

Effects of Fuel Subsidy Removal on Small-Scale Industries in Nigeria

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Abstract: The work explores the effects of fuel subsidy removal on small-scale businesses in Nigeria, a critical sector in the nation's economic landscape. The study contributes to existing knowledge by focusing on the relationship between subsidy removal and its impact on small-scale industries. A comprehensive literature review considers climate change impacts, socio-economic and environmental externalities, and the historical context of fuel subsidies. While previous studies have investigated macro and micro consequences, this research examines the repercussions on small-scale businesses. Utilising a descriptive research design and a Likert-structured questionnaire, the study investigates the ramifications of recent fuel subsidy removal in a typical community in the country. Key factors, including changes in sales, operational costs, and profit margins, are analysed using descriptive statistical methods and the Chi-square test. The findings highlight the interconnectedness between government policies and the health of small-scale businesses, emphasising the need for evidence-based decision-making to support resilience in adapting to policy changes.

Keywords: Fuel Subsidy Removal; Small-Scale Business; Economic Impact; Operational Costs; Profit Margins

1. Introduction

The term “subsidy” denotes the government’s financial support mechanism sectors, institutions, or individuals use to achieve economic and social objectives (Wenqi *et al.*, 2022). In the context of fuel subsidies, governments intervene by setting prices below the international market rates, thus alleviating the financial burden on consumers (Xiang *et al.*, 2021). The rationale behind subsidies is often rooted in the desire to support critical sectors, foster economic development, and improve citizens’ living standards (Bao *et al.*, 2020). Fuel subsidies have been a longstanding and contentious policy tool governments employ to ensure energy affordability, stimulate economic growth, and shield citizens from fluctuations in global oil prices (Skovgaard & van Asselt, 2019). These subsidies, which artificially lower the cost of fuels like gasoline and diesel, have played a crucial role in shaping economic landscapes, particularly in developing nations (Solarin, 2020). However, the consequences of such subsidies are complex, with significant implications for various sectors, including the backbone of many economies—small-scale industries.

Previous studies have focused more on the climate change impacts of fuel subsidies. For instance, Skovgaard and van Asselt (2019) opined that despite the potential climate change mitigation benefits of reforming fossil fuel subsidies, the complex international and domestic political context

complicates this process, posing challenges that may not align with traditional climate politics. Similarly, according to Monasterolo and Raberto (2019), there is an increasing consensus that fossil fuel subsidies provided by high-income country governments contradict the global climate agenda's emission reduction goals, prompting discussions on their negative socio-economic and environmental externalities. Aside from other studies that evaluated the impact of fuel subsidies on developed nations (Chepeliev & van der Mensbrugghe, 2020; Erickson *et al.*, 2020; Heger *et al.*, 2019; Bassi *et al.*, 2023). Solarin (2020) investigated the driving factors behind environmental deterioration, focusing on fossil fuels subsidies, in 35 emerging and developing countries. The study revealed that a 10% increase in fossil fuel subsidies leads to a rise in the ecological footprint by 0.3% to 1.5%, highlighting the role of various factors, such as population size, real Gross Domestic Price (GDP) per capita, urbanisation, and the non-dependent population, in contributing to environmental degradation.

In the case of Nigeria's developing economy, heavily reliant on its oil and gas sector, fuel subsidies have been extremely ingrained in economic policies since the establishment of the Nigerian National Petroleum Corporation (NNPC) in 1977 (Agbonifo, 2023; McCulloch *et al.*, 2021). The subsidy regime, initiated in the 1970s to mitigate the impact of rising global oil prices, has become a significant component of the nation's economic structure (Solarin, 2020). Over the years, however, fuel subsidisation has incurred substantial costs, with estimates suggesting that billions of dollars have been expended on fuel subsidy payments in recent decades (Houeland, 2020). Despite the intended benefits of fuel subsidies, their removal has become a topic of discussion and policy action. In May 2023, President Bola Ahmed Tinubu announced the complete removal of fuel subsidies, marking a significant shift in the economic landscape. This decision has triggered a series of events, most notably an increase in fuel prices, subsequently affecting the operational dynamics of businesses, particularly small-scale industries—the engine of economic growth in Nigeria.

Previous studies have considered the effects of fuel subsidy removal at various times in Nigeria on different socio-economic areas. For example, Houeland (2020) investigated the interplay between popular protests and institutional politics of fuel subsidy removal. The study posits four interconnected claims about the protests' influence on institutional politics, emphasising historical labour-led subsidy protests, the contextual factors amplifying the 2012 protests, the impact of new actors on movement fragmentation, and the enduring civic agency's influence on state-citizen relations, particularly evident in party politics and elections. Agbonifo (2023) further employed Gaventa's 'power cube' as an analytical framework to delve into the dynamics between the government and protesters, viewing power relations as a complex interplay of both domination and resistance, thereby offering a fresh perspective on the debate over the connection between protests and empowerment, often mired in essentialist arguments. On the other hand, Ozili and Obiora (2023) examined the ramifications of the 2023 fuel subsidy removal in Nigeria. The study shed light on macroeconomic and microeconomic consequences using discourse analysis methodology. The removal is anticipated to yield positive effects, such as freeing up financial resources for other sectors, boosting domestic refinery production, diminishing dependence on imported fuel, enhancing employment, directing funds toward critical infrastructure development, reducing the budget deficit, generating a budget surplus, curbing corruption linked to fuel subsidies, fostering competition, revitalising domestic refineries, and alleviating pressure on the exchange rate.

