The Nigerian Journal of Energy & Environmental Economics
Department of Economics,
Nnamdi Azikiwe University, Awka,
Anambra State, Nigeria.

Web: www.aeeeng.org *ISSN 2006-8395*

EFFECT OF FUEL SUBSIDY REMOVAL ON HOUSEHOLDS' EXPENDITURE PATTERNS IN UMUAHIA

Nwakerendu Favour E., Nwanosike Dominic U*. & Ekpendu, E. Justice.

Department of Economics, Clifford University Owerrinta, Nigeria.

*corresponding Author: nwanosiked@cliffordduni.edu.ng

Abstract

Fuel subsidy is a financial assistance provided by the government to reduce the cost of fuel for consumers, aimed at making fuel more affordable for the general population. Fuel subsidy removal policy is very responsive to the structure of households' expenditure patterns and country's level of development. This study therefore investigated how household expenditure pattern changes following the fuel subsidy removal especially in Umuahia metropolis. The study adopted quantitative research method and sample size of 212 respondents selected from the population. The data which were collected using a structured questionnaire and observation method was analyzed using descriptive statistics, ANOVA and correlation analysis. The findings showed that the overall spending of the households on food since the removal of fuel subsidy stood at 69.3%, indicating an increase in the overall spending on food. This result showed that the overall households spending on food increased since the removal of fuel subsidy without commensurate increase in the income of the households and triggered excruciating economic hardship on the residents. Based on the findings, the study recommends the implementation of targeted social welfare programs to support vulnerable households affected by fuel subsidy removal.

Keywords: Expenditure patterns, fuel subsidy, household income, Umuahia, transportation

JEL Classification Codes: C83, D10, Q40.

1. Introduction

Nigeria is endowed with an abundance of natural resources, the most notable of which are its deposits of gas and oil. However, regrettably, the richness that nature has bestowed upon us has not led to increased citizen wealth. Nigeria, which has the largest economy in Africa and the largest population of black people, is an amusing example of a wealthy country with impoverished people (Adekoya, 2020). Nigeria, with its 37.2 billion proved oil reserves, is the continent's greatest oil producer (Olisah, 2020; Siddig, Minor, Grethe, Aguiar & Walmsley, 2015; Adekoya, 2020). In March 2020, Nigeria produced 1.78 million barrels per day, making it the second largest oil resource in Africa behind Libya (Olisah, 2020). According to the Organization of the Petroleum Exporting Countries (OPEC), Nigeria trails Libya in oil

production capacity with 1.18 million barrels per day in August 2023 (Umeji & Eleanya, 2021).

Nigeria's economy is a unified one that depends primarily on the sale of crude oil for government income and budget expenditure. Despite the country's enormous arable land (agricultural land) and plenty of natural resources, 90% of Nigeria's foreign exchange profits, 60% of its income, and 8% of its GDP (Olisah; 2020), come from the country's sales of crude oil (Umeji & Eleanya, 2021). Fuel plays a crucial role in the Nigerian economy, contributing significantly to all aspects of production and distribution of goods (Olisah, 2020). Its significance is undeniable. Okwanga, Ogbu and Pristine (2015) noted that petroleum motor spirit (PMS) is a major component of the Nigerian economy, both for the provision of services and for the movement of commodities. In reference to Agu, Ekwutoso, and Augustine (2018) PMS is a vital energy source in Nigeria, it powers economic activity. Notwithstanding the enormous profits from oil exports, Nigerian governments have repeatedly failed to reduce poverty and provide the basic amenities that their citizens require.

The term subsidy simply depicts any measure or policy that keeps price that consumers pay for goods or produce below what is considered to be market price for either consumers or producers. There are several types of subsidies, such as grants, tax exemptions and reductions, or price control (Umeji & Eleanya, 2021). Fuel subsidy refers to a governmental policy that involves providing a reduction in the market price of fossil fuel, resulting in customers paying a lower amount than the prevailing market price for fuel, Ovaga and Okechukwu (2022). In addition, Bakare (2012) points out that selling a product for less than its cost of manufacture is known as subsidizing. Therefore, selling premium motor spirit for less than the cost of importation is what we mean when we discuss fuel subsidies in the Nigerian context. Due to a new policy issued by the Petroleum Product Pricing Regulatory Agency (PPPRA), the fuel subsidy on PMS (fuel) was eliminated on January 16, 2012 (Sahara Reporters; 2012). The issue of maintaining the fuel subsidy system has been a prominent topic of public discussion since January 2012.

