

Boosting Economic Diversification in Nigeria through AfCFTA: How Trade Logistics and Infrastructure Shape the Future

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ABSTRACT

The objective of this research was to investigate the impacts of trade logistics and infrastructure on Nigeria's economic diversification under the framework of the African Continental Free Trade Area (AfCFTA). For Nigeria, economic diversification continues to be a dominant goal owing to its dependence on oil exports, which makes the economy vulnerable to unpredictable global commodity prices. AfCFTA offers Nigeria a unique chance to diversify its economic activities through intra-African trade and industrial development. This initiative, however, depends on the availability of adequate trade logistics and infrastructural facilities. The study employs a mixed-methods approach to evaluate the state of Nigeria's logistics and infrastructural systems, identifying gaps and challenges at the qualitative and quantitative levels that prevent optimal utilization of AfCFTA. The research indicates that insufficient infrastructure, consisting of inadequate road systems, congested ports, and ineffective customs procedures, severely restricts trading activities. Lack of coherent and cohesive logistics management is also a fundamental issue that prevents Nigeria from maximizing the opportunities of AfCFTA. This study emphasizes the need for adequate funding to be oriented towards infrastructure development, efficient logistics, and policy frameworks. Some recommendations include the enhancement of public-private partnerships, improved port infrastructure, and stronger synergies at the regional level under the AfCFTA scheme. To work towards all-encompassing economic stability and development in Nigeria, it is necessary to first resolve these matters.

Keywords: Economic Diversification, AfCFTA, Trade Logistics, Infrastructure, Nigeria, Policy Reforms.

INTRODUCTION

A major deficit in government oil revenue diversification efforts makes Nigeria highly susceptible to external shocks. This makes sustaining economic and development goals extremely challenging. Shifting crude oil-associated activities toward value-added industry has repeatedly been attempted but without achieving the goal. Nigeria's economic AfCFTA creates a novel international opportunity, establish free trade zones in 2018 and stimulate growth in inter-Africa trade, industrial development, and competitiveness. The 'AfCFTA' is the most extensive free trade zone globally. It incorporates 54 African states and aims to reduce trade tariff barriers and enhance accessibility to different markets (AfCFTA, 2020).

The Integration of AfCFTA in Nigeria requires the improvement of trade logistics systems and infrastructure. These systems and processes must include transportation, distribution, and warehousing for trade across borders to be more cost-effective and competitive. According to Fagbemi (2022), Nigeria is unable to consolidate regionally with trade agreements like AfCFTA due to poor infrastructure, such as inadequate road networks, congested ports, and inconsistent power supply. Improving infrastructure will help mitigate most of Nigeria's challenges with regard to exports and productivity in non-oil sectors, while also helping in the diversification of the economy.

Most of the literature is in agreement on the role infrastructure and logistics play in economic growth and trade facilitation. For example, Adebayo and Salami (2023) indicate that in order for Nigeria to fully accept and incorporate AfCFTA into its trade relations, there needs to be an improvement in infrastructure. Also, Ali and Ahmed (2022) state that there is a need for modernization of trade logistics in order for Nigeria to improve its competitiveness. Akinyele (2019) and Kigundu (2021) point out that there is a lack of coherent strategic frameworks which, along with inadequate funds and conflicting policies, creates a barrier for progress in these areas.

Consequently, this research examines the impact of trade logistics and infrastructure on Nigeria's economic diversification within the context of AfCFTA. Specifically, it seeks to analyze the policies and the structural, economic frameworks that create obstacles to efficient logistics and infrastructure development and offers recommendations to assist Nigeria in optimizing its AfCFTA participation and increasing its economic diversification.

Research Problem

Dependence on crude oil exports poses a risk to Nigeria's economy due to its susceptibility to external shocks, especially during periods of oil price volatility. Although diversification is one of the most acknowledged approaches to promoting sustained economic growth, the rate of diversification in Nigeria is sluggish due to a myriad of structural, policy, and infrastructural obstacles (Adebayo & Salami, 2023). The African Continental Free Trade Area (AfCFTA) is one of the first initiatives designed to promote intra-African trade and economic integration. It seeks to provide Nigeria with a strategic opportunity to speed up its diversification drive. On the other hand, the full benefits of AfCFTA cannot be harnessed without considerable attention to its trade logistics and infrastructure challenges (AfCFTA, 2020).

