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Electricity Tariff Conundrum: Government Regulations and Market Forces on Households and Businesses in Rivers State, Nigeria (2018–2024)

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ABSTRACT

The objective of this study is to assess the economic effects of increasing electricity tariffs in Rivers State, Nigeria for the years 2018 – 2024 in the context of consumers, as well as the micro, small, and medium enterprises (MSMEs). A survey design strategy was employed, and 400 questionnaires were administered to the senior and junior Local Government areas based on purposive sampling (385 were deemed usable). Descriptive statistics were analysed using SPSS, with the mean decision benchmark set at 2.50. Sustained tariff increase results in an increase in the level of inflation, which in turn decreases the level of disposable income (the amount of income available for spending or saving after taxes have been paid) available to consumers, increases the cost of operation in an MSME, reduces the levels of investment or business expansion, and increases the levels of unemployment (no job available for an individual who is capable of working and actively seeking work). An average mean score of 3.4 translates to a significant level of agreement (economic conditions consisting of the goods, services, and money of a region or country) on worsened conditions as a result of increased levels of tariffs. While tariff reform is intended to improve the operational efficiency of the market, the lack of reliable supply and the absence of income growth increase the negative effects on welfare. The study proposes the following: restructuring tariffs based on income, tax relief, expansion of renewable sources of energy, and providing the market with more social protection and a transparent regulatory framework.

Keywords: Electricity tariff; Household welfare; Business performance; Regulatory reform; Rivers State; Nigeria

Introduction

Electricity tariffs in Nigeria have witnessed a consistent upward trend since 2018. Adequate and affordable power supply is vital to national economic growth, as it supports key sectors such as manufacturing, telecommunications, healthcare, and education. However, Nigeria's persistent electricity crisis has driven widespread reliance on costly alternatives such as private generators. Between 2018 and 2021, electricity rates increased significantly from approximately ₦1,000 for 31.5 units to ₦1,000 for 12.5 units of electricity (Udoiyang, 2024). By April 2024, the Nigerian Electricity Regulatory Commission (NERC) raised tariffs for Bands A and B from ₦68/kWh to ₦225/kWh, reducing ₦1,000 worth of power to just 4.1 units (Udoiyang, 2024). This adjustment, justified under the policy of subsidy removal and free-market principles, was intended to achieve stability in power generation and distribution.

However, these rising tariffs have deepened hardship among households and businesses across Nigeria. In Rivers State, where electricity is crucial for industrial activity, these increases have triggered higher production costs, business closures, and declining living standards. Many households now struggle to cope with escalating energy costs amid stagnant wages and high unemployment. Studies suggest that over 70% of Nigerians live below acceptable living standards, lacking sufficient resources to meet basic needs (Boniface et al., 2014). Against this backdrop, this study investigates how electricity tariff increases have affected households and businesses in Rivers State between 2018 and 2024.

Theoretical Framework

Energy Rebound Theory and Cost-Pass-Through Mechanism

This study is primarily based on the Energy Rebound Theory (Lu, 2017) and supplemented by the Cost-Pass-Through Pricing Theory. While the Energy Rebound Theory discusses the energy efficiency paradox, the focus here shifts towards understanding tariff restructuring and its impact on economic behavioural shifts, particularly within the Nigerian landscape.

Nevertheless, the experience of Rivers State goes beyond rebound effects and is best explained by the Cost-Pass-Through Theory. The theory argues that input price increases (in this case, electricity tariff increases) are fully reflected in the end prices of goods and services to the consumer. In the context of a self-generation reliant economy, coupled with a deficient grid power supply, tariff increases translate to higher surmountable costs of production which businesses are bound to pass on to the consumer. This scenario supports economic inflation. Therefore, a tariff increase in Rivers State is not solely a determinant of energy consumption but a fundamental contributor to macroeconomic instability.

Empirical Literature Review

Abigail et al. (2024) examined electricity pricing and household welfare in Lagos State. Using survey data from 383 households in Ayobo, Iyana-Ipaja, and Ikeja, the study found that most respondents lacked understanding of electricity pricing mechanisms, and recent tariff adjustments negatively affected household welfare. The researchers recommended awareness campaigns by electricity distribution companies to improve consumer understanding of pricing structures. Udoiyang (2024) investigated erratic electricity supply and its effects on small and medium enterprises (SMEs) in Akwa Ibom State. Using a sample of 400 respondents, the study found that reliable electricity significantly improved SME productivity, profitability, and employment while reducing costs associated with alternative energy sources. The study recommended prioritizing stable electricity supply to enhance regional economic performance. Ezech et al. (2020) analysed the relationship between household electricity consumption and standard of living in Nigeria from 1981 to 2017 using the ARDL Bounds Test. Their findings indicated a positive long-run relationship between electricity consumption and indicators such as education, income, and life expectancy. The study concluded that improved electricity access enhances living standards and recommended increased power generation and distribution. Adie et al. (2019) studied the effects

