

DETERMINANTS OF LIVELIHOOD DIVERSIFICATION AFTER OIL SUBSIDY REMOVAL: EVIDENCE FROM SMALLHOLDER FARMERS IN THREE STATES OF SOUTH WEST NIGERIA

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ABSTRACT

This study examined the effect of the 2023 removal of oil subsidies in Nigeria on livelihood diversification among smallholder farmers in Southwest Nigeria. Using primary data from 320 rural households across Ekiti, Osun, and Ondo states, the study analyzed socio-economic characteristics, livelihood diversification activities, and factors influencing diversification as coping strategies. Results show extensive diversification into crop and livestock farming, agro-processing, and non-farm activities such as petty trading and paid employment. Key determinants positively influencing diversification include the household head's age and number of children in school, while larger household and farm sizes reduce diversification likelihood. Findings reveal that larger, less diversified households with limited resources are most vulnerable to subsidy removal's adverse effects. The study underscores the critical role of livelihood diversification in enhancing rural resilience and recommends that policies prioritize social protection, support for non-farm income opportunities, and improved rural extension services.

Keywords: Oil subsidy, livelihood diversification, rural households, smallholder farmers

1.0

INTRODUCTION

Subsidy policies are widely used by governments as instruments for improving welfare and stabilising economies. These policies typically include price rebates, tax reductions, consumption vouchers, or direct transfers, with the overarching aim of improving the affordability of essential goods and services for vulnerable groups (Abdulkadir *et al.*, 2020).

In Nigeria, the petroleum subsidy has been one of the most prominent social and economic policies. Petroleum products such as gasoline, kerosene, and diesel are demand inelastic, making them central to household consumption and production activities. Although the country has four refineries with a combined capacity of 445,000 barrels per day, domestic demand has consistently outstripped local refining capacity (Temidayo *et al.*, 2016). To mitigate the impact of global oil price fluctuations, the government introduced a subsidy regime that regulated pump prices and compensated marketers for the difference between domestic prices and the Expected Open Market Price (EOMP) determined by the Petroleum Products Pricing and Regulatory Agency (PPPRA).

Between 2006 and 2018, subsidy expenditure amounted to approximately ₦10 trillion (Budgit, 2019).

The removal of fuel subsidies in 2023 represented a critical policy shift. The measure was justified on fiscal grounds and aligned with global commitments to reduce fossil fuel subsidies (Al Jazeera, 2023). However, the immediate outcome was a sharp increase in fuel prices and associated costs of living. Existing evidence suggests that while subsidy removal may enhance fiscal sustainability in the long term, it exacerbates economic hardship among low-income and rural households in the short term (Ude, 2023).

For rural populations, whose livelihoods are predominantly agrarian, higher fuel costs translate into increased expenditure on farm inputs, transportation, and post-harvest handling. These dynamics reduce farm profitability and heighten household vulnerability (Adewuyi et al., 2025; Bassey and Eze, 2024). One of the principal responses to such shocks is livelihood diversification, which is the pursuit of multiple income-generating activities beyond primary agriculture. Diversification into non-farm enterprises, wage employment, and migration has been shown to enhance household resilience and buffer income fluctuations (Okoro and Chukwuma, 2024).

Diversification has emerged as a key strategy for improving rural household income and economic resilience in Nigeria. Studies show that diversification enhances overall household income and purchasing power, ultimately raising living standards (Olaide *et al.*, 2023). The main livelihood activities among rural households include crop and livestock farming (Nwaogwugwu and Matthews-Njoku, 2015), complemented by non-farm activities such as artisan work and small-scale trading. However, poverty remains deeply entrenched, underscoring the importance of diversification strategies—especially as they tend to deliver higher marginal income gains for women. Significant factors influencing diversification include age, education level, and access to credit for women, while men's choices are shaped by age, education, and farm size (Olaide *et al.*, 2023).

Empirical studies demonstrate that subsidy withdrawal is associated with rising poverty, food insecurity, and restricted access to basic services among vulnerable groups (Ibrahim et al., 2024; Musa & Abdullahi, 2025). Nonetheless, there is evidence that these pressures also stimulate adaptive strategies through diversified livelihood portfolios (Abdullahi & Bala, 2024). This duality underscores the importance of analyzing the adaptive mechanisms rural households employ in the face of subsidy removal.

