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Experimental Examination of Nigerian Stakeholders' Views on Electricity Pricing Process

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Abstract

Sustainable electricity pricing is still a key issue, particularly in developing economies such as Nigeria, where affordability, accessibility, and reliability of supply are vital to socioeconomic progress. This research explores stakeholder perceptions of the Multi-Year Tariff Order (MYTO) pricing regime, specifically its effectiveness in enhancing sustainable electricity provision. It evaluates the impact of electricity pricing acceptability, accessibility, and availability on consumer satisfaction and stakeholders' perceived sustainability of the MYTO model. A cross-sectional survey design was used and data were gathered from 93 electricity stakeholders, including residential consumers, with a structured questionnaire containing Likert-scale items. Multiple linear regression analysis carried out using SPSS showed that all three factors-acceptability, accessibility, and availability have a positive and significant effect on consumer satisfaction ($p < 0.001$). Among the three, accessibility exhibited the highest predictive power (β =0 .640), followed by availability ($\beta = 0.467$), and then acceptability ($\beta = 0.368$). The model accounted for 42.0% of the variation in stakeholder satisfaction ($R^2 = 0.420$), demonstrating a significant impact of service quality facets on public opinion. These results confirm that sustainable electricity pricing should be grounded not just on cost recovery mechanisms but also on pricing transparency, ease of access, and reliability of supply. The research provides appropriate policy implications for energy reform in Nigeria and comparable developing contexts, calling for more inclusive, transparent, and infrastructure-sensitive pricing strategies in order to engender public confidence and ensure long-term sustainability in the electricity industry.

Keywords: *Electricity Pricing, Consumer Satisfaction, Accessibility, Availability, Pricing Acceptability, Nigeria, Sustainable Electricity, MYTO*

JEL Classification: Q41, Q48, L94, D12.

1. Introduction

Electricity price reform has emerged as a pressing and intricate agenda for policymakers globally, and more so in developing nations that are facing chronic supply shortages, deteriorating infrastructure, and affordability issues. A sustainable model of pricing requires juggling the competing interests of various stakeholders-consumers, utility companies, and regulators-each with differing agendas. While suppliers pursue profit maximization, consumers want lower tariffs, and governments need to keep prices not just cost-reflective but also socially acceptable and simple to administer (SAARC, 2020). Sustainable electricity pricing must, therefore, ensure

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cost recovery, incentivize performance, enhance accessibility, and promote long-term investment while being publicly acceptable.

In Nigeria, the Nigerian Electricity Regulatory Commission (NERC) established the Multi-Year Tariff Order (MYTO) to take on entrenched electricity price distortions and underpin the nation's wider electricity reform agenda. Regardless of its theoretical promise and technical strength-framed around cost recovery, performance incentives, and price predictability-the MYTO regime is a disputed matter. A majority of Nigerians still lament a lack of electricity availability, affordability, and quality of supply. Even though Nigeria has some of the lowest electricity tariffs in the world (Trimble et al., 2016), historically, they have not been sufficient to satisfy the capital recovery requirements of private investors, contributing to underinvestment, infrastructure deterioration, and generalized power outages.

The research problem that informs this research exists in the gap between regulatory pricing frameworks such as MYTO and their assumed sustainability and equity from the consumer's perspective. While MYTO holds out the promise of a long-term route to financial sustainability, cost-reflective tariffs, and service quality improvement, the outcomes are ultimately viewed by consumers through the prism of user experience-pricing acceptability, service accessibility, and supply reliability. In a market where end users typically have limited knowledge of tariff structures and where public institutions have low trust, pricing reforms in isolation may not meet desired goals unless accompanied by open stakeholder engagement and observable improvement in the delivery of service.

