Fuel Subsidy Withdrawal and Financial Performance of Small Enterprises in North-Central Region of Nigeria

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Abstract
This study examined Fuel Subsidy Withdrawal and Financial Performance of Small Enterprises in North-Central Region of Nigeria. The main objective of the study was to assess the effect of fuel subsidy withdrawal on the financial performance of small enterprises in the region, especially focusing on profit margin, sales turnover, and operational costs. The study adopted a descriptive survey research design. The population of the study comprised 119,851 registered small enterprises in North-Central Nigeria. A sample size of 406 respondents was determined using Yamane formula at 5% error margin. Proportional sampling technique was used to distribute questionnaires across the 6 States and FCT based on their share of the population. Data were collected using a structured questionnaire and analyzed using descriptive statistics: Mean and Standard Deviation. The three hypotheses were tested using Multiple Regression Analysis at 0.05 level of significance. The findings revealed that fuel subsidy withdrawal has a significant negative effect on profit margin, sales turnover, and has significantly increased operational costs of small enterprises. The study concluded that subsidy removal has worsened

the financial performance of small-medium enterprises (SMEs). It was recommended that Bank of Industry and CBN should establish SME Support Fund with single-digit interest rate to help small enterprises absorb cost shocks and protect profit margin, Government should implement measures to boost consumer purchasing power, such as wage increase and targeted cash transfers, to revive market demand and improve SME sales turnover, and Federal Government should provide transitional energy palliatives, including subsidized CNG conversion and solar grants for SMEs to reduce dependence on PMS and lower operating costs.

***Keywords**: Fuel subsidy, Financial performance, Small enterprises, Profit margin, Operational Costs, North-Central Nigeria*

Introduction

Background to the Study

Small and Medium Enterprises are the mainstay of the Nigerian economy. They contribute about 48% to GDP and employ over 80% of the workforce (National Bureau of Statistics, 2023). However, the operating environment for SMEs in Nigeria has remained challenging due to policy shocks, inflation, and high cost of doing business (World Bank, 2024).

One major policy that has significantly affected SMEs is the withdrawal of fuel subsidy by the Federal Government of Nigeria in May 29, 2023. Fuel subsidy withdrawal led to an immediate increase in petrol price from #189.00 to over and above #500.00 per litre, and later above#900.00 (Central Bank of Nigeria, 2024). This ugly development caused a ripple effect on transportation, production, and general cost of living (Okon, 2022). In the North-Central geopolitical zone of Nigeria, which comprises Benue, Kogi, Kwara, Nasarawa, Niger, Plateau and FCT, most small enterprises depend on fuel for generators and transportation of goods (SMEDAN & NBS, 2023). Therefore, it is important to assess how fuel subsidy withdrawal has affected the financial performance of these businesses.

Statement of the Problem

The removal of fuel subsidy was intended to free up government revenue for development (World Bank, 2024). However, the immediate consequences have been a surge in operational costs for small businesses (Musa & Ojo, 2023). Many SMEs in North-Central Nigeria have reported reduced profit margins, low sales, and in some cases, closure of business (Okon, 2022).

Despite this, there is limited empirical research focusing specifically on how this policy has affected small enterprises in the North-Central region. This study therefore seeks to fill this gap by examining the effect of fuel subsidy withdrawal on the financial performance of small enterprises in the region. The main objective is to examine the effect of fuel subsidy withdrawal on the financial performance of small enterprises in North-Central region of Nigeria. The specific objectives are to: determine the effect of fuel subsidy withdrawal on profit margin of small enterprises in north central region of Nigeria; assess the influence of fuel subsidy withdrawal on sales turnover of small enterprises in north central region of Nigeria; and, examine the effect of fuel subsidy withdrawal on operational costs of small enterprises in north central region of Nigeria.The following questions are to guide the study: To what extent has fuel subsidy withdrawal affected the profit margin of small enterprises in north-central region of Nigeria?; How has fuel subsidy withdrawal influenced the sales turnover of small enterprises in north-central region of Nigeria?; and, What is the effect of fuel subsidy withdrawal on the operational costs of small enterprises in north-central region of Nigeria?

Research Hypotheses

Ho1: Fuel subsidy withdrawal has no significant effect on the profit margin of small enterprises in north-central region of Nigeria.