The removal of fuel subsidies in 2023 is particularly crucial for small-scale businesses, as it not only influences their operational costs and profit margins but also shapes the overall economic landscape in which they operate. However, these reviewed studies and many others (Baba Mohammed *et al.*, 2020; Ikenga & Oluka, 2023; Yunusa *et al.*, 2023) did not consider the potential ripple effects on sectors like small-scale industries to highlight the interconnectedness between government policies, such as subsidy removal, and the health of businesses at the grassroots. Hence, the focal point of this research is an in-depth examination of the repercussions of fuel subsidy removal on small-scale industries, which constitute a significant portion of the Nigerian business landscape, of about 44.4% (Gumel, 2017). Small-scale businesses, often characterised by their

sensitivity to production costs and reliance on affordable energy, play a critical role in job creation, innovation, and income generation (Ogunsanya, 2021). Understanding how removing fuel subsidies impacts these industries is paramount for policymakers, business owners, and the broader society. This research aims to unravel the relationship between fuel subsidy policies and the dynamics of small-scale industries. By delving into case studies, analysing data, and drawing upon existing literature, we seek to provide comprehensive insights that inform evidence-based decision-making. The study addresses critical questions related to customer demands, operational costs, and profit margins within a typical community in Nigeria, offering a clear perspective on the effects of fuel subsidy removal on businesses that form the region's economic backbone.

2. Methodology

2.1 Data collection

This study employs a comprehensive research methodology to explore the impact of the recent removal of fuel subsidies on small-scale businesses within the Sabon-Gari Local Government Area of Kaduna State, Nigeria. Using a descriptive design to systematically describe and quantify the effects of this policy change on small-scale enterprises, this study focused on variations in sales, operational costs, and profit margins.

2.1.1 Research Design. The descriptive research design was selected based on its suitability for this type of study as highlighted in recent literature (Bello *et al.*, 2022; Kuburi *et al.*, 2023; Terab *et al.*, 2023; Umar *et al.*, 2023). This approach allows for a structured and statistical inquiry into the predefined aspects of small-scale businesses impacted by fuel subsidy removal. The study variables were operationalised based on data collected from the revenue department, which provided a comprehensive breakdown of small-scale businesses operating within the study area.

2.1.2 Data Collection Instruments and Procedure. The primary instrument for data collection was a stratified questionnaire designed to capture detailed information across several dimensions:

- **Demographic Information:** Each respondent was asked to provide basic demographic information to facilitate the analysis of data across different population segments.
- **Impact on Business Operations:** Questions specifically tailored to understand changes in sales, expenses, and profit margins post-policy implementation.

The questionnaire was administered face-to-face by trained research assistants to ensure high response rates and reliable data. Sampling was stratified by the type of business to ensure representative data across various sectors such as Fabrication and Welding, Furniture Making, Production of Goods, Agriculture, and others. The distribution of the sample size is illustrated in Table 1. Data collection spanned from June to October 2023, beginning one month after the fuel subsidy was removed, to capture the immediate and short-term effects of the policy change. Figure 1 gives the flowchart of the study's methodology spanning from the research process, from data collection through to analysis.

2.2 Data analysis

Data was obtained from the designed Likert-structured questionnaire and was then subjected to descriptive statistical methods for analysis and presentation. The Chi-square test was employed to assess the significant association between two categorical variables (sales and customer demand/operational costs/profit margins and fuel subsidy removal for small-scale businesses). The significance level (α), set at 0.05 or 5%, is chosen to determine the threshold for statistical significance. The chi-square distribution table with the calculated degrees of freedom and significance level was used to critical Chi-square value, and comparing the critical chi-square value with the calculated chi-square value from the IBM SPSS (version 26), decisions on the acceptance or rejection of the null hypotheses are made. For data visualization, Origin Pro Software (2021) was used.

Table 1. Registered small-scale businesses in the study area

<i>Small-scale businesses</i>	<i>Number of businesses</i>
Production of Goods	13
Fabrication and Welding	15
Agriculture	15
Hospitals/Clinics	19
Wholesale	20
Transportation	22
Hotels	23
Furniture Making	26
Restaurants	41
Mechanic Services	43
Education	76
Pharmacy	82

