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IMPACT OF BELT AND ROAD INITIATIVE IN INFRASTRUCTURAL DEVELOPMENT IN NIGERIA

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ABSTRACT

This study explores that infrastructural development is acknowledged as a crucial driver of economic growth, social change, and poverty alleviation in developing economies. Nigeria's ability to accelerate industrialisation, enhance competitiveness, and integrate effectively into the global economy has been hindered by these structural challenges. Critics raise important issues regarding debt sustainability, the clarity of loan agreements, the prevalence of Chinese contractors, and the possible geopolitical consequences of China's increasing influence in Africa. Informed by Dependency Theory, this study employs a qualitative secondary research methodology, examining academic literature, government reports, policy briefs, and media publications to evaluate the advantages and possible risks associated with Chinese engagement. The study concludes that although BRI investments tackle essential infrastructure deficiencies, they also establish patterns of financial, technological, and trade dependence that may solidify Nigeria's peripheral status in the global economy if not managed with caution. Therefore, the BRI offers opportunities for development alongside risks that necessitate careful policy measures. The study therefore recommended among others that, the Nigerian government ought to implement more robust local content policies in BRI projects to guarantee active participation from Nigerian engineers, technicians, and construction firms. Contract agreements should include mandatory technology transfer and capacity-building programmes to lessen dependence on foreign expertise.

Keywords: Impact, Belt, Road, Initiative, Infrastructure, Development, Nigeria.

Introduction

Infrastructural development is acknowledged as a crucial driver of economic growth, social change, and poverty alleviation in developing economies. Nigeria's infrastructure gap, which is estimated to exceed US$100 billion each year, persists in hindering productivity and restricting efforts towards economic diversification (African Development Bank, 2020).

Chronic underinvestment, a weak maintenance culture, inefficiencies in public procurement, and fiscal limitations have led to inadequate transport networks, an unreliable electricity supply, and insufficient port and rail systems (World Bank, 2021). Nigeria's ability to accelerate industrialisation, enhance competitiveness, and integrate effectively into the global economy has been hindered by these structural challenges.

In light of the infrastructure challenges faced by the Global South, China initiated the Belt and Road Initiative (BRI) in 2013. The BRI seeks to improve global connectivity by making significant investments in transport corridors, energy systems, telecommunications infrastructure, and industrial zones throughout Asia, Africa, and Europe (National Development and Reform Commission, 2015). The initiative quickly established itself as a key component of China's global development strategy and foreign policy, with Africa obtaining a substantial share of BRI-aligned financing (Brautigam, 2020).

Nigeria officially became a part of the BRI framework in 2018, further strengthening its strong bilateral ties with China, which is its largest trading partner and a significant source of foreign direct investment and development financing (Egbula & Zheng, 2021). China has financed and constructed numerous strategic infrastructural projects in Nigeria through the BRI. The projects encompass the Lagos–Ibadan Standard Gauge Railway, the Abuja–Kaduna Railway, the expansion of key airport terminals, the Zungeru Hydropower Project, along with various road and bridge developments (China Civil Engineering Construction Corporation, 2020; Ogunkola et al., 2021). These initiatives aim to improve transport connectivity, promote intra-regional trade, lower logistics expenses, and strengthen Nigeria's economic competitiveness. Despite these contributions, the BRI's role in Nigeria has sparked a variety of scholarly and policy discussions. Supporters contend that infrastructure funded by China fills essential investment voids in Nigeria, speeds up industrial growth, and brings in technical know-how that local companies can utilise (Adewuyi & Oye, 2020). Additionally, financing for infrastructure projects from China typically features quicker execution timelines and reduced bureaucratic obstacles when compared to conventional Western lenders (Brautigam & Hwang, 2020).

Critics raise important issues regarding debt sustainability, the clarity of loan agreements, the prevalence of Chinese contractors, and the possible geopolitical consequences of China's increasing influence in Africa (Carmody, 2020; Sun, 2019). Environmental risks, restricted local content involvement, and uncertainties about the sustainability of long-term projects continue to fuel the ongoing discussion (Umejei, 2021). The differing viewpoints highlight the necessity for empirical assessment of the impact of the BRI on infrastructural development in Nigeria.

Considering Nigeria's significant economic role in Africa and its considerable infrastructure needs, evaluating the effects of the Belt and Road Initiative is crucial for guiding informed policy choices. A thorough examination can reveal the advantages, expenses, and lasting effects of infrastructure projects backed by the BRI, thus steering future collaboration between Nigeria and China while making certain that these partnerships are in harmony with Nigeria's wider development goals.