This study, therefore, examines the effects of fuel subsidy removal on livelihood diversification in rural Nigeria. It seeks to understand the extent to which diversification strategies are adopted as coping mechanisms and the implications for rural welfare. The findings are expected to contribute to the discourse on sustainable rural development and inform policies aimed at strengthening household resilience under conditions of fiscal reform.

2.0

METHODOLOGY

2.1 Study Area

The study area was carried out in southwest Nigeria, which is one of Nigeria's geopolitical zones. The zone lies between latitudes 4°9' North, and longitude 30°7' East with an area of 191,843 square kilometres representing 12% of the country's landmass. The 2006 census estimated the population of the zone to be 21,974,678 (National Population Commission, 2006). The zone has four distinct sub-ecologies namely: swamps, mangrove forests, moist and dry low land and derived savannah. The south-west consists of the following states – Ekiti, Lagos, Ondo, Ogun, Osun and Oyo state. This study was purposively carried out in localities across Ekiti, Osun and Ondo states because of the relatively low level of urbanization in the selected states.

2.2 Data sources and Collection

The study was carried out among rural households in South- west Nigeria and was based on primary data collected from rural households through the use of well-structured questionnaires and secondary data from consultations with journals, online articles and internet browsing. Data was collected on the demographic characteristics of the household heads, socio-economic characteristics, livelihood activities and living standards.

2.3 Sampling Procedure and Size

A multisampling technique was used for the selection of respondents for this study. The first stage comprised the purposive selection of Ekiti, Osun and Ondo States out of the six (6) states in the South West zone due to their relatively low level of urbanization when compared to the remaining states. The second stage was the purposive selection of 25% Local Government Areas (LGAs) that are largely rural in the three selected states. The third stage involved the random selection of five farm settlements/communities from each of the LGAs selected and the last stage involved the random selection of eight households from each of the farm settlement or community making a total of 320 respondents.

3.0

RESULTS AND DISCUSSION

3.1 Socio-economic characteristics of respondents in the study area

Majority (70.6%) of the respondents in the study area were male. The predominance of male-headed households aligns with rural labor patterns in Nigeria, where men typically control land and production resources. This gender imbalance could influence access to livelihood opportunities, especially as subsidy removal may increase existing gender disparities in resource access and income generation. This aligns with the research of Oyedepo (2017) where he reported that in rural Nigeria, male-headed households predominate, with studies reporting male heads constituting around 88% of rural households, reflecting men's dominant role in land ownership and decision-making in agriculture. A majority (62.2%) of respondents are married, which could imply larger household sizes and greater economic responsibilities. This may amplify the impact of subsidy removal as more income is required to maintain household welfare as larger households

may face increased vulnerability to rising costs following subsidy removal, This aligns with Asa *et al.* (2025) were in a study of rural farming households in Akwa Ibom State observed that 60.6% of married couples lived in households with 6–10 persons, reinforcing the link between marital status and larger household size, which increases economic responsibilities and vulnerability to shocks. The average age is 44 years, suggesting a mature and economically active population. This age group is likely to be sensitive to policy changes like subsidy removal as well as livelihood responsibilities. The average household size was approximately 6, with the majority (55%) having between 4 and 6 members. Larger households may experience a greater economic strain following subsidy removal due to increased consumption needs which may also lead to higher poverty incidences. The mean years of schooling was approximately 12 years, indicating that most respondents have at least secondary education. This could influence adaptability and livelihood diversification options, as more educated individuals may access non-farm income. Over half of the respondents (51.1%) have less than 10 years of farm experience, possibly suggesting a younger farming population or transitions into farming. This implies that a substantial share of farmers may have more than 10 years of experience, somewhat contrasting the 51.1% with less than 10 years in your sample. The average farm size is 2.41 hectares, with a majority (66.7%) cultivating small-scale farms (1–2 ha). Smaller farms may result in lower productivity and income, which heightens vulnerability to input price increases post-subsidy removal. The mean income is approximately ₦1.39 million, though the high standard deviation suggests significant income disparities. This variation reflects economic inequality, which could lead to unequal impact of subsidy removal across households. Almost half of the respondents (49.7%) acquired land through inheritance. This could mean limited flexibility in land use and diversification. Access to extension services is evenly split. Those with access may be better equipped to respond to shocks, such as changes in input prices or available subsidies, through improved farming practices or livelihood diversification. Nearly half of the respondents (49.4%) rely on farming as their main occupation, confirming the agricultural base of the study population. The non-farm occupations suggest some level of livelihood diversification, which could be crucial post-subsidy removal. About 46% belong to cooperatives. Membership could facilitate access to credit, inputs, and information, enhancing their ability to mitigate the impact of subsidy removal and engage in diversified livelihoods.