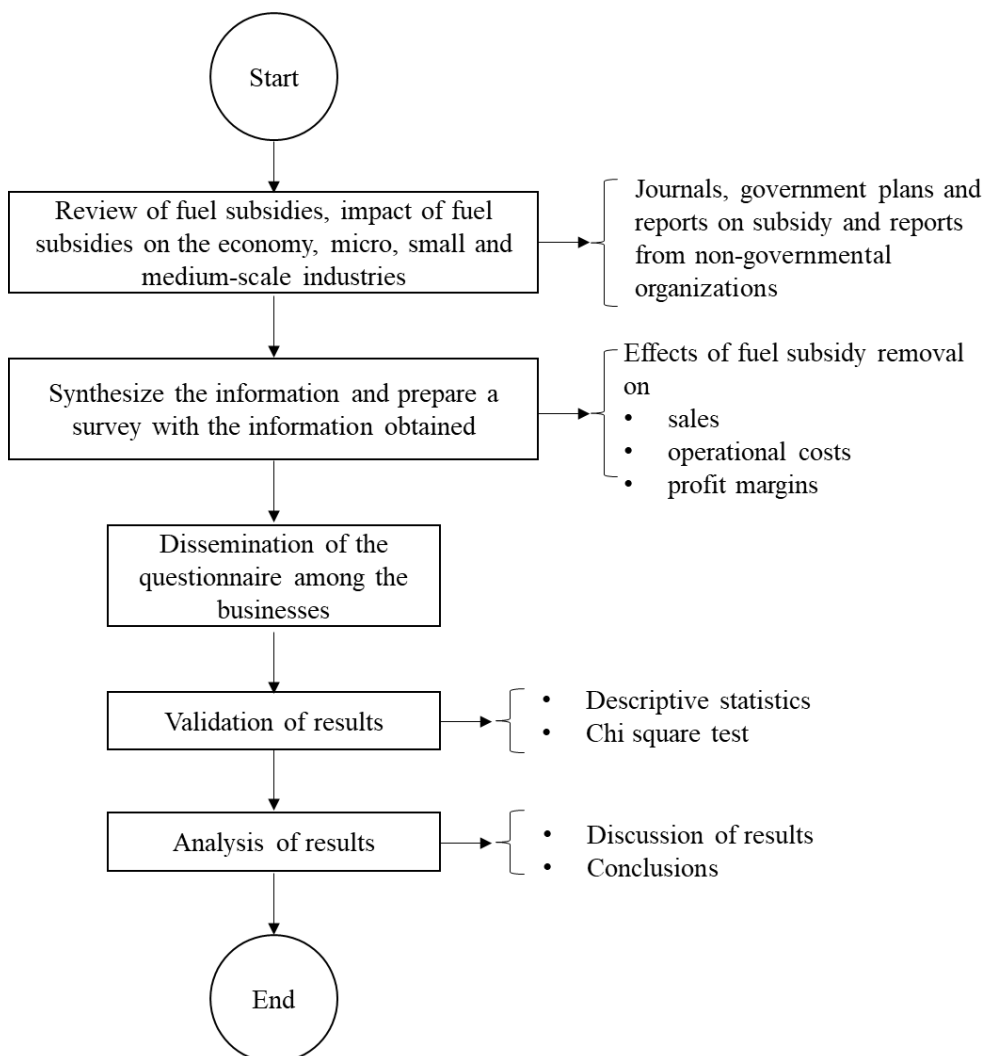


Fig 1. Flowchart of the study’s methodology

3. Results and discussion

3.1 Demographic distribution of the respondents

The analysis of the survey conducted in the study area provided comprehensive insights into the demographic and socio-economic characteristics of the small-scale businesses in the region. The predominance of male-owned businesses (62.6%) shown in Figure 2 aligns with broader trends observed in various economies, such as in Canada (Rosa & Sylla, 2018) and among black and Mexican-American entrepreneurs (Peterson & Altounian, 2019), reflecting historical patterns of entrepreneurial ownership. However, the notable presence of female-owned businesses (37.4%) suggests a growing diversity in the entrepreneurial landscape, potentially influenced by changing societal norms and support structures for women in business (Taiwo, 2023). The distribution across age brackets shown in Figure 2 indicates a relatively balanced representation, with 36.9% falling within the 29-39 years bracket and 34.9% within the 40-50 years bracket. This suggests a distribution that spans different career stages, potentially indicating a dynamic and evolving business community, as reported also by Ogunrinola (2011). The emphasis on tertiary education qualifications (56.9%) among small-scale business owners, as shown in Figure 2, reflects an increasingly educated entrepreneurial class. This trend aligns with the global shift toward knowledge-based economies, where higher education often correlates with innovation and business success (Halberstadt *et al.*, 2019; Solomon *et al.*, 2008).

The prevalence of sole proprietorship businesses (56.4%), as shown in Figure 2, indicates a significant reliance on individual entrepreneurship. However, diverse ownership structures, including partnerships (28.7%) and cooperatives (5.6%), suggest a varied business ecosystem that leverages different organisational models. The concentration of businesses with 10-16 employees

