PUBLIC INFRASRUCTURE PROJECT FAILURES IN NIGERIA: CAUSES AND CONSEQUENTIAL EFFECTS ON ECONOMY AND WELFARE OF CITIZENRY

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KEYWORDS
Project, project failure, public infrastructure, poor implementation

ABSTRACT
Nigerian state particularly at national and sub-national levels, have experienced public infrastructure project failures during execution of their projects, though, there may be some differences among the level of failures, causes, and effects of such failures at federal, state and local government levels. The aim of this study is to examine and investigate the reasons behind the failure of public infrastructure projects in Nigeria. In practical terms, the implementation of public infrastructure projects in Nigeria has encountered several challenges, which usually results into failures of some projects. The investigation in to the failure of infrastructure project was conducted through qualitative methods. Data were obtained from secondary sources, such as books, journals, archival documents, newspapers, magazines, and websites that host related data on public infrastructure projects. The data were further examined using a content analysis technique. The study found that the failures of public infrastructure projects is a recurring decimal in Nigeria, due to variety of causes such as poor financial capability, inaccurate costing, corruption, incompetence, poor planning and estimation, poor contracting and contractor practices, poor communication, frequent scope changes and design errors, poor leadership, interference from socio-cultural and political factors. The adverse effects of these failures on the economy and citizen's welfare is colossal as it involves loss of state revenue, citizen revenue losses, project cost overruns, low community empowerment, slow economic growth, underdevelopment of infrastructure sector, a loss of foreign aid and grants, stricter donor regulations, the loss of elections by the incumbent leadership at state and federal levels, and a lack of trust in government by financial institutions to further finance public infrastructure projects. Based on this, study recommends that government agencies in charge of overseeing and monitoring public infrastructure projects such as the National Council on Public Procurement, Bureau of Public Procurement, and Due Process Office should be re-organized and reformed to

carry out their statutory responsibilities efficiently and effectively without adopting unethical methods. These findings and recommendations are the contributions of this work to scholarship as they are different from the previous related studies.

Introduction

In Nigeria, successive administrations at federal, state and local levels have worked cooperatively to plan and carry out public infrastructure projects. However, most of the time, these infrastructure projects have terrible planning and execution challenges. This is because the three tiers of government have been extremely ineffective in managing and delivering public infrastructure projects, as they generally lack the institutional structures and desired capacities needed to plan and effectively execute infrastructure projects to raise the standard of living for Nigerians, and transform the country to a developed nation.

According to Nzekwe, Oladejo, and Emoh (2015) and Eja and Ramegowda (2020), an infrastructure project can be considered a failure if its intended purpose is not achieved, regardless of how long it takes to execute or how much money it costs to complete the execution of a public infrastructure project. Therefore, the threat of recurring failure of public infrastructure projects has prompted this research to investigate the underlying causes and consequential effects of the project failures in the country. In fact, a preliminary survey of our immediate environment in Nigeria today, shows an unpalatable scene of poorly planned, incomplete, abandoned, aborted or failed infrastructure projects such as roads, housing, electricity, hospital, and water projects, in which colossal amount of public scare resources sunk in them are been wasted.

Statement of Problem

At present, there is widespread institutional mediocrity, a lack of vision, and insufficient budgetary allocations in the execution of public infrastructure projects, which ultimately results in corrupt practices and high project financing costs, and in some cases, project failures or abandonment may be the end result. The implication is that any infrastructure project undertaken that eventually fails, usually wasted public scarce resources, which may prevent other potential infrastructure projects from coming on stream for the advancement of the nation. In the long run, the project's environment and the economy are adversely affected in three ways. The first is the waste of time, money, and human effort put into carrying them out. The second is denying other projects the chance to enter the stream. The third is how the failure syndrome affects the participants and stakeholders in the project's mental health (Okereke, 2017). On the strength of these reasons, David (1997) observed that it is preferable to forgo starting a project implementation than to start, get stuck, and then give up, and allowed it to fail. This means the failure of public infrastructure projects has constitutes a big problem in Nigeria that requires deep investigation in to its cause and effects.

The study therefore examines the factors that responsible for the failure of public infrastructure projects in Nigeria. From some of the literature reviewed, the study notes the work of Damoah and Kumi (2018), which identified poor supervision, contract modification, construction errors, insufficient equipment, poor procurement practices, and challenging financial processes as the root causes of project failures. The study also notes the research report of Igwe and Ude (2018), which hinged the problem of project failures on the three levels of government that they have not really implemented infrastructure projects with due diligence in accordance with international best practices. Also, the study notes the suggestions of Igbokwe-Ibeto (2018), that adherence to due process in all aspects of project planning and management as solutions to incessant project failures in Nigeria. Notwithstanding the submissions of these scholars, existing evidence of failed projects across the country have shown that it has reach a point in this country that the negative effects of infrastructure project failure on the national economy needs to be deeply investigated with a view to develop some strategies to mitigate the effects and proffers some recommendations to deal with the problem, hence the relevance of this enquiry in to the causes and effects of infrastructure project failure in Nigeria.