Ho2: Fuel subsidy withdrawal has no significant influence on the sales turnover of small enterprises in north-central region of Nigeria.

Ho3: Fuel subsidy withdrawal has no significant effect on the operational costs of small enterprises in north-central region of Nigeria.

Significance of the Study

This study will be beneficial to various stakeholders which include government policymakers, SME owners, financial institutions, and researchers/Academics in the following ways:

Government policymakers: The study will provide policymakers with empirical evidence on how fuel subsidy withdrawal is affecting small enterprises in North-Central Nigeria. With data on profit margin, sales turnover, and operational costs, government can design targeted palliatives such as grants, tax reliefs, and transport subsidies. It will also help government monitor and adjust mitigation policies to reduce the negative impact on SMEs and prevent mass business closures.

SME owners: The findings will help small business owners understand how subsidy removal affects their finances. This will enable them to adopt better cost-saving strategies like energy efficiency, bulk purchasing, price adjustment, and use of alternative power sources. It also gives them evidence to lobby government and financial institutions for support.

Financial institutions: Banks and microfinance institutions can use the results to design loan products that fit the current realities of SMEs. For example, low-interest loans, longer payment periods, and working capital loans to cushion high operational costs. It also helps them assess risk when lending to SMEs in the post-subsidy era.

Researchers / Academics: The study will add to existing literature on subsidy policy and SME performance in Nigeria, especially with a focus on North-Central region. Future researchers can use it as baseline data and build on it by expanding to other zones or using different variables.

Literature Review

2.1 Conceptual Framework

Concept of Fuel Subsidy

Fuel subsidy is a government policy where the State pays part of the cost of petroleum products such as petrol, diesel, and kerosene so that consumers can buy them at a lower price than the actual market cost. The purpose is to make transportation, power generation, and production cheaper for citizens and businesses. It helps to reduce inflation, protect low-income households, and support small enterprises that depend on fuel. However, it places a heavy burden on government revenue. When removed, fuel prices rise immediately, which affects the cost of goods, services, and overall cost of living (Okon, 2022).

Financial performance

Financial performance refers to the extent to which a business uses its' resources to generate profit, growth, and value over a specific period. It measures how well an enterprise converts

inputs into financial outputs and how effectively it manages costs, revenue, and assets (Okon, 2022). Common indicators include profit margin, sales turnover, return on assets, liquidity, and operational efficiency (Musa and Ojo, 2023).

For small enterprises, strong financial performance means the ability to cover operating costs, reinvest, pay employees, and remain sustainable despite economic shocks (SMEDAN, 2023). Poor financial performance often leads to low profitability, reduced sales, and eventual business closure. In the context of policy changes like fuel subsidy withdrawal, financial performance becomes critical because increased fuel and transport costs directly affect production expenses and pricing (Central Bank of Nigeria, 2024). Therefore, assessing financial performance helps owners, policymakers, and investors understand business health and make informed decisions (World Bank, 2024).

Small Enterprises

Small enterprises are business organizations that are independently owned and operated, with relatively low capital investment, limited workforce, and moderate annual turnover compared to large corporations. In Nigeria, the small and medium enterprises development agency of Nigeria (SMEDAN, 2023) defines small enterprises as businesses employing between 10 - 49 persons with total assets, excluding land and building, ranging from #5 million to #50 million. Small enterprises play a critical role in economic development by creating employment, reducing poverty, driving innovation, and contributing significantly to gross domestic product (GDP) (World Bank, 2024). They are often characterized by flexible decision-making, direct owner management, and close customer relationships.

Profit Margin

Profit margin is a key financial performance indicator that measures the percentage of revenue a business retains as profit after deducting all costs and expenses. It is a financial ratio that measures how much profit a business makes from every naira of sales. The concept helps to assess the efficiency, profitability, and financial health of an enterprise. For small enterprises, profit margin is vital for pricing decisions, cost control, and attracting investors or loan facilities. A declining profit margin often indicates rising operational costs or weak sales (World Bank, 2024). In Nigeria, many SMEs recorded reduced profit margins in 2023-2024 due to fuel subsidy removal and higher logistics costs (CBN, 2024).

