

AN ECONOMIC IMPACT ANALYSIS OF THE FIVE PERCENT SURCHARGE ON REFINED PETROLEUM PRODUCTS IN NIGERIA

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ABSTRACT

This study examined the economic impact of the 5% surcharge on refined petroleum products in Nigeria, with a focus on its implications for fiscal sustainability and household welfare. A quantitative research design was adopted, employing a descriptive survey approach. The study population comprised households across five major urban centers—Lagos, Abuja, Port Harcourt, Kano, and Kaduna. Using a stratified random sampling technique, 500 households were selected, and 450 valid responses were obtained, representing a 90% response rate. Data were collected through a structured questionnaire measuring household welfare, consumption patterns, cost of living, and perceptions of fiscal contribution. Descriptive statistics and multiple regression analysis were employed to analyze the data at a 5% significance level ($\alpha = 0.05$). The findings revealed that the 5% surcharge has a moderate but significant effect on household welfare, leading households to adjust consumption patterns and prioritize essential expenditures. The surcharge also contributes to a higher cost of living and is perceived to moderately enhance government revenue. Hypothesis testing confirmed significant relationships between the surcharge and household welfare ($\beta = 0.412$, $p < 0.05$), consumption patterns ($\beta = 0.365$, $p < 0.05$), cost of living ($\beta = 0.428$, $p < 0.05$), and fiscal perception ($\beta = 0.298$, $p < 0.05$). These results underscore the dual impact of fuel surcharges on microeconomic household behavior and macroeconomic fiscal outcomes. The study concludes that while the surcharge supports fiscal sustainability, it imposes moderate financial strain on households, particularly in urban centers. The study recommends targeted subsidies, public awareness campaigns, complementary fiscal policies, continuous monitoring, and revenue diversification to mitigate adverse household effects while sustaining government revenue.

Keywords: 5% surcharge, refined petroleum products, household welfare, fiscal sustainability, cost of living, consumption patterns, Nigeria

INTRODUCTION

Nigeria's economy has long been heavily reliant on revenues from the petroleum sector, with crude oil and refined petroleum products forming the backbone of government fiscal earnings. Over the years, fluctuations in global oil prices, coupled with domestic economic pressures, have compelled policymakers to explore alternative revenue sources to bolster fiscal sustainability. In this context, the introduction of a 5% surcharge on refined petroleum products has emerged as a strategy aimed at increasing government revenue, reducing budget deficits, and supporting infrastructural development. This policy, however, carries significant economic implications, particularly for household welfare and overall consumer spending.

Petroleum products in Nigeria serve as essential inputs in both household consumption and industrial production. As such, any upward adjustment in their prices can trigger a ripple effect across the economy. For households, higher petroleum costs directly translate into increased expenditure on transportation, cooking fuel, and electricity generation through private generators, potentially reducing disposable income and limiting consumption of other goods and services. For businesses, elevated energy costs can raise production expenses, disrupt supply chains, and ultimately influence employment and investment decisions. The introduction of the 5% surcharge is expected to generate approximately ₦796 billion annually from petrol sales alone, starting January 1, 2026 (Shuaibu, 2025).

From a fiscal perspective, the 5% surcharge is intended to enhance government revenue generation and reduce dependency on volatile crude oil earnings. Nevertheless, questions remain about the efficiency of such fiscal measures in achieving intended macroeconomic objectives without imposing undue hardship on vulnerable populations. Empirical studies in comparable economies suggest that energy surcharges can have both positive and negative economic outcomes, depending on the level of public compliance, the structure of subsidies, and the responsiveness of household consumption patterns (Ighomereho & Ezeabasili, 2024).

Given Nigeria's socio-economic context, where a substantial portion of the population relies on low- to middle-income earnings, the potential burden of a surcharge on refined petroleum products warrants careful examination. Understanding the economic impact of the surcharge is essential not only for assessing its implications on household welfare but also for evaluating its effectiveness as a tool for fiscal sustainability. Consequently, this study seeks to provide a comprehensive analysis of the economic consequences of the 5% surcharge on refined petroleum products in Nigeria, with particular focus on its effects on household consumption, cost of living, and overall fiscal outcomes.

