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Article

An Analysis of the Effects of Fuel Subsidy Removal on Cost of Transportation in Northern Nigeria

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Abstract: This paper analyses the effects of fuel subsidy removal on transportation costs and its associated socioeconomic consequences in the region. The removal of fuel subsidy in Nigeria has generated significant debate due to its implications for transportation costs and socioeconomic welfare, particularly in Northern Nigeria, where road transport serves as the primary means of movement for people and goods. The study adopted a desk review methodology, relying on secondary data obtained from scholarly publications, government reports, policy documents, and institutional publications. The review revealed that the removal of fuel subsidy resulted in a sharp increase in the pump price of Premium Motor Spirit (PMS), leading to higher passenger fares, freight charges, and logistics costs. The findings further indicate that rising transportation costs have adversely affected agricultural production, commercial activities, household welfare, and access to healthcare, education, and markets. The policy has also contributed to inflation, declining purchasing power, and increased socioeconomic hardship, particularly among farmers, traders, students, and low-income households. Although fuel subsidy removal is expected to promote fiscal sustainability and improve long-term economic efficiency, the study concludes that its short-term effects have imposed substantial socioeconomic burdens on Northern Nigeria. The paper recommends targeted social protection programmes, investment in transport infrastructure, agricultural support, affordable public transportation, and transparent utilization of subsidy savings to mitigate the adverse effects of the policy while promoting inclusive and sustainable economic development.

Keywords: Fuel subsidy removal, transportation costs, socioeconomic hardship, Northern Nigeria.

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1. Introduction

Fuel subsidy has long been one of the most significant social welfare policies in Nigeria, aimed at reducing the cost of petroleum products and making transportation, production, and other economic activities more affordable. Introduced during the oil boom of the 1970s, the subsidy was intended to ensure that Nigerians benefited directly from the country's abundant petroleum resources while supporting industrial development and maintaining relatively stable prices of essential goods and services [1]. However, over the years, the subsidy regime became increasingly controversial due to its enormous fiscal cost, widespread corruption, fuel smuggling, and inefficiencies in the downstream petroleum sector. Successive governments argued that the policy had become financially unsustainable and diverted substantial public resources that could otherwise be invested in infrastructure, healthcare, education, agriculture, and other critical sectors of the economy [2].

The debate over fuel subsidy reached a critical stage on 29 May 2023 when President Bola Ahmed Tinubu announced the complete removal of the subsidy shortly after assuming office. The policy resulted in an immediate increase in the pump price of Premium Motor Spirit (PMS), leading to sharp increases in transportation costs across the country. Because transportation in Nigeria depends almost entirely on petroleum products, commercial transport operators were compelled to increase fares to offset higher operating expenses. The rise in transportation costs also had multiplier effects on the prices of food items, agricultural produce, manufactured goods, and other essential commodities, thereby contributing significantly to inflation and reducing the purchasing power of households [3].

The effects of fuel subsidy removal have been particularly pronounced in Northern Nigeria, comprising the North Central, North East, and North West geopolitical zones. The region is characterized by vast geographical distances, heavy dependence on road transportation, widespread rural settlements, high poverty rates, insecurity, and relatively weak transport infrastructure. Commercial buses, taxis, tricycles, motorcycles, and freight vehicles serve as the primary means of moving people and goods within and across the region. Consequently, increases in fuel prices have substantially raised transportation fares, increased the cost of conveying agricultural produce to markets, and made access to schools, healthcare facilities, workplaces, and other essential services more expensive. The burden has been especially severe for low-income households, farmers, traders, students, and small-scale entrepreneurs whose livelihoods depend heavily on affordable transportation [4].