This research seeks to contribute to the scientific knowledge on sustainable electricity pricing by exploring if MYTO's structural objectives-acceptability, accessibility, and availability-are seen to be achieved in practice. The outcomes are anticipated to inform the design of socially responsive tariff systems in Nigeria and other comparable emerging markets, providing a user-directed viewpoint that connects regulatory aspirations with everyday realities. The research further has possible policy implications, as it could indicate if the continued removal of subsidies and private-sector-led provision of electricity is resonating with the expectations of the public and the underlying objectives of sustainability within the power sector.

2. Literature Review

2.1. Conceptual Review

Literature on electricity pricing offers models and regulatory approaches adopted by countries in their efforts to balance cost recovery with the public good. Two-part tariffs, marginal cost pricing, average cost pricing, time-of-use pricing, and multi-year tariff regimes are some of the prevalent pricing structures (SAARC, 2020). Every model rests on unique economic logics and institutional competencies, and its performance relies on context variables such as the credibility of market information, sector competitiveness, investment climate, and elasticity of consumer demand. Regardless of methodology employed, however, academics and regulators generally agree that the minimum conditions of sustainable electricity pricing must be maintained. Munasinghe and Warford (1982) identify five principal criteria for the sustainability design of electricity tariffs: (1) economic efficiency, with tariffs covering the real cost of generation and transmission and resulting in a rational consumption of resources; (2) equity, as meaning an acceptable burden sharing based on users' consumption levels and permitting the protection of vulnerable groups

through subsidization or differential levels of service; (3) financial viability, requiring tariffs generating sufficient revenues to cover running and investment costs; (4) bill simplicity and transparency to enable consumer understanding; and (5) responsiveness to other political and economic goals, including local area development and sectorial support. These five pillars remain globally applicable standards for assessing the sustainability of electricity prices in various policy settings. In Nigeria, the electricity sector has undergone various reform cycles since the early 2000s, which culminated in the establishment of the Nigerian Electricity Regulatory Commission (NERC) and the introduction of the Multi-Year Tariff Order (MYTO). Founded under Section 76 of the Electricity Sector Power Reform Act (EPSR, 2005), MYTO was structured as a long-term tariff path, cost-reflective, and performance-based for the power industry.

Its general objective is to make operators financially viable while protecting consumers from arbitrary rises in prices. The MYTO process involves bi-annual and long-term reviews, incorporating macroeconomic parameters such as inflation, exchange rate, gas price, and generation capacity. Even as MYTO has been pronounced regulatory vanguard, there have been doubts raised about its own on-the-ground realizations, specifically how it performs relative to the five cardinal principles of sustainable electricity pricing. Empirical studies have shown persistent electricity access issues, affordability issues, and consumer confidence levels low, which could suggest that theoretical ideals of MYTO are not necessarily aligned with stakeholder perceptions in the sector. Indeed, literature increasingly recognizes the importance of institutional transparency, trust, and public opinion in determining the success of tariff reforms, particularly in developing countries with limited regulatory enforcement and state capacity. This study is thus positioned in a broader academic discourse that challenges whether current electricity price policies in Nigeria, and specifically MYTO, are indeed striking the right balance of efficiency, equity, viability, simplicity, and socio-economic responsiveness. More precisely, it seeks to find out how MYTO's perceived ability to fulfill its stated objectives is perceived by the stakeholders and if this is an authentic reflection of sustainable price principles or mere technical intervention with low social acceptability.

A conceptual analysis describes significant concepts used in research by investigating the way researchers define, relate, and apply them in relevant study contexts. In this study, the primary concepts being discussed here are sustainable electricity pricing, acceptability, accessibility, and availability-all of which have to do with the way electricity consumers view the effectiveness of Nigeria's Multi-Year Tariff Order (MYTO) regime. Sustainable Electricity Pricing refers to a pricing model that not only makes electricity supply economically viable but also equitable, easy to understand, and affordable to consumers. Munasinghe and Warford (1982) have posited that sustainable pricing has to be a reflection of full economic cost (efficiency), providing fair distribution (fairness), recovering adequate revenue (viability), easy to understand (simplicity), and responsive to other prevailing political-economic circumstances such as subsidies and regional development. In the Nigerian scenario, the MYTO model attempts to introduce these ingredients through a cost-reflection, inflation-indexed tariff design formula, regulated bi-annually (NERC, 2020). Acceptability is the degree to which end users perceive the system of electricity pricing as reasonable, fair, and comprehensible. It is influenced by transparency, public awareness of tariffs, and confidence in regulatory institutions. If consumers perceive that prices are not justified or very high without any related improvement in service provision, they will likely deny the system legitimacy.

