ECONOMIC SUSTAINABILITY OF SMALL AND MEDIUM SCALE ENTERPRISES (SMES) IN NIGERIA: IMPLICATION OF INCREASES IN ELECTRICITY TARIFFS AND FUEL SUBSIDY REMOVAL

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ABSTRACT: *Small and medium-scale enterprises (SMEs) are the most crucial drivers of sustainable development in developing economies. This study examined the economic sustainability of SMEs in Nigeria with particular emphasis on electricity tariff increases and the removal of fuel subsidies. The study utilized a descriptive survey design, and questionnaires were distributed online to 384 respondents across the States in Nigeria. Structural Equation Modelling (SEM) and t-test were utilized for data analysis. The study results revealed that electricity tariff increases and fuel subsidy removal have adverse effects on the economic sustainability of SMEs in Nigeria. Based on the findings, the study recommended that the government should offer targeted subsidies, grants, and tax relief to SMEs, invest in energy-efficient technologies, sustain their operations, and adopt renewable energy sources, such as solar or wind power, to reduce their reliance on traditional energy sources and minimize the impact of fluctuating energy prices.*

KEY WORDS: *economic sustainability, electricity tariff, fuel subsidy, enterprises, income.*

JEL CLASSIFICATIONS: *H23, H25, L94, L26, P42, P12, P13.*

1. INTRODUCTION

Globally, small and medium-sized enterprises (SMEs) are among the most crucial drivers of sustainable development, particularly in emerging economies. These enterprises operate across various sectors, including agriculture, manufacturing, retail, and services, providing essential products and services to both urban and rural communities. Historical evidence of SMEs as instruments of economic development can

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be seen in Europe in the 19th century, where the economy was predominantly controlled by cottage industries, most of which were SMEs (Alabi et al., 2019). Additionally, the growth of SMEs played a key role in the American economic boom between the 1970s and 1980s. Similarly, India's Gross Domestic Product (GDP) experienced consistent growth and economic transformation in the 20th and 21st centuries, largely due to the success of the country's SME programs (Alabi et al., 2019). In Nigeria, SMEs form the backbone of the local economy, offering employment opportunities, fostering innovation, and making significant contributions to economic development (Ijirshar et al., 2023). Despite their importance, SMEs face numerous challenges that threaten their sustainability, including rising electricity tariffs and the removal of fuel subsidies by the Federal Government of Nigeria.

The Nigerian government has implemented several electricity tariffs increases in recent years as part of efforts to improve the power sector's efficiency and sustainability. While these tariff hikes are aimed at addressing chronic power shortages in the country, they have had adverse effects on SMEs. The increased cost of electricity has significantly increased production costs for SMEs, making it challenging for them to remain competitive in the market. Many SMEs struggle to afford higher electricity bills, leading to reduced productivity and profitability (Ajibola, 2020; Ajibola, et al., 2021). Additionally, the unreliable power supply in the country further compounds the challenges faced by these businesses, as they often have to resort to expensive alternatives such as generators to meet their energy needs, further increasing their operational costs. This reliance on generators not only adds to the financial burden of SMEs but also contributes to environmental pollution and health hazards.

In addition to electricity tariff increases, the removal of fuel subsidies in Nigeria has also significantly impacted SMEs. Fuel subsidies were traditionally seen as a way to cushion the effects of high fuel prices on businesses and consumers. However, the resulting increase in the price of petrol and diesel due to fuel subsidy removal has increased the cost of transportation, raw material prices, logistics, and the operation of backup generators, which many SMEs rely on due to the unreliable power supply (Oguche & Agbo, 2024; Oyasipe & Olukoya, 2024; Titus et al., 2024). The removal of fuel subsidies has also triggered inflationary pressures in the economy, reducing consumers' purchasing power and ultimately impacting SMEs' sales and revenue (Ilodigwe, 2023).