Research Objectives

The objectives of the study is to investigate the causes and effects of the failure of public infrastructure projects on the economy with a view to recommend suitable measures to reduce the menace of failed projects in the country.

Methodology

The investigation is a documentary study, which obtains its data from secondary sources such as books, journals, government-archival documents, newspapers, magazines, and websites that host related data. The content analysis technique was further employed to analyze the data collected on the recurring failure of public infrastructure projects in the country.

Theoretical Framework

This study adopted stakeholder theory for explaining this work. A stakeholder theory of the organization requires an understanding of the types of stakeholders and their influence. The theory also explains how organizations respond to those influences. In reality, each project faces a different set of stakeholders, which aggregate into unique patterns of influence. In the work of Ambler and Wilson (1995), it was demonstrated that projects do not simply respond to each stakeholder individually; rather they respond to the interaction of multiple influences from the entire set of stakeholders. In the project setting, organization responses to their stakeholders requires an analysis of the complex array of multiple and interdependent relationships existing within the stakeholder environment. The conceptual analysis of the stakeholder theory is reflected in virtually every major theory of the project particularly in agency, society, behavioural, institutional, population, ecology, resource dependence, and transaction cost (Argenti1997). Also, Freeman (1984) defined stakeholder as any group or individual who can affect or who is affected by the achievement of the project's objectives and continues to provide the boundaries of what constitutes a stake. Freeman argues further that a stakeholder in a project such as government, citizen and the contractor, has some form of capital, either financial or human, which when at risk, has something to lose depending on a project's behavior, so when a project fails or abandoned, stakeholder such as the government and the citizen as the first casuality.

Conceptual Clarifications

Public Infrastructure are infrastructural facilities, institutions, equipment, systems and structures owned and operated by the government, for the common good and use of the general public. It includes all facilities and systems that facilitate day to day running of the economy, for the enhancement of the standard of living of the general populace. Public Infrastructure is entirely different from private infrastructure with respect to policy, purpose, financing, management and ownership. Public infrastructure implies publicly owned physical infrastructure required for sustaining human life such as drainage, water treatment systems, water dams and reticulation pipes, roads, bridges, parking ramps, schools, research centre, skyway, railway, traffic signal lights, pipelines, and so forth (Manjo,2020). Also, according to Zarmadze (2009), public Infrastructure means the goods and services that are not produced within the market system and in many countries, public Infrastructure is a fundamental component for delivering public goods.

Review of Related Literature

The study engaged in thematic review of related literature on the causes of public infrastructure project failures, and impact of infrastructure project failures:

i. Causes of public infrastructure project failures

Several literatures had attributed one reason or the others to public infrastructure project failures. In the works of Zulch (2014); Ikechukwu (2017); and Sambasivan and Soon (2007), communication was found to be a leading cause of project failure in Nigeria as their works affirmed the importance of communication on the successful implementation of projects globally. Also, Hussein (2018), submitted that communication challenges such as linguistic barriers, cultural barriers, poor feedback and unclear communication channels are factors responsible for public infrastructure project failure. In the same manner, Ogundelea and Somefunb (2008), and Dim (2018) further corroborated the factor of communication challenges by pointing out the weaknesses between intergovernmental communications and stakeholders in Nigerian infrastructure projects. Based on these submissions, the study is in agreement with their assertions that the problem of poor communication channels isa

recurring problem in public infrastructure projects in Nigeria.

Furthermore, Nzekwe (2015) and Adebayo (2018), in their works, equally established poor planning as another factor responsible for high infrastructure project failures in Nigeria. They affirmed the importance of effective inclusion of intended goals in the planning and designing stages of any public infrastructure project in order to achieve success in implementation. Inherently, poor practices at the planning stage will imply a subsequent failure of such project. In support of this is the work of Dosumu and Aigbavboa (2017), which cited that the rife failure of infrastructure projects in Nigeria is due to planning related aspects like the estimation of time and costs, in which they referred to Anambra State as the State with the huge record of project failures owing to poor planning. In practical terms, poor planning means poor conceptualisation of the project by the implementing stakeholders, which implies errors and subsequent failures or abortion of the project.

Additionally, Uyo(2019) also identified poor contracting and contractor's sub-optimal performance as another factor responsible for public infrastructure project failure in Nigeria, pointing to the underperformance of contractors on awarded contracts, the embezzlement of project funds for ulterior gains and favouritism in contract awarding processes as a recurring issues. Uyo (2019) further stated that such favouritism locks out good contractors who could have undertaken the projects effectively, but, in their place, choose close friends, relatives and tribe-mates, who end up getting the job and delivering poor work, and in the end, lead to failures of such public infrastructure projects. Such practices are rife in the tendering processes for infrastructural projects in Nigeria across government ministries, departments and agencies. In reality, poor contracting practices is accepted as one of the determinant factors for occurrence of infrastructure project failure in Nigeria.

