



RESEARCH ARTICLE

EVALUATING THE IMPLICATIONS OF FUEL SUBSIDY REMOVAL ON HUMAN CAPITAL TRANSPORTATION, INFRASTRUCTURE, AND GENERAL ECONOMIC SYSTEMS IN SOUTH-WEST NIGERIA

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ABSTRACT

Nigeria's infrastructure, transportation, and other systems that support economic growth are all significantly impacted by the elimination of gasoline subsidies. This paper looks at both immediate and long-term implications of this policy shift, drawing from recent research and case studies. As the cost of transportation increases, the ripple effect is very noticeable in both the public and private sectors. From increased commodity prices to changed commuter behaviours, the removal of fuel subsidies has redrawn how Nigerians interact with both urban and rural transport systems. Likewise, infrastructure systems that are very dependent on fuel supplies for logistics, power generation, and maintenance face new challenges in funding and sustainability. These effects are countered by government policies through infrastructural reforms, subsidization of alternative sources of energy, and investing in public transportation. Using relevant Nigerian data and similar countries case studies, this paper highlights the pivotal role of fuel pricing in the broader economic infrastructure while addressing the gaps in policy responses to these emerging challenges. The study concludes with ways transportation and infrastructure systems can be adapted to be far more sustainable in the post - fuel subsidy era, thereby propping up continued growth and access for the Nigerian populace.

Keywords: Fuel; Subsidy; Transportation; Infrastructure; System; Human; Capital.

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1.0. INTRODUCTION

Fuel subsidies in Nigeria have long been a significant aspect of the nation's economic framework, aimed at stabilizing domestic fuel prices in the face of global oil market fluctuations and reducing fuel costs for citizens. However, fuel subsidies have become a significant component of government spending, consuming trillions of naira annually without fulfilling their intended purpose because of mismanagement, corruption, and inefficiency, which has led to calls for their removal.

Fuel subsidies have been a very contentious issue in Nigeria, often viewed as a double-edged sword. On one hand, they have provided short-term relief to consumers by keeping artificially low fuel prices, which have always come in handy in the transportation industry—a very important aspect of the economic life of the nation. On the other hand, the subsidies have also been seen to place a huge financial burden on the government, taking away vital resources from essential public services and infrastructural development. The removal of fuel subsidies in 2023 has revitalized debates on its potential to reshape Nigeria's economic landscape, especially the transport sector, which is highly dependent on cheap fuel to be operational (Peterson & Kingsley, 2023).

Recently, the Nigerian government took the decisive step to end the subsidy regime, aiming to redirect resources towards other development priorities, sparking widespread debate on their economic and social consequences. This decision brings about significant changes in the nation's economy, impacting transportation costs, infrastructure development, and broader systemic dynamics.

2.0. Research Problems Statements

Nigeria's economy is currently facing a myriad of challenges with the removal of fuel subsidies, especially in the areas of human capital transportation and infrastructure systems. People and businesses depending on logistics are finding it hard to keep up financially because of the increased costs of public transportation resulting from high fuel prices. Increased fuel prices, in turn, lead to delays or downsizing of ongoing and future infrastructure projects.



The government claims that the subsidy removal will bring long-term benefits; however, the current economic stress is a major challenge in that regards and other lingering issue. This paper tends to explore these implications and to design strategic solutions to mitigate the adverse effects on key economic systems and infrastructure. The major problem statement of this research is that the fuel subsidy removal in Nigeria has created a set of complex issues in human capital transportation, infrastructural development, and the general economic system of the citizens.

Therefore, this research work problem statements can be summarily given as, but not limited to Evaluating the economic and social ramifications of fuel subsidy removal on human capital transportation networks have not been fully documented academically; hence this paper. Likewise, the impact of fuel subsidies removal and increase in prices of infrastructural development has been at the detriment of human capital, leading to high rate of project delay in many organisations, and generally in Nigeria too; as there seems not to be alternative methods of promoting and sustaining these infrastructural developments holistically. Finally, the various policy measures adopted by government, human resources managers (HR) managers, and other policy makers at various organisations in cushioning the harsh economic effects of fuel subsidy removal on their organisational economic system, and the nation in general, is not reflecting on their various human capital.

2.1. Objectives of Study

From the foregoing therefore, the general objectives of this research shall be:

1. To evaluate the economic and social ramifications of removing fuel subsidies on transportation networks in Nigeria, focusing especially on the differences in accessibility and affordability between urban and rural areas.
2. Examine how the increase in fuel prices has impacted infrastructure developments about cost overruns and delayed project time frames, but also look into alternative methods for promoting sustainable infrastructure development.
3. Analyze the policy measures adopted by the Nigerian government in cushioning the effect of subsidy removal and appraise their effectiveness in overcoming the challenges faced by transportation and infrastructure systems.