The removal of subsidies on necessities such as petrol has shown to trigger social unrest and, in extreme cases, to result in civil strikes and street rioting. Programs to remove fuel subsidies are sensitive to the political system, the economy, the country's degree of development, and the structure of the economy. There is proof that the more prosperous nations have adopted a phased or gradual strategy, conducted diligent study before implementing policies, and adhered to a rigorous policy making process. A decent

degree of trust and efficient communication between the people and government can be the other essential success components in this kind of endeavour. The government of President Bola Tinubu's eliminated fuel subsidies in Nigeria after taking office on May 29. The $20 million trade deficit in November 2022 resulting from low crude oil export revenues highlights the need to eliminate fuel subsidies, increase local production capacity, and stop relying on fuel imports in order to achieve a positive trade balance. Such a difficult choice. The government must decide whether to keep the subsidy in place and increase the unmanageable budget imbalance or to risk possible social and economic upheaval by eliminating it. Okwanya, Moses, and Pristine (2023) state that it is obvious that eliminating fuel subsidies might save Nigeria almost ₦7 trillion a year, money that could then be used for infrastructure, health care, and education. For instance, when fuel subsidies were eliminated in Ghana in 2013, the cost of gasoline, kerosene, diesel, and LPG increased by 15% to 50% by mid-September, when prices at market levels were reached. They put the money to use in important areas. Moreover, the nation is the main producer of crude oil in the region; in 2020, it produced 2.4 million barrels of oil per day, or around 24% of all petroleum produced on the continent. However, because of its poor oil output and rising fuel subsidy costs, Nigeria was not able to benefit from the increase in oil prices. As The fuel subsidy program was rife with inefficiency, manipulation, and corruption. The ₦3.92 trillion allotted for fuel subsidies between January 2020 and June 2022 is more than the total amount of federal funding for defense, healthcare, and education for the same 30-month period. Between 2006 and 2018, Nigeria spent over ₦10 trillion on fuel subsidies. It devoured ₦5.82 trillion 2021 – 2022 and ₦3.36 trillion being projected for the first six months of 2023 (Nzelu, Nwogwugwu, Alochukwu-Okwy, Ebenyi, Ukangwa, & Nwanosike**,** 2023). These numbers point to a substantial financial burden on the government, limiting its capacity to make investments in vital fields that may support economic expansion and improve the lives of citizens. Nigeria's daily fuel usage decreased from 66 million to 40 million once the fuel subsidy was removed; this suggests the country's real daily fuel consumption dropped. The study investigates the household expenditure patterns changes following the fuel subsidy removal especially in Umuahia metropolis. This study will serve as a standard to help the government make informed policy decisions to alleviate any negative impacts and implement targeted interventions to support vulnerable households in Umuahia so as to improve the socioeconomic condition in the region.

2. Literature Review

Conceptual Issues

Fuel Subsidy Removal

Eliminating the fuel subsidy simply implies that the government will no longer be covering the gap between the price at the pump and the real cost of fuel imports. In technical terms, it implies completely deregulating the downstream industry to allow for fierce competition from other eager investors. Fuel will need to be sold at the going rate depending on the true cost of importation after the fuel subsidy is eliminated, (Ikenga, & Oluka, 2023). Fuel subsidy removal policies are very responsive to the structure of an economy, a country's level of development, state of the economy and political system. Studies have shown that countries that have succeeded in fuel subsidy removal have taken a slow approach and done a lot of research before implementation. This can be made possible by the effective communication as well as a high level of trust between the government and its citizens (Centre for Public Policy Alternatives, 2012). Adeyinka, (2023) argued that many Nigerians have access to affordable petroleum products through fuel subsidy. Petroleum subsidy represents universal benefit and not a benefit targeted specifically at the poor. Similarly, Adagunodo, (2022) was of the opinion that subsidy is an indirect way of redistributing wealth to the poor and if stopped, government must find a way of compensating Nigerians, explain how the resulting inflation will be managed and how the savings from the removal of subsidy will be utilized.

Resolving the fuel subsidy challenge necessitates a comprehensive strategy that includes incremental reforms, enhancing local energy generation, and supporting renewable energy alternatives to lessen dependence on imported fuels. To enhance economic resilience, Nigeria's government can explore sustainable energy strategies for energy mix diversification. The fuel subsidy issue in Nigeria carries intricate economic, social, and political consequences. While eliminating it could enhance fiscal stability, the process should have been approached cautiously to prevent disproportionate impacts on the populace (Nzelu, et al., 2023).