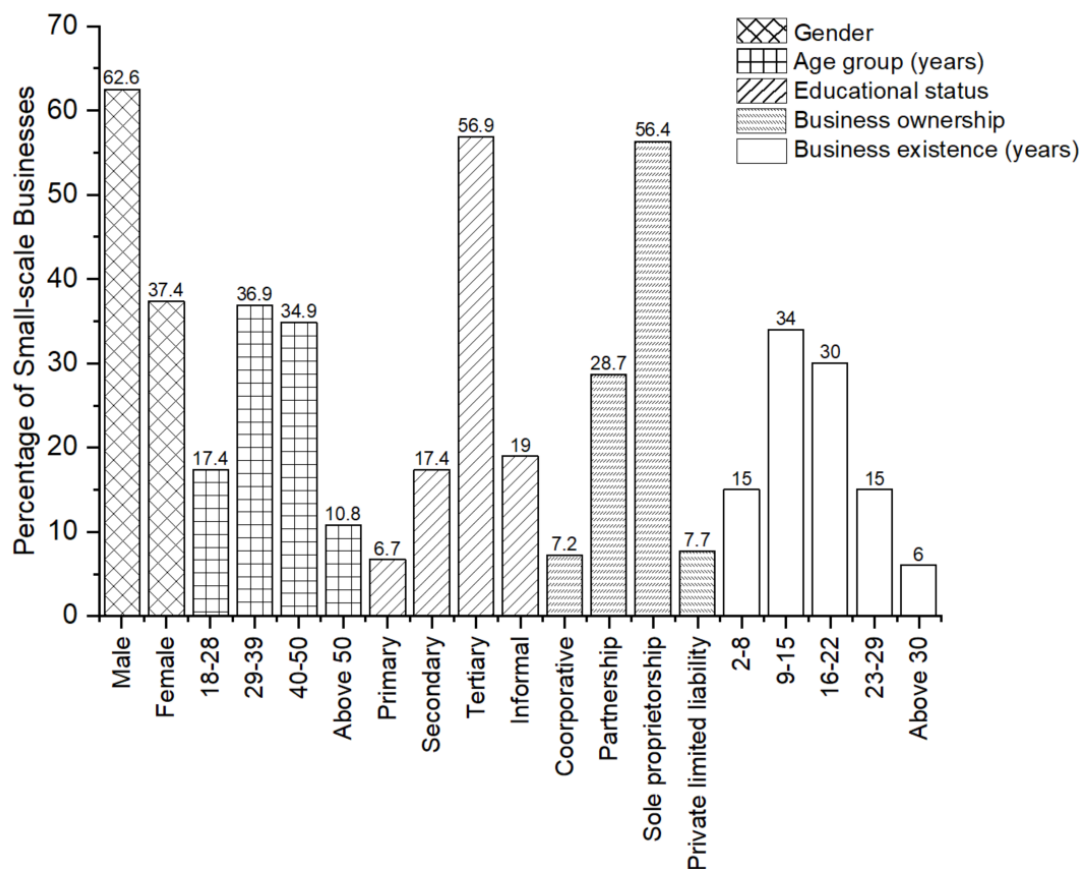


Fig 2. Demographic characteristics of the small-scale business owners

(64.6%) indicates a moderate scale of operations. This distribution aligns with the typical characteristics of small-scale enterprises, often characterised by limited but impactful employment generation (Ogunsanya, 2021). The distribution of businesses across different age brackets suggests a mix of established and relatively new ventures. The concentration of businesses in the 9-15 years bracket (34.8%), as shown in Figure 2, may indicate a period of stability and maturity for a significant portion of the local business community.

3.2 Impact of fuel subsidy removal on sales/customer demand

In the half-decade preceding the 2023 fuel subsidy removal, distinct shifts in sales and customer demand were observed among surveyed small-scale businesses. The dynamics of the sales/customer demand preceding fuel subsidy removal and post-fuel subsidy removal are illustrated in Figure 3. Notably, 37.4% reported no discernible change, 22.6% experienced a moderate decline, 19.5% faced a significant downturn, 15.9% noted a moderate upswing, and 4.6% enjoyed a notable increase in sales and customer demand. The observed diversity in business responses to sales and customer demand changes before the fuel subsidy removal suggests a complex interplay of factors influencing market dynamics. Previous studies have indicated that economic uncertainties (caused by pandemics), consumer behaviour shifts, and industry-specific conditions can contribute to such variations (Das *et al.*, 2021; Munro, 2021). In the aftermath of the fuel subsidy removal, a subsequent wave of changes emerged. Of the surveyed small-scale businesses, 37.9% faced a moderate decrease in sales and customer demand, 23.6% experienced a moderate increase, and 22.1% reported no significant change. Notably, 6.7% encountered a significant decrease, and 3.6% enjoyed a significant increase in sales and customer demand.

The post-removal scenario reflects a shifting landscape, possibly influenced by altered consumer spending patterns and business operational costs (Ozili & Obiora, 2023). The moderate fluctuations may stem from the initial adjustments businesses make in response to changing economic conditions. Comparative studies (Bao *et al.*, 2020; Xiang *et al.*, 2021) on subsidy removals in diverse settings can provide valuable insights into these observed trends. The findings emphasise the need for policymakers and business stakeholders to consider the complicated nature of market responses to fuel subsidy removals. To further scrutinise the interplay between sales/customer demand and the shift introduced by fuel subsidy removal in 2023, a null hypothesis was formulated, which states that no significant association exists between sales/customer demand and fuel subsidy removal. The Chi-square test was employed, generating a calculated chi-square of 259.929 with a p-value of <0.001 . The results, as summarised in Table 2, prompt the rejection of the null hypothesis, signifying a noteworthy association between sales/customer demands and fuel subsidy removal. This statistical significance suggests that the observed changes in sales/customer demand are not mere coincidences but are linked to removing fuel subsidies.

3.3 Impact of fuel subsidy removal on business operating costs

Aside from the impact of fuel subsidy removal on sales/customer demand, a substantial portion of small-scale businesses experienced various shifts in operating costs. In the pre-fuel subsidy removal era, 41.0% of these businesses had no notable change in operating costs, while 27.2% reported a moderate increase. Conversely, 17.4% saw a significant decrease, and 11.8% encountered a moderate decline. A smaller percentage, 2.6%, faced a significant increase in operating costs during this period. Following the fuel subsidy removal in May 2023, the landscape of small-scale business operating costs underwent a substantial transformation. A significant majority, 70.1%, reported a significant increase in operation costs. Another 24.7% indicated a moderate cost rise, while 2.1% reported no change. A minimal percentage, 1.0%, experienced a moderate decrease, and an equal proportion reported a significant decrease in operating costs (see Figure 4).

As seen in the result, the substantial increase in operating costs post-fuel subsidy removal significantly impacts small-scale businesses. The overwhelming majority attributing this surge

