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# Factors Militating Against Infrastructure Delivery in Delta State, Nigeria

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*Abstract:* **Infrastructure serves as the backbone of socio-economic growth, yet its delivery in Delta State, Nigeria, has continued to lag despite the state's resource endowment. This study assessed the factors militating against infrastructure delivery using the perceptions of thirty (30) construction professionals comprising nine architects, six civil/structural engineers, six quantity surveyors, four builders, three land surveyors, and two town planners. Data were collected through structured questionnaires and analysed using SPSS (v.24), applying Relative Importance Index (RII) and Wilcoxon Signed-Rank Test for validation. Findings revealed that the most critical barriers to infrastructure delivery include mismanagement of public funds (RII = 0.86, 2nd rank), unsuitable procurement practices (RII = 0.86, 2nd rank), adverse economic conditions such as inflation, interest and exchange rate fluctuations (RII = 0.86, 2nd rank), and the difficult lowland riverine terrain (RII = 0.86, 2nd rank). The upland undulating topography was also significant (RII = 0.85, 5th rank), while poor contract documentation (RII = 0.75, 6th rank) and lack of political will (RII = 0.75, 6th rank) further constrained delivery. Conversely, youth restiveness (RII = 0.41, 10th rank) and lack of proper project management (RII = 0.53, 9th rank) were perceived as less critical. All factors tested were statistically significant at $\alpha = 0.05$, with Wilcoxon statistics ranging from 29.5 to 114.0 ($p < 0.05$), thereby rejecting the null hypotheses. The study concludes that systemic inefficiencies, fiscal mismanagement, and geographical constraints constitute the dominant impediments to infrastructure delivery in Delta State. It recommends strengthening financial accountability, reforming procurement systems, diversifying state revenue beyond oil dependence, and adopting context-specific engineering solutions to overcome terrain-related challenges. Implementing these strategies would not only improve infrastructure performance in Delta State but also advance sustainable development in line with the United Nations Sustainable Development Goals (SDGs).**

*Keywords:* **Infrastructure delivery, Delta State, Budget allocation, Procurement, Mismanagement of public funds, Youth restiveness, Political will, Project management, Sustainable development goals (SDGs).**

## I. INTRODUCTION

Infrastructure constitutes the backbone of socio-economic development, serving as a catalyst for industrialization, improved living standards, and sustainable growth. It encompasses a wide range of facilities and services, including transportation networks, energy systems, water supply, sanitation, education, and healthcare (Ayodele, 1996; Enimola, 2010). In developing countries such as Nigeria, the delivery of adequate infrastructure remains one of the most pressing governance challenges, as rising population growth, rapid urbanization, and economic pressures outpace the capacity of governments to respond effectively. Delta State, like many other states in Nigeria, faces acute infrastructure deficits that hinder its ability to meet the demands of its growing populace and achieve sustainable development goals (Jiboye, 2019; Omoniyi & Jiboye, 2011).

Globally, governments have recognized that the timely and efficient delivery of infrastructure is critical for economic competitiveness, poverty reduction, and environmental sustainability (World Bank, 1994; Department for International Development, 2007). However, in many contexts, infrastructure provision has been hampered by fiscal constraints, bureaucratic bottlenecks, and inefficiencies in traditional procurement methods (Harty, Kouider, & Paterson, 2015). In

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Nigeria, the situation is compounded by overdependence on oil revenues, volatile economic conditions, and a legacy of poor maintenance culture, which collectively weaken the ability of public institutions to plan, finance, and execute infrastructure projects (Zubairu, 1998; Okupe, 2002). While innovative approaches such as Public–Private Partnerships (PPPs) have been adopted in some states to address these gaps, their success remains uneven, largely due to contextual socio-economic and institutional factors (Akintoye, 2015; Ogunsanmi, 2014).