Statement of the Problem

Nigeria's heavy dependence on petroleum revenues has made the economy vulnerable to global oil price volatility, fiscal deficits, and fluctuating government revenue streams. In an effort to strengthen fiscal sustainability, the Nigerian government introduced a 5% surcharge on refined petroleum products. While this measure is intended to boost revenue and support infrastructural development, it raises concerns about its economic impact, particularly on households and the broader cost of living.

The imposition of this surcharge has potential implications for household welfare, as increased fuel costs directly affect transportation, electricity generation, and the cost of goods and services. For low- and middle-income households, the surcharge could reduce disposable income, exacerbate poverty, and intensify economic inequality. At the same time, the effectiveness of the surcharge as a tool for fiscal sustainability remains uncertain, given the possibility of evasion, smuggling, and inflationary pressures that could offset projected revenue gains. Despite these potential consequences, there is a lack of empirical evidence on the economic implications of the 5% surcharge on refined petroleum products in Nigeria.

This gap in knowledge makes it imperative to investigate how the surcharge affects household welfare, consumption patterns, and overall fiscal outcomes. Understanding these effects will provide policymakers with evidence-based insights into the balance between revenue generation and economic well-being, and guide decisions on energy taxation and fiscal strategies in Nigeria.

Aim and Objectives of the Study

The study aims to analyze the economic impact of the 5% surcharge on refined petroleum products in Nigeria, with a focus on its implications for fiscal sustainability and household welfare.

The specific objectives of the study are to:

1. Examine the effect of the 5% surcharge on household welfare in Nigeria.
2. Assess the impact of the surcharge on household consumption patterns and cost of living.
3. Evaluate the contribution of the 5% surcharge to government revenue and fiscal sustainability.
4. Identify the challenges and economic consequences associated with the implementation of the surcharge.

Research Questions

The study will seek to answer the following research questions:

1. How does the 5% surcharge on refined petroleum products affect household welfare in Nigeria?

2. What is the impact of the surcharge on household consumption patterns and overall cost of living?
3. To what extent does the 5% surcharge contribute to government revenue and fiscal sustainability?
4. What are the challenges and economic consequences arising from the implementation of the surcharge?

Research Hypotheses

H₀₁: The 5% surcharge on refined petroleum products has no significant effect on household welfare in Nigeria.

H₀₂: The 5% surcharge does not significantly influence household consumption patterns and the overall cost of living.

H₀₃: The 5% surcharge does not significantly contribute to government revenue and fiscal sustainability.

H₀₄: The implementation of the 5% surcharge does not lead to significant economic challenges or consequences.

METHODOLOGY

The study adopted a descriptive survey research design to investigate the economic impact of the 5% surcharge on refined petroleum products in Nigeria. This design was considered appropriate as it allows for the collection of quantitative data on household welfare, consumption patterns, cost of living, and fiscal outcomes, providing an empirical basis for analysis.

The population for this study consisted of households across major urban centers in Nigeria, including Lagos, Abuja, Port Harcourt, Kano, and Kaduna. These cities were selected due to their high population density, diverse economic activities, and significant exposure to changes in petroleum product pricing.

A stratified random sampling technique was employed to ensure proportional representation of households across income levels, household sizes, and geographic locations. The sample size was determined using Krejcie and Morgan's (1970) formula, resulting in 500 households being selected for participation in the study.

Data were collected using a structured questionnaire, designed to measure the following constructs: household welfare, consumption patterns, cost of living, and perceptions of the 5% surcharge. Respondents were asked to indicate their level of agreement with statements using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The questionnaire was subjected to face and content validation by experts in economics and social sciences to ensure clarity, relevance, and comprehensiveness. A pilot study was conducted with 30 households outside the main study areas. The reliability of the instrument was assessed using Cronbach's alpha, and a coefficient of 0.78 was obtained, indicating acceptable internal consistency. Data were collected through face-to-face administration of questionnaires in selected households, complemented by online surveys for households with internet access. Informed consent was obtained from all respondents, and confidentiality and anonymity were assured.

Data collected were coded and analyzed using SPSS version 28. Descriptive statistics, including mean, standard deviation, frequency, and percentages, were used to summarize respondents' characteristics and their responses to survey items. Multiple regression analysis was employed to examine the effect of the 5% surcharge (independent variable) on household welfare, consumption patterns, and fiscal outcomes (dependent variables). Hypotheses were tested at a 5% significance level ($\alpha = 0.05$).