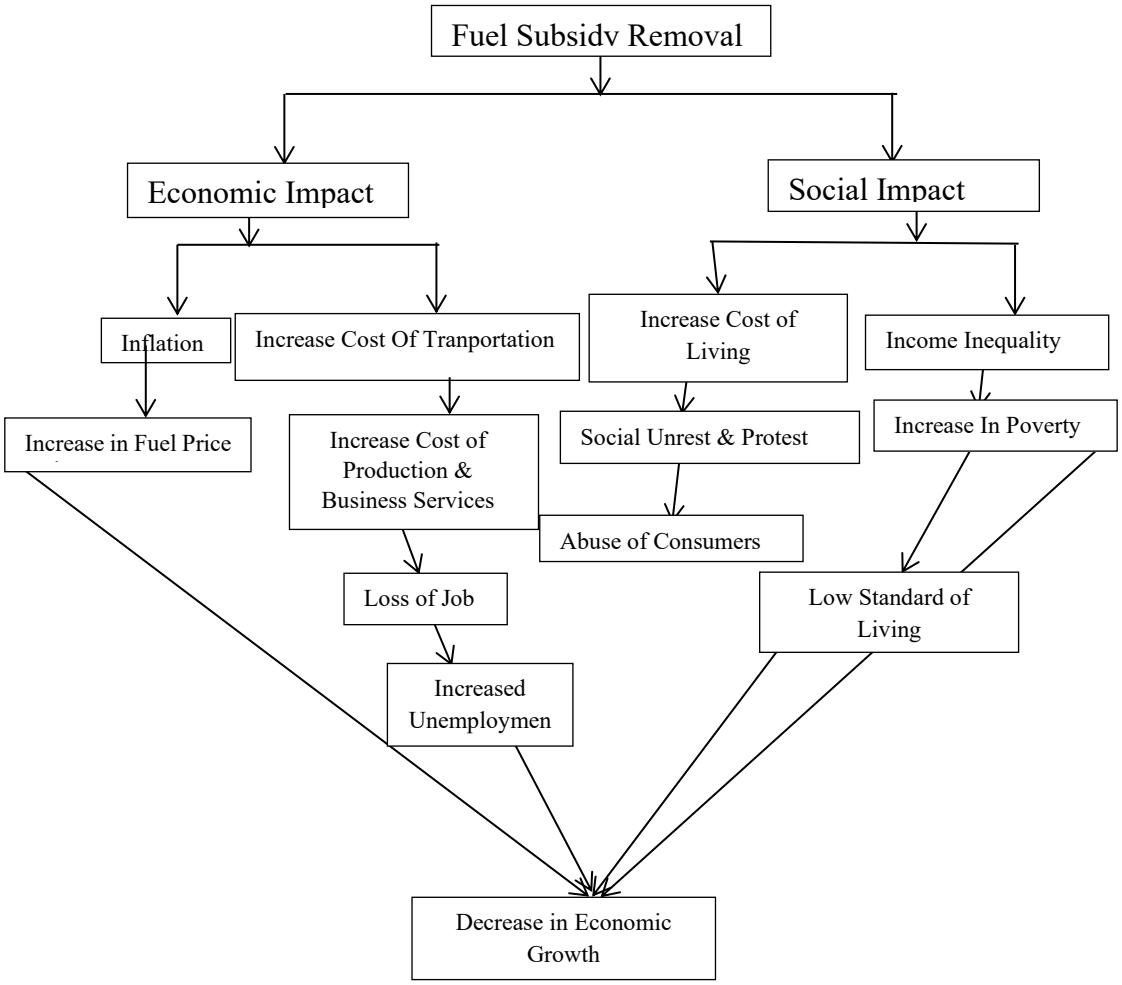


Figure 2.1: Conceptual framework on the impact of fuel subsidy removal
Source: Nwakerendu, Nwanosike and Ekpendu (2024)

Figure 2.1 shows that the removal of fuel subsidy has significant economic and social impacts. Economically, the removal of fuel subsidies often leads to an immediate rise in fuel prices. A chain of reaction may result from this, driving up transportation expenses and ultimately pushing up inflation. Prices for products and services might increase, which would reduce consumer purchasing power. Factories and industries that depend on petroleum products and goods transportation will be affected. In other to meet market demand, such businesses will experience some difficulties and an increase in the cost of production. Due to the increase in the cost of operations or production, some businesses may have no option but to lay off some employees in an effort to cut costs. This will lead to some citizens losing their jobs which in turn would increase the rate of unemployment. The removal of fuel subsidy can cause a monopoly in the free market, (Ozili, & Obiora, 2023). Monopolists are setters, and this can lead to customer rip-off wherein a customer pays too much for a product. Hence fuel subsidy removal can lead

to unfair consumer practices as marketers can choose to create fuel prices at will. Socially, higher fuel prices contribute to a rise in the cost of living, exacerbating income inequality and increasing the risk of social unrest and protests. Vulnerable populations maybe disproportionately affected, facing higher level of poverty and a decline in their standard of living. All these will lead to the decrease in the growth of the economy.