4.0. DISCOURSES

4.1. Fuel Subsidy Removal in Nigeria: Historical Overview

Given its detrimental impact on political issues, Nigeria's history of eliminating fuel subsidies is fairly lengthy. Nigeria first implemented fuel subsidies in the 1970s to combat fluctuations in the price of oil. General Olusegun Obasanjo's military government increased fuel prices in 1978 to fund the 1979 democratic elections and other social demands, which sparked the movement to end fuel subsidies in Nigeria. Mass protests and rising fuel costs were two issues facing Obasanjo's administration, which ultimately resulted in price increases (Ering and Akpan, 2012). Fuel subsidies have been in existence since 1986, when they were partially eliminated.

In 2012, the federal government under the administration of Goodluck Jonathan, abruptly abolished the fuel subsidy, which was followed by widespread demonstrations, after which the government restored the subsidies. Subsequently, fuel subsidy spending has increased significantly and reached ₦4 trillion (US\$6.088 billion), representing 23 percent of the national budget of ₦17.126 trillion (US\$25.87 billion) in 2022 (Ozili & Obiora, 2023). In 2023, this subsidy, which had kept the prices of petrol artificially low for a long time at a very huge cost to the nation's economy, was finally scrapped by President Bola Tinubu. The President had stated during his inauguration that, "Subsidy is gone." Following this statement, petrol prices quickly spiked across the country. The cost of fuel has skyrocketed and continues to rise today. By the evening of May 29, 2023, prices had increased to N500 from about N198, or somewhat more in some places (Punch, 2024).

4.2. Transportation system in Nigeria

The Merriam-Webster Dictionary defines transportation as an action, procedure, or situation in which something is being transported or being transported. According to Anyanwu et al. (1997), it is the process of transporting people and products from one location to another. Additionally, according to Good and Jebbin (2015), transportation is a system that uses power-driven machinery to move people, products, and raw materials both domestically and beyond.

Every country needs transportation, regardless of its level of industrialization, population, or technical advancement. Traffic jams on the highways, overloaded railroads, faltering



airfields, and blind spots in mass transit are all results of Nigeria's transport systems' poor design from the beginning, which also prevents them from scaling up to meet increased demand. In general, there seem to be market barriers that restrict the number of Nigerian business owners that venture into the transportation industry as well as their chances of success.

4.3. Systemic Economic Implications of Fuel Subsidy Removal

Removing subsidies can benefit Nigeria's economy in a number of ways, including making more money available for other areas, encouraging domestic refineries to produce more petroleum products, decreasing the country's reliance on imported fuel, creating jobs, directing funds toward the construction of vital public infrastructure, lowering the budget deficit and soon producing a budget surplus, decreasing government borrowing, reducing corruption related to fuel subsidy payments, boosting competition, reviving domestic refineries, and relieving pressure on the exchange rate. The withdrawal of gasoline subsidies might have dire consequences, including a short-term slowdown in economic growth, higher inflation, poverty, fuel smuggling, increased crime, higher petroleum product prices, and the loss of jobs in the unorganized sector. It is advised that the government thoroughly assess how the elimination of fuel subsidies would affect people and businesses, and offer palliative care and other forms of financial assistance to lessen the negative effects (Peterson and Kingsley, 2023).

4.4. Implications of fuel subsidy removal on Transportation

One important sector that depends significantly on fuel to function is transportation. Nigeria's transportation sector has been significantly impacted by the abrupt elimination of gasoline subsidies, which has caused a sharp increase in transportation expenses. The price of gasoline has tripled over the past months after the announcement of the removal; this results in higher public transportation fares, thus making travel more expensive for people. As pointed out by Ahmed (2018), the increase in fuel prices following subsidy removal can lead to higher transportation costs, affecting the accessibility and affordability of public transport services.

Public transport fares in most urban cities have escalated an estimated 45-70% since the removal of fuel subsidies. This is the case in most cities in Nigeria, for instance, Lagos,



where several million commuters, reliant on buses and taxis, face more dire expenses. This doesn't only affect urban areas; thus, it has also led to the marginalization of rural areas, which already face poor infrastructure in transportation.

The use of private transportation, such as cars and motorcycles, has also declined because the rising cost of gasoline has made people less inclined to drive or use their cars. Vehicle ownership rates have therefore declined. As a result, this facilitates the shift toward greener forms of transportation, such as bicycling, walking, or public transportation. According to the National Bureau of Statistics (2024), the inflationary pressures induced by fuel price hikes have caused a ripple effect across the economy, further stressing supply chains and increasing the cost of goods and services.

