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THE IMPACT OF FUEL SUBSIDY REMOVAL ON RURAL POVERTY: A CASE STUDY OF PEREMABIRI COMMUNITY

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Abstract
The removal of fuel subsidies in Nigeria has generated significant socio-economic challenges, with rural communities experiencing the harshest effects. While subsidies were initially intended to protect vulnerable groups from volatile fuel prices, their elimination has resulted in rising living costs, heightened poverty, and greater economic strain. In Peremabiri community of Bayelsa State, where livelihoods depend on small-scale farming, fishing, and informal trade, subsidy removal has triggered sharp increases in transportation costs, food prices, and agricultural input expenses, thereby deepening poverty among households. This study employed a descriptive survey design to examine the impact of fuel subsidy removal on rural poverty levels in Peremabiri. Primary data were obtained through structured questionnaires administered to fifty household heads selected using stratified random sampling, and analyzed using frequencies, percentages, and chi-square tests. Findings reveal a significant relationship between subsidy removal and worsening living standards, as households reported reduced food consumption, increased transport costs, and declining purchasing power. Many respondents adopted adverse coping strategies, including food rationing and the use of inefficient energy sources such as firewood. The study concludes that fuel subsidy removal, in the absence of targeted social protection measures, aggravates rural poverty and widens inequality. It recommends localized interventions such as conditional cash transfers, rural transport support, and agricultural input subsidies to mitigate the negative impact on vulnerable populations and promote more equitable rural development.

Keywords: Fuel Subsidy, Rural Poverty, Peremabiri Community, Fuel Price, Economic Strain

Introduction
Rural areas in Nigeria accommodate about 70 percent of the nation's population, with the majority relying on subsistence farming, fishing, trading, and artisanal work for survival. A common feature of these areas is pressing poverty, reflected in the widespread deprivation of basic needs and poor access to opportunities. Poverty in Nigeria has therefore become one of the most pressing governance challenges, with severe implications for livelihoods and social stability. Scholars such as Ajayi (2009) describes poverty as both an economic and social condition, characterized by the inability of individuals to secure life's essentials, while Ewium (2010) emphasizes its persistence in rural Nigeria despite numerous interventions. One major policy tool adopted globally to alleviate poverty has been subsidies, including fuel subsidies. Fuel subsidies are designed to make energy more affordable, stabilize living costs, and protect low-income households from volatile fuel markets. However, in Nigeria, its removal has triggered unintended consequences such as higher transport fares, increased food prices, reduced household purchasing power, and inflationary pressures. Studies such as Ajakaiye and Jerome (2018) and Oyinlola and Adetutu (2019) show that subsidy removal disproportionately harms vulnerable populations, particularly those in rural and remote areas where coping mechanisms are weak and alternatives are scarce.

In fact, in recent years, especially following major subsidy removals, there has been a noticeable escalation in fuel prices, which in turn triggers hikes in transportation costs, food prices, and the cost of essential farming inputs. These economic shocks disproportionately affect rural dwellers, who rely heavily on informal economies and subsistence activities for survival. In rural communities like Peremabiri, where poverty is already widespread, the removal of fuel subsidies poses severe threats to household welfare, food security, and the overall cost of living. Rural populations often lack the resilience mechanisms present in urban centers, making them highly susceptible to the ripple effects of fuel price hikes. Historical data underscores these concerns. The Nigerian National Petroleum Corporation (NNPC, 2012) reports that the removal of fuel subsidies in 2012 led to an immediate 100% increase in fuel prices, rising from ₦65 per litre to ₦141 per litre. This abrupt price surge resulted in fare hikes, doubling of food prices, and escalated production costs for businesses, culminating in nationwide protests and severe disruptions in economic activities. Similarly, inflation spiked from 10.3% in December 2011 to 12.6% in January 2012 (NBS, 2012), diminishing the purchasing power of households and exacerbating poverty levels.