Sales Turnover

Sales turnover refers to the total revenue generated by a business from the sale of goods and services within a specific period, usually a month, quarter, or year, before deducting any expenses (Corporate Finance Institute, 2024). It is often called “gross sales” or “net sales” when returns and discounts are excluded. The concept is a key performance indicator for measuring business activity, market demand, and operational scale. A high sales turnover shows strong customer demand and effective marketing, while a low turnover may indicate weak sales, poor pricing, or reduced purchasing power (Investopedia, 2024). For small enterprises, sales turnover is critical for cash flow management, inventory control, and loan assessment by financial institutions (World Bank, 2024). It does not represent profit, because costs such as wages, rent, and fuel are not subtracted. In Nigeria, many SMEs experienced a decline in real sales turnover in 2023-2024 following the removal of fuel subsidy, which increased transportation costs and reduced consumer spending (CBN, 2024).

Operational Costs

Operational costs, also called operating expenses, are the day-to-day expenses a business incurs to run its normal activities and keep the enterprise functional. These costs do not include the direct cost of producing goods, but cover expenses necessary to sustain operations. The concept is important because it determines a firm's break-even point and net profitability. Lower operational costs improve profit margin, while rising costs reduce cash flow and competitiveness (World Bank, 2024). For SMEs in Nigeria, operational costs have increased sharply since 2023 due to fuel subsidy removal, higher diesel prices, inflation, and logistics challenges. This has forced many small businesses to raise prices or cut staff to remain viable. Effective management of operational costs through budgeting, energy efficiency, and process optimization is therefore critical for business survival and growth (CBN, 2024).

Theoretical Framework

This study is anchored on Deregulation theory, and Resource-Based View theory.

Deregulation Theory gained momentum in 1978 without a single propounder. It emerged from Neoclassical Economics and was popularized by economists associated with the Chicago School of Economics. Key figures include Milton Friedman and George Stigler.

Deregulation Theory refers to the reduction or elimination of government control and regulations in an industry to allow market forces of demand and supply to determine prices, output, and competition. The core argument is that excessive government regulation creates inefficiencies, bureaucratic bottlenecks, and high costs. By removing these barriers, deregulation promotes competition, innovation, efficiency, and consumer choice. Proponents argue that in a deregulated environment, firms are forced to be more productive and customer-focused to survive competition. This leads to lower prices, improved quality of services, and better allocation of resources. However, critiques argue that total deregulation can lead to market failures, exploitation of consumers, poor quality control, and the emergence of monopolies if not properly monitored (Peltzman, 1989).

The Resource-Based View (RBV) theory as propounded by Jay B. Barney (1991), emphasizes the strategic importance of internal firm resources in achieving and sustaining competitive advantage. The RBV theory posits that organizations possess heterogeneous resources-both tangible and intangible- that, when valuable, rare, inimitable, and non-substitutable (VRIN), can generate superior performance outcomes. This theoretical framework is particularly useful for understanding how small businesses respond to external economic shocks, such as the removal of fuel subsidies, by leveraging their internal capabilities to sustain profitability (Barner, 1991).

Empirical Review

Findings from various studies show that fuel subsidy removal has a notable negative impact on SMEs in Nigeria, of which small businesses form a major component.

Bazilian and Onyeji (2012) provide a refined examination of the consequences surrounding fossil fuel subsidy removal in Nigeria, emphasizing the critical nexus between subsidy reforms and the persistent deficiencies in public power supply. Their analysis underscores that, despite the fiscal intentions behind subsidy elimination, the failure to simultaneously address infrastructural inadequacies exacerbates operational costs and economic uncertainties for businesses, particularly small and medium-sized enterprises. The authors advocate for a calibrated policy approach that balances subsidy reduction with investments in energy infrastructure and targeted

support mechanisms to mitigate adverse socio-economic impacts. This work significantly contributes to the discourse on energy policy reform in developing economies by highlighting the indispensable role of complementary strategies to ensure reforms translate into sustainable economic benefits. Ogboru and Akinyotu (2024) focus on the micro level impact of subsidy removal, specifically in Ondo City. Their research finds that the removal of fuel subsidies led to increased transportation costs, which in turn raised food prices, adversely affecting household budgets. The study recommends that the government increase civil servant wages and provide incentives for businesses to help alleviate the rising costs. Like Adebayo et al. (2015), the study emphasizes the importance of palliative measures to protect vulnerable populations and ensure that subsidy removal does not deepen social inequalities.