The increase in transportation costs has also generated wider socioeconomic consequences. Higher transport fares have increased the cost of doing business, reduced household mobility, disrupted supply chains, and contributed to rising food prices and general inflation [5]. Farmers incur higher expenses transporting inputs and produce, traders face increased distribution costs, while consumers ultimately bear the additional financial burden through higher market prices. These developments have further weakened household welfare and slowed economic activities in many parts of Northern Nigeria, where insecurity, unemployment, and poverty had already constrained economic resilience. As transportation remains the backbone of trade, agriculture, and service delivery, sustained increases in transport costs threaten both regional economic development and social welfare.

Against this background, this paper examines the effects of fuel subsidy removal on the cost of transportation in Northern Nigeria through a review of existing literature and relevant empirical evidence. It analyses how the removal of fuel subsidy has influenced transportation fares, freight costs, household mobility, agricultural marketing, and business activities across the region. The paper further discusses the broader socioeconomic implications of rising transportation costs and offers policy recommendations aimed at mitigating the adverse effects of the reform while promoting affordable transportation and sustainable economic development in Northern Nigeria.

Conceptual Clarification

Fuel subsidy removal refers to the deliberate withdrawal or reduction of government financial support that keeps the retail price of petroleum products below their actual market value, thereby allowing prices to be determined by prevailing market forces such as international crude oil prices, exchange rates, and domestic demand and supply conditions [6]. It represents a shift from a government-controlled pricing mechanism to a market-oriented system in which consumers bear the full economic cost of fuel. The policy is often implemented as part of broader economic reforms aimed at reducing government expenditure, improving fiscal sustainability, encouraging private sector participation, and promoting efficiency in the downstream petroleum sector.

In Nigeria, fuel subsidy was introduced in the early 1970s following the oil boom to ensure that petroleum products remained affordable to citizens while supporting economic activities, reducing transportation costs, stimulating industrial production, and improving household welfare. Because petroleum products constitute the primary source of energy for road transportation,

electricity generation, manufacturing, and commercial activities, subsidizing fuel helped moderate transport fares and production costs, thereby contributing to relatively stable prices of goods and services across the country.

Over the years, however, the subsidy regime became increasingly controversial because of its enormous fiscal burden and persistent governance challenges. Successive governments argued that maintaining the subsidy consumed a substantial proportion of national revenue that could otherwise be invested in infrastructure, education, healthcare, agriculture, and other development priorities [7]. Estimates indicate that Nigeria spent over ₦12 trillion on fuel subsidies between 2005 and 2022. The policy was also criticized for encouraging corruption, fraudulent subsidy claims, fuel smuggling to neighbouring countries, and rent-seeking practices that undermined its intended benefits.

These concerns culminated in the complete removal of the fuel subsidy on 29 May 2023, when President Bola Ahmed Tinubu announced that "fuel subsidy is gone." The immediate consequence was a sharp increase in the pump price of Premium Motor Spirit (PMS), which rose from approximately ₦200 per litre to over ₦600 per litre within a short period. Since transportation in Nigeria depends almost entirely on petroleum products, the increase in fuel prices translated directly into higher transportation costs for passengers, freight operators, businesses, and government agencies. Simultaneously, foreign exchange reforms further increased the cost of imported goods and transportation inputs, intensifying inflationary pressures across the economy.

The Federal Government justified the removal of the subsidy by arguing that it would reduce fiscal deficits, eliminate market distortions, discourage fuel smuggling, encourage private investment in the petroleum industry, and free financial resources for developmental projects, including transportation infrastructure, education, healthcare, and social welfare programmes. While these objectives reflect the anticipated long-term benefits of the reform, the immediate impact has been a significant increase in transportation costs, which has affected both urban and rural populations across Nigeria.

Transportation cost refers to the amount paid by individuals, businesses, or organizations for the movement of people and goods from one location to another. It includes passenger fares, freight charges, logistics expenses, and operational costs incurred by transport operators. In Northern Nigeria, where road transport is the dominant means of mobility for passengers, agricultural produce, livestock, and commercial goods, transportation costs are highly sensitive to fluctuations in fuel prices [8]. Consequently, the removal of fuel subsidy substantially increased the operational expenses of commercial buses, taxis, tricycles, motorcycles, and haulage vehicles, leading to significant increases in transport fares and the prices of commodities transported across the region.