Delta State presents a unique case study in this regard. Despite its considerable resource endowments, including oil wealth and a strategic geographic location, infrastructure delivery in the state has been undermined by a combination of structural, financial, administrative, and political constraints. Common issues include limited budgetary allocations, delays in project execution, cost overruns, corruption, inadequate stakeholder engagement, and weak regulatory frameworks (Mansur, 2011; Olashore, 1991). Furthermore, the rapid pace of urbanization in the state's major cities has created mounting pressure on existing infrastructure, exacerbating service delivery gaps and diminishing the quality of life for residents (Okupe, 2002; Jiboye, 2019).

Past research on infrastructure challenges in Nigeria has largely examined the problem at the national level, often overlooking the peculiarities of individual states. This has resulted in a lack of detailed empirical evidence on the specific factors militating against infrastructure delivery in states like Delta, where governance structures, revenue patterns, and socio-political dynamics may differ significantly from other regions (Klein, 2015). Understanding these unique local challenges is critical for formulating targeted strategies that can improve infrastructure delivery and optimize resource use.

This study, therefore, investigated the key factors impeding infrastructure delivery in Delta State, Nigeria. identified and analyze the barriers affecting project implementation, with a view to proposing practical policy recommendations. The findings are expected to provide valuable insights for policymakers, development partners, and private sector actors seeking to enhance infrastructure performance in the state.

## II. LITERATURE REVIEW

### A. Infrastructure Delivery in Nigeria

Until 1999, precisely the start of fourth republic, system of government had been plunged with instability and reoccurring topples of government. As such, long term agenda for development of infrastructure has been hampered. Following the return of governance to democratic government, which marked the start of fourth republic, economic reformation programmes were initiated by the government. Nigeria Bureau of Public Procurement (BPP) was established by the public procurement Act of 2007 and the goal was to create competitive markets that attract better patronage from the private sector and foreign direct investment (FDI). The objectives of establishing the BPP are to harmonize existing government policies and practices on public procurement and ensure probity, accountability and transparency in the procurement process. It is aimed at establishing pricing standards and benchmarks. In addition, it ensures the application of fair competitive, transparent, value-for-money standards and practices for the procurement and disposal of public assents. The Bureau of Public Procurement (BPP) further promotes transparency, competitiveness, cost effectiveness, and professionalism in the public sector procurement system.

The Federal government to further strengthen procurement mechanism for infrastructure delivery also set-up, the Infrastructure Concession Regulatory Commission (ICRC) under ICRC Act, 2005. The ICRC is aimed at the success of public-private partnership (PPP) projects with the objectives that include the acceleration of investment in national infrastructure through private sector funding. The core functions of ICRC are as follows:

a. Ensuring that PPP contracts are implemented as signed

b. Regulates the PPP procurement process to ensure it meets the standards set by the National policy on public-private partnership (N4P)

c. Post PPP contract award – ICRC takes over the contracts and monitors the agreements to ensure compliance and acts as ombudsmen in the event of a dispute.

These frameworks if properly implemented and the commission properly constituted to carry out their assignment without interference, will definitely promotes sustainable infrastructure delivery in Nigeria.

**B. The State of Infrastructure Development in Delta State.**

Infrastructure has been described as the wheels of economic activity (World Bank, 1994). The term infrastructure can assume several meanings while some social scientist defines the term to include such facilities as transport, communication and energy, others define it as also embracing water supply, health, education as well as town and country planning. Ayodele (1996) suggest that there are both economic and social dimensions to the term, the social infrastructure sub-sector covers social services such as education, health services, information and town and country planning. The economic infrastructure covers the hardcore economic activities which relates to the provision of electricity supply, water supply, gas supply, sewage, storm water drainage and telephone services which are referred to as utilities (Enimola 2010).

Infrastructure can therefore be described as those facilities and services that provide the backbone for the development of other sectors of the economy. Thus, the provision of infrastructural facilities can deliver major benefits in economic growth, lead to poverty reduction among the populace, and environmental sustainability, but only when the services provided responds to demand and do so effectively.