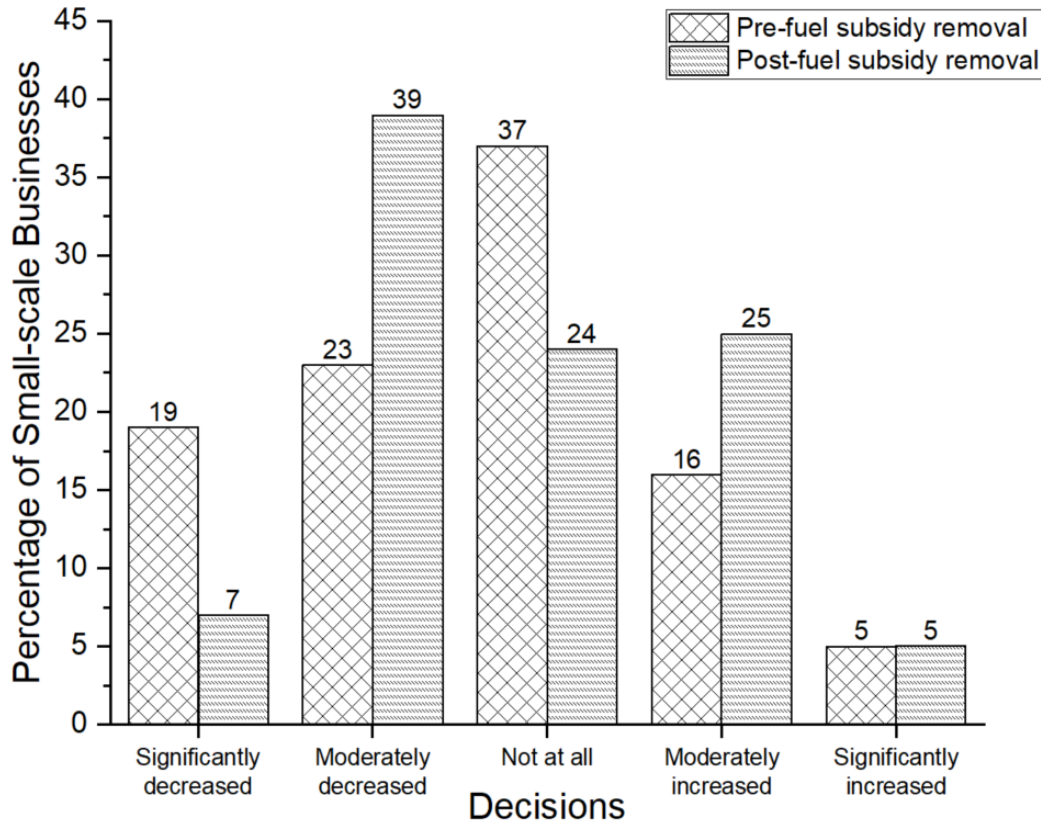


Fig 3. Dynamics of the sales/customer demand pre-fuel subsidy and post-fuel subsidy removals

Table 2. Chi-Square test for sales/customer demands and fuel subsidy removal

Variables	Value	Df	Asymptotic significance (2-sided)
Pearson Chi-Square	259.929	36	<.001
Likelihood Ratio	56.075	36	.018
N of Valid Cases	197		

directly to the removal aligns with established economic literature on the repercussions of subsidy alterations, affirming the substantial influence on operational expenses (Baba Mohammed *et al.*, 2020; McCulloch *et al.*, 2021). This outcome resonates with the anticipated economic shifts associated with subsidy removal and highlights small-scale enterprises’ challenges in adapting to these changes. The study also investigated the association between operational costs and fuel subsidy removal. The null hypothesis posited no significant association between these variables. Table 3 presents the chi-square test results, revealing a calculated chi-square value of 593.66 and a p-value <0.001. The null hypothesis is rejected because the p-value is smaller than the standard alpha value of 5% ($\alpha=0.05$). This signifies a significant association between operating costs and fuel subsidy removal. The statistically significant association between operational costs and fuel subsidy removal emphasizes subsidy alterations’ profound impact on small-scale businesses’ financial dynamics. This aligns with studies such as Wenqi *et al.* (2022) emphasising how policy changes, especially subsidies, can have far-reaching implications for operational expenditures.

3.4 Impact of fuel subsidy removal on profits/profit margin

Leading up to eliminating fuel subsidies in May 2023, around 34.4% of the small-scale businesses surveyed reported no discernible changes in their profits or profit margins over the previous five