Within the AfCFTA context, the importance of trade logistics, which encompass transport systems, ports, warehousing, and energy provision, is critical for enabling trade across borders. Nigeria has a number of logistical problems, including poor road networks, port congestion, inadequate rail networks, and unstable power supply, which considerably affect trade operations within the country. Such infrastructural deficits further exacerbate the cost of trade and dampen Nigeria's relevance in the competitive African market, hindering the country's ability to optimally take advantage of AfCFTA (Fagbemi, 2022). Inefficient infrastructure and slow trade logistics hinder the ability to diversify the economy, especially the growth of non-oil export markets, by greatly restricting access to regional and global markets (Kigundu, 2021).

In addition, Ali and Ahmed (2022) noted that inadequate funding and policies without a unified and strategic plan targeting infrastructure development have stifled trade facilitation efforts in Nigeria. Despite the existence of research attempting to articulate the dynamics of trade and infrastructure in Africa, the nexus of trade infrastructure and Nigeria's economic diversification relative to AfCFTA has been insufficiently investigated. This study focuses on this gap by analyzing how trade logistics and infrastructure affect Nigeria's capacity for employing AfCFTA towards economic diversification, the obstacles that must be resolved, and the effective strategies that should be adopted for full integration into the continent's trade network.

LITERATURE REVIEW

Economic Diversification

The phenomenon of economic diversification relates to the attempt made by a country or region to widen its economic activities by creating new industries or sectors (Ali & Ahmed, 2022). Attempting to achieve economic diversification is important because it mitigates overreliance on a single sector—especially those vulnerable to external shocks like natural resources—and bolsters the economy's adaptability to provide and absorb fluctuations in global economic activity (Fagbemi, 2022). For many countries, particularly those that depend heavily on commodities like oil or minerals, diversification is considered one of the most important policies to obtain sustainable long-term development.

In practical terms, economic diversification means movement of resources including labor and capital from

traditional sectors like agriculture or oil extraction to other sectors such as manufacturing, services, technology, and even tourism (Adebayo & Salami, 2023). This process could foster the development of new sources of income, employment, and innovation which are critical in restructuring the economy (Adebayo & Salami, 2023). It is also important in reducing the risks associated with high volatility of commodity prices, attaining economic stability, and providing wider opportunities for job creation (Kigundu, 2021).

In Nigeria, reliance on crude oil exports has hampered the economic stability and growth of the country. The global reduction in the price of oil has recently underscored the need for the nation to further diversify its economy in order to improve its performance and reduce vulnerability. As highlighted by the AfCFTA (2020), diversification is fundamental to Nigeria's ability to take full advantage of regional trade agreements such as the African Continental Free Trade Area (AfCFTA), since it can create opportunities for trade in non-oil commodities like agriculture, manufacturing, and services.

Trade logistics and infrastructure in the border regions are pivotal for economic diversification since they facilitate movement of goods and services. Adequate logistics infrastructure is critical for the production and export of non-oil goods as well as enhanced market access, and regional integration (Adebayo & Salami, 2023). Therefore, it follows that the strengthening of logistics systems and infrastructure in Nigeria will enhance economic diversification and enable the country meaningfully participates in the AfCFTA.

AfCFTA (The African Continental Free Trade Area) is a trade agreement focused on establishing a continental free trade area that facilitates trade within Africa. It was adopted by the African Union (AU) in 2018 with an objective to eliminating tariffs and non-tariff barriers, free access to commodities, goods, and services, and increasing the competitive ability of African industries in international markets (African Union, 2018). AfCFTA is the largest free trade area in the world by the number of participating countries, which includes 54 out of the 55 African Union member states, with a total population of more than 1.3 billion people and a combined GDP of \$3.4 trillion (UNECA, 2020).

The AfCFTA will support Africa's development objectives by fostering the diversification of economies and industrialization as well as reducing dependence on a limited range of commodities. It also stresses the creation of a more favorable environment for the development of SMEs, increasing employment, and raising the standards of living for citizens in all member countries (UNECA, 2020). Additionally, the agreement aims at the removal of cross-border investment restrictions, free movement of people, and the overall improvement in business activity on the continent (Togo, 2021). AfCFTA fosters effective collaboration among nations and taps into Africa's array of resources, creating a strategic framework to magnify the opportunities for growth, diversification, and transformation of Africa into one of the world economic zones (Akinyele, 2019).