Accessibility is the ease with which individuals and households can access electricity both geographically and economically. In the majority of developing countries, access is constrained by poor infrastructure and unreliable supply, and one therefore inquires how pricing mechanisms like MYTO influence or hinder broad electricity access. Availability here is a characterization of the reliability and consistency of power supply. Even when electricity is inexpensive and consumers are provided with the grid, erratic power cuts or load shedding undervalue the service. Individuals measure the efficacy of pricing adjustments like MYTO in terms of service availability enhancement. The relationship between these ideas is the basis to measure whether MYTO remains faithful to the principles of sustainable electricity pricing. If reforms in prices enhance accessibility and dependability as well as public acceptability, then they can be considered successful. But if there is dissatisfaction with any of these three columns, then the sustainability of the pricing system will come into doubt.

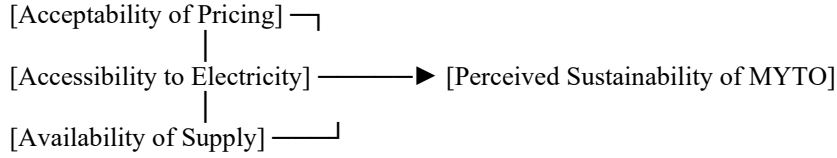
2.2. Conceptual Framework

The conceptual model of this study is developed to examine the perceived impact of Nigeria's MYTO pricing regime on the sustainability of electricity supply. Following Adebayo and Yusuf (2019), and Ajide and Raheem (2016), the model draws on the three rudimentary dimensions of stakeholder perception:

1. Acceptability of electricity tariffs
2. Access to electricity
3. Power supply availability (reliability)

These are independent variables, and the dependent variable is Perceived Sustainability of the MYTO Pricing System-measured by stakeholders' overall assessment of whether MYTO has resulted in increased electricity supply in a fair, reliable, and accessible manner.

Visual Representation of the Conceptual Framework



This model presumes that all the independent variables are responsible for forming public perception of MYTO's effectiveness as well as sustainability. The empirical tests can be done through regression analysis for determining the factors that have a significant impact on public opinion regarding the tariff regime.

Table 1: Theories and Models Related to Sustainable Electricity Pricing

Theory/Model	Key Concepts	Relevance to Study	Key References (APA 7th)
Sustainable Electricity Pricing Principles	Efficiency, equity, cost recovery, simplicity, and political/economic responsiveness	Provides the foundational framework to assess whether MYTO aligns with sustainable pricing norms	Munasinghe & Warford, 1982
Building Block	Cost-reflective pricing,	Regulatory basis of	NERC, 2005; Trimble

Regulatory Model (MYTO Model)	return on investment, adjustment for inflation, forex, and generation mix	Nigeria's MYTO system; balances operator revenue and consumer protection	et al., 2016
Two-Part Tariff Model	Fixed (connection) charge + variable (usage) charge	Used to distribute costs fairly among consumers based on infrastructure access and consumption	SAARC, 2020
Marginal Cost Pricing Model	Prices set at the cost of producing one additional unit	Encourages efficiency but may under-recover capital costs in developing country infrastructure contexts	Littlechild, 2003
Average Cost Pricing	Tariffs set to recover total costs over total consumption	Simple to implement but may discourage efficient use of electricity	Crew & Kleindorfer, 1996
Time-of-Use Tariff	Prices vary by time of day to reflect peak/off-peak demand	Encourages demand-side management and efficient grid usage	Mahmood et al., 2010
Public Choice Theory	Government policies reflect the self-interest of policymakers and powerful actors	Helps explain disconnect between policy design and end-user acceptance	Buchanan & Tullock, 1962
Institutional Theory	Organizational behavior shaped by formal rules, norms, and consumer expectations	Explains how regulatory frameworks like MYTO must align with social expectations to gain legitimacy	

Authors' compilation (2025).

