 2009; Takim *et al.*, 2009; Amade, 2012; Almarri and Abu-Hijleh, 2017; Nuwagada and Molokwane, 2020). The PPP has been seen and regarded as a method that can solve most of the shortcomings of the traditional method of procurement while complementing the efforts of governments in the provision of public projects (Zhang and Chen, 2012; Raisbeck *et al.*, 2010). The role of private funding is projected to increase shortly since the infrastructure needs reinvestment and maintenance, climate policies require a radical restructuring of transportation systems, and public finances in many countries will have to be consolidated after the Covid-19 pandemic (Hultkrantz, 2020).

The PPP method is adopted so that the limited available resources can be channeled to other sectors (Udechukwu, 2012). It is an agreement to deliver public goods through private entities (Amadi and Carrillo, 2018). However, since the commencement of the public-private partnership system for the procurement of public works, the expected increase in the number of projects delivered by the private sector through the system is at low ebb. According to the report of the Royal Institute of Chartered Surveyors (RICS), the procurement of public works and services through public-private partnerships remains comparatively low as a percentage of the total public investments in infrastructure (RICS, 2011). However, public-private partnership is being adopted to provide infrastructure due to a shortage of government funds and experience (Song *et al.*, 2018). Also, the high demand for urban regeneration and shortage of capital in China has increased the growth of the PPP method for achieving urban sustainability (Zhang *et al.*, 2019). PPP schemes have

also been used for so many years as an effective approach to improving water infrastructure and services (Tariq and Zhang, 2020).

Projects' execution and successes are influenced by their complexities and environmental factors (Ishtiaq and Jahanzaib, 2017). These factors are part of the management issues that must be addressed by the parties to the project. The PPPs are believed to maximize the efficiency gains as agreed by most economists and construction experts (Ruiz-Nunez *et al.*, 2016). Some of these gains are: (i) improving project selection (ii) life cycle costs are optimized with better infrastructure quality and adequate maintenance (iii) it can reduce the project's overall cost through effective risk allocation and (iv) it incentivizes the use of innovative solutions. Achieving efficiency gain in the provision of infrastructure assets and services is the major valid motivation for PPP (Ruiz-Nunez *et al.*, 2016). These gains are normally assessed using the ratio of output to inputs while this can be improved by producing the same output at a lower cost (inputs) or producing more and better outputs at the same cost (inputs).

The issues on economic factors relate to the economic feasibility of the project which includes the changes in the domestic economy of the country that received the project or the non-accurate project development due to unpredictable economic conditions (Kwak, 2002). Many case studies show that PPP projects have produced an increased number of new direct and indirect jobs (Ruiz-Nunez *et al.*, 2016). The social factors include the social environment of the country receiving the project that emanated from (i) the hostility of the project participants due to religion, customs, and ethnicity (ii) social uprising due to the polarization of social strata (iii) security of the stakeholders (iv) overestimation of capacity of the beneficiaries and (v) resistance of the community to new social values and standards or to absorb the effects of economic change or new technology (Kwak, 2002). Same countries situated in a particular region tend to share similar culture, socioeconomic and political characteristics with similar laws and reactions to certain situations and problems (Galilea & Medda, 2009).

## **2. Materials and Method**

A qualitative research method was adopted for this study in ascertaining the impact of PPP projects on the immediate community. So, the case studies review approach was used for this study. Four projects were identified as case studies that represent both success and failure in the PPP projects implementation in the country. The first case is the Airport terminal that was constructed to accommodate the high volume of domestic air transport in Lagos, the Commercial Capital. It was the first major PPP project delivered in the country. The second case is an important highway that connects the industrial hub in Lagos, the commercial capital of Nigeria in the Southwestern part of the country. These two cases could be regarded as successful PPP projects. The third case was the proposed major highway that connects the same major cities in the South-Western part of the country. Then, the fourth case was a proposed bridge over the longest river in Nigeria in the South-Eastern part. The documents published on the various projects were reviewed as evidence of the activities that surround the implementation of the project. Also, some of the experts on each project were contacted to obtain information on the projects covering public and private sector participants. The qualitative data obtained from the study were analyzed through content analysis procedures.