Brief History of Umuahia

Umuahia, the capital city of Abia State in southeastern Nigeria, has a rich history and a growing population. Originally an agricultural market center, Umuahia attracted traders and farmers selling produce like yams, cassava, maize, taro, citrus fruits, and palm oil. The city has industries such as a brewery and a palm oil processing plant, contributing to its economy. Umuahia is home to Nigeria's National Root Crops Research Institute and educational institutions like Trinity College and Government College Umuahia. The city's climate is tropical, characterized by significant rainfall throughout the year with a short dry season.

Historically, Umuahia's name is believed to originate from the Igbo word "Ama Ahia," meaning "market place." The British, upon annexing the region in the 19th century, pronounced and spelled it as "Umuahia." The city became the capital of Abia State after Enugu fell to Nigerian troops in 1967. Umuahia was occupied in 1969 but later captured, making Owerri the last Biafran capital. The city was formerly part of Ikwuano/Umuahia Local Government Council, later divided into Umuahia North and Umuahia South. In 2024, Umuahia's population is estimated to be around 947,460, showing significant growth from 13,255 in 1950. The city's population growth reflects a 4.79% annual change, with projections indicating further increases in the coming years. Umuahia's urban area population has steadily risen over the decades, making it a significant urban center in Nigeria (Population Stat World Statistical Data, 2024).

Umuahia's location along the railway between Port Harcourt and Enugu positions it as a key hub for trade and commerce in the region. The city's diverse economic activities, educational institutions, and research facilities contribute to its vibrancy and growth, (Eneke, Nwanosike, Onwuka, Ekpendu, Nzelu, & Ukangwa, 2022).

Theoretical Review

This work theoretically relied on Musgrave theory of state and social welfare (1960), which noted that government is the custodian of public interest that seeks to maximize social welfare. The role of the state in maximizing social welfare therefore lays the foundation for subsidy in the economy. Musgrave (1960) introduced this theory based

on his observation of changes in the income elasticity of demand for public services across different per capita income levels. He suggests that at lower income levels, the demand for public services is minimal as most income is directed towards meeting essential needs. As per capita income increases beyond these lower levels, there is a corresponding rise in the demand for public services like healthcare, education, and transportation, prompting the government to allocate more funds to these sectors. Musgrave notes that in highly developed economies with high per capita incomes, the growth rate of the public sector tends to slow down as basic needs are adequately met.

Empirical Literature

Umeji and Eleanya (2021) studied on the impact of eliminating fuel subsidies on poor Nigerians and its overall benefits to the Nigerian economy using a descriptive research design method. The article notes that while the poor will suffer more, in the form of higher fares and higher prices for food and other goods, eliminating subsidies is in the general interest of the entire economy as the funds will go toward improving infrastructure, particularly in the areas of health, education and transport. Sakiru (2022) examined the factors that influence both income and health poverty, with particular attention on the role of fossil fuel subsidies in 30 developing countries. Using the GMM technique, increasing fossil fuel subsidies have been shown to increase income and health poverty. The result also show that real GDP growth per capita, financial development, human capital development, real remittances per capita, globalization and institutional quality reduce both income and health poverty.

Khalid, Angel, Harald, Peter and Terrie (2021) examined the impact of rising fuel prices on the Nigerian economy. The study used a survey design approach to assess the magnitude of the impact of fuel price increases on the Nigerian economy. The results of the study, using co-integration and error correction models, showed that there is a significant relationship between recent fuel price increases and development in Nigeria. The result showed that subsidies have a positive and significant relationship with the transportation sector, which means that eliminating gasoline subsidies could increase the operating costs of the transportation sector and reduce the country's gross domestic product (GDP). The study by Obasi, Ezenkwa, Onwa and Nwogbaga (2017) focused on the interplay of oil price shocks, fuel subsidies, and their effects on macroeconomic stability in Nigeria. The study involved the development and estimation of a New-Keynesian DSGE model that incorporated the pass-through effect of international oil price fluctuations into the retail fuel price. The findings of the study

demonstrated that oil price shocks have substantial and enduring impacts on the country's economic output, accounting for approximately 22% of its variations over a four-year period.