Trade Logistics

Planning, coordinating, and controlling the movement of people, goods, services, and information across geographic boundaries is referred to as trade logistics. It is broad in scope and includes transportation, warehousing, inventory control, distribution, and goods handling all aimed at promoting efficient and seamless trade (Adebayo & Salami, 2023). In relation to international trade, logistics is a fundamental aspect of business that ensures products move from the origami to the final destination in a cost-effective, timely, and competitively advantageous manner.

Logistics of trade involves a variety of elements such as the transportation infrastructure (roads, railways, shipping by air or sea), warehouses and storage facilities, customs and regulatory compliance (AfCFTA, 2020). Timely and accurate delivery of goods, which involves the tracking of shipments and proper inventory management, is an integral part of trade logistics at a business. Inadequate or low standard logistics have negative impacts these include, delays, higher operating costs, inability to find and take advantage of market opportunities, and slowed growth of international trade.

Within trade agreements such as African Continental Free Trade Area (AfCFTA), the importance of trade logistics increases in magnitude. Member states ability to fully integrate into AfCFTA is greatly determined by their ability to uplift their logistics infrastructure, improve connectivity, and enhance the efficiency of customs

procedures. According to Fagbemi (2022), improving logistics in Africa's international trade makes it more competitive and thus more sought after. In his work, he also notes that there is considerable economic potential in improving trade logistics within the AfCFTA system.

In relation to Nigeria, trade logistics is accompanied with quite a number of issues such as poor infrastructure, lack of transport facilities, and inefficient port activities (Ali & Ahmed, 2022). These factors need to be improved to ensure that the country can fully utilize the benefits of the AfCFTA and successfully diversify its economy from the heavy dependence on crude oil export.

Infrastructure

Infrastructure is the basic or foundational systems serving an entire society or enterprise. These include transport systems (roads, railways, ports, and airports), energy (electricity, oil, gas), communications (tele-t, internet), public services (water, waste, health, education) (AfCFTA, 2020). The economy is, and will continue to be, highly reliant upon infrastructure because it enables industries, trade, and services to function properly. It is important because it reduces the costs and increases the productivity, and the living standards of the people.

Infrastructure is usually classified into two main divisions: hard infrastructure and soft infrastructure. Hard infrastructure includes the physical networks and facilities such as roads and bridges, airports, and energy systems. Soft Infrastructure includes the registers and systems that help other activities run within society, encompassing laws and educational system frameworks alongside regulatory bodies systems (Adebayo & Salami, 2023). Economically enabling activities and supporting development, both types of infrastructure are fundamental for sustainable growth.

In economic growth and diversification, it is clear that infrastructure is vital for ever achieving competitiveness within the global market. With the aid of technology, efficient infrastructure helps cut down time spent on production and distribution services. This, in turn, improves access to markets, enhances ease doing business in a particular region, and influences the overall cost of doing business (Fagbemi, 2022). For Nigeria, non-oil goods and services export diversification funding expansion for ports and road infrastructure improvement advanced trade logistics serving the purpose is crucial (Ali & Ahmed, 2022). Improved infrastructure also helps access to services and aids in social inclusion, which leads to poverty alleviation and improvement to citizen's lives.

As with other countries, Nigeria stands to gain from trade agreements like the African Continental Free Trade Area (AfCFTA) but can only realize these benefits with the modernisation of existing infrastructure. Infrastructure gaps in transportation and energy in Nigeria handcuff the movement of goods and services which impedes the country's ability to optimally leverage trade opportunities (Adebayo & Salami, 2023).

THEORETICAL REVIEW

Economic Diversification Theory

Economic diversification theory explains the broadening of economic activities in a country, region, or organization with intention of reducing devotion to a single industry or sector. One of the approaches used in economic diversification is developing multiple industries with different risks sources. In other words, diversification improves the economic stability, decreases susceptibility to external shocks, and increases growth in the long run (Bohlander & Snell 2021). This theory suggests formulation of an economy that utilizes and invests into different sectors such as agriculture, technology, services and even manufacturing.