Low-income households in Nigeria typically allocate a significant portion of their income estimated at 20-25% (World Bank, 2019) to fuel and transportation expenses. Consequently, any upward adjustment in fuel prices due to subsidy removal directly compresses their disposable income, pushing them further into poverty. (Esheya, 2021; Overseas Development Institute, 2024; Eromosele, 2025). For rural dwellers whose livelihoods depend on affordable access to markets, farms, and essential goods, the impact is even more profound, often resulting in reduced food consumption, school dropouts, and adoption of adverse coping strategies. While there is a growing body of literature examining the macroeconomic implications of fuel subsidy removal in Nigeria, most existing studies have focused on urban centers or have analyzed the phenomenon from a national aggregate perspective. (Soile & Mu, 2015; Esheya, 2021; Overseas Development Institute, 2024). Extant works have explored the relationship between subsidy reforms, inflation, income distribution, and general poverty indices across the country. However, these studies often overlook the divers and localized experiences of rural communities, whose socio-economic dynamics differ significantly from urban settings.

In particular, Peremabiri community, as a typical rural settlement characterized by subsistence farming, fishing, and petty trading, presents a unique case where the impact of fuel subsidy removal could manifest differently due to its economic structure and social vulnerabilities. Despite the critical importance of understanding how policy changes affect such rural communities, empirical investigations specific to Peremabiri are notably absent in existing literature. Against this backdrop, the main objective of this study is to examine the effect of fuel subsidy removal on the deepening of rural poverty in Peremabiri community, Bayelsa State, Nigeria.

Research Questions

The following research questions guided the study:

1. What is the impact of fuel subsidy removal on increased transportation cost of farm produce in Peremabiri community?
2. Has fuel subsidy removal caused a reduction in portions of food bought to manage family needs?
3. What policies will better the incidence of poverty in Peremabiri community?

Hypotheses

The following hypotheses were tested at 0.05 significant level:

1. Fuel subsidy removal has not significantly increased transportation cost of farm produce in Peremabiri Community.

2. Fuel subsidy removal has not significantly caused a reduction in portions of food bought to manage family needs.

Theoretical Framework

This study, adopted the Welfare Economics Theory and Optimal Targeting Theory. The choice of these theories is that they give a concise explanations to the peculiarities of this study, examining the need

for government intervention in eradicating poverty. Welfare economics theory rooted in the works of Arthur Pigou and Paul Samuelson, supports state intervention where market failures exist. Subsidies can improve welfare, but their removal must be balanced with compensatory mechanisms. On the other hand, optimal targeting theory, developed by Amartya Sen and Joseph Stiglitz, advocates that subsidies or social interventions should be targeted to reach the poorest segments effectively. The removal of poorly targeted subsidies may be justified if better-targeted social safety nets are implemented.

Review of Related Literature

Fuel subsidies have been a controversial issue in Nigeria, with significant debates over their distributional effects. Empirical studies reveal that fuel subsidies disproportionately benefit urban middle- and high-income earners, rather than the rural poor. In a study on fuel subsidies and their impact on poverty, Esheya (2021) observes that rural farmers and small-scale traders are disproportionately affected by fuel subsidy removal, as increased input and transportation costs reduce their income margins, in contrast to urban dwellers with more diversified livelihoods. Similarly, Soile and Mu (2015) opine that fuel subsidies in Nigeria disproportionately benefit urban households and higher-income groups, while the rural poor capture only a marginal share of the subsidy benefits, exacerbating income inequalities.

According to the Overseas Development Institute (2024), the removal of fuel subsidies disproportionately burdens rural households, as they experience sharper increases in living costs and have limited access to alternative welfare programmes, compared to urban counterparts. To buttress further, Coady et al. (2015) highlight that fuel subsidies in Nigeria favour wealthier households who consume more petroleum products, while only a small proportion of subsidy benefits trickle down to the rural poor, thereby entrenching income inequality. They conducted a cross-country study on fuel subsidies and found that in Nigeria, fuel subsidies exacerbate income inequality by disproportionately benefiting car owners, industries, and transport companies rather than rural dwellers who primarily use alternative fuels such as firewood and charcoal. He therefore highlight that fuel subsidies contribute to income inequality rather than poverty reduction.

Moreover, World Bank (2022) examines the consequences of fuel subsidy removal and found that while it leads to short-term inflationary pressures, reinvesting subsidy savings into social programmes, cash transfers, and rural infrastructure could mitigate the negative impact on low-income households. However, the study warns that without strong social protection measures, subsidy removal can worsen poverty and increase living costs.