Babatunde (2019) examined the macroeconomic impact of oil shocks and the current fuel subsidy system in Nigeria using a New Keynesian DSGE estimation model. The results show that oil shocks have significant and long-lasting effects on the production of products, and another study also shows that the removal of fuel subsidies leads to greater macroeconomic instability and has a significant impact on the monetary policy response to an oil shock. While Nzelu et al. (2023) examined how oil price shocks and fuel subsidies effected macroeconomic stability in Nigeria. The study involved the development and estimation of a New-Keynesian DSGE model that incorporated the pass-through effect of international oil price fluctuations into the retail fuel price. The findings of the study demonstrated that oil price shocks have substantial and enduring impacts on the country's economic output, accounting for approximately 22% of its variations over a four-year period. On the other hand, Abdulkadir, Funmilola, Abdulkarbir (2020) used descriptive statistics and the simple regression method to assess the effect of the removal of petroleum subsidies on a few socioeconomic characteristics of households in Maiduguri town. The findings demonstrated a clear relationship between the household characteristics and the removal of petroleum subsidies. From the findings, the respondents believed that the government's strategies for mitigating the effects of the elimination of fuel subsidies were a positive move. An additional study on the effect of petroleum subsidy removal in Nigeria was carried out by Akande (2017) using a linear function method. They discovered that an increase in the price of petroleum pumps had a negative impact on people's standard of living. This is because petroleum is a necessary component for the transportation of major commodities in Nigeria, including agricultural products and other market products.

Many of the reviewed studies investigated the effect of subsidy removal in Nigeria using secondary data, see the work of Nzelu et al, (2023); Obasi, Ezenkwa, Onwa, and Nwogbaga, (2017); Umeji and Eleanya (2021). Although, the work of Abdulkadir, Funmilola and Abdulkarbir (2020) investigated the effect of subsidy removal using primary data. However, this work differs from these various works as it focused on the effect of fuel subsidy removal on households expenditure patterns and its ripple effect on poverty, and other socioeconomic effect in Umuahia metropolis, which other works reviewed could not cover.

3. Research Methodology

Quantitative research method was adopted for this study. From the selected area which is Umuahia metropolis, the study sample size of total of 212 respondents was selected from the population figure. The sample size was determined using the Yamane (1967) formula, which is appropriate for a finite population. Umuahia was selected due to its close proximity to the researcher. Umuahia, the capital city of Abia State in southeastern Nigeria, has a rich history and a growing population. In 2024, Umuahia's population is estimated to be around 947,460, showing significant growth from 13,255 in 1950. The city's population growth reflects a 4.79% annual change, with projections indicating further increases in subsequent years. The primary source of data collection was structured questionnaire and observations which was designed to obtain information specifically related to fuel subsidy removal. The questionnaire consists of two sections and was designed based on the research questions and objective of the study. Section A collects the household information of the respondents, Section B collects information on the fuel usage and expenditure, the socioeconomic effects and the policy perceptions. The study employed descriptive statistics, including frequency and percentage to analyse the data. The findings are presented in tables to facilitate easy management and ensure accuracy. Additionally, the study utilized Analysis of Variance (ANOVA) and Spearman's rank correlation technique or method to investigate the correlation and differences between the questionnaire results.

4. Result Presentation and Discussions

4.1 Reliability Test

	Number	Percentage (%)
Valid cases	212	100.0
Excluded	0	.0
Total	212	100.0
Cronbach's Alpha	8	0.918

Source: Researchers computation using Eviews 8.0

This table indicates the reliability test of this study. Table 4.1 shows a Cronbach's Alpha value of 0.918. According to Eneke, et al. (2022) a variable is considered reliable if the Cronbach's Alpha is greater than 0.60. If the Cronbach's Alpha value is less than or equal to 0.60, the variables is said not to be reliable. Since our Cronbach's Alpha value is 0.918,

this means that the questionnaire statements are consistent and have captured the relevant information about the variables, making the survey and its analysis reliable.

4.2 Socio-demographic Characteristics of the Respondent

In this section, we will discuss the socio-demographic characteristics of the respondents such as; gender, age, number of people in the household, and income status of the respondents. For instance, Table 4.2 below, shows the total sex distribution of the respondent sampled. The survey carried out showed that 126 out of 212 respondents were male indicating 59.4% against 79 who were female, which is 37.3%. This indicates that our respondents were more of male.