Table 1: Distribution of respondents according to socioeconomic characteristics

Variable	Frequency	Percentage	Mean	Standard Deviation
Sex				
Male	226	70.6		
Female	94	29.4		
Total	320	100		
Marital Status				
Single	65	20.3		
Married	199	62.2		
Widowed/widower	25	7.8		
Divorced	31	9.7		
Total	320	100		
Age (in years)				
≤30	53	16.6		
31-40	84	26.2	44	12.74
41-50	100	31.3		
51-60	50	15.6		
>60	33	10.3		
Total	320	100		
Household Size (in persons)				
1-3	52	16.3		
4-6	176	55	6	2.32
7-9	67	20.9		
>9	25	7.8		
Total	320	100		
Years of schooling				
1-6	62	19.4		

7-12	132	41.3	12	4.55
>12	126	39.4		
Total	320	100		
Farm Experience (yrs)				
1 – 10	164	51.1		
11 – 20	77	24.0		
>20	80	24.9		
Total	320	100		
Farm Size (in ha)				
1 – 2	214	66.7		
3 – 4	69	21.5	2.4072	2.31008
5 – 6	20	6.2		
>6	18	5.6		
Total	320	100		
Annual income (in Naira)				
1 – 500,000	76	23.7		
500,001 – 1,000,000	117	36.4		
1,000,000 – 1,500,000	52	16.2	1,387,396.14	1,581,217.34
1,500,001 – 2,000,000	25	7.8		
>2,000,000	51	15.9		
Total	320	100		
Mode of land Acquisition				
Family/Inheritance	159	49.7		
Rent/lease	77	24.0		
Purchase	84	26.3		
Total	320	100		
Access to Extension services				
No	161	50.3		

Yes	159	49.7
Total	320	100
Primary Occupation		
Artisan	42	13.1
Civil servant	50	15.6
Farming	158	49.4
Student	28	8.8
Business	42	13.1
Total	320	100
Cooperative membership		
No	173	54.1
Yes	147	45.9
Total	320	100

Source: Field Survey, 2025

3.2 Describe the diversification activities and the respective revenues generated

Table 2 shows the diversity and relative economic contributions of various livelihood activities among rural households, with associated respondent numbers and revenue profiles. This evidence is critical to understanding how rural households adjust and diversify their income sources following the removal of oil subsidies. From the table it can be seen that there is a high level of diversification. Households are engaged in a broad array of activities: agriculture (permanent crops, livestock, fish, cassava, oil palm), non-agricultural businesses (tailoring, hairdressing, bricklaying), petty trading, hunting, teaching, transportation, paid employment, and the sale of processed agricultural products. Livestock stands out, with the highest number of respondents (123) and the largest revenue generated (₦194,160,000), reflecting its critical role in rural livelihoods and resilience. Arable crop farming involves 89 households and yields a collective revenue of ₦75,550,280. Sales of processed agricultural products and permanent crops also generate substantial revenue, underlining the importance of value addition in agriculture for coping with increased household expenses post-subsidy removal. Non-agricultural livelihoods such as paid employment (₦23,252,000), teaching (₦10,320,000), petty trading (₦9,940,000), and bricklaying (₦14,000,000) indicate diverse pathways for income generation. Activities such as hunting, transportation, tailoring, hairdressing, and fish farming involve fewer households and generally yield lower revenue, possibly due to higher entry barriers, limited local demand, or initial capital requirements exacerbated by subsidy reform. The strong engagement in livestock and

agricultural processing reflects a pivot toward activities less directly affected by rising fuel prices and with greater potential for value addition, crucial in periods of economic stress. Also non-farm income sources become more attractive to rural households as they try to enhance their resilience and welfare.