According to Keynesian economic theory, the increase in electricity tariffs and the removal of fuel subsidies in Nigeria would lead to higher operational expenses for small and medium enterprises (SMEs). This, in turn, would result in increased prices for goods and services, reducing disposable income and aggregate demand. A decrease in consumer spending would slow overall economic activity, posing a significant challenge to the sustainability of SMEs. This cascade effect could also lead SMEs to cut back on investments in hiring, expansion, and technology adoption. This would further reduce incomes and employment, exacerbating the economic downturn. To support the economic sustainability of SMEs in the face of such policy changes, Keynesian theory suggests that the government should intervene with measures such as tax incentives, grants, and low-interest loans. These interventions could help boost consumption and investment, enabling SMEs to maintain their operations and continue contributing to

economic growth. Thus, the primary objective of this research is to investigate the economic sustainability of SMEs, focusing specifically on the impacts of electricity tariff increases and the removal of fuel subsidies. The economic sustainability of SMEs is measured via revenue growth, cost management, debt management, customer satisfaction, staff strength, and product/service quality.

2. LITERATURE REVIEW

2.1 Conceptual Issues

Small and Medium Scale Enterprises: Small and Medium Scale Enterprises (SMEs) are typically characterized as small, independent firms with a limited number of employees. The definition of SMEs varies widely and can be based on factors such as the number of employees, capital investment, business size, and revenue. Different countries and organizations have their own criteria for defining SMEs. For instance, according to the National Council of Industries (2009), SMEs are business enterprises whose total costs, excluding land, do not exceed two hundred million naira (N200,000,000). Similarly, SMEDAN (2013) describes SMEs as enterprises employing between 50 and 199 employees, with assets totalling up to 5 million naira, but less than 500 million naira when excluding land and buildings.

Electricity tariff increase: An increase in the electricity tariff refers to the upward adjustment in the cost of electricity charged to consumers by utility companies or electricity providers. This increase is typically implemented by regulatory bodies or government agencies in response to rising costs of producing and distributing electricity.

Fuel subsidy removal: Fuel subsidy removal refers to the discontinuation of government financial support that helps to lower the cost of fuel for consumers. Subsidies are typically implemented to keep fuel prices artificially low, making energy more affordable for individuals and businesses. When these subsidies are removed, the price of fuel increases to reflect its true market value. Ilodigwe (2023) characterized fuel subsidy removal as the government's action to eliminate or reduce subsidies for petroleum products such as gasoline and diesel. In a similar vein, Mohammed, et al (2024) described it as the cessation of government financial support for fuel, resulting in price increases to market levels.

2.2 Theoretical Framework

This study is built on the Resource-Based View (RBV) theory and Keynesian Economic Theory. The Resource-Based View (RBV) theory, proposed by Jay Barney in 1991, posits that a firm's sustainable competitive advantage is derived from its unique resources and capabilities which are valuable, rare, inimitable, and non-substitutable. For SMEs, the ability to manage and optimize energy costs can be a critical resource (Oguche & Agbo, 2024). Increased electricity tariffs and fuel price hikes necessitate more efficient energy use and innovative solutions to reduce dependence on costly energy inputs (Herman, Nistor, & Jula, 2023). SMEs that can effectively manage these resources are more likely to sustain their competitive advantage and achieve long-term

economic sustainability. The increase in electricity tariffs and the removal of fuel subsidies significantly increase operational costs for SMEs, necessitating the use of valuable resources and capabilities to operate efficiently. Investing in energy-efficient technologies and developing energy management and conservation capabilities can help mitigate these costs (Oguche & Agbo, 2024). In Nigeria's competitive SME landscape, effective energy cost management is a rare and valuable resource that provides a competitive advantage, particularly through innovative solutions such as renewable energy. According to RBV theory, building a culture of innovation and strong relationships with technology providers can develop inimitable capabilities in energy management, maintaining lower operational costs and ensuring long-term sustainability. Access to reliable and affordable energy is crucial, and by diversifying energy sources and investing in alternatives, SMEs can reduce vulnerability to price fluctuations and remain resilient against external pressures.

The Keynesian economic theory, developed by John Maynard Keynes in the 1930s, emphasizes the role of aggregate demand in driving economic growth and stability. According to this theory, government policies and external economic factors that influence spending power and consumption can have significant impacts on the overall economy. In the context of increased electricity tariffs and the removal of fuel subsidies, Keynesian theory provides insights into how these changes can affect the economic sustainability of small and medium-sized enterprises (SMEs) in Nigeria. The increase in electricity tariffs and the removal of fuel subsidies increase energy costs for consumers and businesses, leading to greater operational expenses for SMEs and resulting in increased prices for goods and services. This will reduce disposable income and aggregate demand, slowing economic activity and challenging SME sustainability. Keynesian theory highlights the multiplier effect, where initial spending changes have broader economic impacts. Higher energy costs can lead SMEs to cut investments in hiring, expansion, and technology, further reducing income and employment. This cascade effect explains the significant impact on economic activity and SME sustainability. Additionally, these changes can cause cost-push inflation, eroding SME profit margins and competitiveness. To support SME economic sustainability, Keynesian theory suggests the use of government interventions such as tax incentives, grants, and low-interest loans to boost consumption and investment, helping SMEs maintain operations and contribute to economic growth.