Table 4.2: Socio-demographic Characteristics of The Respondent

Variables	Options	Frequency	Percents
Gender	Male	126	59.4%
	Female	79	37.3%
Age	18-29years	48	23%
	30-40years	62	30%
	41-50years	50	24%
	51-60years	27	13%
	Above-60	22	10%
Number of people in the Household	1-3	67	31.6%
	4-6	93	43.9%
	7-9	31	14.6%
	10-above	14	6.6%
Average monthly income of the Respondent	Less than NGN10,000	11	5.2%
	NGN10,000-20,000	17	8%
	NGN21,000-30,000	28	13.2%
	NGN31,000-40,000	30	14.2%
	NGN40,000 and above	124	58.5

Source: Researchers computation using data from the field work

Again, Table 4.2 indicates the age distribution of the respondent who engaged in answering the questionnaire. It showed that respondent between the age of 30-40 years had the highest number of responses with 62 responses showing 29.2%, followed by those between the age of 41-50 years with 50 responses showing 23.6%, 18-29 years with 48 responses showing 22.6%, 51-60 years with 27 responses showing 12.7% and above 60 years with 22 responses showing 10.4%. This indicates that more of the responses were gotten from the age bracket of 30-40. Furthermore, Table 4.2 also indicates the number of people in the household of the respondents who engaged in answering the questionnaire. The survey shows that the respondents which the number of people in the household are between 4-6 turned out to be 93 showing 43.9% had the highest number of responses, followed by those within 1-3 with the total of 67 respondents showing 31.6%, while those between 7-9 had 31 responses showing 14.6% and those between 10 and above had 14 responses showing 6.6%. Table 4.2 shows the income status of the respondents who engaged in answering the questionnaire. The survey shows that the respondents between ₦40,000 and above income is 124 showing 58.5%, followed by respondents between ₦30,000 - ₦40,000 income is 30 showing 14.2%, followed by respondents between ₦N20,000 - ₦30,000 income is 28 showing 13.2%, while respondents between ₦10,000 - ₦20,000 income is 17 showing 8.0% and respondents between less than NGN10,000 income is 11 showing 5.2%. This implies that the highest responses were gotten from the respondents whose income is between ₦40,000 and above.

4.3 Effect of Fuel Subsidy Removal on Households' Expenditure Patterns

Table 4.3: The Effect of Fuel Subsidy Removal on Households' Expenditure Patterns

Variable	Options	Frequency	Percentage
Since the removal of fuel subsidies, has your household's overall spending on food increased, decreased, or remained the same?	Increased Decreased Remained the same	147 33 30	69.3% 15.^ 11.2%
Since the removal of fuel subsidies, has your household's spending on healthcare increased, decreased, or remained the same?	Increased Decreased Remained the same	113 30 67	53.3% 14.2% 31.6%
Since the removal of fuel subsidies, has your household's spending on education increased, decreased, or remained the same?	Increased Decreased Remained the same	141 16 52	66.5% 7.5% 24.%

Has any member of your household lost their job or experienced reduced income since the removal of fuel subsidies?	Yes No	96 113	45.3% 53.3%
Has your household adopted any coping mechanisms to manage increased fuel costs (e.g., switching to cheaper fuels, using public transportation more, reducing discretionary spending)?	Yes No	126 78	59.4% 36.8%

Source: Researcher computation using data from the field work

Table 4.3 shows the overall spending of the households in Umuahia metropolis on food since the removal of fuel subsidy. 69.3% of the respondents indicated the increase in the overall spending on food while 15.6% of the respondents indicated the decrease in the overall spending on food and 14.2% indicated that the overall spending on food since the subsidy removal remained the same. This result shows that the overall spending on food of households in Umuahia metropolis increased.

Table 4.3 also shows the spending of the households in Umuahia metropolis on healthcare since the removal of fuel subsidy. 53.3% of the respondents indicated the increase in spending on healthcare, while 14.2% of the respondents indicated the decrease in spending on healthcare and 31.6% indicated that the spending on healthcare since the subsidy removal remained the same. This result shows that the spending on healthcare of households in Umuahia metropolis increased. Table 4.3 also shows the spending of the households in Umuahia metropolis on education since the removal of fuel subsidy. 66.5% of the respondents indicated the increase in spending on education, while 7.5% of the respondents indicated the decrease in spending on education and 24.5% of the respondents indicated that the spending on education since the subsidy removal has remained the same. This result shows that the spending on education of households in Umuahia metropolis increased.

