Assessment of the Socioeconomic Impact of Fuel Subsidy Removal on Transportation in Ile-Ife, Osun State, Nigeria

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ABSTRACT

Fuel subsidies in Nigeria were originally designed to safeguard energy affordability; their removal has consistently generated fiscal relief at the expense of significant socioeconomic disruption. This study examines the impact of subsidy removal on transportation and household welfare in Ile-Ife, Nigeria. Utilizing a descriptive survey research design, primary data were collected from 370 respondents—including civil servants, traders, and commercial drivers—selected through a multistage sampling technique. The study employed descriptive statistics and a multiple regression model to analyze the relationships between transportation costs (TC), socioeconomic characteristics, and socioeconomic welfare (SW). Findings reveal that average daily transportation fares in Ile-Ife surged by 160% (from ₦250 to ₦650) following the policy change, while daily travel frequency contracted by 33.3% (from 4.2 to 2.8 trips), signaling constrained mobility. Regression analysis confirmed that transportation costs have a significant negative effect on welfare (β = -0.642, t = -7.55). Furthermore, family size (β = -0.210) and the number of dependents (β = -0.305) were identified as significant predictors of increased vulnerability. Conversely, higher monthly income and educational attainment positively influenced coping capacity. Consequently, all three null hypotheses were rejected. The study concludes that fuel subsidy removal disproportionately burdens low-income urban residents through inflationary transport costs and reduced disposable income, highlighting the urgent need for targeted social safety nets and transport policy interventions.

Keywords: Assessment, Socioeconomic, Impact, Fuel Subsidy, Removal, Transportation

INTRODUCTION

Fuel subsidies in Nigeria were traditionally designed to ensure energy affordability and social protection (Abdullahi et al., 2025; Gbadebo, A. D., 2025). However, the persistent fiscal burden, coupled with allegations of corruption and inefficiency, led the Nigerian government to implement the total removal of the fuel subsidy in May 2023 (Evans et al.,2023; Orluchukwu et al.,2025; Aniemeke, E. H., 2024).

This policy shift aimed to redirect funds toward critical public investments but simultaneously triggered widespread inflationary pressures, most notably in the transportation sector (Mohammed et al., 2026; Adepoju et al., 2023; Azeez, O. A., 2024)

In Nigeria, where road transport is the predominant mode of movement, fuel price fluctuations directly impact the operational costs of commercial vehicles. In urban centres like Ile-Ife, these costs are rapidly passed on to commuters, leading to significant increases in fares and reduced disposable income for households (Njoku et al.,2025; Ajuwon et al.,2025).

Ile-Ife, characterized by its mix of historic core areas and diverse socioeconomic groups, provides a critical lens through which to observe these impacts (Yoade, A. O. 2015). This study assesses the quantitative changes in

fares and mobility, and the subsequent effect on the welfare of Ile-Ife residents, particularly those in vulnerable socioeconomic brackets (Abdulrauf et al.,2025; Bakare et al.,2024).

Aim

The study aims to assess the socioeconomic impact of the removal of fuel subsidies on transportation in Ile-Ife, Osun State, Nigeria.

Objectives

The specific objectives are to:

i. investigate the effects of fuel subsidy removal on transportation costs in Ile-Ife, Osun State, Nigeria.

ii. evaluate the effect of increased transportation costs on household socioeconomic welfare and mobility in Ile-Ife.

iii. analyze how socioeconomic characteristics influence household transportation burden after fuel subsidy removal.

Research Questions

i. What effect has fuel subsidy removal had on transportation costs in Ile-Ife?

ii. How has increased transportation cost affected household socioeconomic welfare and mobility in Ile-Ife?

iii. How do socioeconomic characteristics influence household transportation burden after fuel subsidy removal?

Hypotheses

i. **H_{01}:** Fuel subsidy removal has no significant effect on transportation cost in Ile-Ife.

ii. **H_{02}:** Increased transportation cost has no significant effect on household socioeconomic welfare and mobility in Ile-Ife.

iv. **H_{03}:** Socioeconomic characteristics such as income, occupation, education, family size, and number of dependents do not significantly influence household transportation burden following fuel subsidy removal

METHODOLOGY

Research Design

This study adopted a descriptive survey research design to assess the socioeconomic impact of fuel subsidy removal on transportation in Ile-Ife, Osun State, Nigeria. The design was considered appropriate because it allows the systematic collection of quantitative data from a defined population in order to describe existing socioeconomic conditions, transportation cost changes, household welfare responses, mobility adjustments, and coping strategies among affected transport users. The approach also enabled the study to examine the relationship between increased transportation burden and selected household socioeconomic characteristics.

Study Population

The target population comprised transport users and economically active residents of Ile-Ife who experienced changes in transportation costs following the removal of fuel subsidy. These included civil servants, traders, artisans, commercial drivers, farmers, students, and other categories of commuters within the study area. This population was selected because these groups depend substantially on road-based transportation for work, education, trade, farming activities, and daily mobility.