Statement of the Problem

Nigeria is grappling with a significant infrastructure deficit that hampers economic growth, regional integration, and national development. Even with numerous government efforts, the nation continues to face challenges such as inadequate power supply, poor road networks, outdated rail systems, congested ports, and a lack of sufficient industrial infrastructure. The persistence of these gaps can be attributed mainly to fiscal constraints, inadequate institutional capacity, and uneven policy execution. Nigeria has progressively sought external partners, such as China, for infrastructure financing and technical assistance.

Nigeria formally joined the Belt and Road Initiative (BRI) in 2018, leading to a significant involvement of Chinese financing and construction firms in the development of key infrastructural projects, including the Lagos–Ibadan Railway, Abuja–Kaduna Railway, Zungeru Hydropower Project, and new airport terminals. Although these projects seem to tackle essential infrastructure requirements, there is a lack of empirical agreement regarding the true developmental effects of the BRI in Nigeria. Policymakers and scholars are at odds: some contend that projects backed by the BRI improve connectivity, alleviate transport bottlenecks, and foster economic growth; others raise alarms about increasing debt exposure, minimal local content involvement, environmental impacts, and the long-term viability of infrastructure funded by China.

This divergence underscores a significant knowledge gap. Although BRI investments in Nigeria are on the rise, there remains a lack of thorough analysis regarding the impact of these projects on infrastructure development, economic performance, and national development priorities. There are lingering questions regarding how well BRI projects align with Nigeria's infrastructure master plans, the long-term economic value they provide, and the management of financial, technological, and governance risks.

Consequently, the primary issue this study aims to tackle is the insufficient comprehensive evidence regarding the actual effects—whether positive, negative, or mixed—of the Belt and Road Initiative on infrastructural development in Nigeria. In the absence of such analysis, policymakers might either overvalue the benefits or undervalue the risks linked to BRI engagements, which could result in unsustainable financing, misaligned infrastructure priorities, or less than optimal development outcomes.

Literature Review

Conceptualizing Infrastructure Development

Infrastructure development is acknowledged as a vital catalyst for economic growth, trade enhancement, and social well-being. Calderón and Servén (2014) assert that infrastructure, particularly in transport, energy, and communication systems, plays a crucial role in shaping productivity and competitiveness within developing economies. In the African context, the African Development Bank (2020) emphasises that ongoing infrastructure deficits impede industrialisation, elevate transaction costs, and diminish the appeal of foreign investment. Nigeria faces an annual infrastructure financing gap estimated at US$100 billion, which undermines its long-term development goals (World Bank, 2021). This deficit has driven the pursuit of external financing and partnerships, including collaboration with China through the Belt and Road Initiative.

The Belt and Road Initiative: Global and African Perspectives

The Belt and Road Initiative (BRI), introduced in 2013, represents China's premier global development strategy focused on improving connectivity via substantial infrastructural investments (National Development and Reform Commission, 2015). According to scholars like Summers (2016) and Rolland (2017), the BRI integrates economic, geopolitical, and diplomatic goals, positioning it as one of the most ambitious development frameworks of the 21st century.

The BRI has enabled significant investments in railways, highways, ports, and energy projects across Africa. Brautigam (2020) observes that Chinese infrastructure financing in Africa frequently addresses the voids created by Western lenders who are becoming more risk-averse. Nonetheless, some critics raise concerns about the long-term sustainability of Chinese loans and their impact on African sovereignty (Sun, 2019; Carmody, 2020). The discussions highlight wider apprehensions regarding China's growing impact in developing areas.

China–Nigeria Relations and the BRI Framework

China and Nigeria share a deep-rooted partnership in trade, assistance, and infrastructure funding. Egbula and Zheng (2021) emphasise that China emerged as Nigeria's largest trading partner and a significant source of concessional loans prior to Nigeria's formal endorsement of the BRI in 2018. Within the BRI framework, China has provided funding for initiatives including the Abuja–Kaduna Railway, Lagos–Ibadan Standard Gauge Railway, the Zungeru hydropower project, and expansions of airport terminals (CCECC, 2020).

Researchers widely recognise the magnitude and rapidity of Chinese project execution in Nigeria (Ogunkola et al., 2021). Nonetheless, discussions continue about the clarity of loan agreements, restrictions on local content, and the prevalence of Chinese contractors in infrastructure development (Adewuyi & Oye, 2020).