The impact has been particularly severe in Northern Nigeria because of the region's vast geographical coverage, relatively weak transport infrastructure, widespread poverty, and dependence on agriculture and inter-state trade. Farmers now incur higher costs transporting produce to markets, traders pay more for the movement of goods, while workers, students, and other commuters spend a larger proportion of their incomes on daily transportation. The resulting increase in transportation costs has also contributed to higher food prices and the rising cost of living, thereby reducing household purchasing power and worsening socioeconomic conditions across the region [9].

From the foregoing, fuel subsidy removal should be understood not merely as an economic reform but as a policy with profound implications for transportation and socioeconomic development. While the policy aims to improve fiscal sustainability and encourage market efficiency, its immediate effect has been a substantial increase in transportation costs, with far-reaching consequences for mobility, trade, agricultural marketing, business operations, and household welfare in Northern Nigeria. Consequently, any appraisal of the policy must carefully examine both its intended economic benefits and its practical effects on transportation costs and the livelihoods of the people.

2. Theoretical Framework

The study will use Classical Economic Theory and Keynesian theory to explain the socioeconomic consequences of fuel subsidy removal in Northern Nigeria. Classical Economic Theory, developed principally by Adam Smith, David Ricardo [10], Thomas Robert Malthus [11], and later refined by John Stuart Mill [12], argues that markets function most efficiently when left to operate through the forces of supply and demand with minimal government intervention. The theory is founded on the principles of free markets, competition, price flexibility, and the "invisible hand," whereby individual pursuit of self-interest promotes efficient allocation of resources and overall economic welfare [13]. Classical economists maintain that government subsidies distort market signals, encourage inefficiency, create resource misallocation, and impose unnecessary fiscal burdens on the state. Consequently, they advocate the removal of subsidies to allow prices to reflect actual production costs, improve market efficiency, stimulate private investment, and promote long-term economic growth. From the perspective of Classical Economic Theory, Nigeria's fuel subsidy removal represents a necessary structural reform intended to eliminate market distortions that had persisted for decades.

The theory supports the argument that allowing petroleum prices to be determined by market forces would encourage competition in the downstream petroleum sector, reduce opportunities for corruption and fuel smuggling, improve fiscal sustainability, and release government resources for investment in productive sectors such as infrastructure, education, healthcare, and agriculture. However, while Classical Economic Theory emphasizes long-term efficiency gains, it pays relatively little attention to the short-term social costs associated with market liberalization. Consequently, the severe inflationary pressures, declining purchasing power, rising poverty, and socioeconomic hardships experienced by households in Northeastern Nigeria following subsidy removal illustrate one of the major criticisms of the classical perspective, particularly in developing economies characterized by widespread poverty, weak institutions, and fragile labour markets.

Keynesian Theory, developed by John Maynard Keynes in The General Theory of Employment, Interest and Money [14], challenges the classical assumption that markets automatically achieve full employment and efficient resource allocation. Keynes argued that government intervention is necessary during periods of economic instability to stimulate aggregate demand, protect employment, stabilize prices, and safeguard citizens' welfare. According to Keynesian economics, public expenditure, subsidies, and social protection programmes serve as important policy instruments for maintaining purchasing power, reducing poverty, and preventing economic downturns. Abrupt withdrawal of government support without adequate compensatory measures can reduce household consumption, weaken aggregate demand, increase unemployment, and generate wider social and economic instability.