Equally, in the work of Nweze (2016), socio-cultural and political interference, poor leadership and corruption have also been recorded to be the cause of some public infrastructure projects failures in Nigeria. These socio-cultural issues usually take the form of communal or tribal conflicts, while political interference takes the form of incumbent's leadership refusing to allocate fund to public infrastructure projects initiated by their political predecessors for no good reasons. Evidently, at the sub national level under the current fourth republic, politics plays a critical role in the development trajectory of Nigeria state. The study concurred that bad politics and poor political-will has seen thousands of public infrastructure projects failed before they are even implemented at both federal, state and local government levels. In practice, the aspect of poor leadership and corruption further worsen the case for public infrastructure projects in the country, as corruption, embezzlement of funds, nepotism and tribalism in contracting practices and other sectarian practices have make the country fail to attain its potential in several public infrastructure projects it undertakes. Politics and corruption in the commencement of infrastructure projects have resulted in to many earmarked projects lie unattended to. A typical example is the $20bn Ogidigben Gas Industrial Park and the Gelegale Seaport projects in Delta and Edo States of Nigeria that are yet to see the light of the day due to politics and corruption (Yusuf ,2018 and Okoromadu, 2019). Evidently, the study observed that in all States of the federation, these twin problems- poor leadership and corruption, are major detrimental factors responsible for public infrastructure project failures across Country.

In the opinion of Ayal (2005), frequent design changes, touching the scope, and errors that are usually made in the implementation process have also been established as factors causing the failures of some public infrastructure projects in Nigeria. From this literature, changes or lateness in project implementation usually spike the cost and time overruns of projects. Understandably, project limitation in finances and time horizons paired with the incessant changes in the plans can be costly and in turn, derail the project implementation process. In some cases, contractors or financing can be withdrawn from the project. The study agreed that frequent changes in project scope or withdrawal of funding in a project will ultimately lead to failures or abandonment, which are recurring decimal in many public infrastructure projects in Nigeria.

Similarly, lack of adequate financial resources is identified by Ubani and Ononuju (2013) as another factor for the high rates of infrastructure project failures in Nigeria. Financial constraints couple with poor planning and changes to a project, sum up the bulk of structural setbacks to

the successful implementation of projects globally. In Nigeria, inadequate funds disbursement to the project implementing agencies, resulting in to under-financing of mostpublic projects, usually results to failures of such public infrastructure project. Essentially, the study noted the fact that without enough financial support, public infrastructure projects cannot take off, let alone their completion. Thus, finances are critical to the success or failure of any public infrastructure project.

ii. Impact of public infrastructure project failure

Public infrastructure project failures confer the all-dreaded poor social amenities to a community or society, which is detrimental to the nation's economic development. In practical terms, failed projects essentially mean the intended goals of a project were not successfully met by the respective stakeholders, as such, the remnant project is a fraction of what was intended in the designing stage. The end product of the failure of public infrastructure projects can be seen in roads, housing, power, and other infrastructural projects, which failed with the end product not achieved, thus making the intended benefiting community poorer, suffered and degraded. Yusuf (2018) and Okoromadu (2019), in their works, once identified Anambra State to have been noted to be filled with these set of ugly consequences due to the high rate of failed infrastructure projects. As such, sub-standard infrastructure projects delivered to the community or State across the country has made such community or State to remain at a disadvantaged in term of development.

The impact of public infrastructure project failures is also adverse to stakeholders of these investments across Nigeria state. Evident to support this is the report of Sahara Reporter (2019), which identified the loss of state revenues pumped into the execution of these projects as the prime effect of the failure of infrastructure projects, which is put at 2 trillion Naira ($5.517 billion) between the years 2000 and 2019. Moreover, Dim (2018) pointed out that only less than 16% of the projects in road construction end up successful in Nigeria. The bulk of infrastructure projects undertaken in the country fails, which has sent the larger percentage of public's limited resources down the drain with little benefits drawn back from these investments. The study notes that the lost revenues could be used in the provision of essential services to the community and in addressing the poverty levels for the majority of the Nigerians as opposed to undertaking these costly infrastructural projects which in the end fails. Thus, public revenue losses to such infrastructure projects have been a huge impact of failure of publicproject which warrants urgent solutions.

Also,in the work of Manjo (2020),cost overruns have been established to be an associated impact ofpublic infrastructure project failures. These costs have been tied to the contractual responsibilities, which stakeholders are to or have to fulfil, regardless of the trajectory of the project. Mostly, credit facilitation costs have been noted to be a leading cost associated with the majority of public infrastructure projects that failed in Nigeria. In fact, contractors will be obliged to pay the loans they took to undertake the projects, while the government is paying its donors and financial institution for the projects too. Therefore, the study agreed that meeting the strict financial condition given to the stakeholders regardless of the status of the project is a consequence for failure ofinfrastructure projects in Nigeria.