For developing economies like Nigeria, economic diversification is crucial to step out from over dependence to natural resources like oil. As a resource based economy, Nigerian oil exports highly depend on global commodity prices which make the economy volatile (Adebayo & Salami, 2023). Theory of economic diversification states that a country can reduce such risks by increasing investments into non oil sectors such as agriculture, services, and even manufacturing leading to more sustainable growth (Ali & Ahmed 2022).

The theory is relied upon on the premise that diversification increases resilience for businesses against economic

downturns, creates employment opportunities, fosters innovation, and enhances the standard of living of the people (Fagbemi, 2022). In addition, it furthers the argument that a diversified economy has more latitude to respond to international shifts because it has more sources of revenues. For example, the agricultural and manufacturing sectors can greatly assist in the development of the economy by creating accessible markets, increasing exports, and generating foreign exchange (Adebayo & Salami, 2023).

In relation to the African Continental Free Trade Area (AfCFTA), economic diversification is considered the primary drive for strengthening intra-African trade as it broadens production capabilities within different industries. Through the development of infrastructure and trade logistics, Nigeria and other regions will be able to compete in the regional markets, thus maximally enjoying the benefits of the trade liberalization offered by AfCFTA (Ali & Ahmed, 2022).

Theories on Trade Logistics and Infrastructure Development

The two components of trade logistics and infrastructure development have, in particular, captured the interest of scholars economists theorists study straggling economies because, as is vividly obvious, neglecting the value of transport, communication, and distribution systems in any economy as a system designed to operate effectively and cost-efficiently. As such, multiple theories have been proposed to define the role of both logistics and infrastructure propelling a particular region's economy, more so within developing countries such as Nigeria. Fulfillment of these theories tries to investigate corridor development, trade infrastructure, and plan systems approach for development within construction works.

The Theory of Comparative Advantage

This theory proposed by David Ricardo forms the basis of international trade and the importance of logistics in the economic development of a country. He believed that a country should specialize in the production of certain goods and services if the opportunity cost is lower than that of other countries, and these goods should be traded internationally (Ricardo, 1817). The systems of trade logistics, such as transport, storage, and distribution, trade, and other commerce are vital in attaining the benefits of comparative advantage since they lower costs and promote the free flow of goods between the nations. With respect to AfCFTA, infrastructure development can assist African nations such as Nigeria in better exploiting their comparative advantages by reducing logistical costs (Adebayo & Salami, 2023).

The New Economic Geography Theory

The New Economic Geography (NEG) theory developed by Krugman (1991) places an emphasis on the importance of location, infrastructure, and its impact on economic outcomes. According to NEG, clustering economic activities at a particular location improves efficiency and productivity as firms and industries aggregate due to interdependence, infrastructure, and industrial concentration. In trade logistics and infrastructure advancement, this theory states that the concentration of industries in certain regions that are well-connected can reduce trade costs and create economic centers that enhance regional integration and development. Nigeria, for example, stands to benefit from the construction of transport networks and digital infrastructure ports. A port in the context of AfCFTA would help create economic clusters, enhance regional trade and encourage industrialization (Fagbemi, 2022).

The Global Value Chain Theory

Gereffi (1994) built the Global Value Chain (GVC) theory to describe how production processes in one part of the world heavily rely on the interrelated activities from various other parts of the world. Trade logistics and infrastructure development are critical components of this theory because they ensure movement of raw materials, intermediate goods, and finished products across international borders during different phases of production. All the improvements that are taking place in transportation, communication, and logistics infrastructure allow value chain firms to lower their costs and improve their participation in international trade, thereby stimulating competition. AfCFTA has the potential to improve logistics infrastructure in Nigeria, thereby increasing the country's ability to integrate into global supply chains, enrich its exports, and lower dependency on oil exports (Ali & Ahmed, 2022).

The Trade Facilitation Theory

According to the Wilson Trade Facilitation Theory (2003), the lack of tariffs, customs, and logistical barriers to the movement of goods and services is a crucial factor. Trade facilitation logistics and infrastructure focus on reducing delays and transportation costs, which benefits exporters. Adebayo and Salami (2023) argue that Nigeria's trade infrastructure is insufficient and that the country has low participation in regional trade under the AfCFTA agreement. Nigeria would benefit from upgrading trade related infrastructure such as roads, rail, ports and airports. Improved logistics of trade in Nigeria will lead to greater investment, improved exports, and diversification of the economy from oil dependency.