Methodology

This study adopted a descriptive survey design, which was considered appropriate because it allows for the systematic collection of data on the perceptions and experiences of rural households regarding fuel subsidy removal. The design enabled the researcher to capture real-time information from respondents in their natural setting without manipulation. The study population comprised adult residents of Peremabiri community, particularly household heads and primary economic providers within families. From this population, a stratified random sampling technique was employed. The community was stratified by occupational categories such as farmers, fishermen, traders, artisans, and others to ensure fair representation. Within each stratum, household heads were randomly selected, making a total of 50 respondents. The instrument for data collection was a structured questionnaire divided into four sections: demographic data, socio-economic effects of fuel subsidy removal, coping strategies, and policy-related opinions. This instrument was administered personally by the researcher with the help of trained assistants in households, markets, farms, and workshops to maximize response rate and data accuracy.

To analyze the responses, descriptive statistics (frequencies and percentages) were first used to summarize demographic characteristics and major trends. Thereafter, the chi-square test of independence was applied to examine whether statistically significant relationships existed between fuel subsidy removal (independent variable) and rural poverty indicators such as transport cost, food consumption, and coping mechanisms (dependent variables). The chi-square test was chosen because it

is suitable for categorical data and for testing associations between variables. All tests were conducted at a 5% level of significance.

Results

Hypothesis One: Fuel subsidy removal has not significantly increased transportation cost of farm produce in Peremabiri Community.

Table 1: Awareness of Fuel Subsidy Removal /Agreement that it Increased Transport Cost of Farm Produce

	Increased Transport Cost: Yes	No	Row Total
Aware of Subsidy Removal	39	3	42
Not Aware	0	5	5
Column Total	39	8	47

Chi-square Statistical Calculations

Expected frequency for each cell = (Row total × Column total) ÷ Grand total

E_{11} (Aware & Yes): (42 × 39) ÷ 47 = 34.83

E_{12} (Aware & No): (42 × 8) ÷ 47 = 7.17

E_{21} (Not Aware & Yes): (5 × 39) ÷ 47 = 4.15

E_{22} (Not Aware & No): (5 × 8) ÷ 47 = 0.85

$$\chi^2 = \frac{\Sigma (O - E)^2}{E}$$

Observed (O)	Expected (E)	$(O-E)^2$	$\frac{(O - E)^2}{E}$
39	34.83	17.39	0.499
3	7.17	17.39	2.426
0	4.15	17.22	4.150
5	0.85	17.22	20.26

Chi-square Test Statistic: $\chi^2 = 27.34$, df = (rows − 1) (columns − 1) = (2 − 1)(2 − 1) = 1, At 5% significance level, the critical value for df = 1 is 3.841.

Decision: Since the calculated $\chi^2 = 27.34 > 3.841$, we reject the null hypothesis. There is a statistically significant relationship between awareness of fuel subsidy removal and agreement that it increased the transport cost of farm produce.

Hypothesis Two: Fuel subsidy removal has not significantly caused a reduction in portions of food bought to manage family needs.

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Table 2: Occupation vs. "Buying Less Food or Reducing Portions to Manage Family Needs"

Occupation	Observed Yes	Observed No	Total
Farmers	11	2	13
Fishermen	7	4	11
Traders	13	1	14
Others	5	1	6
Artisans	0	3	3
Total	36	11	47

E = (Row Total × Column Total) ÷ Grand Total

Occupation	E (Yes)	E (No)
Farmers	(13×36)/47 = 9.96;	(13×11)/47 = 3.04
Fishermen	(11×36)/47 = 8.42;	(11×11)/47 = 2.58
Traders	(14×36)/47 = 10.72;	(14×11)/47 = 3.28
Others	(6×36)/47 = 4.60;	(6×11)/47 = 1.40
Artisans	(3×36)/47 = 2.30;	(3×11)/47 = 0.70