Keynesian Theory provides a more appropriate framework for explaining the socioeconomic consequences of fuel subsidy removal in Northern Nigeria. The removal of subsidy significantly increased transportation costs, food prices, production costs, and the general cost of living, while household incomes remained largely stagnant. The resulting decline in purchasing power reduced consumer demand, constrained business activities, and increased unemployment and poverty. In a conflict-affected region already experiencing insurgency, displacement, and humanitarian challenges, these economic shocks further weakened household resilience and increased the risk of social unrest and criminality. The theory therefore suggests that while fiscal reforms may be necessary for long-term macroeconomic stability, they should be accompanied by targeted social protection programmes, employment generation initiatives, investments in productive sectors, and effective welfare policies to cushion vulnerable populations against adverse economic shocks. Such an approach would enable government to achieve fiscal sustainability without undermining human security and social stability.

3. Literature Review

Fuel subsidy has historically served as a major economic policy instrument in Nigeria, aimed at reducing the pump price of petroleum products and cushioning citizens against high transportation and production costs [15]. Because petroleum products are the primary source of energy for road transportation in Nigeria, subsidized fuel has traditionally helped to moderate transport fares and the prices of goods and services. However, scholars such as Omotosho argue that despite these benefits, the subsidy regime became fiscally unsustainable due to rising government expenditure, corruption, and inefficiencies in the downstream petroleum sector. Consequently, the Federal Government removed the fuel subsidy in May 2023 with the expectation that the policy would promote fiscal discipline, encourage private investment, and improve the efficiency of the petroleum industry.

The removal of fuel subsidy immediately led to a sharp increase in the pump price of Premium Motor Spirit (PMS), which significantly affected transportation across Nigeria. According to PwC, the rise in fuel prices translated directly into higher operating costs for commercial transport operators, logistics companies, and private vehicle owners. Since road transportation remains the dominant means of movement for passengers and goods in Nigeria, increases in fuel prices were quickly reflected in transport fares. This situation affected both urban and rural communities, although the impact was more severe in regions with weak transport infrastructure and limited alternative means of transportation.

Several empirical studies have established a strong relationship between fuel prices and transportation costs. Ozili & Obiora observed that fuel constitutes one of the largest operational expenses in the transportation sector. Consequently, any increase in fuel prices directly raises the cost of operating buses, taxis, motorcycles, tricycles, and freight vehicles. Commercial transport operators often transfer these additional costs to passengers through higher fares to maintain profitability. Similarly, transport companies involved in the movement of agricultural produce and manufactured goods experience increased logistics costs, which are subsequently passed on to consumers through higher commodity prices.

Northern Nigeria has experienced particularly significant transportation challenges following the removal of fuel subsidy. The region covers vast geographical distances, with many rural communities depending almost entirely on road transportation to access markets, educational institutions, healthcare facilities, and government services. Rising fuel prices have therefore substantially increased the cost of travelling between communities and across states. Farmers transporting produce from rural areas to urban markets now incur higher transportation expenses, while traders face increased distribution costs that reduce business profitability and contribute to rising market prices.

Researchers have also examined the disproportionate effects of increased transportation costs on low-income households [16]. According to the National Bureau of Statistics, many households in Northern Nigeria allocate a considerable proportion of their income to transportation due to long travel distances and limited public transport systems. Following subsidy removal, workers, students, traders, and farmers experienced a significant reduction in purchasing power as a larger share of household income was devoted to transportation. This has affected access to employment opportunities, education, healthcare services, and other essential social activities, thereby worsening living conditions among vulnerable populations.

The literature further shows that increased transportation costs have significant implications for agricultural development in Northern Nigeria. Agriculture remains the dominant economic activity in the region, and transportation plays a critical role in moving farm inputs to production areas and transporting harvested produce to markets [17]. As argued by Sennuga, rising transport costs have increased the overall cost of agricultural production, reduced farmers' profit margins, and contributed to food inflation. Poor rural road networks and insecurity in some parts of Northern Nigeria have further compounded these transportation challenges.