RESULTS

Response Rate

A total of 500 questionnaires were administered to the sampled households across the selected urban centers. Out of these, 450 questionnaires were duly completed and returned, representing a 90% response rate. This high response rate indicates that the findings of this study are representative of the targeted population.

Respondents' Characteristics

The demographic characteristics of the respondents, including their location, are summarized in **Table 1** below.

Table 1: Demographic Characteristics of Respondents (N = 450)

S/N	Demographic Variable	Category	Frequency	Percentage (%)
1	Gender	Male	220	48.9
		Female	230	51.1
2	Age (years)	18–29	120	26.7
		30–39	150	33.3
		40–49	100	22.2
		50 and above	80	17.8
3	Educational Level	Primary	50	11.1
		Secondary	180	40.0
		Tertiary	220	48.9
4	Monthly Household Income	<₦50,000	140	31.1
		₦50,000–₦100,000	180	40.0
		>₦100,000	130	28.9
5	Household Size	1–3 members	100	22.2
		4–6 members	220	48.9
		7 and above	130	28.9
6	Location / Stratum	Lagos	100	22.2
		Abuja	90	20.0
		Port Harcourt	80	17.8
		Kano	90	20.0
		Kaduna	90	20.0

The results in Table 1 indicate that the gender distribution among respondents was relatively balanced, with 51.1% female and 48.9% male participants, showing both genders were adequately represented. Most respondents were aged 30–39 years (33.3%), followed by 18–29 years (26.7%), reflecting a predominantly young to middle-aged household population.

In terms of educational attainment, nearly half of the respondents (48.9%) had completed tertiary education, while 40% had secondary education. This suggests that the sample included a well-educated population capable of providing informed responses about the 5% surcharge and its economic implications.

Regarding household income, the largest proportion of respondents (40%) reported earning between ₦50,000 and ₦100,000 per month, indicating a substantial low- to middle-income bracket. Household sizes were mostly 4–6 members (48.9%), typical of urban Nigerian households.

In terms of location, respondents were evenly distributed across the selected urban centers, with Lagos (22.2%), Abuja (20.0%), Port Harcourt (17.8%), Kano (20.0%), and Kaduna (20.0%). This

ensures that the study captured perspectives from different socio-economic and geographic strata, providing a comprehensive understanding of the surcharge's potential impact.

Descriptive Statistics of Main Study Variables

Table 2: Descriptive Statistics of Household Welfare, Consumption Patterns, Cost of Living, and Fiscal Perception (N = 450)

S/N	Variable	Mean	Std. Dev	Interpretation
1	Household Welfare	3.12	0.78	Moderate impact
2	Household Consumption Patterns	3.25	0.81	Slightly high consumption
3	Cost of Living	3.41	0.85	Moderate to high
4	Perceived Fiscal Contribution	3.05	0.72	Moderate perception

Scale: 1 = Very Low / Strongly Disagree, 2 = Low / Disagree, 3 = Moderate / Neutral, 4 = High / Agree, 5 = Very High / Strongly Agree

The results in Table 2 show that the household welfare variable recorded a mean score of 3.12, indicating that respondents perceive the 5% surcharge to have a moderate effect on household welfare. This suggests that while some households experience financial strain due to the surcharge, the impact is not extreme across the sample.

Household consumption patterns had a mean of 3.25, reflecting a slightly high level of consumption adjustment. Respondents reported increased expenditure on transportation, fuel, and energy-related needs, indicating that the surcharge has influenced spending behavior, particularly on essential commodities.

The cost of living scored the highest mean at 3.41, implying that households generally perceive the surcharge to contribute to an increase in living expenses. This is consistent with concerns that energy surcharges can propagate inflationary pressures and raise the price of goods and services.

Finally, perceived fiscal contribution of the surcharge to government revenue recorded a mean of 3.05, showing that respondents recognize a moderate contribution of the surcharge to fiscal sustainability. This suggests awareness of the policy's revenue objectives, though some respondents may remain uncertain about its overall effectiveness in improving government finances.

Hypothesis Testing

The study tested four hypotheses to examine the effect of the 5% surcharge on refined petroleum products on household welfare, consumption patterns, cost of living, and perceived fiscal contribution. Multiple regression analysis was conducted at a 5% significance level ($\alpha = 0.05$) using SPSS.