Despite the importance of infrastructural facilities to the development and sustainability of our cities and the significant attention paid to the provision of these facilities over the years by various administrations in the Delta state, experience indicates that Delta state is faced with the problem of inadequacy and poor management of public services. . Virtually all aspect of Delta state infrastructures is in deplorable condition. The power sector though it is national problem for instance is marked by low generating capacity relative to installed capacity. At present electricity generation ranges from 2500 megawatts to about 3000, even with the inclusion of three gas – powered independent power projects in the Niger Delta region, while estimated national consumption is in excess of 60,000 megawatts. Potential demand in the next few years is estimated at about 15,000 megawatts (Oluba, 2008). Despite the fact that Delta state is endowed with crude oil reserves and one of the largest gas reserves, electricity supply is still epileptic.

Transportation is an essential part of human activity, and in many ways form the basis of all socio-economic interactions. Thus, a good transport system is essential to support economic growth and development. Since the attainment of independence in 1960, the problems of Nigeria transport system include bad roads, inadequate fleets of buses or trucks, irregular, inadequate and overcrowded trains and airplanes and congested ports. The length of roads in Delta state is about 5,500 kilometers out of which about 25% is paved. About 30% of these paved roads are bad and not motorable which ultimately tends to retard the economy of the state.

Even in the housing sector, the story is the same. Recent studies have shown that housing delivery is a high contentious and politicized issue that is of great concern to administrators, scholars and the public in Nigeria (Sule, 2001). Today, the problems of inadequate supply of housing in Delta state steam from the inability of government to build the requirement number of housing units for the population. It has been observed that rapid populations, paucity of funds and poor implementation of procurement law have compounded the problems of inadequate housing in Delta state.

Water is crucial to development but in Nigeria the Agencies responsible for water service delivery in both urban and semi-urban areas have failed in the discharge of their duties. The Nigeria water sector, according to Olugbamila (2008) is faced with the problems of lack of trained manpower/inappropriate technology, insufficient fund as well as lack of legal framework among others. In delta state, the problem is the same and its need urgent intervention

Therefore, it is pertinent to state here that Delta state infrastructure challenge is hug. From the challenges enumerated above, it is obvious that the infrastructure development in Delta state require hug finances annually for the next twenty-four years to meet the infrastructure requirement. Therefore, there is need for private sector participation in infrastructure development in Delta state considering the enormous resources required.

## III. METHODOLOGY

The study adopted a survey research design to investigate the factors militating against infrastructure delivery in Delta State, Nigeria. The research targeted professionals within the construction sector, including architects, civil/structural engineers, quantity surveyors, builders, land surveyors, and town planners actively engaged in public projects in the state. A preliminary survey identified a total of thirty (30) registered practitioners in the study area, comprising nine architects, six civil/structural engineers, six quantity surveyors, four builders, three land surveyors, and two town planners, which formed the population for the research. The study employed a purposive sampling technique to ensure that only participants with relevant experience in infrastructure delivery were included.

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Data were collected using a structured questionnaire designed to capture respondents' insights on the challenges affecting infrastructure delivery in the state. The collected data were processed and analysed using Statistical Package for the Social Sciences (SPSS) version 24, with results presented in tabular form for clarity and ease of interpretation. This approach allowed for systematic identification and ranking of the key factors impeding infrastructure delivery in Delta State.

## IV. RESULTS AND DISCUSSION

**Table 1: Profession of Respondents**

| S/No | Profession | No. of Respondents | Percentage (%) |
|---|---|---|---|
| 1 | Architects | 9 | 30 |
| 2 | Civil/Structural Engineers | 6 | 20 |
| 3 | Quantity Surveyors | 6 | 20 |
| 4 | Builders | 4 | 13.3 |
| 5 | Land Surveyors | 3 | 10 |
| 6 | Town Planners | 2 | 6.66 |
| | **Total** | **30** | **100** |

Table 1 shows the distribution of respondents by profession, indicating that architects constituted the largest group with 9 respondents (30%), followed by civil/structural engineers and quantity surveyors, each representing 20% of the sample. Builders accounted for 13.3%, while land surveyors made up 10% of the respondents. Town planners formed the smallest group, representing 6.66% of the total. This distribution reflects a fair representation of key professional categories within the construction sector in Delta State, ensuring that the study captured diverse perspectives on the factors militating against infrastructure delivery.