Another important issue identified in the literature is the impact of fuel subsidy removal on business operations and economic activities. Small and medium-sized enterprises (SMEs), which depend heavily on road transportation for the movement of goods and services, have experienced increased operating expenses due to higher transport charges [18]. Several businesses have responded by increasing the prices of their products, reducing production, or downsizing their workforce. These developments have contributed to inflationary pressures and slowed economic activities, particularly in Northern Nigeria, where transportation remains essential for regional trade and commercial interactions.

Although existing studies have extensively examined the economic consequences of fuel subsidy removal, relatively few have specifically focused on its effects on transportation costs in Northern Nigeria. Most previous research has concentrated on inflation, fiscal sustainability, household welfare, or national economic performance, with limited attention given to the unique transportation challenges facing Northern Nigeria. Furthermore, the interaction between rising transportation costs, regional insecurity, poor infrastructure, and socioeconomic development remains underexplored. This study therefore fills this gap by examining the effects of fuel subsidy removal on the cost of transportation in Northern Nigeria, providing evidence that can inform policies aimed at improving transport affordability, enhancing mobility, and mitigating the adverse effects of future economic reforms.

4. Methodology

This study adopted a desk review research design. The desk review approach was considered appropriate because it enables the synthesis and critical analysis of existing empirical and secondary data on the subject without collecting primary data from respondents. The study relied on secondary sources of information obtained from peer-reviewed journal articles, textbooks, government publications, policy documents, reports of the National Bureau of Statistics (NBS), the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA), the Central Bank of Nigeria (CBN), the National Union of Road Transport Workers (NURTW), the World Bank, the International Monetary Fund (IMF), newspapers, and publications from reputable international organizations. These sources were purposively selected based on their relevance, credibility, and recency, particularly materials published after the removal of fuel subsidy in May 2023.

The data collected were analysed using qualitative content analysis, whereby relevant literature and documentary evidence were systematically reviewed, categorized, compared, and interpreted to identify recurring themes relating to changes in transportation costs following fuel subsidy removal. Particular attention was given to evidence on increases in fuel prices, public transport fares, freight charges, intercity and rural transportation costs, the cost of moving agricultural produce and goods, and the broader socioeconomic implications for households and businesses in Northern Nigeria. Findings from different sources were synthesized to establish patterns, areas of convergence and divergence, and the overall impact of the policy on transportation costs. This approach provided a comprehensive understanding of the relationship between fuel subsidy removal and transportation costs while ensuring that the conclusions were grounded in credible and verifiable evidence.

5. Result, Discussion & Findings

The review revealed that the removal of fuel subsidy has significantly increased transportation costs across Northern Nigeria. The sharp rise in the pump price of Premium Motor Spirit (PMS) immediately translated into higher operating costs for commercial buses, taxis, tricycles, motorcycles, and freight vehicles, forcing transport operators to increase passenger fares and haulage charges. Since road transportation remains the dominant means of mobility in the region, the increase in transport fares affected both intra-city and inter-state travel. The findings further indicate that the impact was more pronounced in rural communities where transport services are limited and travel

distances are relatively longer, making transportation increasingly unaffordable for many households.

The study further found that rising transportation costs have adversely affected agricultural production and commercial activities, which constitute the backbone of Northern Nigeria's economy. Farmers now incur substantially higher expenses transporting farm inputs such as fertilizers, seeds, and agrochemicals to production areas, as well as conveying harvested produce to urban markets. Similarly, traders and transporters have experienced increased logistics and distribution costs, which have been transferred to consumers through higher commodity prices. Consequently, the cost of food items and other essential goods has risen considerably, contributing to inflation, declining business profitability, and reduced market competitiveness across the region.

Another important finding is that the increase in transportation costs has significantly reduced household welfare and mobility. Workers, students, farmers, traders, and low-income earners now spend a larger proportion of their income on transportation, thereby reducing the resources available for food, healthcare, education, housing, and other essential household needs. The review also revealed that higher transport fares have discouraged frequent travel for economic and social purposes, limiting access to employment opportunities, healthcare facilities, educational institutions, and markets, particularly among rural populations. These developments have further weakened the purchasing power and living standards of vulnerable households.

