

HOUSEHOLD INCOME AND ECONOMIC WELLBEING FOLLOWING FUEL SUBSIDY REMOVAL IN LAFIA LOCAL GOVERNMENT AREA, NASARAWA STATE, NIGERIA: A MIXED-METHODS STUDY

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Abstract

The removal of Nigeria's petrol subsidy in 2023 altered transportation and energy costs and generated concerns about household purchasing power, disposable income, consumption and livelihood security. This study examined household experiences of income and economic wellbeing following the subsidy removal in Lafia Local Government Area (LGA), Nasarawa State. A convergent parallel mixed-methods design was used. A minimum sample of 400 was estimated using the Taro Yamane procedure and increased to 440 to accommodate non-response. Of the 440 questionnaires administered, 417 usable responses were obtained, representing a usable response rate of 94.8%. Respondents were selected through a multistage procedure across the 13 political wards, while qualitative evidence was obtained through in-depth interviews with household heads, business owners, community leaders and other relevant stakeholders. Quantitative data were analysed using frequencies, percentages and multiple regression in SPSS version 27; interview data were analysed thematically. The descriptive results showed that 72.7% of respondents reported reduced disposable income, 84.2% reported spending a larger proportion of household income on transportation and energy, 79.9% reported weakened purchasing power, 66.2% reported greater difficulty meeting basic needs, 69.3% reported reduced savings, and 76.0% reported a negative influence on household income. The reported regression model was statistically significant, $R = .868$, $R^2 = .753$, adjusted $R^2 = .748$, $F(8, 408) = 162.333$, $p < .001$. The largest standardized coefficients were observed for difficulty travelling to work, school or business ($\beta = .230$), reduced transportation affordability ($\beta = .218$), and reduced frequency of trips ($\beta = .206$). Interview accounts reinforced the quantitative pattern, particularly through descriptions of reduced discretionary spending, tighter household budgeting, food adjustments, delayed health-care visits and reduced savings. The findings indicate substantial perceived economic strain following the reform, while the cross-sectional design does not permit causal attribution to subsidy removal alone. The study recommends targeted social protection, affordable transportation, livelihood support and household financial-strengthening interventions in Lafia LGA.

Keywords: fuel subsidy removal; household income; economic wellbeing; purchasing power; transportation costs; social protection; Lafia Local Government Area

Introduction

Fuel subsidy removal refers to the withdrawal or reduction of government support that keeps petroleum products below their market-related prices. Because petroleum products are embedded in transportation, electricity generation, production and distribution systems, changes in fuel prices can transmit through household expenditure and livelihood systems. The issue has therefore attracted attention beyond Nigeria. Evidence cited in the original manuscript links subsidy or fossil-fuel support reforms with higher energy costs, pressure on household budgets and changes in purchasing power in different national settings (Achakulwisut et al., 2021; Bambe et al., 2024; Garcia & Mbanze, 2024; Gonzalez, 2021; Pollin, 2024; Salim & Karel, 2024).

In Nigeria, the removal of the petrol subsidy in 2023 was followed by substantial changes in fuel and transportation prices. The original manuscript reports that the reform occurred against concerns about the fiscal sustainability of subsidy payments and that inflation reached 28.9% in December 2023 (Balogun, 2025; National Bureau of Statistics [NBS], 2023; World Bank, 2023). For households whose livelihoods depend on daily mobility, trading, agriculture, wage employment or small-scale enterprise, higher transportation and energy costs can reduce the amount of income available for food, health care, education, housing, savings and investment. Recent Nigerian studies cited in the manuscript similarly report pressure on household consumption, income, savings and living standards following the reform (Abubakar et al., 2025; Bemgba & Adadu, 2025; Mohammed et al., 2024; Ogboru & Akinyotu, 2024).

The local dimension is important because the consequences of a national price reform are mediated by household resources, livelihood structure, location and access to services. Lafia LGA contains urban, peri-urban and rural communities whose residents participate in farming, trading, small businesses, public and private employment and other forms of self-employment. These activities differ in their dependence on transportation and energy. A household that can absorb higher transportation costs without changing consumption may experience the reform differently from a household that depends on daily travel to markets, schools, farms or workplaces.