In the study conducted by Yusuf (2018) and Okoromadu (2019), loss of revenue by the immediate host community of failed infrastructure projects is another major consequence. It is necessary to state here that project implementation is geared towards the provision of projects that facilitate vital services to the communities, as infrastructural projects open opportunities to the local communities in commerce and social integration, which is important for the development of the nation. However, when public infrastructure project fails, it's usually locked out communities from development, and in some cases, taken away the probable revenues that could have been gained with the operation of some of these public infrastructure projects. A specific case in point is the Delta communities, which were said to have lost plenty revenues which could have been generated from the $20bn Ogidigben Gas Industrial Park. The failure of the project has left the Ogidigben community economically disadvantaged and still playing catch up game with advanced regions like Asaba within the same Delta state. In this case, low empowerment of the community disadvantaged by the project failure can also be counted as one of the impacts of infrastructure project failure.

Equally, Yusuf (2018) and Okoromadu (2019) restated that public infrastructure project failure usually leads to slowed developments in the

associated sector in which the infrastructure project would be operating. This means that such project failures will also deprive the affected sector of the needed support that the infrastructure projects were intended to offer as the case with the Gas Revolution and Industrial Park, Ogidigben in Delta State and the Gelegale Seaport in Edo State, which are both intended to benefit the gas industry in both Edo and Delta States, but failed to materialize. Had it been they had been successfully implemented, the local gas industry would have benefitted from refinery services locally in Nigeria, hence, bridging the costs, and improving the efficiency of the product value chain. The multiplier effect would have, in turn, benefitted local oil manufacturers with more revenues. However, the failure of these two vital infrastructure projects implies that these projects would not be conferring the intended economic benefits to the local communities, and at the same time, locking out economic opportunities for the industry players to capitalise on for overall economic and oil and gas sector growth in the country.

Analysis, Findings and Discussion on the Causes and Effects of Infrastructure Project Failures in Nigeria.

As a practical guide for analysis, the study employed some of the documented memoirs of field works, inspection reports and observatory work across some project sites, particularly in Kwara state between 2017 and 2020when the Author served as Permanent Secretary, Ministry of Works and Transport, where the following factors were found to be responsible for public infrastructure project failures in Nigeria, particularly in Kwara State:

First, most infrastructure projects in Nigeria have failed due to poor project management and ineffective resource allocation. In reality, infrastructure development is a construction process whereby an organization assumes responsibility for a project, delegates a project team to build it and initiates management systems such as tools, equipment, processes and procedures with which the project can be completed. This management process needed three fundamental elements; requiring execution and control, which may be symbolized by 3 Ps: the project outcome (product), the tools, technology and management systems (process) and the team to deliver the project (people).The study by Manjo (2023) on Kishi-Kaiama federal road project traversing Kwara-Oyo States Boundary revealed that fund reimbursement impasse was a major cause of the abandonment of Kaiama-Kishi road construction project, which therefore corroborated this finding.

Secondly, Moro and Ohan Bridges Inspection Report (2018) equally revealed poor project management and lack of sound project management by project sponsors, particularly the federal and state governments and in some cases the contractors, which often lead to project construction delays and extra costs for both parties i.e., the government and executing contractor. The study found that poor management accounted for the non-completion and abandonment of Moro and Ohan Bridges since 2015. In addition to the problems that occur during project construction period, poor project management in particular, had also resulted in some completed infrastructure project failing to meet the specified quality and functionality requirements, thus, could not produce the intended products, or could not be operated for its intended purpose. The study found from the Inspection Report (2018) that Ohan and Moro Bridge Construction works along Ilorin-Igbeti federal road, traversing Kwara, Oyo, to Chikanda-Benin Republic International border is being executed at a snail rate since 2015.Works stopped at the two sites in 2017, and there was no construction activities at the two sites throughout 2018, 2019 and 2020. The study's field trip to the sites of the two bridges on 24th March,2024 also revealed a sorry state of abandonment of the two projects as there was no works at the two sites.

In practice, the penchant for fire brigade approach to project management in Nigeria was found to be a critical factor responsible for public infrastructure project failures across the country. Project managers and government agencies often take on extremely aggressive schedules without outlining necessary plans, resources and systems to adequately address the difficulties which may arise and this usually forces project staff to work in areas outside their competence, thereby compelling them to take shortcuts and barely giving them necessary space to assess risks and plan for eventualities without which project failure is almost inevitable. Corroborating this finding is the remarks by El-Rufai (2012) which stated that:

> *"Assume a road is to be constructed between two locations, the rights-of-way must be surveyed, levels taken, alignment finalized, road designed, and detailed drawings, bills of*

quantities and other bidding documents prepared prior to inviting pre-qualified engineering contractors to submit competitive tenders. The design development process can take anything between some months to more than a year, while it takes a minimum of 5 months from advertising invitations for bids to presentation to the FEC or other approving authority. This suggests that design and procurement processes for any project ought to start at least a year or two before being budgeted for. This only happens in a few foresighted agencies (MDAs). Typically, nothing happens until the budget is passed and cash-backed, then the implementing MDA begins the fire brigade work of compressing this timeline into a few weeks! Most MDAs wait until projects are included in budget or the budget passed before they start project surveys or design or the procurement process. When an MDA spends at least 5 months on procurement, how much time does the contractor have to execute the project and draw down the funds before the financial year runs out? This becomes a big issue as MDAs are required by law to return all unspent funds to the treasury by the year end".