Impact of the BRI on Transport Infrastructure in Nigeria

Transport infrastructure stands out as a prominent aspect of BRI influence. The Abuja–Kaduna and Lagos–Ibadan rail projects serve as notable instances of enhanced connectivity attributed to Chinese investment (CCECC, 2020). Ogunkola et al. (2021) indicate that these projects greatly decrease travel time, enhance regional integration, and promote trade.

Some scholars contend that the sustainability of such infrastructure remains questionable because of elevated maintenance costs, a lack of local technical expertise, and difficulties in generating revenue to repay loans (Brautigam & Hwang, 2020). Moreover, there are apprehensions regarding Nigeria's increasing debt exposure, particularly due to its significant dependence on Chinese loans for major projects (Sun, 2019).

Impact of the BRI on Energy and Industrial Infrastructure

Nigeria's energy insecurity has consistently hindered its economic performance. China has financed the Zungeru Hydropower Plant and has played a role in enhancing electricity transmission under the BRI (Adewuyi & Oye, 2020). Research indicates that these investments can enhance the reliability of electricity supply and bolster industrial productivity (Ogunkola et al., 2021).

Critics contend that these projects often encounter environmental challenges, labour issues, and a restricted transfer of technology to Nigerian engineers (Umejei, 2021). Additionally, certain energy projects have experienced delays as a result of contract renegotiations and financing challenges.

Debt Sustainability and Governance Concerns

A key focus in the literature is the issue of debt sustainability. China maintains that its loans are concessional and mutually beneficial; however, scholars like Carmody (2020) and Sun (2019) caution that mismanaged debt obligations may put Nigeria at risk fiscally. Brautigam (2020) counters that the "debt-trap diplomacy" narrative is overstated, arguing that most African countries—including Nigeria—retain autonomy over their loan decisions and asset management.

Governance issues are also significant, such as unclear loan terms, inadequate local project oversight, and a lack of sufficient community consultation (Umejei, 2021). The issues at hand prompt enquiries regarding the long-term developmental effects of BRI projects in Nigeria.

Theoretical Framework

Dependency Theory

Dependency Theory offers a significant framework for analysing the effects of the Belt and Road Initiative (BRI) on infrastructure development in Nigeria. Emerging in the late 1950s and 1960s, the theory served as a critique of Modernisation Theory, questioning the idea that all countries progress along a linear trajectory towards development. Early advocates like Raúl Prebisch (1950), Andre Gunder Frank (1967), Theotonio Dos Santos (1970), and Samir Amin (1974) contended that underdevelopment is not an inherent phase of economic progression but instead the result of structural relationships that position certain nations in subordinate economic roles. These scholars argue that the global economy is segmented into the "core," which holds power over capital and technology, and the "periphery," which provides raw materials and relies on the core for investment, manufactured goods, and expertise.

Dependency Theory posits that peripheral countries continue to be underdeveloped due to their entrapment in unequal economic relationships that benefit industrialised nations. Relationships are sustained through trade patterns, foreign investment, technological reliance, and political influence (Frank, 1967; Dos Santos, 1970). This framework is especially relevant to Nigeria's infrastructural collaboration with China within the BRI context. While China is not typically categorised as a Western "core" nation, there is a growing scholarly perspective that characterises China–Africa relations as a type of neo-dependency, influenced by imbalanced economic and political power (Carmody, 2020; Sun, 2019).

Nigeria's dependence on Chinese funding for major infrastructure projects highlights the financial dynamics described in Dependency Theory. Numerous BRI projects—including the Lagos–Ibadan Railway, Abuja–Kaduna Railway, Zungeru Hydropower Plant, and airport terminals—are financed through Chinese loans that require the use of Chinese contractors, equipment, and labour (Egbula & Zheng, 2021). This supports Dos Santos's (1970) assertion that dependency is sustained when foreign financing strengthens reliance on external entities for capital accumulation. These projects tackle essential infrastructure requirements, yet they

also heighten Nigeria's susceptibility to external debt and reliance on Chinese financial institutions, which raises concerns regarding fiscal vulnerability (Sun, 2019).

Another aspect emphasised by Dependency Theory is technological dependence. The majority of BRI-related projects in Nigeria are carried out by Chinese companies, resulting in minimal technology transfer to Nigerian engineers or local industries (Adewuyi & Oye, 2020). According to Frank (1967), the movement of technology from core to periphery frequently strengthens dependency instead of fostering independent development capabilities. Nigeria faces the danger of continued dependence on Chinese expertise for future construction, maintenance, and technological advancements if there is no significant transfer of skills and technology.