➤ **Implications on Infrastructure**

The removal of fuel subsidies has particularly affected infrastructure projects that rely heavily on fuel-powered machinery. According to Tang (2020), governments often divert funds previously allocated for fuel subsidies to the betterment of infrastructure. This may enhance the development and improvement of road networks, public transportation systems, and greener modes of transportation. However, there may also be challenges in terms of funding allocation and prioritization, as Smith (2017) have observed.

Road construction, expansion of rail networks, and housing projects are experiencing cost escalations arising from the increased prices of diesel and petrol. Also, Again, electricity generation in some regions of Nigeria still largely depends on fuel-powered generating sets due to the epileptic nature of grid electricity. These rising costs have pushed contractors to re-negotiate terms, delay timelines for projects, or even bring work to a complete standstill. The very ambitious infrastructure development agenda of the Government of Nigeria, and especially the National Integrated Infrastructure Master Plan, will be seriously undermined if case cost overruns continue unabated.

➤ **Systemic and Policy Reactions**

To mitigate the financial and operational impact of subsidy removal, the government of Nigeria has adopted multiple measures, including cash transfers, micro-loans for small transport operators, and subsidies for alternative energy sources such as compressed natural



gas (CNG) (Federal Ministry of Finance, 2023). However, the effectiveness of these policies is still under scrutiny. Preliminary assessments reveal that cash transfers, while perhaps a temporary solution, do little to address the increasing operational costs across fuel-intensive sectors like transportation and construction (Adeyemi & Afolabi, 2024).

Additionally, the government's push for CNG adoption faces hurdles related to infrastructure inadequacies, particularly the lack of refueling stations nationwide and the high cost of vehicle conversion (Bolarinwa, 2024). Thus, without substantial infrastructure investments and operational subsidies, the shift towards CNG may remain out of reach for most Nigerians. A more viable approach might involve prioritizing investment in public transportation infrastructure to reduce commuter dependence on private and informal transport networks.

4.4. Case Studies

Indonesia's Subsidy Reduction (2005 & 2014)

Indonesia implemented phased reductions in fuel subsidies during 2005 and 2014 to alleviate fiscal deficits and reallocate funds to priority sectors. The objective was to take away the fiscal burden and increase the budget available for vital sectors. Transport costs had gone up, people in general were unhappy, but with time, more investments in infrastructure, especially public transportation—such as BRT—easing commuters' burdens, decreasing the need to use private vehicles, better economic growth, with the major investment in rural electrification and road networks. To temper social effects, the administration inaugurated cash transfer programs targeting disadvantaged households.

Indonesia's case demonstrates that carefully planned reforms, coupled with effective public engagement and compensatory measures like social safety nets, can transform subsidy removal into a tool for sustainable development. Long-term investments in public infrastructure yielded economic and environmental benefits, enhancing policy acceptance.

Iran's Subsidy Reform Plan (2010)

In 2010, Iran replaced its fuel subsidy program with direct cash transfers to households, aiming to reduce fiscal imbalances and improve resource allocation. The reform led to an immediate reduction in fuel consumption, promoting energy efficiency and alleviating urban



congestion. Savings from subsidy cuts were partially directed toward improving energy infrastructure, including domestic refinery upgrades. However, systemic challenges arose as inflation eroded the value of cash transfers, diminishing their effectiveness over time.

Iran's experience underscores the importance of regularly adjusting cash transfer amounts to account for inflation. It also highlights the need for a balanced approach that integrates economic reform with inflation control measures, ensuring the sustainability of the policy.

Ghana's 2013 Fuel Price Deregulation

Ghana's transition to deregulated fuel pricing in 2013 aimed to address fiscal deficits and align domestic prices with international market trends. Transportation costs rose sharply, triggering public protests and strikes, which emphasized the need for stakeholder engagement in policy implementation. Promises to reinvest savings into infrastructure development faced delays, leading to public skepticism about the benefits of the reform. Despite these challenges, the policy reduced fiscal deficits and curbed excessive government spending.

Ghana's experience highlights the critical role of public trust and stakeholder engagement in implementing subsidy reforms. Visible investments in infrastructure and transparent communication are essential to gain public support and ensure the long-term success of such policies.

4.5. Discussions of Findings

The impacts of fuel subsidy removal on transportation, infrastructure, and systemic operations have drawn significant academic attention, particularly in the context of developing countries. Current literature provides a wide-based exploration of how subsidy reforms might change economic, social, and environmental parameters.