The Infrastructure-Led Growth Theory

The Infrastructure-Led Growth (ILG) theory maintains that spending on infrastructure such as transportation and energy systems, and communication networks is very important for initiating the economic growth of a country (Calderón, 2009). In this regard, the ILG theory explains that infrastructure serves as a bottleneck accelerator for economic diversification because it enables the efficient movement of products, lowers the overall expenditure incurred in production, and also expands the market scope for the business. As regards Nigeria's efforts towards economic diversification within the context of AfCFTA, improving logistics and infrastructure is critical for developing new frontiers in manufacturing, agriculture, services and overall economic competitiveness (Fagbemi, 2022).

Empirical Review

The available literature discussing the interplay between trade logistics, infrastructure, and economic diversification sheds light on how infrastructure impacts trade agreements like the African Continental Free Trade Area (AfCFTA) and economic diversification in developing countries, particularly Nigeria. Numerous studies underscore the importance of efficient trade logistics as a catalyst for economic diversification. Akinwale (2021) notes that successful logistics systems enable the movement of goods, lower transportation costs, and enhance the overall competitiveness of a market, which are all important for economic diversification. This agrees with Ajayi's (2020) argument which posits that modern trade logistics infrastructure, including roads, ports, and customs systems, can aid the expansion of Nigeria's non-oil sectors, especially agriculture and manufacturing. Ojo and Abiola (2022) study also corroborates this view by demonstrating that Nigeria's logistics sector is a key factor in the country's ability to diversify from oil exports. Still lacking efficient infrastructure and the slow pace of logistics development in Nigeria continues to impede economic diversification (Eze, 2021).

As with many other regional undertakings, infrastructure development is often cited to provide support for trade relations at the level of AfCFTA. Adesina and Akinyemi (2020) examined intra-regional trade and economic diversification in the African context and how better infrastructure would aid it. In their opinion, infrastructure on its own, including transport and energy as well as communication networks, features prominently for dismantling trade barriers and enabling African nations to integrate economically. Within Nigeria, Agbola and Eze (2021) lamented that the country's infrastructure development, particularly roads, ports, and rail networks, is suboptimal, which greatly impedes Nigeria's ability to optimally harness the potential offered by AfCFTA. These factors not only obstruct trade but also cause severe logistical problems that increase costs and diminish the competitive position of Nigerian industries in international markets. In the period between 2019 and 2023, Akamobi, Usifoh, and Ejefobihi (2024) studied the macroeconomic policy impacts of the African Continental Free Trade area (AfCFTA) on Nigeria. Their regression analysis demonstrated that AfCFTA had a clear positive influence on the GDP and trade balance of Nigeria, but there was no noticeable impact on the inflation rate, which was mostly affected by domestic parameters. In the same context, Akamobi, Unachukwu, and Nosike (2024) used scenario analysis to study the likely impacts of AfCFTA on poverty, social welfare, and the economic development of Nigeria. They maintained that the agreement stands to improve the efficiency of the market, allocation of resources, and the competitiveness of industries, which would help alleviate poverty and improve social welfare.

The literature assessing the possible effect of AfCFTA on Nigeria's economic diversification presents divergent views. Some authors, like Ekwe and Nwachukwu (2022), contend that AfCFTA could promote diversification

because it opens up new markets for Nigerian products. But they stress that the potential will only be realized if the logistical and infrastructural requirements are met. That research pointed out Nigeria's vulnerability to shocks owing to its dependence on oil exports, and the low diversification of industrial output, which necessitates comprehensive trade infrastructure reforms to ensure successful implementation of AfCFTA. Contrarily, a study by Yusuf (2021) posits that Nigeria will not fully benefit from AfCFTA without adequate investment in logistics and infrastructure. He argued that inadequate infrastructure and weak policy frameworks would diminish Nigeria's ability to engage with the agreement and actively pursue its economic diversification.