2.3. Hypothesis Development

Electricity pricing structures have a powerful effect on user perceptions, affordability, and overall affordability of power supply, particularly in developing economies. Electricity tariff design, transparency, and communication directly affect consumer understanding and acceptability (Jamasb et al., 2005). Where end-users perceive pricing to be fair, well explained, and representative of service delivery, they are more tolerant of the tariffs. Conversely, unjustified or poorly explained tariff structures can lead to resistance and discontent (Tieben & Woolf, 2020). Therefore, it is required to study the link between tariff acceptability and the feasibility of electricity pricing policies.

In addition, accessibility to electricity-defined in terms of ease of connection, affordability, and reliability-is a foundation of energy equity. In the majority of underdeveloped countries, accessibility remains low despite policy reforms and price interventions. Literature demonstrates

that sustainable pricing mechanisms that balance cost recovery with affordability can enhance accessibility by encouraging infrastructure investment and reducing outages (Foster & Rana, 2020). This research thus presupposes a connection between sustainable electricity pricing and electricity accessibility.

Similarly, the supply of electricity, and particularly the reliability and extent of supply, is closely linked with pricing mechanisms. Regulated tariffs that are sub(cost-recovery) can be demotivating to investment and the ability of suppliers to strengthen or expand supply infrastructure (Kojima & Trimble, 2016). A pricing mechanism that provides cost recovery while enabling investment in grid reinforcements is essential for ensuring stable electricity supply. This forms the basis for examining the relationship between sustainable electricity pricing approaches and access to electricity.

In line with the problem statement and literature reviewed, the following hypotheses were formulated:

H_1: There is a positive relationship between electricity tariff acceptability and sustainable electricity pricing approaches.

H_2: There is a positive relationship between sustainability in electricity pricing frameworks and access to electricity.

H_3: There is a positive relationship between electricity availability and sustainable electricity pricing strategies.

These hypotheses are employed for the empirical testing of the presumed relationships between pricing strategies and end-user experience, with policy, utility regulation, and sustainable development implications for the electricity industry.

3.0 Research Methodology

The study employed a survey research design, most suitable in researching the attitude, perception, and practice of the stakeholders, and generalizing from sample to population (Creswell & Creswell, 2018). The study was carried out in the electricity sector of Nigeria, in the Multi-Year Tariff Order (MYTO) regime. The population was those stakeholders directly involved in electricity regulation, supply, and policy. These included management and employees of electricity generation and distribution companies, energy economics and power sector governance experts, power firm executives and employees, and regulators from the Nigerian Electricity Regulatory Commission (NERC). Judgmental (purposive) sampling technique was used to select 93 respondents with real experience and in-depth knowledge of the electricity sector (Etikan et al., 2016). The data collection was obtained using a structured questionnaire, derived from known studies and tailored to suit the Nigerian electricity context. The survey tool contained four parts: Section A included demographic data such as educational