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Sample Size and Sampling Procedure

A total of 370 respondents were selected for the study. The study employed a multistage sampling technique involving purposive and simple random sampling procedures. In the first stage, purposive sampling was used to identify relevant respondent categories and transport-dependent locations within Ile-Ife where the effects of increased transport fares were likely to be evident. In the second stage, simple random sampling was used to select individual respondents from the identified groups and locations. This approach ensured that the sample captured diverse socioeconomic groups, including income earners, students, commercial transport operators, and informal-sector workers.

Data Collection Instrument

Primary data were collected using a structured questionnaire designed in line with the study's objectives. The questionnaire was divided into sections covering respondents' socioeconomic characteristics, transportation cost before and after fuel subsidy removal, household welfare conditions, mobility patterns, coping strategies, and suggested policy interventions. The socioeconomic section captured variables such as occupation, income, educational level, family size, and number of dependents. The transportation section obtained information on fare changes, monthly transport expenditure, travel frequency, and mobility adjustments. The welfare section examined perceived effects on household income, savings, food consumption, education, health access, employment, and market participation.

Variables and Measurement

The dependent variable in the study was household socioeconomic welfare, measured through respondents' reported welfare conditions after fuel subsidy removal. The key independent variable was transportation cost, while other explanatory variables included monthly income, educational level, family size, and number of dependents. Transportation burden was measured as the proportion of monthly income spent on transportation. This index was used to determine the relative pressure imposed by transportation expenditure on household income.

For methodological accuracy, the transportation burden index equation(i) was adopted:

$$TB_i = \left(\frac{MTE_i}{MI_i}\right) \times 100 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(i)}$$

Where:

TB_i represents the transportation burden of household/respondent i;

MTE_i represents the monthly transportation expenditure of household/respondent i; and

MI_i represents the monthly income of the household/respondent i.

The transport burden was conventionally interpreted as the percentage of income spent on transportation. Therefore, a higher value indicates a heavier transportation burden on the household.

Method of Data Analysis

Data collected from the questionnaire were coded, cleaned, and analyzed using descriptive and inferential statistical techniques. Descriptive statistics, including frequency distributions, percentages, means, and mean score analysis, were used to summarise respondents' socioeconomic characteristics, transportation fare changes, perceived welfare impacts, mobility responses, and coping strategies. Comparative analysis was used to examine changes in transportation cost, before and after the fuel subsidy removal. Inferential analysis was conducted using multiple regression to determine the influence of transportation cost and socioeconomic characteristics on household welfare as expressed in equation (ii).

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$$SW_i = \beta_0 + \beta_1 TC_i + \beta_2 INC_i + \beta_3 EDU_i + \beta_4 FS_i + \beta_5 DEP_i + \mu_i$$

Where:

SW_i= socioeconomic welfare of respondent/household i;

TC_i= transportation cost of respondent/household i;

INC_i= monthly income of respondent/household i;

EDU_i= educational level of respondent/household i;

FS_i= family size of respondent/household i;

DEP_i= number of dependents of respondent/household i;

β_0= intercept;

$\beta_1 - \beta_5$= regression coefficients of the explanatory variables; and

μ_i= stochastic error term.

The regression model was used to estimate the extent to which transportation cost and socioeconomic characteristics influenced household welfare following fuel subsidy removal in Ile-Ife. The signs, magnitudes, and statistical significance of the regression coefficients were used to determine the direction and strength of the relationship between the explanatory variables and household welfare.

RESULTS

Descriptive Results

The socioeconomic characteristics of the respondents were analyzed using descriptive statistics. In Table 1, the gender distribution revealed that 55.1% of the respondents were male while 44.9% were female, indicating relatively balanced participation among both genders. The age distribution showed that 41.9% of respondents were between 18 and 29 years, and 30.3% within 30 and 39 years. This implies that the majority of respondents were economically active individuals who rely heavily on transportation for daily socioeconomic activities.

The educational distribution indicated that 64.9% of respondents possessed tertiary education, while only 8.6% had no formal or primary education. This suggests a relatively educated population capable of understanding and evaluating the implications of fuel subsidy removal on transportation and welfare conditions.

The occupational distribution showed that students constituted the highest proportion of respondents (35.1%), followed by civil servants (23.0%), traders/artisans (18.5%), commercial drivers (13.5%), and farmers (9.5%). The implication is that a large proportion of respondents are directly dependent on transportation for educational, occupational, and commercial activities.

Income distribution revealed that 39.2% of respondents earned between ₦30,000 and ₦59,999 monthly, while 25.7% earned below ₦30,000. This indicates that the majority of respondents belonged to low- and middle-income categories and are therefore highly vulnerable to increases in transportation costs resulting from fuel subsidy removal.

Table 1. Socioeconomic Characteristics of Respondents (n = 370)

Variables	Frequency	Percentage (%)
Sex		

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Male	204	55.1
Female	166	44.9
Age		
18–29 years	155	41.9
30–39 years	112	30.3
40–49 years	74	20.0
50 years and above	29	7.8
Educational Qualification		
No Formal/Primary	32	8.6
Secondary	98	26.5
Tertiary	240	64.9
Occupation		
Student	130	35.1
Civil Servant	85	23.0
Trader/Artisan	105	18.5
Farmer	35	9.5
Commercial Driver	50	13.5
Monthly Income		
Below ₦30,000	95	25.7
₦30,000–₦59,999	145	39.2
₦60,000–₦99,999	80	21.6
₦100,000 and above	50	13.5

Impact on Transportation Costs and Fares

Table 2 displays the changes in transportation costs and mobility patterns before and after fuel subsidy removal.