The significance of Dependency Theory is further highlighted by trade dependence. China stands as Nigeria's foremost import partner, providing machinery, vehicles, electronics, and various manufactured goods, whereas Nigeria primarily exports crude oil and other primary commodities (Egbula & Zheng, 2021). This asymmetric trade structure reflects the core–periphery pattern outlined by Prebisch (1950), in which peripheral economies export low-value raw materials while importing high-value finished products. Such patterns obstruct industrial diversification and sustain long-term dependency.

Some contemporary scholars contend that, despite these concerns, China's role in Africa is distinct from classical Western imperialism. Brautigam (2020) argues that Chinese loans primarily focus on specific projects and are motivated by practical development goals instead of coercive tactics. Additionally, African governments, such as Nigeria's, maintain the ability to negotiate contracts and choose projects (Brautigam & Hwang, 2020). This indicates that the relationship between China and Nigeria could embody a more intricate type of interdependence instead of mere exploitation.

Nevertheless, the perspectives offered by Dependency Theory continue to be significant for examining Nigeria's participation in the BRI. The theory emphasises structural inequalities in global economic relations and elucidates how China's financing and technological supremacy might strengthen Nigeria's marginal status in the global economy. This highlights the possible long-term dangers linked to external borrowing, restricted domestic capacity-building, and dependence on foreign contractors. As a result, this theoretical framework directs the current study by exploring whether BRI-driven infrastructure development strengthens Nigeria's autonomy and sustainable growth or exacerbates structural dependency on China.

Methodology

This research employs a qualitative design that relies on the analysis of secondary data. This design aims to examine and analyse the available evidence regarding the effects of the Belt and Road Initiative (BRI) on infrastructural development in Nigeria. Qualitative secondary research is suitable as it enables the researcher to integrate information from recognised academic, institutional, and policy sources instead of gathering primary data.

Conclusion

This research explored the effects of the Belt and Road Initiative (BRI) on infrastructure development in Nigeria, utilising secondary data sourced from academic literature, policy

reports, and institutional publications. The analysis shows that the BRI has made substantial contributions to Nigeria's transport, energy, and industrial infrastructure through major projects like the Abuja–Kaduna Railway, Lagos–Ibadan Railway, Zungeru Hydropower Plant, and upgrades to airport terminals. The projects have successfully enhanced connectivity, minimised travel time, increased electricity generation capacity, and bolstered economic activities.

Nevertheless, the research also reveals that the advantages come with significant challenges. The significant dependence on Chinese loans brings to light issues regarding debt sustainability and enduring fiscal pressure. The limited transfer of technology, the predominance of Chinese contractors, and the inadequate involvement of local content hinder Nigeria's ability to independently sustain or reproduce such infrastructure. Moreover, matters concerning transparency, contract negotiation, and governance persist in influencing public discussions regarding the future of China–Nigeria collaboration within the BRI framework.

The study, utilising Dependency Theory, concludes that although BRI investments tackle essential infrastructure deficiencies, they also establish patterns of financial, technological, and trade dependence that may solidify Nigeria's peripheral status in the global economy if not managed with caution. Therefore, the BRI offers opportunities for development alongside risks that necessitate careful policy measures.

Recommendations

Based on the findings, the following recommendations are proposed:

1. The Nigerian government ought to implement more robust local content policies in BRI projects to guarantee active participation from Nigerian engineers, technicians, and construction firms. Contract agreements should include mandatory technology transfer and capacity-building programmes to lessen dependence on foreign expertise.
2. Government ministries and agencies ought to implement open contracting standards for all BRI projects. Clear procurement processes and the public sharing of loan terms will improve accountability, diminish corruption, and foster public trust in China–Nigeria collaboration.
3. Nigeria ought to perform regular debt sustainability analyses prior to taking on new loans. The government should, where feasible, negotiate more advantageous financing terms, pursue concessional loans, or investigate alternative funding models like public–private partnerships (PPPs) to lessen reliance on Chinese credit.
4. Infrastructure financed under the BRI must be thoughtfully aligned with national priorities, including the Nigeria Infrastructure Master Plan (NIMP) and the Economic Recovery and Growth Plan (ERGP). This guarantees that projects are financially sustainable and support long-term development objectives instead of catering to external strategic interests.
5. Government agencies need to enhance their project monitoring, evaluation, and oversight to guarantee timely implementation, maintain quality control, and ensure adherence to established standards. It is essential to conduct independent audits to evaluate the effectiveness and sustainability of completed projects.

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