**Table 2: Factors militating against infrastructure delivery in Delta State.**

| S/N | Options | SA | A | UND | D | SD | ∑f | ∑fx | RII | Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mismanagement of public funds is a factor militating against infrastructure delivery in Delta State | 15 | 11 | 1 | 2 | 1 | 30 | 129 | 0.86 | 2nd |
| 2 | Youth restiveness is a factor militating against infrastructure delivery in the study area | 2 | 2 | 1 | 11 | 14 | 30 | 61 | 0.41 | 10th |
| 3 | Procurement option being adopted in infrastructure development is a factor militating against infrastructure delivery in the study area | 14 | 13 | 1 | 1 | 1 | 30 | 129 | 0.86 | 2nd |
| 4 | The lowland riverine difficult terrain is a factor militating against infrastructure delivery in the study area. | 15 | 11 | 1 | 2 | 1 | 30 | 129 | 0.86 | 2nd |
| 5 | Poor contract documentation is a factor militating against infrastructure delivery in the study area. | 10 | 9 | 2 | 6 | 3 | 30 | 113 | 0.75 | 6th |
| 6 | Inflation is a factor militating against infrastructure delivery in the study area | 14 | 10 | 2 | 2 | 2 | 30 | 124 | 0.83 | 4th |
| 7 | Lack of political will is a factor militating against infrastructure delivery in the study area | 11 | 8 | 2 | 6 | 3 | 30 | 113 | 0.75 | 6th |
| 8 | Lack of proper project management is a critical factor militating against infrastructure delivery in the study area | 3 | 6 | 2 | 9 | 10 | 30 | 80 | 0.53 | 9th |
| 9 | The upland undulating topography is factors militating against infrastructure delivery | 14 | 12 | 1 | 2 | 1 | 30 | 127 | 0.85 | 5th |
| 10 | Economic environment such as interest rate, currency exchange rate, price fluctuation are factors militating against infrastructure delivery in Delta State | 15 | 12 | 0 | 2 | 1 | 30 | 129 | 0.86 | 2nd |

The analysis of factors militating against infrastructure delivery in Delta State, as presented in Table 2, reveals that mismanagement of public funds, unsuitable procurement options, difficult riverine terrain, and adverse economic conditions such as interest rates, exchange rates, and price fluctuations are the most significant challenges, each recording a Relative Importance Index (RII) of 0.86. Inflation (RII = 0.83) and upland undulating topography (RII = 0.85) also emerged as critical impediments, highlighting the combined effect of economic instability and geographical conditions in frustrating effective infrastructure delivery. Poor contract documentation and lack of political will, both ranked 6th (RII = 0.75), further emphasize the role of weak governance structures in stalling infrastructural progress in the state.

In contrast, lack of proper project management (RII = 0.53) and youth restiveness (RII = 0.41) were ranked lower, suggesting that while they affect infrastructure delivery, they are considered less significant compared to financial, economic, and geographical challenges. Overall, the findings indicate that systemic and structural barriers particularly mismanagement, procurement weaknesses, and terrain difficulties—pose greater threats to infrastructure delivery in Delta State than social disturbances. This underscores the need for stronger financial accountability, appropriate procurement strategies, and targeted interventions to overcome terrain and economic challenges in order to ensure sustainable infrastructure development.