## **3. Results**

### **3.1. Case Studies of PPP Projects**

Four PPP projects in Nigeria were reviewed to understand the level of their impacts on the social and economic factors of the immediate community. The first two projects reported below were regarded as being successful in the delivery of infrastructure through PPP while the third project failed to reach a financial close after four years of handing over the site to the investor and was

eventually revoked. The Murtala Muhammed Airport, Lagos is the first PPP project in Nigeria while the Lekki-Ajah Expressway, Lagos is the first highway PPP project in Nigeria.

### **3.2. Murtala Muhammed Airport, Lagos**

The domestic terminal of Murtala Muhammed Airport, Lagos is the first PPP infrastructural project in Nigeria. This was used to experiment with the usage of private sector participants to undertake and deliver public services which is the primary duty of the government. Bi-Courtney Aviation Services Limited (BASL) is a private investor that signed an agreement with the Federal Airports Authority of Nigeria (FAAN) in 2003 to reconstruct and operate the domestic terminal of the Airport. This project was completed in 2007 at the cost of about a 245million US Dollars and started operation in the same year with a concession period of 36 years. The development of the airport had contributed to the development of the subsector of the economy through the creation of jobs and infrastructural facilities that encouraged more investors in the sector. This project showed an indication that the infrastructure deficit could be reduced through the implementation of public projects using the PPP arrangement. However, most of the participants had little experience in the PPP projects being the first in the country. The operation is still in operation with its challenges, especially with the public sector participants.

### **3.3. Lekki-Epe Expressway, Lagos**

The Lekki-Ajah Road expansion and modernization is the first highway delivered under the PPP arrangement in Nigeria. The project was contracted out by the Lagos State Government to Lekki Concession Company (LCC) and valued at 50 billion Nigerian Naira (USD 310 million) (Nigeria PPP Review, 2012). LCC is a Special Purpose Vehicle company (SPV) formed by ARM, an asset management firm in Nigeria. The contract was signed between Lagos State Government and LCC in 2006 for a 30-year concession to design, finance, construct, operate, maintain, and transfer the road. In 2013, the Lagos State Government decided to buy-back the Lekki Concession from ARM Group of Companies to save the project from failure due to new developments that were not envisaged when the agreement was signed in 2006. The concessionaire only spent 5 years on the project out of the total 30-year agreement. The initial stage of this project did not pass-through a thorough planning due to the fact that the government was interested in quick delivery of the project to score political points. The public users were not in support of the project because of the toll collection, and this led to litigation in court to stop the concession.

### **3.4. Lagos - Ibadan Expressway, Southwest**

**The** Federal Ministry of Works signed an agreement with Bi-Courtney Highway Services Ltd (BHSL) in 2009 for the design-build-operate-transfer (DBOT) toll road of the Lagos-Ibadan Expressway. The project was for the reconstruction, expansion, and modernization of the 105km highway which was constructed in the 1970s. The proposed 25 years concession was valued at about a 750million US Dollars. It was projected that, by the end of the construction period of three years, the financial commitment to the project could increase to 1.062billion US Dollars with the 20% interest rate. The construction of the project was planned to be in four phases. The project debt was to be settled through toll charges and the income was expected at about 187million to 312million US Dollars per year. The project could be seen as being viable, but the contract was terminated in November 2012. It could not achieve financial close after about three years of handing over the site to the private partner. The road connects Lagos, the commercial capital of Nigeria, with other parts of the country and it is the busiest road. The Lagos-Ibadan road is very significant due to its economic importance. "The selection process was not competitive, and the agreement was signed without design and evidence of financing" (Ahmed, 2011; Omigbodun, 2012).