Furthermore, the Author's practical experience in public service have also shown that for a project to achieve its purpose, the project systems have to be integrated and aligned so as to enable the people to carry out their functions efficiently. However, this was not the case found in the Moro and Ohan Bridges Inspection report (2018), which revealed that the handling construction companies in Nigeria engaged in unprofessional practices that lead to the abandonment of these projects. First, it is a general knowledge in project management that project managers sometimes hold overly optimistic views occasioned from inadequate analysis, which may affect the operational plan or the schedule plan or both. Secondly, when the schedule of work is based on performance expectations from sub-contractors and expected productivity from the workforce, meeting the schedule of works will depend on sub-contractors meeting stated deadlines. When these targets are not met, previous unrealistic assumptions will therefore demand that the project work plan be changed to recover from unexpected lapses which ultimately increases the potentials for failure of the project. With respect to the two Bridges under reference, records from inspection reports shows that the contractors quoted ridiculously low rates to win the bids, and thereafter, submitted a variations, which almost doubled the initial approved contract costs. The non-approval of variation costs submitted by the contractors, resulted to an impasse that adversely affected the construction of the two bridges since 2018 till date.

At this juncture, it needs to be stressed also that evaluation of risks during project planning tends to receive inadequate attention due to time constraints and the urgency to deliver by ministries, departments and agencies of government. The resultant effects is the likelihood of higher risks being imposed on the project. When a project is denied the very necessary processes and preparations which may improve the possibility of success, such an infrastructure project tends to fail and this has been the case at both federal and state governments in Nigeria.

Another recurring problem is the lack of financial capacity and delays in payment due to contactors, occasioned by paucity of funds on the part of government, and this usually resulted in to stoppage of project's works, especially that federal government ministries, departments and agencies are required to return unspent budgeted funds to the central coffer at the end of every financial year. The practice often leaves federal MDA's stranded for cash to complete on-going projects. In spite the adverse implications of not exhausting the funds budgeted for implementing infrastructure projects on the economy, federal MDA's are always eager to showcase their incorruptibility by rushing to return unspent funds, thereby promoting project abandonment and total failure. In this regard, government at all levels in Nigeria are failing to conduct an evaluation of the infrastructural projects for which budgeted funds are being returned to realize the incompetence aspect of government agencies in terms of time wasted on procurement, which may causes delay and project failure in the name of unspent funds must be returned to government at the end of every financial year.

Additionally, the Author's practical experience in public service have also shown that bureaucratic red-tapism, corruption and inaccurate cost estimate has been responsible

for public infrastructure project failure. It is no longer news that the Nigerian public service is characterized by a very high level of bureaucratic red-tapism and delay which seriously hinders infrastructure project delivery in Nigeria. This challenge is prevalent in the areas of appropriation, procurement, documentation, approvals and fund release. Given that government agencies are often charged with the responsibility of initiating and monitoring on-going projects, officials in public service usually capitalize on this authority to exploit the process by conniving with contractors to manipulate cost estimates and document false progress report to favor contractors, and receive kickbacks, thereby ensuring the failure of most infrastructure projects across the country. In fact, bribery and corruption are regarded by most Nigerians especially the civil servants as a custom even with the ongoing crusade against corruption by the EFCC and ICPC since the enthronement of democratic governance in 1999. Delays procedure and implementation of projects, leading to cost overruns are part of the consequences of excessive bureaucratic red-tapism and corruption. Corroborating this finding, Sohail and Cavil (2009) also submitted that contractors often purposely overstate the time and cost requirements of a project, falsify time sheets, utilize cheaper or defective materials and sometimes deliberately omit specifications in order to reap illegitimate financial benefits.

Along the same thinking on the impact of excessive bureaucracy and corruption on project implementation and delivery, Szeffel (1998) is also of the opinion that corruption alters the capacity for institutional performance in the context of administrative efficiency, undermines managerial effectiveness and redirects resources from regional, country and global development to individual interest. Equally, this finding is in line with the earlier submission by Odeyinka and Yusuf (1997), that the effect of corruption in public infrastructure project failure in Nigeria is so severe to the extent that in an effort to ensure the success of bids submitted, contractors sometimes buy out information from the client's quantity surveyor to ensure that the lowest tender figure is submitted for the said contractor or company to win the bids. The long run effect of this is that public infrastructure projects are often awarded to contractors or companies which do not have the technical capability to deliver on the project and such unholy practices have been found to be responsible for so many failed infrastructure projects across the country.