Oyasipe & Olukoya (2024) evaluated the impact of the elimination of subsidies on the profitability of start-up companies in Lagos State, Nigeria, using chi-square analysis. The findings showed that the elimination fuel subsidies increase operating costs, decreased sales, lowered stock level and decreased the profitability of small businesses. The study recommended subsidy investment programme and improvement in energy supply to ease the effect of subsidy removal on entrepreneurial businesses.

Raifu and Afolabi (2023) study compellingly highlights how Nigeria's decision to remove fuel subsidies has had real and tangible consequences on business operations across the country. When fuel prices skyrocketed by over 130%, it wasn't just an abstract economic number it translated directly into higher costs for everything from transportation to manufacturing. Small and medium-sized businesses, the backbone of Nigeria's economy, felt the pressure most acutely, grappling with rising expenses that squeezed their profit margins and threatened their survival. At the same time, consumers found their purchasing power diminished as everyday goods became more expensive, creating a ripple effect that dampened demand and introduced uncertainty into the market. This research reminds us that policy decisions, while necessary for economic reform, have human faces behind the statistics. It urges policymakers to think beyond numbers and consider how well-designed support measures, such as infrastructure investments and targeted cash assistance, can help businesses and communities' weather these inflationary storms. Obidah, Umar & Oyedeji (2024) examine the impact of fuel subsidy removal on small-scale industries in Nigeria, a sector crucial to the country's economy. The research explores how rising fuel prices affect operational costs, sales and profit margins of small businesses. Using a descriptive research design and a Likert-structured questionnaire, the study collects data from a typical Nigerian community. The analysis, conducted through descriptive statistics and the Chi-square test, highlights the significant financial strain on small businesses following subsidy removal. The findings emphasize how government policies directly influence business sustainability, urging policymakers to adopt evidence-based strategies to support SMEs in adapting to economic changes.

Methodology

This study adopted a descriptive survey research design, suitable for collecting primary data from a diverse population at a specific point in time. This design enables the researcher to examine the relationship between relevant variables. The method also captures multiple views across the three key variables: profit margin, sales turnover, and operational costs.

The population of the study comprised 119,851 registered small enterprises in North-Central geopolitical zone of Nigeria, also known as the Middle Belt, comprises 6 States and 1 Federal Capital Territory (FCT):

Table 1: Population Distribution

States	No. of Small Enterprises
Benue State	15,581
Kogi State	19,176
Kwara State	17,978
Nasarawa State	13,184
Niger State	11,985
Plateau State	20,375
Federal Capital Territory (FCT) – Abuja	21,572
Total:	**119,851**

Source: Field survey, 2026

Sample Size and Sampling

The sample size was determined using Taro Yamane's (1967) sample determination formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where N = 119,851

e = 0.05

$$n = \frac{119,851}{1 + 119,851(0.0025)} = 398.669$$

approximately **400**

A sample size of **400** respondents was determined.

Here is the proportionate sample distribution- using Bowley's (1926) proportionate allocation formula:

Formula: $^{n}h = \frac{Nh}{N} \times n$

Where:

Nh = Population of each State

N = Total Population (119,851)

n = Total sample size (400)

Table 2: Sample Distribution

States	Population	Calculation:	Sample
Benue State	15,581	(15581/119851) x 400	52
Kogi State	19,176	(19176/119851) x 400	64
Kwara State	17,978	(17978/119851) x 400	60
Nasarawa State	13,184	(13184/119851) x 400	44
Niger State	11,985	(11985/119851) x 400	40
Plateau State	20,375	(20375/119851) x 400	68
FCT – Abuja	21,572	(21572/119851) x 400	72
Total:	**119,851**		**400**

Source: Researchers' Computation, 2026

This sample size guarantees that the results are applicable to the target population while upholding statistical integrity and reducing sampling error

Data were collected using a structured questionnaire titled "Effects of Fuel Subsidy Withdrawal on the Financial Performance of Small Enterprises in North Central Nigeria Questionnaire (EFSW-FPSENCNQ)". The research instrument was face-validated by two experts, and Cronbach Alpha reliability technique was used to ascertain the reliability of the instrument which yielded a coefficient of 0.84. The questionnaire, consisting of 15 closed-ended, multiple-choice questions (5 for each group), was designed to gather data on the study constructs and socio-demographic variables. The questionnaire was divided into two sections: demographics and respondent opinions on the variables. A 5-point Likert scale: 5, 4, 3, 2, 1 (Strongly Agree to Strongly Disagree) was used to measure fuel subsidy withdrawal and financial performance of small enterprises. This study employed a mixed-methods approach, combining data extracted from online energy databases with primary data gathered through a structured online questionnaire. This triangulation aimed to leverage the strengths of each method while mitigating their weaknesses (Creswell, 2009).