Finally, the findings indicate that although fuel subsidy removal was introduced to promote fiscal sustainability, eliminate market distortions, and encourage investment in the petroleum sector, its immediate effects on transportation have generated significant socioeconomic challenges in Northern Nigeria. The review established that inadequate transport infrastructure, insecurity along major highways, widespread poverty, and the absence of effective social protection measures have amplified the impact of rising transport costs. The study therefore finds that while the policy may offer long-term macroeconomic benefits, its short-term consequences have increased transportation expenses, slowed economic activities, contributed to inflation, and worsened the socioeconomic conditions of households and businesses across Northern Nigeria.

6. Conclusion

The study concludes that the removal of fuel subsidy has had profound implications for the cost of transportation in Northern Nigeria, with far-reaching socioeconomic consequences for households, businesses, and the regional economy. The review established that the sharp increase in the pump price of Premium Motor Spirit (PMS) significantly raised the operating costs of commercial transport services, leading to substantial increases in passenger fares and freight charges. Given the heavy dependence on road transportation in the region, these higher transport costs have reduced mobility and increased the financial burden on both urban and rural populations. The study further concludes that rising transportation costs have negatively affected agricultural productivity and commercial activities by increasing the cost of moving farm inputs, agricultural produce, and other goods across markets. These increased logistics costs have contributed to higher food prices, inflationary pressures, declining business profitability, and reduced purchasing power among households. The review also shows that vulnerable groups, including farmers, traders, students, and low-income earners, have been disproportionately affected, as a greater share of their incomes is now devoted to transportation at the expense of other basic needs such as food, healthcare, education, and housing.

Although fuel subsidy removal was intended to strengthen fiscal sustainability and improve economic efficiency, the study concludes that its immediate effects have imposed significant socioeconomic hardships, particularly in a region already facing poverty, inadequate infrastructure, and insecurity. The findings therefore suggest that the success of the policy depends on complementary measures such as improved public transportation, targeted social protection programmes, investments in transport infrastructure, and policies that cushion vulnerable

populations against rising transportation costs. Without such interventions, the short-term costs of the policy may continue to outweigh its anticipated long-term economic benefits, especially for households and businesses in Northern Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are put forwarded:

1. The Federal and State Governments should introduce targeted transport intervention programmes to cushion the impact of rising transportation costs on vulnerable groups, particularly farmers, students, low-income workers, traders, and rural dwellers. This could include subsidized public transportation, transport vouchers, or special fare discounts for identified vulnerable populations to improve mobility and access to essential services.
2. Government should prioritize the rehabilitation and expansion of road networks and invest in efficient and affordable mass transit systems across Northern Nigeria. Improving transport infrastructure will reduce vehicle operating costs, enhance the movement of goods and people, lower transportation fares, and stimulate regional economic activities.
3. To mitigate the effect of increased transportation costs on agriculture, governments should provide farmers with subsidized agricultural inputs, rural feeder roads, produce aggregation centres, and affordable logistics support. These measures will reduce production and distribution costs, improve food supply chains, stabilize food prices, and enhance farmers' incomes.
4. Government should expand targeted social protection programmes, including conditional cash transfers, livelihood support, and soft loans for small-scale traders and transport operators. Such interventions will help vulnerable households and small businesses cope with rising living costs while reducing the adverse socioeconomic effects associated with fuel subsidy removal.
5. The financial savings realized from fuel subsidy removal should be transparently invested in sectors that directly improve citizens' welfare, particularly transportation, agriculture, healthcare, education, and rural development. Establishing strong monitoring and accountability mechanisms will enhance public confidence in the reform process and ensure that the long-term benefits of subsidy removal are equitably distributed across Northern Nigeria.

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