2.3 Empirical review

The effects of fuel subsidy removal on SMEs in Nigeria have been extensively studied. Oguche and Agbo (2024) found that increased fuel prices raise production costs, disrupt supply chains, reduce customer demand, complicate pricing stability, and increase transportation expenses for SMEs in Lokoja. Similarly, Oyasipe and Olukoya (2024) noted that the removal of fuel subsidies in Lagos leads to higher operational costs, declining sales, reduced stock levels, and diminished profitability for entrepreneurial businesses. Titus, Umar, and Oyedeji (2024) confirmed the negative impact of fuel subsidy removal on small-scale industries in Nigeria, which affects their performance. Otubor et al. (2024) found that the removal of the fuel subsidy had a significantly

negative effect on small businesses. It disrupted their accounting systems, discouraged bank loan applications, and led to a decline in business performance and customer patronage. Ilodigwe (2023) observed that SMEs in Anambra State face increased production costs, reduced profits, lower sales, and financial strain due to subsidy removal. Ohonba and Ogbeide (2023) highlighted that while fuel subsidy removal has short-term negative impacts on businesses and the economy, it offers long-term benefits such as improved fiscal stability and economic diversification. Edet (2023) found that fuel price hikes adversely affect SMEs, leading to issues with employment issues, inflationary pressures, supply chain disruptions, and increased operating costs.

The impact of electricity distribution and pricing on SMEs has been studied in various regions. Giwa, Rikwetishe, and Abomchi (2023) found that a stable and affordable power supply positively affects SME performance in southern Taraba State. Conversely, Ayivi et al. (2022) reported that higher electricity prices negatively impact the growth and development of SMEs in the Ashanti Region of Ghana. Similarly, Moseki (2019) observed that increased electricity tariffs adversely affect the performance of small, medium, and micro enterprises in the Rustenburg area. Finally, Olaoye and Talabi (2018) also discovered that high electricity tariffs and reliance on self-generated power negatively impact business performance in Nigeria.

3. METHODOLOGY

A descriptive survey design was employed for the study, as it involved collecting data and systematically describing the typical features or characteristics of a certain community based on a sample of individuals or items considered representative of the entire group. The survey covered a variety of enterprises from different states across Nigeria, capturing a diverse array of industries. These enterprises were geographically distributed across several locations. The survey covered states from all six geopolitical zones in Nigeria, ensuring comprehensive and diverse representation. In the North-Central zone, states like Abuja, Benue, Kogi, Kwara, Nasarawa, and Niger were included, representing the political, agricultural, and educational hubs of the region. From the North-East zone, Bauchi, Gombe, and Taraba were surveyed, highlighting areas known for agriculture and natural resources. The North-West zone included Kano, Kebbi and Sokoto, known for their commercial, cultural and historical significance. In the South-East, Abia, Ebonyi and Enugu were covered, representing regions important for commercial, industrial hub, agriculture and education. The South-South zone included Bayelsa, Cross River and Rivers, key states for tourism and oil production. Finally, the South-West zone encompassed Ekiti, Lagos, Oyo, and Ogun, which are crucial for their commercial, financial, and educational contributions. This extensive geographical spread ensures that the survey captures the diverse SMEs in Nigeria, making the responses broadly representative of the entire country.

The sample size for this study was selected by applying the formula developed by Cochran (1977) for calculating sample size when the population is infinite or unknown. Thus, the formula is:

$$n = \frac{Z^2 pq}{e^2}$$

Where, n_0 represents the sample size, z = the selected critical value of desired confidence level, p = the estimated proportion of an attribute that is present in the population, q = (1 - P) and e = the desired level of precision. Calculation sample size at 95% confidence level (5% significance level), p = 0.05 and hence q =1 -0.05 = 0.05; e = 0.05; z =1.96; thus,

$$n = \frac{(1.96)^2(0.6)(0.4)}{(0.05)^2} = \frac{0.9604}{0.0025} = 384.16$$

The data for this research was collected using a self-administered questionnaire administered online as the primary source. This questionnaire utilized a five-point Likert scale. The scale ranged from "strongly agree" to "strongly disagree," with the options coded as 5 = 'Strongly Agree,' 4 = 'Agree,' 3 = 'Neutral,' 2 = 'Disagree,' and 1 = 'Strongly Disagree.' The simple random sampling was used in selecting respondents from each local government to avoid biasness.