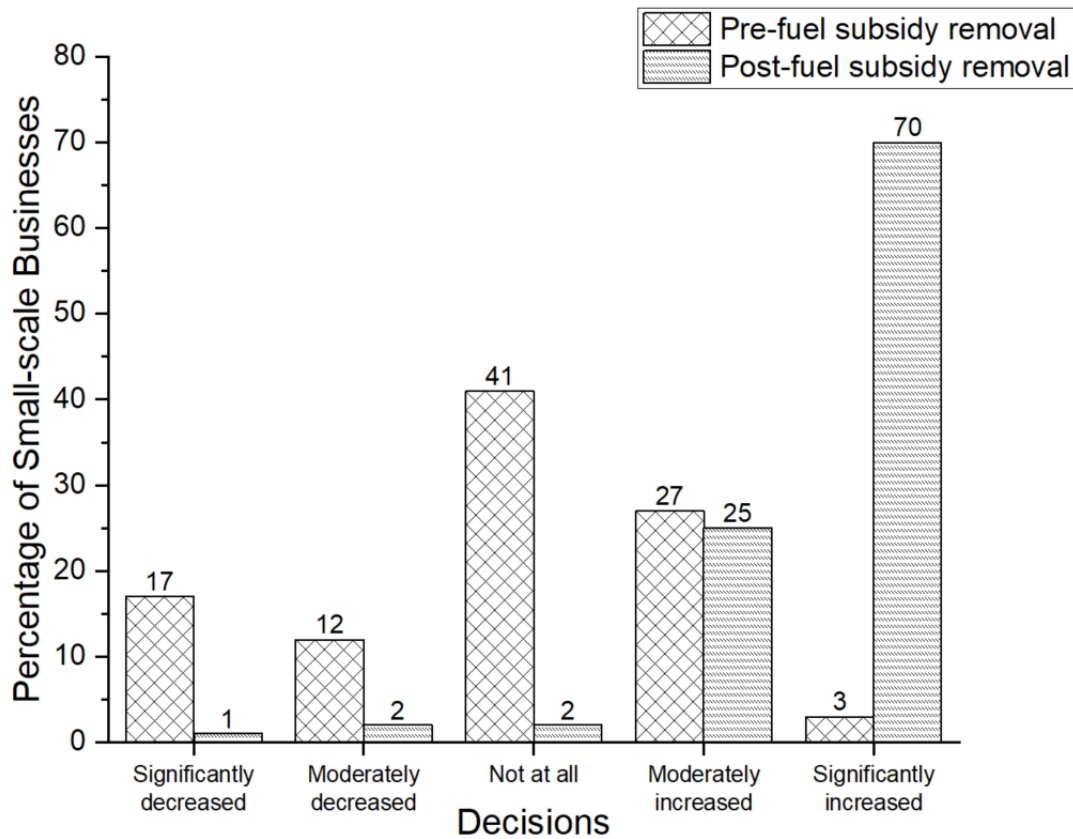


Fig 4. Dynamics of the business operating costs pre-fuel subsidy removal and post-fuel subsidy removal

Table 3. Chi-Square test for operational costs and fuel subsidy removal

Variables	Value	Df	Asymptotic significance (2-sided)
Pearson Chi-Square	593.677	36	<.001
Likelihood Ratio	159.666	36	<.001
N of Valid Cases	197		

years. Conversely, 10.3% noted a moderate increase, and 0.5% reported a significant increase in profits and margins. However, following the fuel subsidy removal, a notable shift occurred, with 45.1% of businesses reporting a moderate increase and 35.9% noting a significant increase in profits and margins. Meanwhile, 15.4% reported a moderate decrease, 3.1% noted a significant decrease, and 0.5% observed no change (see Figure 5). Examining the association between profits and profit margin and fuel subsidy removal yielded compelling results based on the chi-square analysis. The alternate hypothesis challenged the null hypothesis, positing no significant association between these variables, suggesting a notable connection. The Chi-square test statistics (see Table 4), with a calculated chi-square value of 438.46 and a p-value of <0.001, highlighted the significance of this association. Rejecting the null hypothesis implies that there is a substantial and statistically significant relationship between the changes in profit and profit margin and the removal of fuel subsidies.

The contrasting trends before and after subsidy removal highlight the distinct effects of this policy change on the financial landscape of small-scale businesses. The drivers behind these changes include shifts in consumer behaviour, market dynamics and operational costs. Moreover, a comparative analysis with a similar study (Baba Mohammed *et al.*, 2020) validates the observed trends. The study argues that for the sustainability of the subsidy removal, the hardship of the people, the business owners inclusive, who have experienced reduced profits needs to be alleviated.

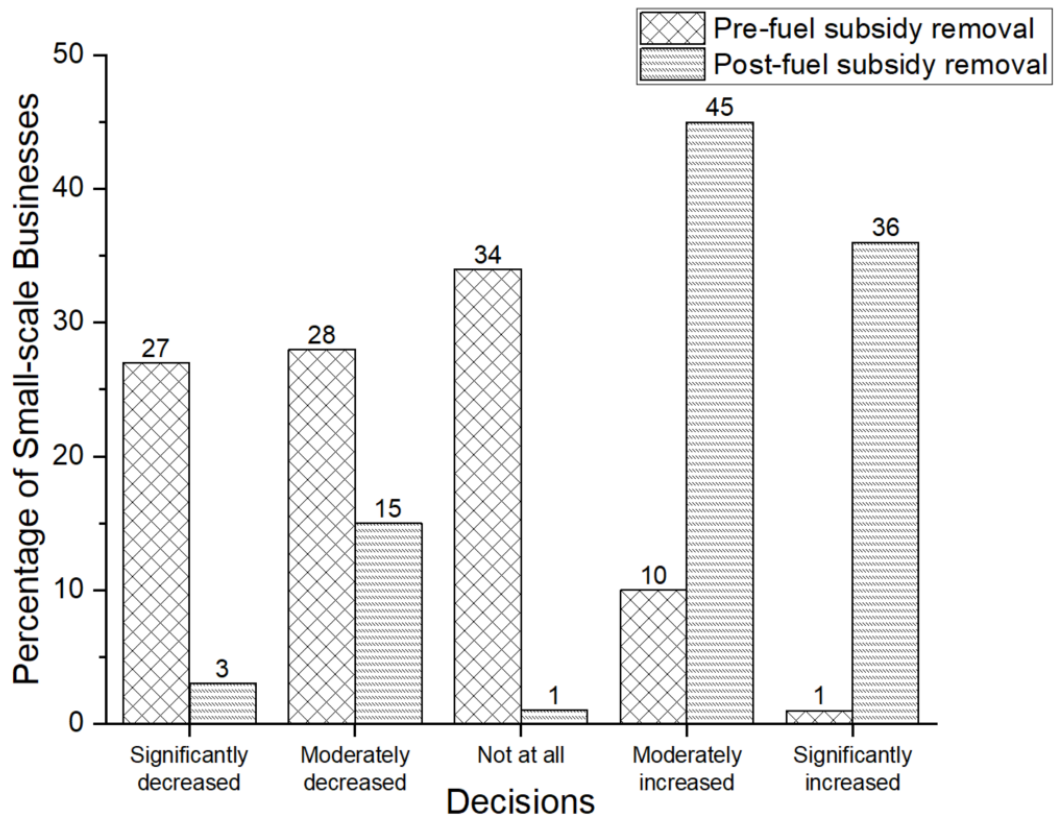


Fig 5. Dynamics of the business profits and profit margin pre-fuel subsidy and post-fuel subsidy removals