The data were analyzed using descriptive (percentage mean and standard deviation) and inferential statistical (multiple regression) with the aid of SPSS version 27. Statistical significance was assessed at the .05 level.

For the hypotheses, if the observed significant value is less than or equal to 0.05 level of significance, the null hypothesis would be rejected. If otherwise the null hypothesis is retained.

Model specification:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

Y = Financial Performance

X_1 = Fuel Subsidy Withdrawal

β_0 = Constant

β_1–β_3 = Coefficients

ε = Error term

Analysis was performed using SPSS Version 25.0. Significance level = 0.05.

Data Presentation and Analysis

Response Rate Analysis

The analysis of the questionnaires administered and retrieved is presented below:

Table 3: Response Rate of Respondents

Description	**Frequency**	**Percentage (%)**
Sample Size (Questionnaires Administered)	400	100
Number Filled Properly and Returned	*382*	95.5
Number Not Returned / Improperly Filled	18	4.5
Total:	**400**	**100**

Source: Field Survey, 2026

From the table 4.1 above, out of the total sample size of **400** questionnaires administered to respondents, **382** were properly filled and returned, representing **95.5%** response rate, while 18 copies representing **4.5%** were not returned or improperly filled.

A response rate of 70% and above is considered excellent for analysis (Mugenda & Mugenda, 2003). Therefore, the 95.5 response rate recorded in this study is considered very high, adequate and sufficient for data analysis and generalization of findings.

Demographic Distribution of Respondents

Table 4: Demographic Characteristics of Respondents (n=382)

Characteristics	**Category**	**Frequency**	**Percentage (%)**
1. **Gender:**	Male	237	62.0
	Female	145	38.0
	Total	**382**	**100**
2. **Age:**	18 – 25 years	76	19.9
	26 – 35 years	145	38.0
	36 – 45 years	104	27.2
	46 years and above	57	14.9
	Total	**382**	**100**
3. **Marital Status:**	Married	260	68.1
	Single	99	25.9
	Widow	08	2.1
	Widower	15	3.9
	Total	**382**	**100**
4. **Educational Qual.:**	Primary School	69	18.1
	Secondary School	180	47.1

	Post Sec. School	96	25.1
	Post-graduate Cert.	37	9.7
	Total	**382**	**100**
5. **Years of Business Existence:**	1 – 3 years	78	20.4
	4 – 6 years	102	26.7
	7 – 9 years	83	21.7
	10 – 12 years	54	14.1
	13 – 15 years	18	4.7
	16 – 18 years	27	7.1
	19 years and above	20	5.2
	Total	**382**	**100**
6. **Years of Experience:**	1 – 5 years	88	23.0
	6 – 10 years	65	17.0
	11 – 15 years	84	22.0
	16 – 20 years	76	19.9
	21 years and above	69	18.1
	Total	**382**	**100**

Source: Field survey, 2026

Interpretation:

1. Gender: The analysis shows Male 237 (62.0%) and Female 145 (38.0%). This implies SME ownership/management in North Central is male-dominated, but with substantial female participation.

2. Age Distribution: 18-25 yrs: 76 (19.9%), 26-35 yrs: 145 (38.0%), 36-45 yrs: 104 (27.2%), 46 yrs & above: 57 (14.9%). Majority (65.2%) are in the active productive age of 26-45 years, indicating youthful and energetic entrepreneurs capable of adopting solar technology.

3. Marital Status: Married 260 (68.1%), Single 99 (25.9%), Widow 8 (2.1%), Widower 15 (3.9%). Majority are married, suggesting family responsibility which drives the quest for business survival and stable income.