Similarly, Ademuyiwa (2009) had pointed out that experts in project accounting had submitted that the current accounting system for project funds cannot be deemed to be adequate without accounting for other project inputs such as time, human and material resources which are wasted by MDA's in the course of project procurement, which usually leaves the contractors in a dilemma when the financial year ends in the middle of a project. For instance, the amount of unspent funds on projects expected by government in 2008 alone was estimated at over N500 Billion translating to about US$3 Billion (Ademuyiwa,2009).

The study also found that in spite the provisions of Public Procurement Act (2007), there are still several cases of many contracting companies in Nigeria that do not have the financial capacity to execute the contracts, yet, they secured the project contract, and this leaves them stranded for funds midway into the project execution process. The study noted that some of these contractors hide and capitalize on the provisions of Section 63 (1) of the Public Procurement Act (2007), which states inter-alia: *'In addition to any other regulations as may be prescribed by the Bureau, a mobilization fee of no more than 15% for local suppliers and contractors and 10% for foreign suppliers and contractors may be paid to a supplier or contractor …'*. Though, the study accepts that the literal interpretation of this section of the Act implies that contractors must have the requisite capital outlay for project execution prior to submission of bid documents, but unfortunately this principle is not always followed by MDAs during contract procurement process, thus contributing to public infrastructure project failure in Nigeria.

Another controversy that usually a re-occurrence during project procurement process is the contractor non-performance, nepotism, tribalism and deficient contracting practices. These infractions have always caused immense harm on Nigeria's infrastructural development and has significantly undermined Nigeria's contracting process such that the best contractors do not always get the job, rather contracts are awarded based on ethnic and sectional considerations, resulting in many failed infrastructure projects. In practice, the present contracting practices in Nigeria is highly deficient. Normally, a contract document should

contain every aspect of the job to be done, the payment terms, pricing, and service levels, but, this has not been the case in Nigeria's project systems. Practical experience in public service have shown that there are several cases that exists of projects that failed because the entire project scenario was not captured in the original contract documentation and as such, disputes could not easily be resolved. In reality, during implementation process, the absence of relevant specifications in the contract tends to encourage disagreements between the MDAs and project's contractors, followed by prolonged negotiations and avoidable change orders, which entail new budgets and schedule, and practically, will results to delays, cost overrun and project failure in the long run as witnessed in Kishi-Kaiama Road project (Kishi-Kaiama Field Report,2018).

The study also sees the need to stress at this juncture that most ministries, departments and agencies of government in Nigeria lack proper due process and tender system, which should ordinarily, assist in developing a standard of the most suitable contract type for the specific project, taking into cognizance the peculiarities of the envisaged project. The absence of proper due process and tender system, which should explicitly define the terms and conditions that would govern the project and spell out penalties in the event of infractions and delays, in addition to specifying the party that would bear cost overruns, has led to a situation whereby contractors tend to be at ease with their non-performance, knowing that there are no means of checkmating their unprofessional activities. The use of obsolete contract templates in contract administration in Nigeria also contributes to infrastructure project failure as no preparation is made to envisage and tackle operational challenges during project implementation when they arise.

In many infrastructure projects across the country, inadequate planning and poor scheduling has also result to project failure. Westerveld (2003), averred that infrastructure projects in Nigeria are hampered by inadequate planning and poor scheduling, submitting that any project that is not well planned is bound to fail. Project planning is important because it helps the project team to develop objectives and outlines the best way of achieving them. But in Nigeria, parties to infrastructural project implementation often put in place inadequate plans before commencement of work and also, tend to use inexperienced professionals in project planning, which usually have an adverse consequence on the project. In some cases, when there are capable people to draw up the project plan, time constraints arising from a variety of factors make it difficult for planning officials to follow pre-established guidelines and deliver an implementable plan that would guarantee the success of the project.

In a normal project management circumstance like what is obtainable in developed countries, a project should have a budget and deadline prior to take-off. However, in many project cases in Nigeria, project managers commit to low estimates without knowing it and as such, the project kicks off without the requisite materials and resource outlay, only for the budgets and deadlines to be overshot before the project management team comes to the realization that adequate planning was not carried out. The study found this issue of low estimates in Bill of Engineering Measurement and Evaluation (BEME) of Moro and Ohan bridges projects, which accounted for variations costs that is yet to be approved and consequently resulted to work stoppage at the two sites since 2017(Moro-Ohan Bridges Inspection Report).