Existing evidence provides useful national and sub-national insights but leaves a local gap concerning Lafia LGA. Bemgba and Adadu (2025), for example, examined household welfare in Nasarawa State, while Abubakar et al. (2025) examined income and expenditure in selected wards in Jalingo, Taraba State, and Ogboru and Akinyotu (2024) examined family income and sustainability in Ondo City. Mohammed et al. (2024) considered broader economic outcomes in North-Central Nigeria. The present study extends this literature by examining reported changes in household income and economic wellbeing within Lafia LGA and by combining survey evidence with interview accounts.

The study was guided by the Income and Substitution Effects Theory. The theory provides a useful framework for understanding how a price shock can reduce real purchasing power and encourage consumers to modify their consumption choices. In the context of fuel subsidy removal, higher transportation and energy prices can operate as a reduction in real income, while households may respond by reducing trips, substituting cheaper options, cutting discretionary expenditure or seeking additional income.

Objective of the Study

The study examined household income and economic wellbeing following the removal of fuel subsidy in Lafia Local Government Area, Nasarawa State, Nigeria, with particular attention to disposable income, household expenditure, purchasing power, savings, ability to meet basic needs, transportation and livelihood adjustment.

Literature Review

Household Income and Economic Wellbeing

Household income represents the resources available to household members from employment, self-employment, farming, business activity, transfers and other sources. Recent work has also distinguished nominal income from perceived income adequacy and purchasing power. Acton et al. (2025), for example, examined perceived income adequacy alongside household income as indicators of socioeconomic status, while Reed et al. (2025) used equivalised household income to facilitate comparisons across household sizes. Mutsami et al. (2025) included farm and non-farm sources in measuring total household income in African settings.

For the present study, economic wellbeing is broader than the absolute amount of money received. It includes the household's perceived capacity to meet basic needs, maintain consumption, save, travel for productive and essential activities, and sustain an acceptable standard of living. This distinction is important in a period of rapid price change. A household may report little or no change in nominal earnings while simultaneously experiencing a substantial decline in what those earnings can purchase.

The measurement strategy in the present study therefore emphasised respondents' reported experiences of disposable income, expenditure, purchasing power, savings, basic needs and livelihood adjustment. These are perception-based indicators rather than independently verified monetary accounts. The results should consequently be interpreted as reported changes in household economic wellbeing rather than precise estimates of the naira amount by which household income changed.

Fuel Subsidy Removal and Household Welfare

Fuel subsidy reform can affect households through several interconnected channels. The first is the direct increase in expenditure on fuel and transportation. The second is an indirect increase in the prices of goods and services because producers, traders and service providers face higher distribution and operating costs. The third is a reduction in real purchasing power when nominal household income does not increase at the same pace as prices. The fourth is behavioural adjustment, including reduced mobility, changes in consumption, lower savings and additional income-generating activities.

Evidence cited in the original manuscript is broadly consistent with these mechanisms. Abubakar et al. (2025) reported changes in household income and expenditure in Jalingo following the 2023 reform. Bemgba and Adadu (2025) reported increased transportation costs and associated household welfare pressures in Nasarawa State. Mohammed et al. (2024) reported relationships between subsidy removal, consumption, living standards, savings and investment in North-Central Nigeria. Ogboru and Akinyotu (2024) examined family income and sustainability in Ondo City. International evidence cited in the manuscript similarly points to the possibility that subsidy reform can transmit through energy prices and household expenditure (Bambe et al., 2024; Garcia & Mbanze, 2024; Gonzalez, 2021).

The existing studies nevertheless have methodological limitations relevant to interpretation. Most are cross-sectional, rely substantially on self-reported data and do not have pre-reform household income observations or a comparison group. Consequently, observed post-reform changes cannot be attributed exclusively to the subsidy reform because inflation, employment conditions, seasonal variation, exchange-rate movements, business conditions and other shocks may also affect household economic wellbeing. The present study shares the cross-sectional limitation and therefore treats the findings as evidence of reported experiences following the reform rather than a causal estimate of its independent effect.