of electricity tariffs on SMEs in North Central Nigeria between 2014 and 2018. Employing multiple regression analysis, the authors found that both two-part and power-factor tariffs significantly influenced SME performance. The study recommended that SMEs continue paying electricity charges to sustain operations while advocating better tariff structures. Olaoye and Talabi (2018) examined how electricity tariffs and self-generated power costs affected business performance in Ondo State. Using OLS regression analysis, the study revealed that high electricity tariffs and generator expenses significantly reduced productivity and profit margins. They recommended government tax incentives for businesses relying on self-generated power to mitigate operational costs. Salehi et al. (2017) explored the impact of electricity price hikes on rural welfare in Iran using the Almost Ideal Demand System (AIDS) model. Their findings revealed that electricity had low price elasticity, indicating limited substitution possibilities and a substantial burden on household budgets. Tapsin (2017) analysed the relationship between industrial value-added and electricity consumption in Turkey (1970–2015) using the Johansen cointegration and error correction model. The study identified a long-term bidirectional relationship between industrial output and electricity use, confirming electricity's critical role in economic expansion. Boniface and Chudi (2014) found that high electricity tariffs in developing countries lead to inflation, unemployment, and industrial decline. They emphasized that Nigeria's inability to harness abundant natural resources for power generation has hindered national development and worsened poverty. Riker (2012) applied the price elasticity theory to assess energy prices and U.S. manufacturing exports (2002–2006). The study found a negative correlation between high energy costs and export performance, urging governments to subsidize industrial energy usage. Babatunde and Enehe (2011) identified key determinants of household electricity demand in Nigeria, including household size, number of rooms, and hours of power supply. Their findings underscored electricity's essential role in meeting household needs. While numerous studies have examined electricity consumption and tariffs across Nigeria, there remains a gap in understanding their specific effects on households and businesses in Rivers State. This study fills that gap.

Methodology

The effects of the increase in electricity tariffs on households and businesses in Rivers State, spanning the years 2018-2024, were analysed using cross-sectional survey research methodology.

The targeted study population includes residents and business owners across the 23 Local Government Areas of Rivers State, with a total population of 5,198,716 (National Population Census, 2006). Using the Taro Yamane (1973) formula: $n = N/1+N(e)^2$. A 5% margin of error gave a sample size of 400 respondents. Of 400 questionnaires distributed, 385 were retrieved and considered valid, translating to a response rate of 96.25%. This further strengthens the findings.

A purposive sampling method was used to select:

- Obio/Akpor (Rivers East)
- Bonny (Rivers South-East)
- Oyigbo (Rivers West)

These LGAs were chosen for their economic diversification, presence of industries, and different levels of electricity usage. Data was collected through a structured questionnaire titled Electricity Tariff and Its Impact on Households and Businesses (E.T.H.B.). The tool had 14 items on a Likert scale. The reliability of the tool was tested using the Cronbach's Alpha method. The reliability coefficient was 0.87, which is acceptable and indicates a high level of internal consistency.

Data were analysed using SPSS (Version XX). Descriptive statistics (mean and frequency distribution) were used. A criterion mean of 2.50 was used as the cut-off point for decision making.

Data presentation

The data was presented based on the research objectives. Primary and secondary data were reviewed and questionnaire was distributed based on senatorial district, local government area, specific demographic characteristics such as age, gender, marital status, business type and all other demographic variables are calculated using percentages.

Table 1. Demographic characteristics and business type of the respondents

Demographic Characteristics	Frequency	Percentage
Gender		
Male	172	44.7
Female	213	55.3
Total	385	100
Marital Status		
Single Parent	107	27.8
Married	278	72.2
Total	385	100
Age Range		
25-35 years	69	17.9
36-45 years	93	24.2
46-55 years	105	27.2
56- years and above	118	30.6
Total	385	100
Highest Educational Qualification		
FSLC/WAEC	87	22.6
NCE/ND	121	31.4
HND/BSC	145	37.6
MSC/PHD	32	8.3
Total	385	100
Business Type		
Hospital & School	31	8.1
Welding	36	9.4
Bakeries	17	4.4
Factories	62	16.1
Eateries	29	7.5
Cold Room	32	8.3
Recording & Photo Studios	17	4.4
Drinking Bars	32	8.3
Timbers	12	3.1
Hotel	64	16.6
Super Market/Provision Stores	53	13.7
Total	385	100

Source: Survey, 2025.

In Table 1, we can see a synopsis of the demographics and business types of the respondents. Among the 385 respondents, a high percentage are married men and women, accounting for 72.2% of the total. The gender breakdown was found to be 213 females (55.3% of the total) and 172 males (44.7% of the total). In terms of age, the most respondents were 56 and above, with 118 (30.6%). In terms of educational background, those with a BSC/HND had the most respondents (145/37.6%), while those with an MSC/PHD had the fewest (32/8.3%). Among the different types of businesses, the most common is hotel business, with (64/16.6% of the total) operating in this sector. The lowest number was found in the timber business, (12/3.1% of the total).