The study employed the Structural Equation Modelling (SEM) to assess the impact of electricity tariff increase and fuel subsidy removal on the economic sustainability of SMEs in Nigeria. The SEM is structured to incorporate these factors as determinants of economic sustainability of the SMEs. The approach This analytical approach can be stated as follows:

$$ES_i = f\left(ET_i, FS_i\right) \quad (1)$$

where ES represents economic sustainability (measured by revenue growth, cost management, debt management, customer satisfaction, staff strength, and product/services quality), ET denotes electricity tariff, while FS represents fuel subsidy removal. The measures of electricity tariff increase for SMEs can be summarized as follows: there has been a substantial rise in electricity tariffs (ET1), the increase has hindered the ability to reinvest in growth and expansion (ET2), the SMEs have raised their product or service prices due to the higher electricity costs (ET3), the cost of operation has surged as a direct result of the higher tariffs (ET4), the ability to manage debt has been adversely affected as a direct result of the higher tariffs (ET5), there has been a decline in revenue generation as a direct result of the higher tariffs (ET6), the increased electricity costs have negatively impacted customer patronage due to the higher electricity costs (ET7), the higher tariffs have forced a reduction in the number of staff due to the higher electricity costs (ET8), the potential to hire additional personnel has been diminished due to the higher electricity costs (ET9), and there has been a decline in the quality of services or products offered due to the higher electricity costs (ET10).

The measures of fuel subsidy removal for businesses are: there is a substantial rise in the price of petroleum products due to the removal of the fuel subsidy (FS1), the removal has hindered the ability to reinvest in growth and expansion (FS2), businesses have raised their product or service prices due to the fuel subsidy removal (FS3), the cost of operation has surged as a direct result of the subsidy removal (FS4), the ability to manage debt has been adversely affected due to the fuel subsidy removal (FS5), there has been a decline in revenue generation due to the fuel subsidy removal (FS6), the

removal of the subsidy has negatively impacted customer patronage (FS7), businesses have been forced to reduce staff numbers due to the fuel subsidy removal (FS8). the potential to hire additional personnel has been diminished due to the fuel subsidy removal (FS9), and there has been a decline in the quality of services or products offered due to the removal of fuel subsidy (FS10).

For the economic sustainability (ES), the study measures it with the following indicators: The measures of economic sustainability (ES) for SMEs as used in the study are: revenue growth=consistent revenue growth over the past three years (ES1), cost control=effective control and reduction of operational costs (ES2), debt management=maintenance of a manageable level of debt (ES3), customer satisfaction=high customer satisfaction with the quality of products/services (ES4), workforce stability=a stable and growing workforce (ES5), and quality standards=consistent quality of products/services that meets industry standards (ES6). These expressions can be presented in the structural equation model (SEM) as:

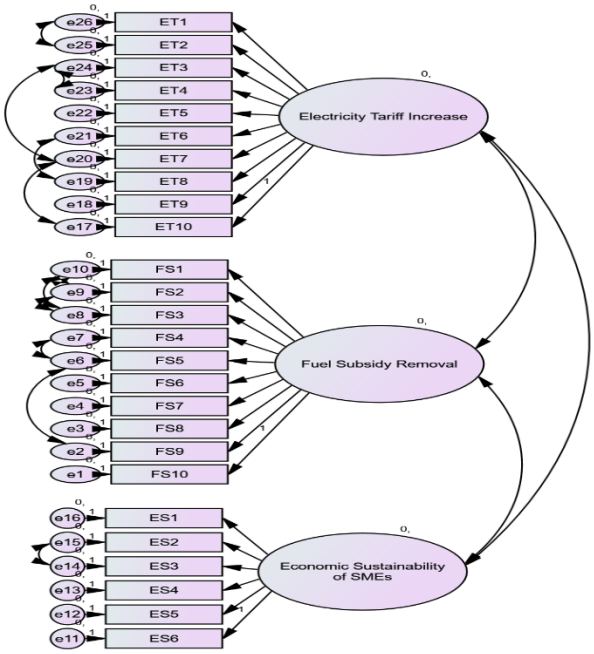

Figure 1. CFA Model

In confirmatory factor analysis (CFA), the addition of covariances and the removal of indicators are common steps to improve the model's overall fit and explanatory power. To enhance the model's overall fit, additional covariances were incorporated between specific error terms. These covariances reflect the understanding that certain indicators might share unique variances not explained solely by their respective latent constructs. The specific covariances added are: for economic sustainability measures: e14(ES3) and e15(ES4) which indicates a shared variance between manageable debt levels and customer satisfaction, suggesting that financial

stability might influence customer perceptions. The covariance between e14 and e15 is justified because financial stability often influences customer satisfaction. If a business entity maintains manageable debt, it likely allocates resources efficiently, leading to higher customer satisfaction.

For the fuel subsidy removal measures: the added covariance between e2(FS9) and e6(FS6) reflects the relationship between employment potential and revenue decline, implying that a decrease in revenue affects hiring capabilities, e6(FS5) and e7(FS4) shows a connection between debt management difficulties and increased operational costs due to subsidy removal, e8(FS3) and e9(FS2) demonstrates the link between product/service price increase and hindered reinvestment for growth, e8(FS3) and e10(FS1) highlights the impact of increased product/service prices due to the initial price hike in petroleum products, and e9(FS2) and e10(FS1) further emphasizes the connection between reinvestment challenges and the initial subsidy removal impact. The covariances reflect the intertwined nature of financial strain, operational costs, and employment potential. When subsidies are removed, businesses face increased costs, which can reduce revenue, limit hiring potential, and force price adjustments, creating a network of interconnected impacts.

For the electricity tariff increase measures, the e17(ET10) and e20(ET7) shows a relationship between service/product quality decline and reduced customer patronage due to increased tariffs, e19(ET8) and e21(ET6) indicates a link between staff reduction and revenue decline caused by higher electricity costs, e20(ET7) and e24(ET3) highlights the effect of reduced customer patronage on product/service price increases, and e25(ET2) and e26(ET1) reflects the direct impact of electricity tariff increase on reinvestment for growth. The covariances highlight the cascading effects of increased operational costs on various aspects of business performance, such as customer patronage, revenue, and service quality. These relationships show how an increase in tariffs can create multiple, interrelated challenges for businesses.

Certain indicators were removed from the model due to their factor loadings or weights being less than the threshold of 0.7. The indicators with low factor loadings contribute less to their respective constructs and can reduce the model's overall fit and validity. The removed indicators are: ET2 (he increases in electricity tariff has affected the ability to reinvest for growth and expansion), ET7 (the increased cost of electricity has affected customer patronage), FS2 (the removal of the fuel subsidy has affected the ability to reinvest for growth and expansion, FS3 (the price of products/services has increased due to the fuel subsidy removal). ET2 and ET7 were removed due to low factor loadings, indicating they do not strongly represent the latent construct of the impact of electricity tariff increases. Removing these indicators helps refine the model to include only the most relevant and impactful measures. Similarly, FS2 and FS3 showed less significant factor loadings, suggesting that their contribution to understanding the impact of fuel subsidy removal is limited. By excluding these indicators, the model improves in clarity and explanatory power, focusing on the most critical factors. The adjusted SEM becomes (see figure 2).

The Structural Equation Modelling (SEM) is an advanced statistical technique that integrates multiple regression analysis and factor analysis to evaluate complex relationships among observed and latent variables. It is particularly suitable for assessing

the impact of electricity tariff increases and fuel subsidy removal on economic sustainability in Nigeria. This is because it allows for the concurrent examination of multiple relationships among observed and latent variables. This is essential for our study, which involves various interconnected factors such as operational costs, customer satisfaction, workforce stability, and their combined impact on economic sustainability. More so, it accounts for measurement errors in observed variables.