qualification, marital status, age, and years of experience in the industry; Section B gathered acceptability of current electricity tariffs by the respondents; Section C gathered electricity usage and billing history; and Section D gathered views on electricity tariffs, affordability, reliability, and regulation process. Sections B to D consisted of close-ended items on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), an accepted procedure for the ensuring of consistent measurement of subjective opinions in social science studies (Joshi et al., 2015). Questionnaires were administered through both online (Google Forms) and paper versions, and voluntary response with assurance of anonymity. Data collection occurred over four weeks. After collection, the data were cleaned and processed with the use of SPSS version 26.0. Descriptive statistics including frequencies, percentages, and mean scores were utilized to provide respondent characteristics and behavior summaries, whereas regression analysis was utilized to explore significant relationships and predictors of tariff perception and stakeholder satisfaction. For the sake of validity, the questionnaire was reviewed by experts in the areas of energy economics, regulation, and quantitative research. Reliability was assured through Cronbach's Alpha, which achieved a high coefficient of 0.82-well beyond the requisite minimum of 0.70 (Nunnally & Bernstein, 1994). Ethical clearance was obtained and participants were assured that their responses would be kept anonymous, confidential, and used solely for the interests of scholarship.

4. Results and discussion

4.1. Descriptive Statistic

The research findings will confirm whether the government ambition for acceptable, accessible, and available electricity efficiency considers power price differences. The findings of this research can also determine whether or not MYTO pricing system in Nigeria is viable, whether market operators do not trust one another, and whether or not policy is inadequate to eliminate consumer's ignorance of the pricing system. What will be the effect of the government's intention to end subsidies on the long-term sustainability of the energy pricing regime?

4.1.1. Demographic Characteristics of Respondents

Table 4.1: Gender Distribution of Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	65	69.9%	69.9%	69.9%
Female	28	30.1%	30.1%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.1 shows that out of 93 respondents, 65 (69.9%) were male and 28 (30.1%) were female, with no missing data. This indicates a gender imbalance, with males comprising nearly 70% of the sample. Such a skew may influence perceptions of electricity pricing, as gender differences affect electricity use and burden. Women, especially in developing contexts, often face greater challenges from unreliable electricity due to household responsibilities (UN Women, 2021). The underrepresentation of women in this sample may limit the study's generalizability regarding equity and affordability under the MYTO framework. Future studies should consider gender-sensitive sampling to better capture diverse stakeholder experiences **(Clancy, Skutsch, &**

Batchelor, 2011; Sovacool, 2014).

Table 4.2: Age Distribution of Respondents

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
21–30 years	14	15.1%	15.1%	15.1%
31–40 years	17	18.3%	18.3%	33.3%
41–50 years	30	32.3%	32.3%	65.6%
51 years and above	30	32.3%	32.3%	97.8%
Others	2	2.2%	2.2%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.2 presents the age distribution of the 93 participants who participated in the study. Data show that the largest proportion of participants fall in the 41–50 years and 51 years and above age bracket, with both having 32.3% of the total sample. These two segments account for 64.6%, indicating that the majority of the respondents are mature adults, potentially with substantive personal or professional exposure to electricity use and issues.The age group of 31–40 years make up 18.3%, and 15.1% are in the category of 21–30 years, showing that a smaller percentage of the sample lies in young adults. The remaining 2.2% evidently did not fall in any particular category and were included in the category "Others." Overall, the data shows an evenly spread age distribution, with a good mix of older persons who are most likely to have longstanding exposure to electricity pricing and utilization patterns in Nigeria. This makes their responses more credible and strengthens the reliability of the findings of the study.

Table 4.3: Marital Status of Respondents

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Single	16	17.2%	17.2%	17.2%
Married	76	81.7%	81.7%	98.9%
Divorced	1	1.1%	1.1%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.3 shows that out of 93 respondents, 76 (81.7%) were married, 16 (17.2%) were single, and 1 (1.1%) was divorced. The dominance of married respondents reflects that most of the participants are also likely to be involved in household utility decision-making, and their views are therefore highly pertinent to electricity tariff policy such as MYTO. As married individuals tend to handle electricity for entire families, their views are significant when determining the affordability and equity of tariff arrangements.