In many MDAs, poor planning and lack of agreement on project outcomes impact negatively on the execution phase of most infrastructure projects in Nigeria. In fact, in some projects, conflicting instructions from different officials of MDAs and frequent intra-governmental confrontations by officials of MDAs have resulted to unplanned adjustments to projects and has also led to the failure of many public infrastructure projects across the country. There is also the problem of poor monitoring and scope tracking, which in some cases, may not be done by government institutions responsible for the project. Scope tracking involves the monitoring of the totality of deliverables expected at the end of a project since all project implementation plans, cost estimation, schedule, quality specifications and baselines are normally articulated based on the initial project scope. This implies that any change in project scope during execution will affect the whole project plan and would require a reviewed budget, schedule and quality. Whenever a change in scope occurs, scarce project resources are diverted to activities that were not part of the original scope, leading to pressure on the original schedule and budget. An evaluation of failed infrastructure projects in Nigeria like Kaiama-Kishi Road project indicated that changes in project scope usually arises from

wrong initial scope definition, unanticipated risks and uncertainties and sudden change in financing which leads to change requests and then change in expected deliverables, which also affects the whole project team as the case with Kishi-Kaiama abandoned federal road project. (Kishi-Kaiama Field Report,2018)

In many public infrastructure projects, poor scope management has also caused dispute and litigation which impacts negatively on the project in terms of delays and cost overruns and could sometimes end in discontinuation of the project. For example, some project inspection reports perused by the Author have shown that most road construction companies in Nigeria do not integrate a suitable change management plan which enables the adoption of a proactive approach in managing the needs of stakeholders throughout the road project life cycle. Such road construction companies are therefore unable to select the key success factors together with the client, which accounts for their inability to establish key performance indicators to measure the performance of the road project scope. Sometimes, changes are communicated in an untimely manner, which introduces confusion amongst the project team and eventually lead to road construction project delay, abandonment or failure.

Furthermore, from Moro and Ohan Bridges Inspection Report (2018), the study also found lack of experience and technical competence of contracting companies as another twin factors that usually caused infrastructure project failure. It is saddening that the construction industry and many contracting companies in Nigeria are suffering from an acute shortage of skilled manpower, mostly because Nigeria has been experiencing brain drain in the last two decades, with highly skilled personnel migrating to developed countries in search of more rewarding opportunities. The consequence of this trend is that Nigeria has had to depend on expatriates from other countries to execute some big public infrastructural projects like roads and bridges. This comes at highly exorbitant costs and poses a major challenge to government's quest to implement high impact infrastructure projects which are often complex. The study observed that even within Nigeria, there has been a huge movement of construction professionals and experts from public to private sector and this has also limited the capacity of government agencies to properly oversee infrastructure project implementation, with many government institutions now having to rely mainly on the services of private consultants, whose services constitute a huge financial burden on government. In this case, a critical contributory factor to infrastructure project failure in Nigeria is therefore the inability of local professionals and government personnel to deliver on highly complex infrastructure projects even when they give the project their best, owing to a huge skills gap which threatens the economic and technological advancement of the country.

Presently, most construction companies operating in Nigeria have also been found to lack value management skills which are integral in obtaining the best cost-effective design options while guarantying quality and outcomes that meet the expectations of project stakeholders, and this has significantly contributed to the failure of many public infrastructure projects.

There is also the problem of poor design, frequent design changes, design error and defective design. In project implementation, design is the core basis for the implementation of a project. So, errors in design means that the project is bound to fail as the implementation team may apply wrong techniques for achieving wrong deliverables and any effort to correct the mistake midway into the project is likely to increase costs and cause delays which could bring about infrastructure project failure. In fact, Practical experience gathered from the inspection of the abandoned Kaiama-Kishi Road project indicated that many other road projects have also failed in Nigeria because designs were done without proper assessment of site conditions, and during the course of the project, the actual site conditions often pose a challenge to the construction companies, necessitating additional work, revision of project scope and sometimes total contract revision. This often creates an obstacle to the success of the project and has led to project failure in cases where it was not well managed (Kaiama-Kishi Road Report,2019).

The study found another example of the problem of design changes and errors at the re-constructed Adeta-Pakata intra-city road in Ilorin, Kwara State capital. The road was awarded in 2021 and completed in 2023 with a covered drainage on both-side as walk ways. Since the completion of the road, the covered drainage had resulted in to environmental problem of silted sewage and flooding whenever rainfall in the area, resulting to several havoc to homes along the road. The study fieldtrip along

the road notes that problem of the road is essentially the drainage design error, which is defective and not suitable for a build-up area like Gaa-Aremu and Pakata where the road passes. In 2024, the Kwara State Government had to re-award the re-construction of the road at the expense of public scarce resources. Presently, a field-trip to the site revealed a massive destruction of the covered drainage and walk-way, with a view to convert them to an open drainage as it was originally designed in 1977 when the road was first constructed by the administration of late General George Innih (Adeta-Pakata Field Report,2024)

Another protracted reasons that usually responsible for infrastructure project failure is political instability and community interference which revolves on the lack of continuity in government policy. History has shown that successive governments in Nigeria tend to discontinue infrastructure projects started by their predecessors (Fubera, 1985). The underlying reason behind this trend is that contracts are usually awarded to cronies and party loyalists, and such contracts are awarded purely to serve political purposes. There are several cases where infrastructure contracts are inflated, making incoming governments to prefer to initiate their own projects and receive kick-backs rather than continue funding existing projects (Nwachukwu, 2010). This trend discourages private sector participation in infrastructure development in Nigeria.