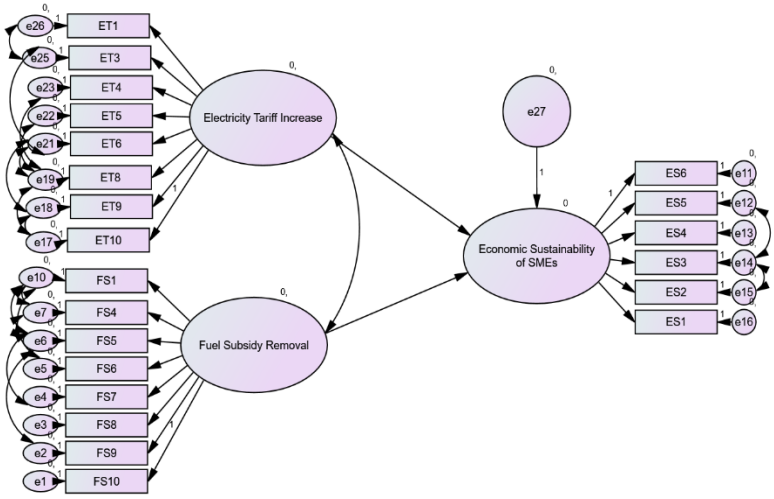

Figure 2. The SEM assessing the impact of Electricity Tariff increase and Fuel Subsidy Removal

Given that indicators of economic sustainability, electricity tariff impacts, and fuel subsidy impacts are derived from survey data, SEM's ability to include measurement errors enhances the accuracy of our model. The study involves latent constructs like "economic sustainability," "impact of electricity tariff increase," and "impact of fuel subsidy removal." The model can effectively measure these constructs through multiple observed indicators, providing a robust estimation of the underlying concepts. Furthermore, the model is statistically identifiable by having more observed variables than latent variables and ensuring all necessary parameters are estimable. The study also used estimation methods like Maximum Likelihood (ML) to derive parameter estimates, ensuring the model parameters are the best possible estimates given the observed data. The study further assessed the overall model fit using indices such as Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Chi-square statistics. Thus, the Structural Equation Modelling (SEM) is a suitable and powerful tool for assessing the impact of electricity tariff increases and fuel subsidy removal on economic sustainability of SMEs in Nigeria.

4. Results and Discussion

Result on the significant difference in the average monthly income of SMEs before and after electricity tariffs increase and fuel subsidy removal in Nigeria is presented in Table 1. The income of SMEs include: sales revenue (income from selling

goods or services), service fees (earnings from providing services), interest income (money earned from investments or savings) rental income (earnings from leasing out property or equipment) and grants and subsidies (financial support from government programs or other organizations). The t-test results are presented in Table 1.

Table 1. Paired t – Test result of income of SMEs before and after electricity tariffs increase and fuel subsidy removal in Nigeria

Items	Mean	N	Std. Deviation	t	df	Sig. (2-tailed)
Average monthly income before the increase in electricity tariff and fuel subsidy removal:	2,195,797	384	2337530	6.404	383	0.000
Average monthly income after the increase in electricity tariff and fuel subsidy removal:	1,912,359	384	2091443			

Source: Extracts from SPSS Output

The paired t-test statistic result showed an average monthly income of N2,195,796.88 and N1,912,359.38 of SMEs before and after electricity tariffs increase and fuel subsidy removal in Nigeria respectively with the mean difference of N283,437.50. The result also revealed a t-test statistics value of 6.404 and probability value of 0.0000<0.05. The null hypothesis that the mean difference between the average monthly income of SMEs before and after electricity tariffs increase and fuel subsidy removal in Nigeria is zero is rejected at 5% level of significance. The paired t-test results reveal a statistically significant decrease in the average monthly income following the increase in electricity tariff and the removal of the fuel subsidy. This indicates that this decrease is highly significant, suggesting that the policy changes have had a substantial negative impact on SMEs' income. The implications of these findings are far-reaching, as they highlight the economic strain placed on SMEs due to the increased costs associated with higher electricity tariffs and the absence of fuel subsidies. However, there is high standard deviation in the average monthly income, both before and after the increase in electricity tariff and fuel subsidy removal, indicates a wide variability in income among the SMEs in the sample.

The effect of electricity tariffs increase and fuel subsidy removal on economic sustainability of small and medium scale enterprises was also examined using structural equation modelling and the results are presented in Table 2.

The estimated standardized coefficient of electricity tariffs increase on economic sustainability of SMEs in Nigeria was partially significant at the 5% level. However, the unstandardized coefficient was significant at the 5% level. This is theoretically plausible. This coefficient reflects the strength and direction of the relationship between electricity tariffs increase and economic sustainability of SMEs, indicating a negative relationship between the variables. This means that a one percent increase in electricity tariff would lead to a 0.281% decrease in SMEs' economic sustainability. This finding is consistence with the findings Ayivi et al. (2022) and Olaoye and Talabi (2018).