Table 4. Chi-Square test for business profits and profit margin and fuel subsidy removal

Variables	Value	Df	Asymptotic significance (2-sided)
Pearson Chi-Square	438.463	36	.000
Likelihood Ratio	144.879	36	.000
N of Valid Cases	197		

4. Conclusion

The findings of this study shed light on the implications of fuel subsidy removal on small-scale businesses in the study area. The demographic analysis uncovered a diverse entrepreneurial landscape, with a significant prevalence of male-owned businesses and a noteworthy presence of female-owned enterprises, indicating a shift towards greater gender inclusivity in entrepreneurship. The impact of fuel subsidy removal on sales and customer demand exhibited distinct shifts in the half-decade leading up to the policy change. The varied responses suggest a complex interplay of factors influencing market dynamics. Post-subsidy removal, the landscape continued to evolve, with a significant proportion of businesses experiencing changes in sales and customer demand. The Chi-square test point out a statistically significant association between these variables, emphasising a direct link between the observed market dynamics and fuel subsidy removal. Operational costs faced a substantial transformation post-subsidy removal, with most businesses reporting a significant increase. Examining profits and profit margins revealed a notable shift following fuel subsidy removal. Many businesses reported a significant increase, while others experienced moderate or significant decreases. The chi-square analysis further affirmed a significant association between sales/customer demand, operational costs, profit margins and fuel subsidy removal, highlighting the profound impact of policy changes on the financial dynamics of small-scale businesses.

The limitations of this study include its focus on a single community, which may not be representative of other regions, and the reliance on self-reported data that could introduce biases in reporting business impacts, limiting the generalizability of the findings. However, the study underlines the need for policymakers and stakeholders to consider the interconnected nature of the variables examined. The findings provide valuable insights into the challenges and opportunities small-scale businesses face in adapting to policy changes, emphasising the importance of targeted support measures to mitigate potential hardships. The study recommends ongoing monitoring and assessment to inform evidence-based policies that promote the sustainability of subsidy removal while safeguarding the interests of businesses and fostering economic resilience.

Originality statement

The authors declare that the work reported in the current study is original, and no content (concept, text, tables, illustrations, data, etc.) supposed to be produced/generated/estimated/written/collected by the authors in the current study is partially or completely generated through Artificial Intelligence (AI) or any AI-based software.

References

- Agbonifo, J. (2023). Fuel subsidy protests in Nigeria: The promise and mirage of empowerment. *The Extractive Industries and Society*, 16, 101333. <https://doi.org/10.1016/j.exis.2023.101333>
- Baba Mohammed, A., Ahmed, F. F., & Adedeji, A. N. (2020). Assessment of Impact of Fuel Subsidy Removal on Socio-economic Characteristics: A Survey of Households in Maiduguri, Borno State, Nigeria. *Journal of Business and Economic Development*, 5(1), 10-20. <https://doi.org/10.11648/j.jbed.20200501.12>
- Bao, B., Ma, J., & Goh, M. (2020). Short- and long-term repeated game behaviours of two parallel supply chains based on government subsidy in the vehicle market. *International Journal of Production Research*, 58(24), 7507–7530. <https://doi.org/10.1080/00207543.2020.1711988>
- Bassi, A.M., Pallaske, G., Bridle, R., & Bajaj, K. (2023). Emission Reduction via Fossil Fuel Subsidy Removal and Carbon Pricing, Creating Synergies with Revenue Recycling. *World*, 4(2), 225-240. <https://doi.org/10.3390/world4020016>
- Bello, U., Yawas, D.S., & Oyediji, A.N. (2022). Assessment of Perceived Performance of Solar-Powered Borehole Projects in Nigeria. *Management Science and Business Decisions*, 2(2), 32–43. <https://doi.org/10.52812/MSBD.47>
- Chepeliev, M., & van der Mensbrugge, D. (2020). Global fossil-fuel subsidy reform and Paris Agreement. *Energy Economics*, 5, 104598. <https://doi.org/10.1016/j.eneco.2019.104598>
- Das, G., Jain, S.P., Maheswaran, D., Slotegraaf, R.J., & Srinivasan, R. (2021). Pandemics and marketing: insights, impacts, and research opportunities. *Journal of the Academy of Marketing Science*, 49(5), 835–854. <https://doi.org/10.1007/s11747-021-00786-y>
- Erickson, P., van Asselt, H., Koplow, D., Lazarus, M., Newell, P., Oreskes, N., & Supran, G. (2020). Why fossil fuel producer subsidies matter. *Nature*, 578, E1-E4. <http://doi.org/10.1038/s41586-019-1920-x>
- Gumel, B.I. (2017). Critical Challenges Facing Small Business Enterprises in Nigeria: A Literature Review. *International Journal of Scientific & Engineering Research*, 8(8), 796–808. <https://hal.science/hal-04080436>
- Halberstadt, J., Timm, J.M., Kraus, S., & Gundolf, K. (2019). Skills and knowledge management in higher education: how service learning can contribute to social entrepreneurial competence development. *Journal of Knowledge Management*, 23(10), 1925–1948. <https://doi.org/10.1108/JKM-12-2018-0744>
- Heger, M., Wheeler, D., Zens, G., Meisner, C., & Heger, M.P. (2019). *Motor Vehicle Density and Air Pollution in Greater Cairo: Fuel Subsidy Removal and Metro Line Extension and Their Effect on Congestion and Pollution*. Washington, DC: World Bank. <https://doi.org/10.1596/32512>
- Houeland, C. (2020). Contentious and institutional politics in a petro-state: Nigeria's 2012 fuel subsidy protests. *The Extractive Industries and Society*, 7 (4), 1230–1237. <https://doi.org/10.1016/J.EXIS.2020.05.010>