Table 4.3 equally revealed if any member of the household lost their job or experienced reduced income since the removal of fuel subsidy in Umuahia metropolis. The result shows that 53.3% of the respondents indicated that no member of the household has lost their job or experienced reduced income, while 45.3% of the respondents said yes. This result implies that there was no loss of job or reduced income experienced by the households. Table 4.3 also shows if the household has adopted any coping

mechanism to manage increased fuel costs (e.g., switching to cheaper fuels, using public transportation more, reducing discretionary spending) since the removal of fuel subsidy in Umuahia metropolis. The result shows that 59.4% of the respondents indicated that households in Umuahia metropolis adopted a coping mechanism to manage the increased cost of fuel, while 36.8% of the respondents said no. This result implies that the households adopted a coping mechanism.

Table 4.4: Correlation between Fuel Subsidy Removal and Socioeconomic Effects

			SOCIO7	SOCIO3	SOCIO1
	SOCIO7	Correlation Coefficient	1.000	.816	.589
		Sig. (2-tailed)	.	.000	.000
		N	209	209	209
	SOCIO3	Correlation Coefficient	.816	1.000	.845
		Sig. (2-tailed)	.000	.	.000
		N	209	210	210
	SOCIO1	Correlation Coefficient	.589	.845	1.000
		Sig. (2-tailed)	.000	.000	.
		N	209	210	210

*** SOCIO1**: Spending on Food Since Subsidy Removal.

*** SOCIO3:** Spending on Healthcare Since Subsidy Removal.

*** SOCIO7**: If any Member of the household has lost job or experienced reduction in income since the removal of subsidy.

Table 4.4 shows correlations between variables related to SOCIO (socioeconomic status). The correlation coefficient between the coping mechanisms adopted by the households to manage increased fuel costs (SOCIO9) and if any member of the household has lost job or experienced reduction in income since the removal of subsidy (SOCIO7) is 0.742, indicating a strong positive relationship. This therefore implies that the removal of subsidy has affected the households negatively. Income level has either reduced or remained unchanged and petty theft and hunger are growing since the removal of subsidy. More people are resorting to walking long distances instead of using motorized transport due to unaffordable transportation costs. Businesses have cut back on their operations, leading to a decline in economic activity and loss of job which can lead to a decline in consumer spending, creating a negative feedback loop that further slows the economy. The correlations among these variables (SOCIO7, SOCIO3, and SOCIO1) are also strong and positive, with coefficients ranging from 0.742 to 0.950, indicating robust monotonic relationships between these socio-economic variables.

Therefore, we reject the null hypothesis and accept the alternative hypothesis that there is a difference or variation between since fuel subsidy removal and the socioeconomic status now in Umuahia metropolis and their effect on household varies. The study observed the removal fuel subsidy has led to increase in transportation costs, which can result in higher food prices and can lead to households spending a larger portion of their income food, potentially reducing their ability to afford other necessities. As households struggle to meet basic needs like food and transportation, they may be forced to reduce spending on education, such as paying for school fees or buying books and other materials and could negatively impact the quality of education children receive and their future prospects. The rise in cost of living due to the removal of subsidy has led to households to cut back on healthcare expenses, such as doctor visits or purchasing medications and this could have serious implications for the health and well-being of the households in Umuahia metropolis.

5. Summary and Recommendations

The study found that the removal of fuel subsidies had a significant impact on households in terms of increased transportation costs, leading to higher prices for essential goods such as food and healthcare. For instance, 69.3% of the household indicated that since the removal of fuel subsidy, the overall spending on food has increased as against 15.6% that said otherwise. On the other hand, 63.3% of the household noted that their spending on healthcare has increased since the subsidy

removal as against 14.2% that said otherwise. This resulted in households spending a larger portion of their income on basic necessities, affecting their overall economic well-being. The study rejects the null hypothesis and conclude that household's expenditure pattern after subsidy removal has statistically and significantly changed. This implies that expenditure of the household has significantly increased without proportional corresponding increase in income.

Based on the research findings, the study recommends implementation of targeted social welfare programs to support vulnerable households affected by the subsidy removal, such as providing subsidized transport schemes within Umuahia metropolis as well as improving good road infrastructure in the Umuahia metropolis. This will help to address the challenges faced by households following the fuel subsidy removal.

References

Abdulkadir B. M., Funmilola F. A., & Abdulkabir N. A. (2020). Assessment of fuel subsidy removal on socio-economic characteristics: a survey of households in Maiduguri, Borno state, Nigeria. *Journal of Business and Economic Development, 5*(1):10-20

Adagunodo, M. (2022). The effect of oil receipts and fuel subsidy payment on the current account deficit in Nigeria and Venezuela. Annals of Spiru Haret University. *Economic Series, 22*(1), 137-152.