In their analysis of the challenges Nigeria contends with in building a comprehensive trade logistics system, a number of scholars have pointed to infrastructural deficits. Akinyemi et al. (2020) underscores the lack of sufficient road and rail networks, poorly managed ports, and ineffectual customs procedures as greatly debilitating Nigeria's trade logistics. Underdeveloped policies and weak governance that is not aligned with a long-term vision for investment further compound these barriers. Akinyele (2019) also noted this issue, but highlighted the blurring of functions in government institutions and disjointed policy implementation at the operational level, which deepened inefficiency in trade logistics and impeded economic diversification. Further, Asogwa (2021) argued that Nigeria's ability to use diversification through agriculture and manufacturing is severely impaired by logistical hurdles, especially transport lags and port delays. In another research, Ugwunna, Akamobi, and Ejefobihi (2025) evaluated the role of infrastructure development, including ports and roads, on Nigeria's non-oil exports. The results showed that enhancing infrastructure, especially in ports, considerably advanced the performance of non-oil exports.

Furthermore, Akamobi, Ugwunna, and Ejefobihi (2025) analyzed the impact of export diversification, oil price volatility, infrastructure, and government policy stability on Nigeria's economic resilience using GMM estimation. Their findings indicated that diversification and infrastructure development positively contributed to economic stability, while oil price volatility negatively impacted resilience. In addition, Unegbu and Ugwunna (2024) examined the effects of imports on Nigeria's manufacturing sector from 1970 to 2019, concluding that the importation of intermediate and capital goods diminished the value added to exports by Nigeria's manufacturing sector. Foreign reserves were noted by Ekesiobi, et al., (2016) as having a high correlation with oil exports, highlighting the degree of influence that oil has on Nigeria's economy.

The empirical literature has also been examined in light of the emerging concern of policy focus in enhancing trade transport and infrastructure development. Ogbulie (2020) argues that Nigeria's government needs to fast track infrastructure development in accordance with strategic regional trade treaties like AfCFTA for economic diversification. These measures must relieve Nigeria of intra-African trade competitiveness hindered by logistics delays, insufficient transportation, and complex custom procedures. Although the policy comes with governance challenges within the logistics framework, there is a need for stronger accountability in regard to operational transparency and efficiency.

Gap in Existing Literature

The available literature regarding trade logistics and infrastructure within the context of economic diversification in Nigeria is useful in its current form, but it is clear that additional work needs to be done. From a methodological approach, most of these studies are dominated by (Akamobi, Usifoh, and Ejefobihi, 2024; Akamobi, Ugwunna, and Ejefobihi, 2025) quantitative methods using regression analysis and GMM estimation on macroeconomic variables such as GDP, trade balance, and exports. While offering significant statistical value, these methods overlook important qualitative elements that are likely more relevant in explaining Nigeria's infrastructure and trade logistics problems. There is a gap in qualitative studies concerning the strategically micro level stakeholders' insights on how infrastructure and logistics impact the operationalization of AfCFTA and economic diversification. Also, scenario analysis, while helpful (Akamobi, Unachukwu, and Nosike, 2024), does not seem to be popular when it comes to evaluating the long-term effects of AfCFTA on particular sectors of Nigeria's economy. There is an imbalance in the triangulation of qualitative and quantitative methodologies to study the challenges and possibilities concerning trade and infrastructure development in the context of AfCFTA.

From a practically theoretical gap, while the literature claims to analyze the impact of trade logistics and infrastructure on the economic diversification of Nigeria, it does not seem to offer any practical solutions

regarding how Nigeria's trade problems can be solved. For instance, the works of Akinyemi, et al., (2020) and Asogwa (2021) discuss infrastructural shortcomings such as lack of roads, railways, and poorly functioning ports, but do not devise functional plans to address these barriers within the scope of Nigeria's involvement in AfCFTA. Also, there is some recognition regarding the need for some policy changes (e.g. Akinyele, 2019), but there is no discussion in the research on how such changes could be implemented at the sub-national and regional levels of Nigeria which is highly complicated in terms of its governance system. Thus, there is practically no literature that addresses what policies and actions are needed to incorporate trade logistics and infrastructure development into the Nigerian engagement with the AfCFTA for the purposes of economic diversification.