Table 4.4: Educational Background of Respondents

Educational Level	Frequency	Percent	Valid Percent	Cumulative Percent
HND/B.Sc./M.Sc.	57	61.3%	61.3%	61.3%
PhD	25	26.9%	26.9%	88.2%
Others	11	11.8%	11.8%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.4 shows the educational background of the respondents. Out of the 93 individuals surveyed, the majority (61.3%) had obtained a Higher National Diploma (HND), Bachelor's degree (B.Sc.), or Master's degree (M.Sc.). This indicates that a large portion of the respondents possess tertiary education, suggesting they are well-educated and likely able to understand

technical issues related to electricity pricing and regulation. Additionally, 26.9% of the respondents held a PhD, showing a significant representation of highly educated individuals, possibly academics or professionals in the power sector. The remaining 11.8% fell under the "Others" category, which may include diploma holders, professional certifications, or less formal education. Overall, the data suggests that the survey participants are sufficiently knowledgeable to provide informed opinions on electricity-related issues.

Table 4.5: Experience as a Stakeholder in the Power Sector

Years of Experience	Frequency	Percent	Valid Percent	Cumulative Percent
1–5 years	17	18.3%	18.3%	18.3%
6–10 years	8	8.6%	8.6%	26.9%
11–15 years	9	9.7%	9.7%	36.6%
16 years and above	59	63.4%	63.4%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.5 shows the composition of respondents based on their experience, which is quantified in terms of the number of years they have been in the power industry. 63.4% of the respondents had 16 years and above experience. This attests to the fact that a significant proportion of the samples are very experienced stakeholders who have most likely witnessed numerous stages of electricity reforms and price realignments in Nigeria. An 18.3% proportion had between 1 and 5 years, 8.6% between 6 and 10, and 9.7% 11 to 15 years of experience. They cover a total of 36.6% of respondents and respectively are relatively recent entrants to the power sector. Overall, the spread shows that the survey captured a representative section of stakeholders but one that was dominated by seasoned professionals. This contributes to the credibility and value of the feedback, as most of the participants are likely to have well-educated opinions based on long involvement within the industry.

Table 4.6: Years of Personal Electricity Use

Years Using Electricity	Frequency	Percent	Valid Percent	Cumulative Percent
1–5 years	6	6.5%	6.5%	6.5%
6–10 years	11	11.8%	11.8%	18.3%
11–15 years	7	7.5%	7.5%	25.8%
16 years and above	69	74.2%	74.2%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.6 indicates that 74.2% (n = 69) of respondents have used electricity in Nigeria for over 16 years, reflecting extensive personal experience with supply fluctuations, billing issues, and sector reforms. Smaller groups reported usage of 6–10 years (11.8%), 11–15 years (7.5%), and 1–5 years (6.5%). The dominance of long-term users enhances the depth of insight into electricity affordability and policy effectiveness, especially regarding long-term initiatives like MYTO (Akinbami et al., 2021). As Ogunleye (2016) notes, extended usage strengthens consumer perspectives on sector inefficiencies and reform strategies.

Table 4.7: Years Paying Electricity Bills

Years Paying Bills	Frequency	Percent	Valid Percent	Cumulative Percent
1–5 years	15	16.1%	16.1%	16.1%
6–10 years	11	11.8%	11.8%	28.0%
11–15 years	14	15.1%	15.1%	43.0%

16 years and above	53	57.0%	57.0%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.7 indicates the number of years that respondents have been paying electricity bills. The majority of the respondents, 57.0%, reported that they have been paying for 16 years and more, which suggests high long-term exposure to electricity consumption and billing culture in Nigeria. This suggests that the majority of the participants are well positioned to make knowledgeable opinions about the pricing mechanism and service delivery. The 16.1% of the sample with 1 to 5 years of bill-paying experience, the 11.8% with 6 to 10 years of experience paying bills, and the 15.1% with 11 to 15 years of experience add up to 43.0% of the total sample. On the whole, the numbers show that while an overwhelming majority of the respondents are long-term electricity users, there is also a large percentage of relatively newer ones. This combination enriches the outcomes of the survey by showcasing a range of experiences and perceptions about electricity prices over time.