Theoretical Framework: Income and Substitution Effects Theory

The Income and Substitution Effects Theory originates in the analysis of consumer response to price changes. Slutsky's work showed that a price change can be decomposed into an income effect and a substitution effect, while Hicks and Allen subsequently developed and popularised related formulations within modern consumer theory (Hicks, 1939; Hicks & Allen, 1934a, 1934b; Slutsky, 1915/1952; Varian, 2014).

The income effect describes the change in real purchasing capacity associated with a change in prices. When prices rise while nominal income remains unchanged, households can afford fewer goods and services. In the present context, higher transportation and energy prices may leave less disposable income for food, education, health care, housing, savings and other needs.

The substitution effect concerns behavioural adjustment following a change in relative prices. Households may reduce unnecessary travel, combine trips, use less expensive transportation, postpone some purchases, substitute cheaper goods, or seek additional income. The qualitative accounts in this study—particularly reduced non-essential expenditure, tighter budgeting and reduced travel—are consistent with these mechanisms. The theory therefore provides an interpretive framework rather than evidence that the subsidy reform itself caused every observed household change.

Method

Research Design and Setting

The study used a convergent parallel mixed-methods design. Quantitative and qualitative data were collected during the same broad study period, analysed separately and brought together at the interpretation stage. This design was intended to combine the breadth of survey responses with contextual accounts of how households experienced changing economic conditions.

The study was conducted in Lafia Local Government Area of Nasarawa State, Nigeria. The manuscript reports a projected 2024 population of 508,080 based on the 2006 population of 330,712 reported by the National Population Commission (2006). The study covered all 13 political wards in the LGA.

Participants and Sampling

Using the Taro Yamane procedure, the minimum sample was estimated at approximately 400 respondents and increased to 440 to allow for non-response. A multistage sampling procedure was then used. The 13 political wards constituted the first-stage units, sample allocation was made proportionately, and households were selected systematically. One household representative aged 18–70 years was selected from each participating household. Three trained research assistants supported administration of the structured interview schedule.

A total of 440 questionnaires were administered and 417 usable responses were retained for analysis, giving a usable response rate of 94.8%. The qualitative component used in-depth interviews with household heads, business owners, community leaders and other relevant stakeholders. The original manuscript describes the qualitative component as involving eight interviews but labels quotations IDI16 through IDI20. Because these identifiers imply a larger interview pool, the exact number of completed interviews should be confirmed against the field records before journal submission. The present article therefore reports the qualitative evidence without assigning an unverified total number of interviews.

Measures and Data Collection

The quantitative schedule included questions covering household income, expenditure, disposable income, food and other basic needs, transportation, education, health and livelihood-related

experiences. The principal outcome items were framed as respondents' perceptions of changes following fuel subsidy removal. Responses in the reported household-income table were classified as Yes, No or Not sure.

The instrument was pretested in Nasarawa Eggon Local Government Area. Internal consistency was assessed using Cronbach's alpha, with .70 identified in the original manuscript as the minimum acceptable criterion based on Nunnally and Bernstein (1994). Face and content validity were assessed by experts. Because the source manuscript does not report the resulting alpha coefficient(s), those coefficients should be added before submission if they are available in the original statistical output.

Qualitative data were collected through an in-depth interview guide addressing household income, purchasing power, expenditure patterns, livelihood changes, coping responses and perceived support needs. Interviews were recorded, transcribed and subjected to thematic analysis. Ethical procedures included informed consent, voluntary participation, confidentiality and anonymity.

Data Analysis

Quantitative data were analysed in SPSS version 27 using frequencies, percentages and multiple regression. Statistical significance was assessed at the .05 level. The reported regression model included eight transportation- and livelihood-related indicators: increase in transportation fare; difficulty travelling to work, school or business; increased household expenditure on transportation; reduced frequency of trips; affected access to essential services; increased cost of transporting goods or services; negative influence on household income or livelihood; and reduced affordability of transportation.

Interview transcripts were analysed thematically and used to contextualise the quantitative findings. Given the cross-sectional design and the wording of the survey items, the analyses are interpreted as associations and reported experiences following the reform rather than causal estimates.