Table 2: Distribution of respondents according to their livelihood activities and revenue generated

Livelihood activity	No of Respondents involved	Revenue generated(N)
Arable crop Farming	89	75, 550,280
Permanent crops	46	45,400,007
Livestock	123	194,160,000
Fish farming	31	3,500,000
Cassava processing	26	8,400,007
Oil palm processing	42	17,500,000
Hunting	6	720,000
Transportation	7	4,800,000
Tailoring	12	2,100,000
Hair dressing	7	2,800,000
Teaching	13	10,320,000
Bricklaying	7	14,000,000
Petty trading	21	9,940,000
Sales of processed Agric products	42	57,848,000
Paid employment	14	23,252,000
Total	486*	394,740,014

Source: Field survey, 2025

*- Multiple responses

Determinants of Diversification

The Tobit regression model was used to investigate the factors influencing the share of non-farm income among rural households. The model is appropriate due to the censored nature of the dependent variable (bounded between 0 and 100%). The model is statistically significant overall (Prob > Chi² = 0.0000), but the *Pseudo R*² (0.0432) is low, suggesting variables only explain a small portion of the dependent variable, which is typical in socio-economic cross-sectional research. The key significant variables were age (Coef = 0.3242) which was significant at 5% level of significance with a positive relationship. This means that older heads of household are more likely to diversify their livelihoods. This could be due to accumulated experience, wider social networks, or a greater necessity to support dependents, making them more proactive in seeking multiple income sources. Household Size (Coef = -0.9800) was statistically significant at 1% level of significance and had a negative relationship. This means that larger households are less likely to diversify. This might seem counterintuitive, but it could reflect resource and labor constraints or a heavier burden concentrating labor into subsistence activities rather than diversification. Larger families may lack the capital or flexibility to spread labor across multiple ventures, especially as subsidy removal affects household expenditure. Farm Size (Coef = -1.3453, p=0.057) which was statistically significant at 10% level of significance and had a negative relationship. This implies that households with larger farms are less likely to diversify. They may already receive sufficient income from primary agricultural activities, feeling less need to seek alternatives. Children in School (Coef = 1.900, p=0.018,) was statistically significant at 5% level of significance and had a positive relationship with diversification to non-farm income sources. This means that having more children in school is associated with more diversification. This may reflect greater human capital, which enables households to engage in diverse activities, or may be an incentive for seeking additional income streams to support educational costs.

Table 3: Tobit regression for the determinants of diversification

Variable	Coefficient	Std. Err.	T	P > t
Age	0.3242**	0.1377	2.35	0.019
Sex (1=Male)	-4.1321	3.5173	-1.17	0.241
Household size	-0.9800***	0.0320	-3.06	0.002
Years of Schooling	0.0108	0.3608	0.03	0.976
Farm size	-1.3453*	0.7038	-1.91	0.057
Income	-0.5515	1.7703	0.31	0.756
Distance to market	-0.1670	0.4200	-0.40	0.691

Children in school	1.900**	0.800	2.68	0.018
No of crops and livestock	0.5669	0.5546	-1.02	0.307
Cons	49.7177	26.6017	1.87	0.063
/sigma	26.000	1.000		

***1%, **5%, and *10% level of significance.

Source: Field survey, 2025

Model Summary

- Number of observations: 320
- LR Chi²(9): 67.45
- Prob > Chi²: 0.0000
- Log likelihood: -1483.40
- Pseudo R²: 0.0432

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

The removal of oil subsidies in Southwest Nigeria has clear, adverse effects on poverty and livelihood resilience among rural households. Male-headed, larger, lower-educated, and small-scale farming households are the most vulnerable. Livelihood diversification helps cushion this vulnerability but is constrained for many households by resource and capacity limitations. Effective policy responses must enhance social protection, support diversification (especially non-farm incomes), and maintain or expand rural interventions to mitigate the negative effects of subsidy removal.

4.2 Recommendations

The study on livelihood diversification after oil subsidy removal among smallholder farmers in Southwest Nigeria has the following recommendations

1. There is need to establish and expand social safety nets targeting vulnerable rural households, especially larger, low-income, and less diversified families, to cushion the short-term economic shocks caused by subsidy removal.
2. There is need to promote policies and programs that facilitate access to credit, training, and markets for rural households to engage in non-farm enterprises such as petty trading, agro-processing, and paid employment, which have proven resilience against rising fuel costs.

3. There is need to strengthen extension services to improve access to information, training, and inputs that can enhance productivity and livelihood diversification, particularly for less experienced farmers and those with smaller farms.

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