According to Afolabi (1999), it has been established in the past, that any large increase in the fuel price often create economic recession, such as witnessed in year 1973, year 1979 and year 2016. One means in which the government had made fuel sufficiently available and inexpensive to the low-income earner is through subsidy. The use of subsidies indirectly fosters economic development and growth since it makes items more affordable, allowing middle-class citizens to make substantial contributions to the economy. Additionally, he said that the lesson learned from China demonstrates how subsidies have greatly aided in



economic development and prosperity. The success may be ascribed to the fact that energy is now more affordable and, as a result, in more demand.

Tob-Ogu *et al.* (2018), in their study, analyze the functional elements of road freight transportation, underlining the areas that need to be improved through equipment and process design initiatives; they emphasize the importance of fleet management techniques, routing efficiencies, and the potential of alternative fuels in lowering CO2 emissions. Their findings suggest that while high reliance on diesel and petroleum may be a continuing projection for some time to come, strategic policy mechanisms can still drive improvements in urban freight challenges. This study establishes a foundation to understand how transportation systems can adjust to subsidy removals by exploring resource allocation and environmental impacts.

Also, according to Coreshad and Grainger (2018), in their own study, they estimated the wider economic impacts of fossil fuel subsidy reforms in developing countries. They argue that such removals could result in mixed income distribution outcomes and, therefore, diverse household welfare effects through both direct and indirect mechanisms. This becomes a very complex study, especially with fuel pricing and the subsequent effects on living expenses and consumption behaviors. The research paper emphasizes the critical need for policymakers to consider the socio-economic impact of removing subsidies, especially on vulnerable populations.

Jazuli *et al.* (2021) present a case study of Indonesia to illustrate the complex policy dilemmas surrounding fuel subsidy reductions. They argue that subsidy reforms may help to relieve fiscal imbalances and increase investment in infrastructure, but they also risk increasing the cost of living, especially for poor households. The study on the social and environmental dimension of subsidy removal reveals that while there are potential benefits in terms of enhanced fiscal flexibility and investment in renewable energy, the short-term consequences could be detrimental to the most vulnerable members of society. This conflict between short-term challenges and long-term benefits means that a rather complex approach to policy formulation is called for.

Together, these literatures provide wide-based analysis of the impact arising from fuel subsidy removal and stress the need for detailed assessment of the various implications on



transportation systems, infrastructure development, and social equity. This literature collection shows the importance of strategic policymaking that balances economic growth with social welfare and environmental sustainability.

5.0. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

Nigeria's transportation industry, infrastructure advancements, and systemic operations have all been significantly influenced by the elimination of fuel subsidies. While it can redirect fiscal resources towards infrastructure and systemic development, it has also triggered inflationary pressures, increased transportation costs, and delays in infrastructure projects. This has disproportionately affected vulnerable populations and low-income households, highlighting the need for careful policy planning. Subsidies can reduce fiscal burdens, curb corruption, and encourage domestic refinery operations, but without adequate compensatory measures, they can exacerbate poverty, limit transportation accessibility, and create financial strain on infrastructure projects. To address this implication, the government should expand public transportation systems, improve financing models for infrastructure, subsidize renewable energy and CNG, strengthen social safety nets, and carry out regulatory reforms for fuel markets.

5.2. Recommendation

1. Expansion of public transport systems: The government should invest at a fast pace in safe and affordable public transport, mostly within urban centers, to provide relief to the pressure of individual commute costs. Alternatives include expansion of BRT systems, introducing light rail networks, and improvement in rural-urban connectivity.
2. Improved models for infrastructure financing: The government could consider the conclusion of public-private partnerships (PPPs) and using the funds available from international development institutions in order to get an additional funding possibility for infrastructural projects, which is going to lighten the fiscal burden on public budgets while making projects more resilient against fuel price variation. An additional pragmatic approach is using green bonds to finance alternative energy infrastructure.
3. Subsidies for Renewable Energy and CNG: The government should subsidize the cost of renewable energy solutions and CNG for public transport operators in order to reduce their



operational costs and set a way forward toward cleaner energy. The subsidies on vehicle conversions, coupled with increased investments in CNG stations around the country, would drive adoption and decrease dependence on petrol and diesel.

4. Strengthening Social Safety Nets: In view of rising costs, the government needs to expand cash transfer programs, food assistance programs, and targeted financial subsidies for essential transportation services in order to help poor families. These interventions will cushion at-risk groups from the short-term economic shocks pending more durable infrastructural solutions.

5. Regulatory Reforms for Fuel Markets: The implementation of price regulation mechanisms is essential to mitigate the risk of exploitation within fuel pricing, thereby promoting equitable market practices. Furthermore, the creation of a regulatory oversight entity dedicated to monitoring fuel pricing has the potential to enhance market stability and safeguard consumers against exorbitant price increases.

Competing Interest

The authors have declared that no conflicting interest exist in this paper.

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