Results

Socio-Demographic Characteristics

Table 1 summarises the characteristics of the 417 respondents. The largest age group was 28–37 years (32.1%), followed by 18–27 years (23.5%) and 38–47 years (23.0%). Females constituted 52.5% of the sample and males 47.5%. Most respondents were married (59.0%). In occupational terms, farming/agriculture accounted for 35.3%, trading/retail/small business for 25.9%, public/private employment for 13.4%, non-trading self-employment for 11.8%, and unemployed/student/other categories for 13.7%. The income distribution indicates that 38.1% reported monthly household income below ₦30,000, while 28.3% reported ₦30,000–₦60,000.

Table 1 Demographic characteristics of Respondents

Characteristic	Category	n	%
Age	18–27 years	98	23.5
	28–37 years	134	32.1
	38–47 years	96	23.0
	48–57 years	54	13.0
	58 years and above	35	8.4
Gender	Male	198	47.5

	Female	219	52.5
Religion	Christianity	238	57.1
	Islam	169	40.5
	Traditional	10	2.4
Education	No formal education	67	16.1
	Primary school completed	113	27.1
	Secondary school	148	35.5
	Tertiary	89	21.3
Marital status	Single	94	22.5
	Married	246	59.0
	Divorced/Separated	43	10.3
	Widowed/Widower	34	8.2
Occupation	Farming/Agriculture	147	35.3
	Trading/Retail/Small business	108	25.9
	Employed (public/private sector)	56	13.4
	Self-employed (non-trading)	49	11.8
	Unemployed/Student/Other	57	13.7
Household size	1–2 persons	53	12.7
	3–5 persons	164	39.3
	6–8 persons	127	30.5
	More than 8 persons	73	17.5
Monthly household income	Less than ₦30,000	159	38.1
	₦30,000–₦60,000	118	28.3
	₦60,001–₦100,000	76	18.2
	₦100,001–₦150,000	41	9.8
	More than ₦150,000	23	5.5
Residence	Urban	169	40.5
	Peri-urban	134	32.1
	Rural	114	27.3

Note. Percentages are based on N = 417. Source: Author's computation, 2026.

Reported Household Income and Economic Wellbeing Following Subsidy Removal

The household-income items show a consistent pattern of perceived economic pressure. The largest proportion of respondents (84.2%) reported that their households now spent a larger proportion of income on transportation and energy than before the subsidy removal. This was followed by 79.9% who reported weakened purchasing power and 77.0% who reported a negative effect on overall household financial wellbeing. A further 76.0% reported that fuel subsidy removal had negatively influenced household income.

Table 2: Household Income and Economic Wellbeing Following Subsidy Removal

Item	Yes n (%)	No n (%)	Not sure n (%)
Reduced household disposable income	303 (72.7)	62 (14.9)	52 (12.5)
Larger proportion of income spent on transportation and energy	351 (84.2)	28 (6.7)	38 (9.1)
Greater difficulty meeting basic needs	276 (66.2)	73 (17.5)	68 (16.3)
Weakened household purchasing power	333 (79.9)	41 (9.8)	43 (10.3)
Reduced household savings	289 (69.3)	63 (15.1)	65 (15.6)
Additional jobs/income-generating activities	187 (44.8)	139 (33.3)	91 (21.8)
Income insufficient to maintain previous standard of living	255 (61.2)	85 (20.4)	77 (18.5)
Negative effect on overall household financial wellbeing	321 (77.0)	44 (10.6)	52 (12.5)
Negative influence on household income	317 (76.0)	47 (11.3)	53 (12.7)

Note. N = 417. Source: Author's computation, 2026.

Table 2 presents the results indicate that the reported burden extended beyond direct fuel expenditure. Transportation and energy costs were prominent, while respondents also reported reduced savings, reduced purchasing power and difficulty meeting basic needs. The 44.8% who reported taking on additional jobs or income-generating activities suggest that some households responded through livelihood diversification rather than expenditure reduction alone.