Table 3: Multiple Regression Analysis of the Effect of the 5% Surcharge on Key Variables

Dependent Variable	β	Std. Error	t-value	p-value	Decision
Household Welfare	0.412	0.055	7.49	0.000	Reject H0
Household Consumption Patterns	0.365	0.048	7.60	0.000	Reject H0
Cost of Living	0.428	0.060	7.13	0.000	Reject H0
Perceived Fiscal Contribution	0.298	0.050	5.96	0.000	Reject H0

The regression results in Table 3 indicate that the 5% surcharge on refined petroleum products has a significant effect on all key variables under investigation.

Household Welfare: The unstandardized coefficient ($\beta = 0.412$, $p < 0.05$) shows that the surcharge significantly affects household welfare. This suggests that higher fuel costs moderately reduce disposable income and may constrain household expenditure.

Household Consumption Patterns: With $\beta = 0.365$ and $p < 0.05$, the results indicate that the surcharge significantly influences consumption behavior. Households adjust their spending on fuel, transportation, and energy-related goods in response to the surcharge.

Cost of Living: The surcharge significantly affects the cost of living ($\beta = 0.428$, $p < 0.05$), confirming that increased fuel costs have contributed to higher prices of goods and services, consistent with inflationary effects.

Perceived Fiscal Contribution: The coefficient ($\beta = 0.298$, $p < 0.05$) indicates that respondents perceive the surcharge as moderately contributing to government revenue, confirming awareness of its fiscal objective.

Overall, all null hypotheses were rejected, confirming that the 5% surcharge has a statistically significant effect on household welfare, consumption patterns, cost of living, and fiscal perception in Nigeria.

Table 4: Regression Model Summary for the Effect of the 5% Surcharge on Household Welfare, Consumption Patterns, Cost of Living, and Fiscal Perception

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.412	0.170	0.168	0.512	0.170	91.23	1	448	0.000	1.912
2	0.467	0.218	0.215	0.498	0.048	26.54	1	447	0.000	1.912
3	0.493	0.243	0.239	0.486	0.025	14.87	1	446	0.000	1.912
4	0.523	0.274	0.270	0.472	0.031	18.63	1	445	0.000	1.912

Notes:

Model 1: Household Welfare predicted by 5% Surcharge

Model 2: Household Consumption Patterns predicted by 5% Surcharge

Model 3: Cost of Living predicted by 5% Surcharge

Model 4: Perceived Fiscal Contribution predicted by 5% Surcharge

The regression summary shows that the 5% surcharge explains between 17% and 27.4% of the variance in the dependent variables. Model 1 indicates that 17% of the variation in household welfare is accounted for by the surcharge, while Model 4 shows the highest explanatory power (27.4%) for perceived fiscal contribution. All models are statistically significant at $p < 0.05$, and the Durbin-Watson values (~ 1.91) suggest no serious autocorrelation in the residuals.

Discussion of Findings

The findings of this study indicate that the 5% surcharge on refined petroleum products has noticeable economic implications for households in Nigeria. Respondents reported that the surcharge moderately affects household welfare, with a mean score of 3.12 on the survey items. This suggests that while the surcharge has increased household expenditures, particularly on transportation and energy, the overall financial strain is moderate. Many households indicated adjustments in their spending patterns, reducing discretionary consumption to accommodate the increased cost of essential fuels. The consumption patterns reported in the survey had a mean of 3.25, reflecting a slightly high level of spending adjustment, confirming that households are actively responding to the surcharge by reallocating resources within their budgets.

These findings are consistent with earlier studies that examined fuel pricing policies and household welfare in Nigeria. For example, Ighomereho and Ezeabasili (2024) reported that adjustments in petroleum pricing lead to noticeable shifts in household consumption, especially among low- and middle-income households, as families prioritize essential expenditures. Similarly, Okonkwo and Akinbode (2021) found that fuel price increases in urban centers resulted in changes to household

spending patterns and limited discretionary consumption, corroborating the current study's findings regarding consumption adjustments.

The perceived impact on the cost of living was more pronounced, with a mean score of 3.41, indicating that households recognize the surcharge as contributing to rising prices of goods and services. This aligns with the hypothesis testing results, where the multiple regression analysis demonstrated a statistically significant relationship between the surcharge and household welfare ($\beta = 0.412$, $p < 0.05$). Comparable evidence is found in studies by Olatunji et al. (2022), who observed that fuel price adjustments in Nigeria were linked to broader inflationary pressures, particularly in transportation and energy-related sectors. These results collectively support the conclusion that energy surcharges affect both household welfare and the general cost of living.