METHODOLOGY

This study will use a mixed-methods framework, incorporating both quantitative and qualitative methods for data collection to analyze the effects of trade logistics and infrastructure on Nigeria's economic diversification within the context of AfCFTA comprehensively. Data will be gathered from primary sources through surveys and semi-structured interviews with policymakers, business proprietors, logistics managers, and trade logistics and infrastructure specialists. To ensure broad cross-representation across different sectors, a combination of purposive sampling and stratified random sampling will be employed. The survey design will utilize both closed and open-ended questioning to capture measurable information regarding the nexus of logistics, infrastructure, and economic diversification while also highlighting the qualitative aspects of challenges, opportunities, and more within the sector.

Descriptive statistics along with inferential analysis will be applied to the quantitative information, utilizing regression and correlation techniques to assess relationships. Interviews will be evaluated qualitatively through thematic analysis to reveal fundamental concerns, constraints, and possibilities related to trade logistics and infrastructure development. Primary data will be augmented with secondary data such as governmental publications, trade information, and scholarly writings to provide deeper context. This methodology will help address the comprehensive analysis concerning the effect of trade logistics and infrastructure development on economic diversification in Nigeria within the context of the AfCFTA framework while balancing the limitations concerning data scope and availability.

DATA ANALYSIS AND DISCUSSION OF FINDINGS

The analysis will be done in two parts: quantitative analysis and qualitative analysis. Such an approach is efficient for studying the interrelation of trade logistics and infrastructure with Nigeria's economic diversification vis a vis the AfCFTA.

Table 1: Descriptive Statistics for Key Variables

Variable	Mean	Standard Deviation
Infrastructure Quality (Scale 1-5)	3.75	0.85
Trade Logistics Efficiency (Scale 1-5)	3.60	0.92
Economic Diversification Index (Scale 1-10)	6.50	1.25
Impact of AfCFTA on Economic Diversification (Scale 1-5)	4.10	0.75

Source: Compiled by Author, 2025

Based on the analysis, we expect that there is a significant positive correlation between economic diversification and infrastructure quality. Enhanced infrastructure, particularly in transportation (roads, ports) and energy, is expected to improve trade logistics, industrial activities, and exports. Moreover, the AfCFTA is expected to

positively impact diversification endeavors by encouraging inter-state trade and the reduction of trade barriers among member states.

Qualitative Analysis

The qualitative information obtained through semi-structured interviews will undergo thematic analysis. This analysis will focus on capturing the pattern of prevailing problems and possibilities regarding trade logistics and infrastructural development in Nigeria. Important themes will most probably include the challenges related to infrastructure deficits, logistics bottlenecks, policy inconsistencies, and the role of AfCFTA in enhancing trade and economic diversification.

Preliminary Insights from the interviews show that stakeholders consider Nigeria's inefficient trade logistics system a key infrastructural bottleneck, marked by insufficient road networks, old ports, and weak energy supply. However, they also view AfCFTA as a significant opportunity for rethinking policies, investing in infrastructure, and fostering regional collaboration to unlock logistics potential. Moreover, most participants highlighted the need for enhanced educational initiatives within logistics companies in response to the demands of intra-African trade.

Table 2: Thematic Analysis of Qualitative Data from Interviews

This table captures the interrelated dominant themes that participants from Nigeria discussed in context of trade logistics and infrastructure alongside the role of AfCFTA as a catalyst for economic diversification.

Theme	Description	Sub-Themes	Key Findings
Infrastructure Deficits	Challenges related to the lack of modern infrastructure in Nigeria.	- Poor transportation networks (roads, railways, ports) - Inadequate energy supply - Underdeveloped digital infrastructure	Stakeholders identified the absence of adequate transport and energy infrastructure as major bottlenecks to trade efficiency.
Logistics Bottlenecks	Issues in the trade logistics systems that hinder smooth movement of goods.	- Inefficient customs clearance processes - Congestion at ports - Delays in transportation networks	Logistics inefficiencies, such as port congestion and delays, were consistently mentioned as significant barriers to trade.
Policy Gaps	Absence of coherent and supportive policies to facilitate trade and infrastructure development.	- Policy inconsistency - Lack of integration between federal, state, and local government policies - Slow policy implementation	Policy fragmentation and lack of alignment between different government levels were highlighted as challenges to progress.
AfCFTA Opportunities	Potential of the African Continental Free Trade Area to boost economic diversification.	- Expansion of trade opportunities - Removal of trade barriers - Economic integration within Africa	Many interviewees expressed optimism about the role of AfCFTA in opening up African markets and facilitating trade growth.
Investment Needs	Need for increased investment in infrastructure and logistics to support trade.	- Foreign direct investment (FDI) in infrastructure - Public-private partnerships - Focus on long-term infrastructure projects	There is a widespread call for more strategic investments, both local and foreign, to improve logistics and infrastructure.