Table 2. SEM Results on the Impact of Electricity Tariffs Increase and Fuel Subsidy Removal on Economic Sustainability of SMEs

	Unstandardized Estimates	Standardized Estimates	S.E.	C.R.	P	Lower	Upper	P
ES<--- ET	-0.194	-0.281	0.09	-2.149	0.032	-0.543	0.007	0.054
ES<--- FS	-0.29	-0.615	0.062	-4.653	***	-0.899	-0.354	0.001
FS10 <---FS	1	0.923				0.908	0.939	0.001
FS9<---FS	0.623	0.921	0.019	32.042	***	0.901	0.938	0.001
FS8<---FS	0.833	0.961	0.022	38.142	***	0.953	0.967	0.001
FS7<---FS	0.869	0.966	0.022	39.371	***	0.958	0.973	0.001
FS6<---FS	0.669	0.93	0.02	33.223	***	0.909	0.947	0.001
FS5<---FS	0.641	0.932	0.019	33.444	***	0.914	0.945	0.001
FS4<---FS	0.679	0.905	0.022	30.475	***	0.886	0.924	0.001
FS1<---FS	0.664	0.911	0.021	30.974	***	0.888	0.93	0.001
ES6<--- ES	1	0.901				0.884	0.916	0.001
ES5<--- ES	1.347	0.955	0.04	33.675	***	0.945	0.965	0.001
ES4<--- ES	1.552	0.974	0.043	35.812	***	0.968	0.98	0.001
ES3<--- ES	1.104	0.932	0.035	31.179	***	0.917	0.945	0.001
ES2<--- ES	1.136	0.946	0.035	32.637	***	0.934	0.956	0.001
ES1<--- ES	1.151	0.887	0.042	27.111	***	0.864	0.906	0.001
ET10<--- ET	1	0.834				0.803	0.862	0.001
ET9<--- ET	1.039	0.922	0.037	28.086	***	0.908	0.933	0.001
ET8<--- ET	1.058	0.952	0.039	26.868	***	0.938	0.963	0.001
ET6<--- ET	0.909	0.929	0.036	25.211	***	0.916	0.941	0.001
ET5<--- ET	1.091	0.982	0.039	28.212	***	0.975	0.988	0.001
ET4<--- ET	1.229	0.929	0.049	25.194	***	0.914	0.942	0.001
ET3<--- ET	1.221	0.976	0.044	27.814	***	0.968	0.982	0.001
ET1<--- ET	1.201	0.991	0.042	28.817	***	0.987	0.995	0.001
Model Fit Indices: CMIN=3971.656 (P=0.000), NFI=0.910, RFI=0.869, IFI=0.918, TLI=0.878, CFI=0.917, RMSEA=0.028, Standardized RMR = 0.0469								

Source: Extracts from SPSS Amos

Furthermore, the estimated standardized coefficient of fuel subsidy removal on the economic sustainability of SMEs in Nigeria was significant at the 5% level of significance. This is theoretically plausible. This coefficient reflects the strength and direction of the relationship between fuel subsidy removal and the economic sustainability of SMEs, indicating a negative relationship between the variables. This means that a one percent increase in fuel subsidy removal would lead to a 0.615% decrease in the economic sustainability of SMEs. This finding conforms to the findings of Oguche and Agbo (2024), Oyasipe and Olukoya (2024), Titus, Umar, and Oyedeji (2024), Otubor et al. (2024), Ilodigwe (2023), Ohonba and Ogbeide (2023) and Edet (2023).

The results in Table 2 provide a chain of adverse effects on Small and Medium-sized Enterprises (SMEs) stemming from an increase in electricity tariffs and fuel subsidy removal. These policy changes have significantly escalated the operational costs for SMEs, compelling them to raise the prices of their products to offset the increased expenses (Oguche & Agbo, 2024; Oyasipe & Olukoya, 2024; Ilodigwe, 2023). Despite their efforts to maintain product quality, price increases have led to a noticeable decline

in customer patronage (Otubor et al. 2024; Ilodigwe, 2023). Customers, sensitive to higher prices, have reduced their purchases, resulting in decreased sales volumes and as such adversely affecting the overall business performance of SMEs.