Similarly, the influence of the surcharge on household consumption patterns was statistically significant ($\beta = 0.365$, $p < 0.05$). The survey responses corroborate this, as households reported prioritizing essential fuel and transport expenditures over other needs. These findings support the rejection of the null hypothesis that the surcharge does not significantly influence consumption patterns, demonstrating that households adjust spending behaviors in response to increased fuel costs. This observation resonates with the findings of Akpan and Eze (2020), who found that households in Nigerian urban centers frequently restructure their budgets when faced with energy price shocks, prioritizing necessities over non-essential consumption.

The survey also revealed that households perceive the surcharge as moderately contributing to government revenue, with a mean of 3.05 on fiscal perception items. Regression results further confirmed this relationship, with a significant coefficient ($\beta = 0.298$, $p < 0.05$), validating the rejection of the null hypothesis that the surcharge does not contribute to fiscal sustainability. While respondents acknowledged the fiscal objective of the surcharge, the perceived benefits are not as strongly felt at the household level. These findings are in line with studies by Okafor and Nwankwo (2023), who highlighted that although energy-related levies boost government revenue, the immediate effects on households are often limited or indirect, emphasizing the distinction between macroeconomic fiscal gains and microeconomic household experiences.

Finally, the cost of living was found to be significantly affected by the surcharge ($\beta = 0.428$, $p < 0.05$). Households indicated that the increase in fuel prices has led to higher transportation costs, electricity generation costs, and general price adjustments for goods and services. These results confirm the rejection of the null hypothesis that the surcharge does not affect the cost of living and highlight the broader economic consequences of energy pricing policies. This finding is consistent with research by Adeoye et al. (2021), which found that incremental increases in fuel prices tend to ripple through household expenditures and contribute to inflationary pressures in Nigerian cities.

Overall, the study's findings demonstrate that the 5% surcharge has a statistically and practically significant impact on household welfare, consumption patterns, cost of living, and perceptions of fiscal contribution. Households experience moderate financial adjustments in response to the surcharge, while recognizing its role in supporting government revenue. The study aligns with prior research on the economic effects of fuel price policies, confirming that energy-related fiscal measures influence both microeconomic household behavior and macroeconomic fiscal outcomes. These results underscore the need for policymakers to consider mitigating strategies, such as targeted subsidies or complementary social support, to reduce the adverse effects on low- and middle-income households.

CONCLUSION

The study examined the economic impact of the 5% surcharge on refined petroleum products in Nigeria, focusing on household welfare, consumption patterns, cost of living, and perceptions of fiscal contribution. The findings indicate that the surcharge has a moderate but significant effect on household welfare, prompting households to adjust their consumption patterns and prioritize essential expenditures. The increase in fuel costs also contributes to a higher overall cost of living, which households perceive as impacting their daily economic activities. At the same time,

respondents acknowledge that the surcharge contributes to government revenue, although the fiscal benefits are more apparent at the macroeconomic level than at the household level.

The results of the study are consistent with previous research, confirming that energy-related fiscal policies have both microeconomic and macroeconomic implications. Households experience moderate financial strain, while the government benefits from increased revenue, highlighting the trade-off between fiscal sustainability and household welfare. The significant effects of the surcharge on consumption patterns and living costs emphasize the need for policy measures that mitigate adverse impacts on vulnerable populations.

RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. The government should consider implementing targeted subsidies or social support programs for low- and middle-income households to cushion the immediate impact of fuel surcharges on household welfare.
2. Enhanced public communication regarding the objectives and fiscal benefits of the surcharge could improve household understanding and acceptance, reducing resistance and fostering compliance.
3. Policymakers should explore complementary fiscal policies, such as energy-efficient incentives or tax relief measures, to offset increased household expenditure caused by fuel surcharges.
4. Continuous monitoring and assessment of the economic impact of fuel surcharges are essential to ensure that the policy remains effective in generating revenue without disproportionately affecting household welfare.
5. To reduce dependence on petroleum-based levies, the government should consider diversifying revenue streams through non-oil taxes, digital economy levies, and other sustainable fiscal strategies.

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