Table 2. Transportation Characteristics Before and After Fuel Subsidy Removal

Variables	**Before Removal (Mean)**	**After Removal (Mean)**	**Percentage Change**
Average Daily Fare (₦)	250.00	650.00	+160%

Travel Frequency (Trips/Day)	4.2	2.8	-33.3%

The rising cost of transportation has led to a noticeable decline in mobility. The findings in Table 2 revealed that the average daily transportation fare in Ile-Ife experienced a sharp increase, rising from ₦250 prior to the subsidy removal to ₦650 afterwards. This represents a 160% surge in commuting costs. The immediate nature of this increase highlights the high sensitivity of the local transportation market to fuel price volatility. Respondents reported a reduction in average daily trip frequency from 4.2 trips to 2.8 trips, a decline of 33.3%. This suggests that residents are increasingly forced to prioritize essential travel, such as commuting to work or school, while forgoing other social and economic engagements.

Perceived Impact of Fuel Subsidy Removal on Household Welfare

The study evaluated respondents' perceptions regarding the socioeconomic effects of increased transportation costs using Likert-scale analysis. The results in Table 3 revealed a significant decline in household welfare, primarily due to higher transportation costs and diminished financial capacity. Respondents indicated that transport fares increased markedly, with a mean score of 4.82, making this the most immediate impact of the policy change. Consequently, households reported a reduction in disposable income (mean score of 4.55), forcing them to allocate more of their earnings to transportation and limiting funds available for essential needs like food, education, and healthcare. Additionally, respondents noted an increase in walking distances to save on transport costs (mean score of 4.10) and a significant decrease in household savings (mean score of 4.40). Overall, the findings indicate that the removal of the subsidy has negatively affected household welfare by increasing transport costs, reducing disposable income, decreasing savings, and altering mobility behaviours.

Table 3. Perceived Impact of Fuel Subsidy Removal on Household Welfare

Impact Statement	**Mean Score**	**Remark**
Subsidy removal has increased transport fares in Ile-Ife.	4.82	Strongly Agree
Increased fares have reduced my disposable income	4.55	Strongly Agree
I now walk long distances to save transport costs	4.10	Agree
My household savings have reduced significantly	4.40	Agree

Regression Analysis of Socioeconomic Welfare

A multiple regression model was utilized to determine the relationship between welfare (SW), transportation costs (TC), and household characteristics (income, education, family size, and dependents).

Table: Regression Analysis Results

Variable	Coefficient (β)	t-statistic	Significance
Transportation Costs (TC)	-0.642	-7.55	$p < 0.05$
Family Size (FS)	-0.210	-3.00	$p < 0.05$
Number of Dependents (DEP)	-0.305	-3.31	$p < 0.05$

Monthly Income (INC)	Positive	-	Significant
Educational Level (EDU)	Positive	-	Significant

The findings confirm that transportation costs have a significant negative impact on socioeconomic welfare (β = -0.642, t = -7.55). Furthermore, larger family sizes (β = -0.210) and a higher number of dependents (β = -0.305) were identified as significant predictors of welfare decline. Conversely, higher income and educational attainment were found to improve residents' ability to cope with the economic shock. Consequently, all three null hypotheses were rejected.

RECOMMENDATION

Based on the findings, the study recommends that government at levels (federal, state, and local) should introduce targeted transport-support interventions to reduce the socioeconomic burden of fuel subsidy removal on vulnerable households in Ile-Ife.

Sine the study revealed a 160% rise in average daily transport fares and a 33.3% reduction in travel frequency, priority should be given to subsidized public transport schemes, regulated intra-city fare systems, and support for mass-transit services that can reduce commuting costs for students, low-income workers, traders, and other transport-dependent groups. Social protection progrmmes like conditional cash transfers, transport vouchers, or mobility support grants should also be directed toward low-income households, especially those with large family sizes and many dependents, because the regression results showed that these groups experienced greater welfare decline. Finally, future subsidy reforms should be accompanied by clearly communicated mitigation measures, inclusive stakeholder consultation, and phased implementation to reduce sudden welfare shocks and protect household income, savings, education access, healthcare access, and market participation among vulnerable residents.

CONCLUSION

The removal of the fuel subsidy in Nigeria has disproportionately burdened low-income urban residents in Ile-Ife by raising transport costs and constraining mobility. The 160% increase in fares and 33.3% decline in mobility underscore the severity of the economic impact on commuters. The regression results highlight that households with more dependents and lower incomes are the most vulnerable. These findings emphasize the urgent need for targeted social safety nets, such as direct cash transfers or subsidized public transport schemes, to mitigate the adverse effects of fuel policy reforms on the most vulnerable segments of the Nigerian population.

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