Table 2. Respondents' Perceptions on increase in electricity tariff and its impact on household and businesses in Rivers State, Nigeria.

S/N	Factors	SA	A	D	SD	Mean	Decision
1	It worsens inflation.	176	127	45	37	3.2	Agreed
2	It stifles small and medium enterprises.	98	245	18	24	3.1	Agreed
3	Increase in electricity tariff forces manufacturers out of business.	168	207	2	8	3.4	Agreed
4	Loss of job.	193	124	36	32	3.2	Agreed
5	Social unrest.	154	179	23	29	3.2	Agreed
6	It leads to poverty.	201	84	57	43	3.2	Agreed
7	Increase in the cost of living.	130	165	26	64	3.0	Agreed
8	Increase in operational cost for business.	146	128	72	39	3.0	Agreed
9	Reduction of profit.	178	165	29	13	3.3	Agreed
10	Hinders/discourages investors.	154	181	10	40	3.2	Agreed
11	Increase in the price of goods and services.	143	173	33	36	3.1	Agreed
12	It diminishes the quality of household life.	118	202	35	30	3.1	Agreed
13	Reduction of household disposable income.	127	195	24	39	3.1	Agreed
14	It brings about decrease in output.	134	167	73	11	3.1	Agreed
	Aggregate Mean					3.4	Agreed

Source: Survey, 2025.

The results of the study on increase in electricity tariff and its impact on household and businesses in Rivers State, Nigeria are shown in Table 2. From the table above, it can be deduced that all the respondents in Rivers State agreed that increase in electricity tariff has a negative impact on household and businesses. The aggregate mean criterion is 3.4 which is above the mean criterion of 2.50 indicating that all the respondents anonymously agreed that increase in electricity tariff is one of the major causes of poverty, hardship, unemployment, loss of job, social unrest and business failure in Rivers State, Nigeria.

Research Findings

Cancellation of policies included in the Tariff Review Regulation has devastating economic impacts on the household and business economy of Rivers State in the short and long term.

First of all, the study proves that the higher the tariff, the greater the increase in inflation (Mean = 3.2). This is a classic case of cost-push inflation. With increasing electricity prices, businesses have no choice but to increase prices and, therefore, inflation. This is supported by Boniface and Chudi (2014) who state that during developing economies, high electricity tariffs aggravate inflation.

Second, tariffs stifle the growth of SMEs (Mean = 3.1). This is most concerning in the case of Rivers State given that SMEs are the primary sources of employment. Many sectors (including cold rooms, welding, baking, and hospitality) use a lot of electricity in their operations. With the increasing tariffs and unreliable electricity, firms are compelled to use generators, increasing their operational costs by two (2) folds.

Third, the increase in income levels of the household (Mean = 3.1) is an illustration of the welfare contraction effect. People have less money to pay for food, health, and education. This conforms to Ezech et al. (2020) that links electricity access to the poor living standards of people.

The 3.3 average score for reduction in profits and 3.2 for discouragement of investors is reflective of wider macroeconomic impacts. Tariff instability causes uncertainty and erodes investor confidence and, subsequently, the amount of investment in energy-using sectors.

It is also noteworthy that the average of 3.4 shows almost complete agreement among the respondents. Such unanimity is a proof of the impact of argument that, in the context of supply unreliability, tariff reforms increase economic problems more than they enhance economic efficiency.

Conclusion

Between 2018 and 2024, the increase of electricity tariffs devastatingly impacted the economic conditions of households and businesses in Rivers State. Although the intended outcomes of tariff modifications, in relation to the electricity sector of Nigeria, include market efficiency and cost-recovery, the setting of inconsistent supply and stagnant income has a detrimental impact on the welfare of the people. In the case of Rivers State, electricity tariff hikes have compounded the existing problems. Increased business operational costs and decreased profitability have led to decreased purchasing power of households, discouraged investors, resulted in higher unemployment rates, and increased levels of economic inflation. Therefore, tariff reforms without simultaneous improvements in supply reliability and increase in income levels will exacerbate socio-economic inequalities.

Recommendations

1. Structure tariffs by income brackets: Regulators should implement progressive tariff systems that are controlled by income level and defined consumption thresholds.
2. Supply-Performance Based Tariff Adjustment: Tariff increases should be linked to demonstrable increases in supply hours and reliable service.
3. Tax Credits for SMEs: Tax-deductions and energy rebates should be offered to SMEs with high electricity consumption.
4. Incentives for Renewable Energy: Promote solar mini-grids and standalone power projects in Rivers State.
5. Billing System Transparency: Estimated billing related to smart meters should be resolved by electricity distribution companies.

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