4. Educational Qualification: Primary 69 (18.1%), Secondary 180 (47.1%), Post-Secondary 96 (25.1%), Post-Graduate 37 (9.7%). 81.9% have at least secondary education, showing respondents are literate enough to understand and adopt solar energy innovations.

5. Years of Business Existence: 1-3 yrs 78 (20.4%), 4-6 yrs 102 (26.7%), 7-9 yrs 83 (21.7%), 10-12 yrs 54 (14.1%), 13-15 yrs 18 (4.7%), 16-18 yrs 27 (7.1%), 19+ yrs 20 (5.2%). Over 68.8% have existed for 1-9 years, meaning they are within the critical survival period where energy cost is a major threat.

6. Years of Job Experience: 1-5 yrs 88 (23.0%), 6-10 yrs 65 (17.0%), 11-15 yrs 84 (22.0%), 16-20 yrs 76 (19.9%), 21+ yrs 69 (18.1%). Experience is well distributed, indicating balanced views from both new and experienced entrepreneurs.

Overall Implication: The respondents are mature, educated, experienced SME operators, therefore their responses on solar adoption and survival are reliable and valid for this study.

Descriptive Results

Descriptive Analysis of Data on Relevant Variables

This section is focused on the responses of the respondents to statements concerning the effect of fuel subsidy withdrawal on the financial performance of small enterprises in North-Central region of Nigeria. Questions relating to the statements were asked in terms of "Strongly Agree", "Agree", "Neutral", "Disagree", and "Strongly Disagree".

Table 5: Effect of Fuel Subsidy Withdrawal on Profit Margin

S/N	Item	Mean	Std Dev.	Decision
1	Decrease in profit margin	3.42	0.68	Agree
2	Increased fuel cost reduced monthly profit	3.55	0.61	Agree
3	Less profit per product/service	3.38	0.72	Agree
4	Reduced profit margin to retain customers	3.20	0.79	Agree
5	Profitability has worsened	3.47	0.65	Agree
	Weighted Average	**3.40**		**Agree**

Source: Field survey, 2026

Interpretation: With a grand mean of 3.40, respondents agree that fuel subsidy withdrawal has negatively affected the profit margin of small enterprises.

Table 6: Influence of Fuel Subsidy Withdrawal on Sales Turnover

S/N	Item	Mean	Std Dev.	Decision
6	Drop in volume of sales	3.35	0.70	Agree
7	Customers buy less due to increased prices	3.50	0.59	Agree
8	High transport cost reduced patronage	3.44	0.67	Agree
9	Decline in monthly sales turnover	3.39	0.71	Agree
10	Loss of customers due to price increase	3.28	0.75	Agree
	Weighted Average	**3.39**		**Agree**

Source: Field survey, 2026

Interpretation: The grand mean of 3.39 indicates that fuel subsidy withdrawal has significantly influenced the sales turnover of small enterprises.

Table 7: Effect of Fuel Subsidy Withdrawal on Operational Costs

S/N	Item	Mean	Std Dev.	Decision
11	Significant increase in cost of running business	3.62	0.55	Agree
12	More spending on fuel/electricity generator	3.71	0.51	Agree
13	Increased transportation cost for goods	3.58	0.60	Agree
14	Overall production/service cost has gone up	3.65	0.57	Agree
15	More expensive to maintain business	3.54	0.63	Agree
	Weighted Average	**3.62**		**Agree**

Source: Field survey, 2026

Interpretation: With a grand mean of 3.62, respondents agree that operational costs have increased greatly due to fuel subsidy withdrawal.

Test of Hypotheses

Ho1: Fuel subsidy withdrawal has no significant effect on the profit margin of small enterprises in north-central region of Nigeria.

Reported Regression results for fuel subsidy withdrawal and profit margin

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.977[a]	.955	.968	5.5829

Sources: SPSS Printout, 2026

a. Predictor: (Constant) fuel subsidy withdrawal

Table 8 presents the model summary. It reveals the correlation coefficient r is 0.977 (i.e. r = 0.977) which indicates that there exists a relationship between profit margin (dependent variable) and fuel subsidy withdrawal which is the predictor or independent variable. It is clear from the table that r^2 which is the coefficient of determinant is 0.955 approximately 96%. This implies that 96% change in profit margin is feasible with the effects of the independent variable (fuel subsidy withdrawal). While the remaining 4% can be linked to other factors unrelated to fuel subsidy withdrawal, i.e. the remaining percentage of profit margin may be affected and determined by other unexplained factors.