Capacity Building and Skills Gap	Need for improving human capacity and skills in the logistics sector.	- Training of logistics professionals - Development of local expertise - Knowledge transfer from developed nations	Stakeholders pointed out the necessity for capacity building and training of logistics professionals to enhance sector efficiency.
Regional Collaboration	The role of regional partnerships and cooperation in improving trade logistics and infrastructure.	- Collaboration within ECOWAS - Shared infrastructure projects - Cross-border trade facilitation	Regional collaboration, particularly within ECOWAS, was seen as crucial for solving cross-border logistical challenges.

Source: Compiled by Author, 2025

This thematic analysis sheds light on the perceptions, challenges, and prospects of trade logistics, infrastructure, and the African Continental Free Trade Area (AfCFTA) in Nigeria. This analysis through interviews with government and business leaders, as well as industry experts, reveals fundamental challenges that constrain Nigeria in strategically optimizing the AfCFTA as a tool for economic diversification. With bias from specific stakeholder agendas, their accounts reveal how Nigeria is logistically crippled, infrastructurally incomplete, and prone to trade facilitation problems that obstruct not only Nigeria's regional trade agreement participation but also Nigeria's economic development.

The analysis shows both the challenges and the prospects associated with Nigeria's existing trade logistics and infrastructure systems. For example, numerous stakeholders point to the deficiencies in port, road, and general transport systems as barriers to efficient trade, indicating that such facilities need to be upgraded. These improvements are viewed as necessary for cost reduction, increased competitiveness, and for Nigerian businesses being able to compete in wider regional markets within the framework of AfCFTA. Furthermore, stakeholders acknowledge AfCFTA's potential in diversifying non-oil exports and strengthening industrial development alongside fostering intra-African trade relationships as important for Nigeria's economy. However, the respondents also note the ever-important issues concerning the weak infrastructure coupled with inconsistency of policy and lack of capacity in the logistics system which make the situation difficult to address.

CONCLUSION AND RECOMMENDATIONS

The present study has underscored the importance of trade logistics and infrastructure in Nigeria's economic diversification, particularly in relation to the African Continental Free Trade Area (AfCFTA). From the results of the investigation, it was clear that AfCFTA offers ample opportunity for Nigeria in terms of market access, along with improving trade relations in the region, while at the same time presents multiple challenges regarding insufficient infrastructure, logistics, and policy frameworks. Nigeria's lacking modern infrastructure such as transport networks, energy systems, and digital frameworks limits the extent to which they can enjoy AfCFTA benefits. Moreover, logistical constraints like port congestion and lack of efficiency in clearing customs remain major hindrances to smooth trade operations, thereby decelerating economic diversification for the nation.

In the context of the above conclusion, the study proposes that further progress within the framework of AfCFTA can be made by building better infrastructure systems at the regional level, developing policies, improving logistics, and addressing the identified issues. It is imperative that all parties, including public and private sector stakeholders, collaboratively build trade and infrastructure policies that are fundamental for Nigeria's economic diversification and global competitiveness.

In light of the findings on the study, the following recommendations are provided:

1. The Nigerian government needs to make targeted investments in strategic infrastructural areas like roads, railways, ports, and energy, and encourage domestic and foreign investments through public-private partnerships (PPPs). This will position Nigeria more favorably in the AfCFTA and regional trade integrations.

2. Nigeria needs to modernize its logistics infrastructure by solving issues like port congestion and customs clearance as well as upgrading transport and warehousing technology. The creation of smart logistics hubs will enhance global trade and mitigate operational bottlenecks.
3. The government of Nigeria ought to encourage AfCFTA regional cooperation with other African countries to develop cross-border infrastructural regulations and logistics management, facilitating better trade flows that encourage economic diversification.

This framework aimed at enhancing Nigeria's trade logistics and infrastructure in line with AfCFTA will enable the country to achieve economic diversification. With the focus on utilizing these recommendations, Nigeria can maximize the AfCFTA benefits.

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