In response to the drop in customer patronage and the ongoing pressure of heightened operational costs, SMEs have been forced to adopt further cost-cutting measures. A significant step taken by many SMEs has been the reduction of their workforce (Edet, 2023). By downsizing their staff, SMEs aim to manage their expenses more effectively, although this often impacts their operational efficiency and employee morale. Additionally, SMEs have reduced the quantity of products they produce, aligning production levels with the diminished demand and striving to control costs in a challenging economic climate.

The combined effect of reduced customer patronage and lower production levels has led to a significant decrease in the revenue generated by SMEs (Oyasipe & Olukoya, 2024). This decline in revenue has created a ripple effect on other critical aspects of their business operations. With reduced income, SMEs face increasing difficulty in reinvesting in their businesses, which is essential for sustaining operations and pursuing growth opportunities. The lack of sufficient reinvestment hampers SMEs ability to expand and capitalize on new business opportunities, thereby significantly affecting their market potential for long-term growth and expansion. Consequently, SMEs struggle to cope with financial pressures and as such device ways to remain in the market in the face of rising operational costs.

To sustain their operations amidst these financial pressures, some SMEs have resorted to borrowing funds. While borrowing provides a temporary lifeline, it also introduces new challenges (Ilodigwe, 2023). The additional debt incurred by SMEs further placed strain on the already existing limited financial resources, making it difficult for them to service their debts. The challenge of managing debt repayments, coupled with reduced revenues, exacerbates the financial vulnerability of SMEs. This precarious financial position increasingly challenges SMEs stability in operations, growth and strives for long-term sustainability.

The goodness of fit of the structural equation model (SEM) was evaluated using various decision rule thresholds. The chi-square (CMIN) value was significant ($p < 0.05$), indicating a significant difference between the observed and model-implied covariance matrices. Although a nonsignificant chi-square is desirable, it is rare in practice, especially for large sample sizes such as this study. The Normed Fit Index (NFI) was 0.910, suggesting a good fit of the model to the data. The Incremental Fit Index (IFI) was 0.918, indicating a good fit. The Comparative Fit Index (CFI) was 0.917, indicating a good fit of the model to the data. The relative fit index (RFI) and Tucker–Lewis index (TLI) were 0.869 and 0.878, respectively, which are below the acceptable thresholds, suggesting that the model fit could be improved. The Root Mean Square Error of Approximation (RMSEA) of 0.028 is slightly above the threshold for a good fit but still within the range for a reasonable fit, suggesting that the model approximates the data relatively well. Again, the Standardized Root Mean Square Residual (SRMR) of 0.0469 again suggested an excellent fit of the model to the data.

Most SMEs reported investing in energy-efficient technologies to counteract the effects of rising electricity tariffs and fuel subsidy cuts. Their coping strategies included

investing in alternative energy sources such as solar, wind, and biofuels to lessen reliance on grid electricity, adopting practices like using LED lighting, power-saving equipment, and efficient machinery implementing austerity measures, reducing production size, cutting costs by employing part-time staff, and consolidating production areas, installing solar panels and generators to enhance energy efficiency and reduce costs, and hiring staff from nearby locations to minimize transportation expenses. These strategies collectively help SMEs manage increased energy costs while maintaining operational efficiency.

5. CONCLUSION AND POLICY RECOMMENDATIONS

The increase in electricity tariffs and the removal of fuel subsidies have substantially raised the operational costs for SMEs, triggering a domino effect. As a result, SMEs have increased product prices, leading to a decline in customer patronage despite maintaining quality. To cope with these effects, many SMEs have adopted retrenchment and reduced production levels, further impacting revenue generation. This decline in revenue has made it difficult for SMEs to reinvest which impedes growth and expansion opportunities. Additionally, some SMEs resort to borrowing to sustain operations, which exacerbates their financial strain, making debt repayment challenging and further destabilizing their businesses. Thus, the study recommended the following:

The government should provide targeted subsidies or grants to SMEs to offset increased operational costs from higher electricity tariffs and the removal of fuel subsidies. Additionally, offering tax relief or temporary tax exemptions can alleviate financial burdens, enabling SMEs to invest in energy-efficient technologies and sustain their operations.

SMEs should adopt renewable energy sources, such as solar or wind power, to reduce their reliance on traditional energy sources and minimize the impact of fluctuating energy prices. This approach can lead to more stable and predictable energy costs, enhancing financial stability.

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