Adekoya, F. (2020). *Economic necessity, dilemma of fuel subsidy removal.* Retrieved From https://guardian.ng/energy/economic-necessity-dilemma-of-fuel-subsidy-removal/ (VISITED ON: 03/09/2020).

Adeyinka, A.P. (2023). Dynamics of fuel subsidy removal and its impact on transport decision-making among lower-income Nigerians: A conceptual review. *ACU Journal of Social and Management Sciences. 4(*1).

Agu, A. O., Ekwutosi, O. C. & Augustine, A. N. (2018). Effect of subsidy removal on Nigerian economy. *Advance Research Journal of Multi-Disciplinary Discoveries, 23*(1), 06-12.

Akande, L. (2017). Social intervention programmes. *Premium Times Nigeria, 14 September.* Available: http://www.premiumtimesng.com

Babatunde S. O. (2019). Oil Price shocks, fuel subsidies and macroeconomic in stability in Nigeria. *CBN Journal of Applied Statistics, 10*(2), 1450-1462.

Ikenga, A. F., & Oluka, N. L. (2023). An examination of the benefits and challenges of the fuel subsidy removal on the Nigerian economy in the fourth republic. *International Journal of Applied Research in Social Sciences, 5*(6), 128-142.

Khalid S, Angel A, Harald G, Peter M, & Terrie W. (2021). Impacts of removing fuel import subsidies in Nigeria on poverty. *Energy Policy,* 16, 165-178.

Musgrave, R. (1959). *The Theory of Public Finance: A Study in Public Economy*. (New York: McGraw-Hill).

Eneke S. O., Nwanosike, D. U., Onwuka, I. C., Ekpendu, E. J., Nzelu, A. C. & Ukangwa, J. U. (2022). Made in Aba shoes as tool for the development of Abia State Economy. *International Journal of Humanities Social Science and management (IJHSSM), 2*(5), pp 413-426.

Nzelu, A. C.; Nwogwugwu, U. C.; Alochukwu-Okwy, A. A.;Ebenyi, G. O.; Ukangwa, J & Nwanosike, D. U. (2023). Effect of the Pump Price of Petrol on Nigeria's Inflation Rate. *The Nigerian Journal of Energy Environmental Economics, 14(*1), 75-90.

Obasi, V. U., Ezenkwa, E. C., Onwa, D. O., & Nwogbaga, D. M. (2017). The political economy of fuel subsidy removal in Nigeria. *African Journal of Politics and Administrative Studies, 9,* 1.

Okwuanya, I., Ogbu, M. & Pristine, J. M. (2015). An assessment of the impact of petroleum subsidy on consumer price index in Nigeria. *Global Journal of Interdisciplinary Social Sciences, 4*(1), 36-39.

Olisah, C. (2020). *Federal government gives reasons for fuel subsidy removal, discloses alternative to kerosene*. Retrieved from www.nairametrics.com

Ovaga, O. H., & Okechukwu, M. E. (2012). Subsidy in the downstream oil sector and the fate of the masses in Nigeria. *Arabian Journal of Business and Management Review (Kuwait Chapter), 1*(6), 15-34.

Ozili, P. K. & Obiora, K. (2023). *Implications of Fuel Subsidy Removal on the Nigerian Economy.* Public Policy's Role in Achieving Sustainable Development Goals, 2023.

Ozili, P. K. (2023). *Implications of fuel subsidy removal on the Nigerian economy.* MPRA Paper 118798, University Library of Munich, Germany. *RePEc:pra:mprapa:118798*

Sakiru, A. S. (2022). Modelling two dimensions of poverty in some selected developing countries: The impact of fossil fuel subsidies. *Social Indicators Research, 160,* 357–379

Siddig, K., Aguiar, A., Grethe, H., Minor, P., & Walmsley, T. (2014). Impacts of removing fuel import subsidies in Nigeria on poverty. *Energy Policy, 69,* 165-178.

Siddig, K., Minor, P., Grethe, H., Aguiar, A. & Walmsley, T. (2015). Impacts on poverty of removing fuel imports subsidy in Nigeria. *Policy Research Working Paper 7376.* World Bank Group.

Umeji, G. & Eleanya, E. E. (2021). Assessing the impact of fuel subsidy removal on the poor in the COVID-19 era. *SERBD-International Journal of Multidisciplinary Sciences, 2*(4), 2581-8376.