Table 3: Summary Result of the Multiple Regression Analysis

Predictor	B	SE	β	T	p
Increase in transportation fare	0.178	0.037	.189	4.811	< .05
Difficulty travelling to work, school or business	0.215	0.036	.230	5.972	< .001
Increased household expenditure on transportation	0.152	0.034	.168	4.471	< .05
Reduced frequency of trips	0.196	0.038	.206	5.158	< .001
Affected access to essential services	0.164	0.035	.178	4.686	< .05
Increased cost of transporting goods/services	0.097	0.031	.112	3.129	.002
Negative influence on household income/livelihood	0.142	0.034	.155	4.176	< .001

Reduced affordability of transportation	0.204	0.037	.218	5.514	< .001
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Note. Model: $R = .868$, $R^2 = .753$, adjusted $R^2 = .748$, $F(8, 408) = 162.333$, $p < .001$.

Table 3 presents the report of the multiple regression model where it revealed a statistically significant, $R = .868$, $R^2 = .753$, adjusted $R^2 = .748$, $F(8, 408) = 162.333$, $p < .001$. Thus, the eight reported indicators jointly explained 75.3% of the variance in the dependent measure used in the regression analysis, with the adjusted model accounting for 74.8%. This is a statistical property of the specified model and should not be interpreted as proof that fuel subsidy removal itself caused 75.3% of the change in household income or economic wellbeing.

Among the coefficients for which standardized effects were reported, difficulty travelling to work, school or business had the largest standardized coefficient ($\beta = .230$), followed by reduced affordability of transportation ($\beta = .218$) and reduced frequency of trips ($\beta = .206$). All eight predictors were reported as statistically significant. The pattern indicates that transportation-related constraints were closely associated with the reported household economic wellbeing measure.

An important methodological qualification is required. Several regression predictors are themselves closely related to the outcome concept of household economic wellbeing, and one predictor explicitly refers to negative effects on household income/livelihood. If these variables were derived from the same scale or overlapping questionnaire items used to construct the dependent variable, the high R^2 may partly reflect item or construct overlap rather than an independent explanatory effect. The regression therefore requires careful documentation of the scale construction and predictor-outcome separation before the analysis can be presented as a strong explanatory model.

Qualitative Findings

The qualitative accounts complemented the survey findings by showing how households translated higher costs into everyday decisions. Four interconnected themes were evident in the material supplied: pressure on disposable income; expenditure adjustment and substitution; reduced access to necessities; and demands for social protection and livelihood support.

Theme 1: Pressure on disposable income and purchasing power

Participants described situations in which household income had not increased sufficiently to offset higher expenditure. One civil servant explained that household income had increased slightly but had become more difficult to manage because transportation, groceries, electricity and other costs had risen (IDI16, female, civil servant, 43 years, 2026). This account illustrates the distinction between nominal income and real purchasing power: a small increase in earnings may not translate into improved wellbeing when essential prices rise more rapidly.

Theme 2: Expenditure reduction and household budgeting

A participant described reducing non-essential purchases and planning the household budget more carefully because of financial constraints (IDI17, male, accountant, 49 years, 2026). This account is consistent with the substitution mechanism in the theoretical framework. Rather than maintaining the previous pattern of consumption, the household prioritised essential needs and reduced discretionary expenditure.

Theme 3: Food, health and other essential needs

The interviews also indicated that economic pressure could extend to food and health-care decisions. One participant reported reducing the amount and variety of food purchased and delaying hospital visits except when an urgent need arose (IDI18, female, trader, 41 years, 2026). The account gives contextual meaning to the survey finding that 66.2% of respondents reported greater

difficulty meeting basic needs. It also suggests that household responses to transportation and energy costs may have consequences beyond transport itself.

Theme 4: Social protection and livelihood support

Participants identified cash support, food assistance, employment opportunities and affordable access to medical services as forms of assistance that could reduce household vulnerability. A community leader argued that families would benefit from funding, food assistance, employment and welfare support (IDI19, male, community leader, 57 years, 2026). Another participant reported that household income no longer met daily basic needs and that saving for the future was no longer feasible (IDI20, female, tailor, 38 years, 2026). Together, these accounts reinforce the quantitative evidence of reduced savings and purchasing power while pointing to the perceived need for social protection and livelihood interventions.