- Ikenga, A.F., & Oluka, N.L. (2023). An examination of the benefits and challenges of the fuel subsidy removal on the Nigerian economy in the fourth republic. *International Journal of Applied Research in Social Sciences*, 5 (6), 128–142. <https://doi.org/10.51594/IJARSS.V5I6.522>
- Kuburi, L.S., Umar, U., & Oyediji, A.N. (2023). Risk Assessment of Petrol Filling Stations in a Metropolitan City of Kaduna State, Nigeria. *Sinergi*, 27(2), 179–184. <https://doi.org/10.22441/SINERGI.2023.2.005>
- McCulloch, N., Moerenhout, T., & Yang, J. (2021). Fuel subsidy reform and the social contract in Nigeria: A micro-economic analysis. *Energy Policy*, 156, 112336. <https://doi.org/10.1016/J.ENPOL.2021.112336>
- Monasterolo, I., & Raberto, M. (2019). The impact of phasing out fossil fuel subsidies on the low-carbon transition. *Energy Policy*, 124, 355–370. <https://doi.org/10.1016/J.ENPOL.2018.08.051>
- Munro, D.R. (2021). Consumer Behavior and Firm Volatility. *Journal of Money, Credit and Banking*, 53(4), 845–873. <https://doi.org/10.1111/JMCB.12749>
- Ogunsanya, A.A. (2021). Squaring small and medium businesses and branding post Covid-19 in Nigeria: Tripartite imperatives for performance. *Journal of Public Affairs*, 21(4), e2586. <https://doi.org/10.1002/PA.2586>
- Ogunrinola, I.O. (2011). Social capital and earnings distribution among female micro-entrepreneurs in rural Nigeria. *African Journal of Economic and Management Studies*, 2(1), 94–113. <https://doi.org/10.1108/20400701111110795>
- Ozili, P.K., & Obiora, K. (2023). *Implications of Fuel Subsidy Removal on the Nigerian Economy*. In: Public Policy's Role in Achieving Sustainable Development Goals. <https://doi.org/10.4018/978-1-6684-8903-1.ch007>
- Peterson, R.A., & Altounian, D. (2019). *Self-perceived performance of female-owned firms and male-owned firms: Insights from black and Mexican-American entrepreneurs*. In: Go-to-Market Strategies for Women Entrepreneurs: Creating and Exploring Success (pp. 95–105). <https://doi.org/10.1108/978-1-78973-289-420191014>
- Rosa, J.M., & Sylla, D. (2018). A comparison of the performance of majority female-owned and majority male-owned small and medium-sized enterprises. *International Journal of Entrepreneurship and Small Business*, 35(3), 282–302. <https://doi.org/10.1504/IJESB.2018.095901>
- Skovgaard, J., & van Asselt, H. (2019). The politics of fossil fuel subsidies and their reform: Implications for climate change mitigation. *Wiley Interdisciplinary Reviews: Climate Change*, 10(4), e581. <https://doi.org/10.1002/WCC.581>
- Solarin, S.A. (2020). An environmental impact assessment of fossil fuel subsidies in emerging and developing economies. *Environmental Impact Assessment Review*, 85, 106443. <https://doi.org/10.1016/J.EIAR.2020.106443>
- Solomon, G., Dickson, P.H., Solomon, G.T., & Weaver, K.M. (2008). Entrepreneurial selection and success: Does education matter?. *Journal of Small Business and Enterprise Development*, 15(2), 239–258. <https://doi.org/10.1108/14626000810871655>
- Taiwo, A. (2023). *Entrepreneurial financing options of female businesses and enterprise performance in Nigeria*. In: New Horizons and Global Perspectives in Female Entrepreneurship Research (pp. 75–92), Emerald Group Publishing Ltd. <https://doi.org/10.1108/978-1-83982-780-820231003>
- Terab, B.S., Umar, U.A., & Oyediji, A.N. (2023). Information technology in supply chain management: Perspectives from key actors in the Nigerian petroleum sector. *African Journal of Science, Technology, Innovation and Development*, 15(7), 955-961. <https://doi.org/10.1080/20421338.2023.2221876>
- Umar, U.A., Obadoba, Y.O., & Oyediji, A.N. (2023). Risk Management Practices in Rice Production: A Case of Smallholder Farmers of Soba Community in Northern Nigeria. *Nigerian Journal of Science and Engineering Infrastructure*, 1(1), 174–182. <https://doi.org/10.61352/2023AT07>
- Wenqi, D., Khurshid, A., Rauf, A., & Calin, A.C. (2022). Government subsidies' influence on corporate social responsibility of private firms in a competitive environment. *Journal of Innovation & Knowledge*, 7(2), 100189. <https://doi.org/10.1016/J.JIK.2022.100189>
- Xiang, D., Zhao, T., & Zhang, N. (2021). Does public subsidy promote sustainable innovation? The case of Chinese high-tech SMEs. *Environmental Science and Pollution Research*, 28(38), 53493–53506, <https://doi.org/10.1007/S11356-021-14555-5>
- Yunusa, E., Yakubu, Y., Emeje, Y.A., Ibrahim, Y.B., Stephen, E., & Egbunu, D.A. (2023). Fuel Subsidy Removal And Poverty In Nigeria: A Literature Review. *GPH-International Journal of Applied Management Science*, 4(09), 14–27. <https://doi.org/10.5281/zenodo.8409907>