**Table 3: Wilcoxon Signed-Rank Test Results on Factors Militating Against Infrastructure Delivery in Delta State**

| S/N | Statement | Wilcoxon Statistic | Asymp. Sig. (2-tailed) | Decision @ α = 0.05 |
|---|---|---|---|---|
| 1 | Mismanagement of public funds is a factor militating against infrastructure delivery | 35.5 | 0.000018 | Reject Null Hypothesis |
| 2 | Youth restiveness is a factor | 57.0 | 0.000242 | Reject Null Hypothesis |
| 3 | Procurement option is a factor militating against infrastructure delivery | 29.5 | 0.000008 | Reject Null Hypothesis |
| 4 | The lowland riverine difficult terrain is a factor militating against infrastructure delivery in the study area. | 35.5 | 0.000018 | Reject Null Hypothesis |
| 5 | Poor contract documentation is a factor militating against infrastructure delivery in the study area. | 114.0 | 0.042608 | Reject Null Hypothesis |
| 6 | Inflation is a factor militating against infrastructure | 54.0 | 0.000342 | Reject Null Hypothesis |
| 7 | Lack of political will is a factor | 109.5 | 0.033681 | Reject Null Hypothesis |
| 8 | Lack of proper project management is a factor | 114.0 | 0.042608 | Reject Null Hypothesis |
| 9 | The upland undulating topography is a factor | 37.0 | 0.000021 | Reject Null Hypothesis |
| 10 | Economic environment (interest rate, etc.) is a factor | 37.5 | 0.000012 | Reject Null Hypothesis |

The paper tested the hypothesis “There are no factors militating against infrastructure delivery in Delta State” using. Wilcoxon Signed-Rank Test. The Wilcoxon Signed-Rank Test results in Table 3 indicated that all the identified factors militating against infrastructure delivery in Delta State were statistically significant at a 5% level of significance, as their p-values were all less than 0.05. This led to the rejection of the null hypothesis in each case. The results implied that issues such as the high allocation of more than 70% of the state budget to recurrent expenditure, the insufficiency of the less than 30% balance for achieving Sustainable Development Goals (SDGs) in infrastructure delivery, procurement options, corruption, youth restiveness, low budgetary provision, lack of political will, poor project management practices, physical environmental challenges like difficult terrains, and adverse economic conditions including inflation and currency fluctuations were confirmed as major barriers to infrastructure development in the state. These findings reinforced the perception that both systemic governance challenges and environmental-economic realities had significantly hindered effective infrastructure delivery.

## V. CONCLUSION AND RECOMMENDATION

This study investigated the factors hindering infrastructure delivery in Delta State, Nigeria, drawing insights from professionals in the construction sector. Despite the state’s abundant resource endowment, the findings reveal that infrastructure development is constrained by intertwined financial, institutional, economic, and environmental challenges.

The most critical barriers identified include mismanagement of public funds, unsuitable procurement practices, adverse macroeconomic conditions such as inflation, exchange rate instability, and interest rate fluctuations, as well as the difficult riverine and upland terrains. Other notable impediments are poor contract documentation, inadequate political will, and governance weaknesses, while issues such as youth restiveness and lack of proper project management, though present, were perceived as less critical. Overall, the study highlights that systemic inefficiencies, fiscal mismanagement, and geographical constraints are the dominant obstacles undermining infrastructure delivery in the state.

In response to these challenges, the study recommends a comprehensive and multi-dimensional strategy for improving infrastructure delivery in Delta State. First, there is a need to strengthen financial accountability by curbing mismanagement and prioritizing capital investment over recurrent expenditure. Second, procurement processes should be reformed to ensure transparency, competitiveness, and efficiency, alongside strict anti-Mismanagement of public funds mechanisms. Third, government fiscal planning should be enhanced and revenue diversified beyond oil dependence to reduce vulnerability to economic shocks. Finally, context-specific engineering and project management solutions should be adopted to address the difficulties posed by Delta State's unique terrain and environmental conditions. Such reforms are critical not only for improving the state's infrastructure performance but also for advancing its developmental goals and aligning with the Sustainable Development Goals (SDGs).

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