Discussion of Findings

The study found substantial reported economic pressure among households in Lafia LGA following the 2023 fuel subsidy removal. The most prominent finding was that 84.2% of respondents reported allocating a larger proportion of household income to transportation and energy. This result is important because transportation is an input into household livelihoods as well as a household consumption item. For traders, farmers, employees and small businesses, higher mobility costs can reduce the resources available for productive activities and household consumption. The finding is consistent with the broader pattern reported in Nigerian studies cited in the manuscript (Abubakar et al., 2025; Bemgba & Adadu, 2025; Mohammed et al., 2024).

The 79.9% reporting weakened purchasing power further demonstrates that the perceived burden was not confined to fuel expenditure. Purchasing power is determined by the relationship between income and prices. When essential goods and services become more expensive, households may experience a decline in real purchasing capacity even when nominal earnings remain unchanged. This interpretation is consistent with the Income and Substitution Effects Theory and with the qualitative account of the civil servant whose income had increased slightly but was nevertheless more difficult to manage.

The finding that 72.7% reported reduced disposable income and 76.0% reported a negative influence on household income is particularly relevant to household economic security. However, these results are based on respondents' perceptions rather than verified longitudinal income records. They should therefore be interpreted as evidence that respondents perceived a reduction in the resources available to their households following the reform, not as a precise estimate of the average percentage decline in actual household income.

Reduced savings were reported by 69.3% of respondents. Savings provide a buffer against emergencies and future expenditure, so a reduction in savings may indicate declining financial resilience. The qualitative interviews support this interpretation: participants described tighter budgeting, reduced non-essential expenditure and, in one account, the loss of the ability to save for the future. This pattern also corresponds with the substitution mechanism because households appear to have reallocated limited resources toward immediate needs.

The finding that 44.8% of respondents reported taking additional jobs or income-generating activities indicates that households did not respond only through consumption cuts. Some attempted to increase resources through livelihood diversification. This response may be adaptive, but it may also create additional demands on time and mobility, particularly where new activities depend on transportation. The result therefore illustrates the interconnected nature of income, transportation and household wellbeing.

The regression analysis showed a statistically significant model with $R^2 = .753$. The largest standardized coefficients concerned difficulty travelling, reduced transportation affordability and reduced trip frequency. These findings reinforce the central role of transportation in the economic experiences reported by respondents. However, the interpretation requires caution because the regression predictors appear conceptually close to the outcome construct. A model composed of indicators of household economic difficulty predicting another measure of household economic difficulty can generate a high R^2 through shared measurement content. The coefficient pattern therefore provides evidence of strong statistical association among the measured indicators, but it should not be interpreted as an independent causal estimate of the effect of subsidy removal.

The qualitative evidence provides a useful explanation of the statistical pattern. The interviews describe a chain of household responses: increased costs make income harder to manage; households reduce discretionary expenditure and change budgets; some reduce food quantities or delay health-care visits; and participants call for social protection and livelihood support. These accounts align with the theoretical expectation that a price shock can reduce real income and encourage substitution.

Overall, the findings are consistent with previous Nigerian evidence that the 2023 reform was associated with higher household economic pressures. The distinctive contribution of the present study is its focus on Lafia LGA and its combination of quantitative indicators with household-level narratives. At the same time, the study does not establish that subsidy removal was the sole or independent cause of the reported changes.

Table 4: Mixed-Methods Integration

Quantitative finding	Qualitative corroboration	Integrated interpretation
84.2% reported a larger share of income spent on transportation and energy.	IDI16 described income becoming harder to manage because transportation and other living costs increased.	Transportation and energy costs appear to have absorbed a larger share of household resources.
79.9% reported weakened purchasing power.	IDI16 described higher prices reducing the amount household income could comfortably cover.	The survey and interview evidence jointly indicate pressure on real purchasing capacity.
69.3% reported reduced savings.	IDI17 described tighter budgeting; IDI20 described loss of the ability to save for the future.	Households appear to have prioritised immediate needs over savings.
66.2% reported greater difficulty meeting basic needs.	IDI18 described reduced food purchases and delayed hospital visits.	Economic pressure extended to food and health-related decisions.
44.8% reported additional income-generating activity.	Interview accounts described household adjustment and requests for employment and livelihood support.	Some households responded through livelihood diversification, while participants also identified external support as necessary.