There are other politically related reasons for discontinuation or failure of infrastructure projects in Nigeria and this includes rising inflation which affects the price of raw materials and increases the funds required to complete a project, following changes in government especially under the current fourth republic from 1999 till date. When the cost of such infrastructure projects is reviewed upwards many times by successive governments, such that the amount of money required to complete them is much higher that the amount required to deliver a new project, the tendency is to abandon them, hence such infrastructure projects are regarded as having failed. A reference case in point is the ten kilometers Sango-Kulende-Kwara Polytechnic-Unilorin Teaching Hospital-Oke-Ose Road dualisation project in Ilorin, Kwara State, which has been abandoned since June,2019 at 85% completion level by Abdul Rahman Administration of Kwara State. The study's field trip along the road on 26th March, 2024 revealed that the project is still in an abandoned state, with spatial potholes, causing hardship and accessional accidents to motorists and vehicles (Report of Fieldtrip along abandoned Sango-Oke-Ose Road project,2024)

The study also found that there are several reports of hostility to contracting companies and to the project itself by communities that plays host to the projects especially in the Niger Delta areas, and this hostility often play a vital role in the failure of projects. In some cases, some communities in Niger Delta areas, sometimes sabotage the project by making various kinds of demand from government and contractors. In fact, there are cases where construction companies are sometimes required to appoint indigenes of the community as subcontractors or to include influential community leaders on the payroll of the company even when such persons are not meant to perform work of any kind during the project. Failure of construction companies to meet these kinds of demand sometimes lead to disruption of on-going work at sites, vandalization of company's equipment at sites, theft of materials and abduction of expatriate workers at sites by community youth groups. This attitude by host communities has put a stop to many infrastructure projects in oil producing Niger Delta region of Nigeria (Report of NNDC to Senate, 2016).

Finally, the twins' fundamental problems that has been a clog in the wheel of many public infrastructure projects across the country is the challenge of poor communication and leadership between government agencies and contractors. The study found that these twin issues has been having detrimental effects on many infrastructure projects, and has even caused revocation of some contracts by government, which often lead to litigations and termination or failure of a number of infrastructure projects. In project management, effective communication is necessary for the success of any project, as sound communication practice helps to enhance team work and ensure better collaboration. On the contrary, poor communication results in misunderstanding, delays and disputes. In practice, there are many hindrances to effective communication in the infrastructure project system and these include: unclear communication objectives, unclear channels of communication, ineffective reporting system and ineffective communication between the key parties involved in a project. Because infrastructure project implementation process is a highly fragmented and dynamic sector, effective communications is vital for the success

of projects in terms of performance objectives such as productivity, profitability and re-work opportunities (Dainty, 2006). In practical terms therefore, project details are communicated by means of drawings, contract documents, and specifications; and the absence of proper medium for effective communication has been impacted negatively on the infrastructure project life-cycle, which accounted for many failed infrastructure projects in the country.

Conclusion

Evident from the foregoing analysis, findings and discussion, the causes of public infrastructure project failure in Nigeria are multifarious and ranges from a number of factors such as poor planning, frequent design changes, inadequate resources, poor leadership, and endemic corruption in public service among others; and this recurring project failures has been having detrimental effects on the citizens and economy through revenue loss, loss of economic opportunities, and overall slowdown in the rate of economic development of the nation.

Recommendations

As a way out to drastically reduce public infrastructure project failure in Nigeria, the following measures are recommended:

1. Review of the Public Procurement Act 2007 to reduce corruption and plug leakages, and abuse of the procurement process by both government officials and contractors;

2. The government procurement agencies such as the Bureau of Public Procurement (BPP), National Council on Public Procurement (NCPP) and the Due Process Office, which are the authorities charged with the responsibility of overseeing and monitoring federal government projects across the country should be re-organized to optimally discharge their functions devoid of sharp practices;

3. The existing practice whereby Ministries, Departments and Agencies of government are required to return unspent budgeted funds at the end of each financial year should be reviewed with a view of making adequate provisions for on-going projects that started late in the year due to time spent on planning and procurement of contract for projects;

4. Mechanisms should be developed to sanction erring contractors to account for non-performance and failure to deliver after contracts have been awarded, to serve as a deterrent to contractors who are in the habit of bidding for jobs for which they lack competence, thereby providing guarantee that contracting companies seeking infrastructure contracts are adequately staffed for the project;

5. Professional bodies such as the Council for the Regulation of Engineering in Nigeria (COREN), the Nigerian Society of Engineers (NSE), the Nigerian Institute of Quantity Surveyors (NIQS) etc, should enforce existing codes of conduct to ensure strict adherence of members to the highest standards of ethics and professionalism in public infrastructure project management and delivery systems; and

6. Federal, State, and Local Government need to quickly address unbridled corruption and nepotism in public service and widespread community interference in the award of infrastructure contract and project implementation process in Nigeria.

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