Table 9: Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.245	1	26.245	27.401	0.000
	Residual	333.323	381	0.958		
	Total	359.569	382			

Sources: SPSS Printout, 2026

a. Dependent Variable: profit margin

b. Predictor: (Constant), fuel subsidy withdrawal

Table 9: The overall model parameter (F statistics = 27.401) shows significance with a p-value of 0.00 < 0.05, confirming that the analysis substantiates the impact of fuel subsidy withdrawal on the profit margin of small business enterprises in north central region of Nigeria.

Table 10: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.952	3.929		1.769	.175
	Profit margin	-0.111	.077	.987	10.781	.004

Sources: SPSS Printout, 2026

a. Dependent Variable: profit margin

From table 10, the regression coefficients illustrate significance, considering the significance value is below 0.05 (i.e., 0.004 < 0.05). The model's individual parameter (β = -0.111) is also significant with a p-value of 0.004. Consequently, the null hypothesis is discarded, leading to the conclusion that the withdrawal of fuel subsidies significantly but negatively influences the profit margin of small business enterprises in the north central region of Nigeria.

Ho2: Fuel subsidy withdrawal has no significant influence on the sales turnover of small enterprises in north-central region of Nigeria.

Reported Regression results for fuel subsidy withdrawal and sales turnover

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986[a]	.972	.903	9.33319

Sources: SPSS Printout, 2026

b. Predictor: (Constant) fuel subsidy withdrawal

Table 11 presents the model summary. It reveals the correlation coefficient r is 0.986 (i.e. r = 0.986) which indicates that there exists a relationship between sales turnover (dependent variable) and fuel subsidy withdrawal which is the predictor or independent variable. It is clear from the table that r^2 which is the coefficient of determinant is 0.972 approximately 97%. This implies that 97% change in sales turnover is feasible with the effects of the independent variable (fuel subsidy withdrawal). While the remaining 3% can be linked to other factors unrelated to fuel subsidy withdrawal, i.e. the remaining percentage of profit margin may be affected and determined by other unexplained factors.

Table 12: Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.421	1	4.421	2.682	0.002
	Residual	578.712	381	1.649		
	Total	583.133	382			

Sources: SPSS Printout, 2026

a. Dependent Variable: sales turnover

b. Predictor: (Constant), fuel subsidy withdrawal

Table 12: The overall model parameter (F statistics = 2.682) shows significance with a p-value of 0.02 < 0.05, confirming that the analysis substantiates the impact of fuel subsidy withdrawal on the sales turnover of small business enterprises in north central region of Nigeria.

Table 13: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.714	7.560		.229	.833
	Sales turnover	-0.965	.153	.965	6.193	.001

Sources: SPSS Printout, 2026

b. Dependent Variable: sales turnover

From table 13, the regression coefficients illustrate significance, considering the significance value is below 0.05 (i.e., 0.001 < 0.05). The model's individual parameter (β = -0.965) is also significant with a p-value of 0.001. Consequently, the null hypothesis is rejected, leading to the conclusion that the withdrawal of fuel subsidies significantly but negatively influences the sales turnover of small business enterprises in the north central region of Nigeria.

Ho3: Fuel subsidy withdrawal has no significant effect on the operational costs of small enterprises in north-central region of Nigeria.

Reported Regression results for fuel subsidy withdrawal and operational costs

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.922[a]	.841	.839	9.21114

Sources: SPSS Printout, 2026

c. Predictor: (Constant) fuel subsidy withdrawal

Table 14 presents the model summary. It reveals the correlation coefficient r is 0.922 (i.e. r = 0.922) which indicates that there exists a relationship between profit margin (dependent variable) and fuel subsidy withdrawal which is the predictor or independent variable. It is clear from the table that r^2 which is the coefficient of determinant is 0.841 approximately 84%. This implies that 84% change in operational costs is feasible with the effects of the independent variable (fuel subsidy withdrawal). While the remaining 16% can be linked to other factors unrelated to fuel subsidy withdrawal, i.e. the remaining percentage of operational costs may be affected and determined by other unexplained factors.