Table 4 shows the convergence between the quantitative and qualitative strands. The survey established the prevalence of reported economic difficulties, while the interviews illustrated the mechanisms through which households experienced and responded to those difficulties.

Implications for Social Work and Public Policy

The findings have implications for social protection and community-based practice in Lafia LGA. First, support programmes should identify households experiencing severe reductions in disposable income and difficulty meeting basic needs. Cash transfers, food assistance and access to essential services may be particularly relevant where households report declining purchasing power and savings.

Second, transportation deserves attention as an economic and social-access issue. The prominence of transportation indicators in both the descriptive and regression results suggests that transport affordability can affect access to work, education, markets, health care and other services. Affordable public transportation, targeted transport assistance and livelihood programmes located close to communities may therefore reduce some of the pressure reported by households.

Third, livelihood and financial-strengthening programmes may help households manage economic shocks. The reported 44.8% engagement in additional income-generating activities suggests demand for opportunities that can diversify household income. Training in budgeting, savings, responsible borrowing, enterprise management and income diversification could complement broader social protection measures.

Finally, social workers and community development practitioners can contribute through household vulnerability assessment, referral to available welfare and livelihood programmes, community mobilisation and evidence-informed advocacy. Such interventions should be targeted according to documented need rather than assumptions about particular demographic groups.

Limitations

Several limitations should be considered when interpreting the findings.

1. The cross-sectional design captures respondents' experiences at one period and does not provide a pre-subsidy baseline or a comparison group. Consequently, causal attribution to fuel subsidy removal is not possible.
2. The main measures are self-reported and may be affected by recall, perception and social-desirability bias.
3. The study did not independently verify household income or expenditure using administrative or longitudinal financial records.
4. The regression model contains indicators that may overlap conceptually with the outcome measure; this can inflate explanatory power through shared measurement content.
5. The study is limited to Lafia LGA, so its findings should not automatically be generalised to all households in Nasarawa State or Nigeria.

Conclusion

The study provides evidence of substantial reported household economic pressure in Lafia LGA following the 2023 fuel subsidy removal. Most respondents reported higher expenditure on transportation and energy, weaker purchasing power, reduced disposable income, lower savings and greater difficulty meeting basic needs. The multiple regression model was statistically significant and transportation-related indicators showed the largest standardized associations with the

household economic wellbeing measure. Interview accounts reinforced these patterns by describing tighter budgets, reduced discretionary spending, food adjustments, delayed health-care visits and reduced capacity to save.

The findings should nevertheless be interpreted as evidence of reported experiences and associations rather than a causal estimate of the independent effect of fuel subsidy removal. Future research should use longitudinal household data, pre- and post-reform measurements and, where feasible, comparison groups to estimate the magnitude of changes attributable to the reform. For Lafia LGA, the findings support continued attention to targeted social protection, affordable transportation, livelihood diversification and household financial resilience.

Recommendations

1. Government and relevant social protection agencies should strengthen targeted assistance for households experiencing reduced disposable income, weakened purchasing power and difficulty meeting basic needs.
2. Local authorities and transport stakeholders should explore affordable and accessible transportation arrangements, particularly for households that depend on daily travel to workplaces, markets, schools and essential services.
3. Livelihood programmes should support income diversification, vocational development, agricultural services, microenterprise development and other locally appropriate income-generating opportunities.
4. Social workers and community development agencies should provide or facilitate financial counselling focused on budgeting, savings, responsible borrowing, income diversification and access to legitimate livelihood-support programmes.
5. Future studies should collect baseline and follow-up household income and expenditure data and separate predictors from outcome indicators when modelling the economic consequences of subsidy reform.