### **3.5. Second River Niger Bridge**

The Second Niger Bridge is the proposed bridge over the River Niger in Southeastern Nigeria that connects the region to other parts of the country. The bridge is about 1.6km long and furnished with other ancillary infrastructure including a 10.3 km highway. This project is being proposed to be completed in the year 2022. The bridge was initiated under the administration of Goodluck Jonathan and is being sustained by President Muhammadu Buhari. The project was conceived as a public-private partnership (PPP) arrangement but it could not reach financial close before the administration that started it. The new government withdrew from the arrangement and replaced it with the traditional procurement method. It serves as a major road connection, bridging the cities of Asaba on the west bank and Onitsha on the east bank, and is part of the Trans-African Highway between Lagos and Mombasa in Kenya, in addition to being the main east-west connection within Nigeria. This project is a segment of a new motorway ring that aims to minimize traffic congestion on the old bridge and strengthen the entire region generally.

#### 4. Discussion

The findings from the study indicate that the projects are critical to the development of socio-economic development of the immediate environment of the project sites. These include economic growth, job creation, technological advancement, and international joint ventures. The results of the study from the two successful PPP projects showed that the economic activities in the immediate community increased with the progress of the projects. This is similar to the findings of Kwofie, Afram & Botchway (2016). The properties in the community increased in value and the concentration of the business was well noticed. The rate of increase in business activities around the other two unsuccessful projects showed very little growth compared to those mentioned earlier. The evidence of the economic activities was noticed in case one.

There is more aircraft parking with an increase in the number of airlines using the new terminal (Ponjavic & Karabegovic, 2019). Also, some local flights relocated to this terminal because of the new equipment and facilities that are provided. Some of the passengers interviewed confirmed the presence of a better environment that encouraged them to patronize the airlines using the new terminal. So, the increase in the volume of passengers means more revenue for the government. The same scenario plays out in the second case. This project is the first highway PPP project in the country and the Lagos State government is the client. Better road networks were provided, and more vehicles ply the road daily. This shows more revenue for the government.

The creation of jobs is linked with the increase in economic activities in a particular location (Malecki, 2018). The two projects provided jobs for the teeming population of the citizens through direct and indirect job creation. Also, modern technologies were imported and installed for the daily businesses on these projects. Case two combined the manual and automated methods of payments at the toll plaza for the vehicles plying the road.

While case one could attract enough capital for the project from the local financial institutions the second case got the funds from foreign banks to finance the project. The amount required with a long-term repayment package may be too much for local partners to fund. So, it was evidenced that PPP encourages international joint ventures. However, the third and fourth cases did very little to attract foreign investment and joint ventures due to the little progress achieved in the implementation.

Some of the lessons learned from the four PPP projects reported above could be summarized below:

- (a) The provision of better facilities helped increase patronage, hence the growth in economic activities.
- (b) The viability of the cases one and two projects helped in attracting the financial institutions in funding the project.

- (c) The implementation of PPP projects in the country creates more jobs for the citizens. This is evident in the delivery of cases one and case two above. The airport terminal is delivered in case one is having the best facilities in the country while the road is delivered in case two employs modern technology in the facilities and management.
- (d) Due to the financial crisis within the country, the banks are not willing to offer long-term loans while the PPP project requires long-term financing. Also, the investors within the country were not able to attract funding from foreign banks due to the political instability in the country.

The weak legal institutions in the country do not encourage the investors both local and international to actively participate in the delivery of PPP projects within the country. Due to the lack of adherence to contractual provisions in the case one project, the investor is yet to get justice delivered and implemented by the courts.

## 5. Conclusions

This study was able to review some PPP projects in a developing country to determine the impact of such projects on the immediate community. The study identified that the projects have an impact on the immediate communities by providing growth in the economy, jobs creation, technological improvements, and international joint ventures. These are indications that the implementation of PPP projects must be encouraged by the governments due to the benefits that come with its adoption.

The outcome of this study shows that developing countries have more to benefit from this procurement method and will help in bridging the gap in governments' funding. It is recommended that more projects are delivered through PPP as a procurement option with adequate support. Further study is encouraged with the quantitative research method to ascertain actual contributions from the projects implemented.

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