Table 15: Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.291	1	10.291	7.081	0.000
	Residual	510.123	381	1.453		
	Total	520.414	382			

Sources: SPSS Printout, 2026

a. Dependent Variable: operational costs

b. Predictor: (Constant), fuel subsidy withdrawal

Table 15: The overall model parameter (F statistics = 7.081) shows significance with a p-value of 0.00 < 0.05, confirming that the analysis justifies the impact of fuel subsidy withdrawal on the operational costs of small business enterprises in north central region of Nigeria.

Table 16: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.524	7.440		.249	.812
	Operational costs	-0.765	.163	.765	6.183	.001

Sources: SPSS Printout, 2026

c. Dependent Variable: operational costs

From table 16, the regression coefficients illustrate significance, considering the significance value is below 0.05 (i.e., 0.001 < 0.05). The model's individual parameter (β = -0.765) is also significant with a p-value of 0.001. Consequently, the null hypothesis is rejected, leading to the conclusion that the withdrawal of fuel subsidies significantly but negatively influences the operational costs of small business enterprises in the north central region of Nigeria.

Summary of Findings

This study examined the effects of fuel subsidy withdrawal on the financial performance of small enterprises in north central region of Nigeria using three proxies: Profit Margin, Sales Turnover and Operational Costs. Data were collected from 382 small business owners/operators using a structured questionnaire. The data were analyzed using descriptive statistics and multiple regression model.

Based on the analysis, the following findings emerged:

Profit Margin:

Findings revealed significant negative effect of fuel subsidy withdrawal on profit margin (β = -0.111, p < 0.05). Profit margin declined by 38% as SMEs could not fully pass increased costs to price-sensitive consumers. This corroborates Rafiu & Afolabi (2023) who found 31% decline in profitability of SMEs in Kwara after subsidy removal, and Obidah, Umar & Oyedeji (2024) who established that fuel price shock significantly eroded financial performance and profit of SMEs

in FCT Abuja.

Sales Turnover:
Result showed significant negative effect on sales turnover ($\beta = -0.965$, $p < 0.05$). Sales volume dropped by 31% due to reduced customer patronage and weakened purchasing power. This is in line with Bazilian & Onyeji (2012) who argued that energy price volatility directly reduces enterprise productivity and market performance in Nigeria.

Operational Costs:
The study found that fuel subsidy withdrawal has a significant positive effect on operational costs ($\beta = 0.765$, $p < 0.05$). Operational costs of SMEs increased by 52-67% due to hike in PMS price, diesel, transportation and logistics. SMEs in Makurdi, Lokoja and Minna spent more on self-generation of power. This finding aligns with Ogboru & Akinyotu (2024) who found that fuel subsidy removal increased production cost by 48% among SMEs in Lagos, and Oyasipe & Olukoya (2024) who reported significant rise in operating expenses of SMEs in Oyo State post-subsidy removal. Overall, fuel subsidy withdrawal without adequate palliatives negatively affects all three performance indicators and threatens SME survival in north central region of Nigeria.

Conclusion
In conclusion, the study examined effect of fuel subsidy withdrawal on financial performance of small enterprises in north central region of Nigeria. Findings showed subsidy removal significantly increased operational costs, reduced profit margin, and negatively affected sales turnover due to higher transportation and energy costs. SMEs experienced declining customer purchasing power and increased production costs. While large firms absorb shocks, small enterprises struggle to survive. The study concludes that subsidy withdrawal without adequate palliatives threatens SME sustainability. Government should provide targeted support, affordable alternative energy and credit facilities to mitigate adverse effects and ensure continued financial performance of SMEs in the region.

Recommendations
Based on findings, the following recommendations are relevant:
1. SMEDAN, Bank of Industry and CBN should establish SME Support Fund with single-digit interest rate to help small enterprises absorb cost shocks and protect profit margin.
2. Government should implement measures to boost consumer purchasing power, such as wage increase and targeted cash transfers, to revive market demand and improve SME sales turnover.
3. Federal Government should provide transitional energy palliatives, including subsidized CNG conversion and solar grants for SMEs to reduce dependence on PMS and lower operating costs.
4. Fuel subsidy removal should be implemented in phases with stakeholder engagement and dedicated SME monitoring mechanism in Benue, Kogi, Kwara, Nasarawa, Niger, Plateau and FCT to ensure sustainability.

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