Table 3: Chi Square Statistical Computations

Occupation	Yes (Obs)	Yes (Exp)	$(O–E)^2/E$ (Yes)	No (Obs)	No (Exp)	$(O–E)^2/E$ (No)
Farmers	11	9.96	0.108	2	3.04	0.356
Fishermen	7	8.42	0.24	4	2.58	0.771
Traders	13	10.72	0.495	1	3.28	1.593
Others	5	4.60	0.037	1	1.40	0.119
Artisans	0	2.30	2.29	3	0.70	7.17

Total Chi-square Value

Total χ^2 = Sum of all $(O-E)^2/E$

= 0.108 + 0.240 + 0.485 + 0.035 + 2.300 + 0.356 + 0.781 + 1.585 + 0.114 + 7.557

= 13.561

Degrees of Freedom (df) = (5 – 1) × (2 – 1) = 4, Critical Chi-square value at 0.05 significance level for df = 4 is 9.488, Calculated χ^2 = 13.561
Decision: Since 13.561 > 9.488, we reject the null hypothesis. There is a statistically significant relationship between a rural dweller's occupation and the likelihood of reducing food quantity or portions in response to subsidy removal.

Discussion of Findings

The findings of this study demonstrate that the removal of fuel subsidies has significant and far-reaching effects on rural poverty in Peremabiri community. The analysis revealed that increases in fuel prices substantially raised the cost of transporting farm produce, thereby reducing household disposable income. This result aligns with Esheya (2021), the Overseas Development Institute (2024), and Eromosele (2025), who all report that subsidy removal increases financial pressure on rural households. It also supports Ajakaiye and Jerome (2018), who argue that subsidy reforms disproportionately burden poor and vulnerable populations, especially those in remote areas where alternative sources of energy and transport are limited.

Another important finding was the direct link between subsidy removal and higher living costs. Many households reported coping by cutting food consumption, either by buying smaller quantities or reducing meal portions. The chi-square results confirmed a strong relationship between respondents' occupations and the likelihood of adopting such strategies. This suggests that farmers, traders, and

fishermen who depend heavily on fuel-driven activities were the most vulnerable. The outcome is consistent with Oyinlola and Adetutu (2019), who found that subsidy reforms reduced household welfare across low-income groups.

The study also showed that awareness of subsidy removal significantly shaped perceptions about its impact. While respondents acknowledged government's fiscal rationale for ending subsidies, most considered the policy harmful to their community due to its immediate effect on food prices, transport fares, and household welfare. This finding reflects Ogunleye's (2018) argument that poorly designed or untargeted compensatory measures fail to cushion vulnerable groups effectively.

Overall, the study's results confirm the broader view in the literature that fuel subsidies in Nigeria have historically benefitted urban elites more than rural poor, leaving rural households more exposed to the shocks of subsidy removal (Soile & Mu, 2015; Esheya, 2021). Although subsidy removal may generate fiscal savings, without adequate reinvestment into social protection and rural development, the policy exacerbates inequality and undermines rural livelihoods.

Conclusion

This study has shown that the withdrawal of fuel subsidies has intensified poverty in Peremabiri community, Bayelsa State. The policy has led to higher transportation costs, rising agricultural input prices, and shrinking household incomes, leaving rural dwellers increasingly vulnerable. The chi-square tests provided statistical evidence of the link between subsidy removal and indicators of rural poverty, such as reduced food intake, rising transport expenses, and reliance on unsustainable coping mechanisms. While subsidy removal may create fiscal space and opportunities for government to redirect resources to critical sectors, its intended poverty-reducing effects remain unrealized without proper redistribution frameworks. Unless carefully managed, such reforms risk widening inequality and undermining sustainable rural development. The evidence from this study therefore highlights the urgent need for targeted interventions and pro-poor policies to cushion rural households against the adverse impacts of subsidy removal.

Recommendations

The study recommends as follow:

1. The government should implement well-designed social safety nets such as conditional cash transfers, rural transportation subsidies, and food assistance programmes.
2. The government should redirect subsidy savings into infrastructural development projects in rural communities, including the construction of rural roads, affordable public transportation systems, and rural electrification to reduce logistics costs and improve access to markets and essential services.
3. The government should introduce targeted subsidies for essential agricultural inputs such as fertilizers, seeds, and farm equipment to mitigate the increased production costs induced by higher fuel prices and ensure that smallholder farmers maintain productivity.

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