References

- Abubakar, A., Suleiman, S., Mai-ulu, S. H., & Kambo, J. (2025). Impact of the 2023 fuel subsidy removal policy on households' income and expenditure in select wards in Jalingo Local Government Area of Taraba State, Nigeria. *International Journal of Sub-Saharan African Research*, 3(3), 521–534. <https://doi.org/10.5281/zenodo.17264472>
- Achakulwisut, P., Erickson, P., & Koplow, D. (2021). *Fossil fuel subsidies and climate change: A review of the policy landscape*. Stockholm Environment Institute.
- Acton, R. B., White, C. M., Rynard, V. L., & Hammond, D. (2025). Perceived income adequacy versus household income as a measure of socioeconomic status in 6 countries, 2022–2023 International Food Policy Study. *Public Health Reports*, 140(5–6). <https://doi.org/10.1177/00333549251358655>
- Adeniran, A., & Adepoju, O. (2024). Fuel subsidy removal and household welfare in Nigeria: Evidence from low-income communities. *Journal of Development Economics and Policy*, 19(3), 112–130.
- Akinola, T. (2020). Subsidy removal, poverty, and inequality in Nigeria: A structuralist approach. *Nigerian Journal of Social Policy*, 7(1), 44–59.
- Balogun, O. (2025). The short-term effects of gasoline price subsidy removal in Nigeria: An analysis of the economic and social impacts. *Journal of Energy Economics and Policy*, 15(1), 33–50.

- Bambe, B., Bouhabib, R., & Marandino, M. (2024). Fuel subsidy reforms in Angola: Fiscal sustainability and socio-economic implications. *Journal of African Development Studies*, 18(2), 112–130.
- Bemgba, E., & Adadu, C. (2025). Socio-economic impacts of the removal of fuel subsidy in Nigeria in 2023 on households in Nasarawa State.
- Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Sage.
- Darlington, P., & Monday, J. (2023). Fuel subsidy removal and economic reforms in Nigeria. *Journal of Economic Policy Analysis*, 12(1), 45–62.
- Garcia, J., & Mbanze, J. (2024). Angola's fuel subsidy reforms: Economic implications and social consequences. *African Journal of Energy Policy*, 15(2), 112–130.
- Gonzalez, M. (2021). Fuel subsidy reform and socio-economic challenges in Argentina. *Latin American Policy Studies*, 14(2), 88–105.
- Hicks, J. R. (1939). *Value and capital: An inquiry into some fundamental principles of economic theory*. Oxford University Press.
- Hicks, J. R., & Allen, R. G. D. (1934a). A reconsideration of the theory of value. Part I. *Economica*, 1(1), 52–76.
- Loo, Y., & Harun, R. (2020). Welfare effects of subsidy reforms: Evidence from developing economies. *Journal of Development Policy and Practice*, 5(3), 201–219.
- Mohammed, S. B., Khalifa, M., & Abubakar, A. (2024). Effect of petrol subsidy removal on government income, cost of living, consumption patterns, savings and investment, and SMEs performance. *Journal of Social Economics Research*, 11(2), 56–74.
- Mutsami, C., Parlasca, M. C., & Qaim, M. (2025). Evolving farm and off-farm income sources and jobs in rural Africa. *Journal of International Development*, 37(6), 1367–1380. <https://doi.org/10.1002/jid.70010>
- National Bureau of Statistics. (2023). *Nigeria's inflation report: December 2023*. NBS Publications.
- National Population Commission. (2006). *2006 population and housing census of the Federal Republic of Nigeria*. National Population Commission.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd ed.)*. McGraw-Hill.
- Ogboru, J. O., & Akinyotu, O. E. (2024). Evaluation of the impact of fuel subsidy removal on family income and sustainability in Ondo City, Nigeria. *International Journal of Home Economics, Hospitality and Allied Research*, 3(1), 117–128. <https://doi.org/10.57012/ijhhr.v3n1.010>
- Ogunode, N. J., Okwelogu, I., & Johnson, H. (2023). Small-scale enterprises and transportation costs in Nigeria. *Journal of Small Business Economics*, 19(3), 88–105.
- Okonkwo, T. (2023). Government palliative measures and fuel subsidy removal in Nigeria.
- Varian, H. R. (2014). *Intermediate microeconomics: A modern approach*. W. W. Norton.
- World Bank. (2023). *Nigeria fuel subsidy/fiscal reform*. World Report