Table 4.8: Years Interacted with Electricity Tariff Bands

Years Interacted	Frequency	Percent	Valid Percent	Cumulative Percent
1–5 years	15	16.1%	16.1%	16.1%
6–10 years	11	11.8%	11.8%	28.0%
11–15 years	14	15.1%	15.1%	43.0%
16 years and above	53	57.0%	57.0%	100.0%
Total	**93**	**100%**	**100%**	

Source: Authors' computation (2025).

Table 4.8 shows that 57% of the respondents have been exposed to electricity tariff bands for more than 16 years, constituting high exposure to regimes of tariffs that fluctuate over time, including cost-reflective tariffs in MYTO by NERC (2020). 1–5 years (16.1%), 6–10 years (11.8%), and 11–15 years (15.1%) describe new stakeholders. As Idemudia et al. (2021) put it, levels of experience shape consumer knowledge and responses to tariff policy, making this distribution useful in assessing affordability perceptions as well as policy impacts.

4.2. Regression Analysis

This section presents regression results establishing the relationship between Acceptability (A), Accessibility (B), and Availability (C) of electricity with Sustainable Electricity Pricing Strategies (D). The model establishes the relative contribution of each independent variable with beta coefficients (β) reflecting their predictive strength for stakeholder satisfaction.

Hypothesis 1:

H_1: There is a positive relationship between the acceptability of electricity tariffs and sustainable electricity pricing strategies.

From the regression analysis, standardized beta coefficient for Acceptability (A) is B = 0.410 at $p < 0.001$, indicating a very strong, statistically significant positive relationship. Accordingly, H_1

is accepted. Acceptability of electricity price (β = 0.368), while smallest in effect among the three predictors, also exhibited a statistically significant relationship with stakeholder satisfaction. This implies that fair, clear, and explainable price plans are important but less focal than on access to services and their accessibility. Acceptability relates to attitudes with respect to tariff equitability, awareness and comprehension of billing components, and to what extent users perceive themselves to be involved in or consulted about pricing decisions. The importance of the variable means that not only should pricing mechanisms (e.g., the Multi-Year Tariff Order (MYTO)) be economically rational, but socially acceptable as well, and the stakeholders need to have faith in the pricing process and believe they are paying a fair price.

Hypothesis 2:

H_2: There is a positive relationship between sustainability in electricity pricing systems and accessibility to electricity.

The coefficient of Accessibility (B) is B = 0.752, statistically significant with $p < 0.001$, showing a very strong positive correlation. H_2 is thus confirmed. Hence, H_2 is accepted Accessibility of electricity (β = 0.640) emerged as the best predictor of stakeholder satisfaction. This discovery suggests that when customers perceive it as convenient to access the grid, buy meters, and obtain responsive customer service, they see the electricity price regime in a positive light. Physical convenience as well as procedural convenience, including easy onboarding, low bureaucratic hurdles, rapid fault fixing, and clear billing interfaces, are involved. These findings indicate that stakeholder satisfaction is highly dependent on the ease of access and fairness with which users are able to obtain electricity services, regardless of tariff levels. The high value of beta indicates that improving accessibility would provide the most significant improvement in public perception of the justice and sustainability of pricing policies (such as in the Multi-Year Tariff Order (MYTO).

Hypothesis 3:

H_3: There is a positive relationship between the availability of electricity and sustainable electricity pricing strategies.

The regression result shows that Availability (B = 0.500, $p < 0.001$) has a significant positive effect on sustainable electricity pricing, confirming H_3. Hence, H_3 is accepted. With β = 0.467, it is the second strongest predictor, highlighting the importance of reliable and stable supply in user satisfaction. Even when tariffs are affordable, frequent outages reduce stakeholder satisfaction due to disruptions and losses. The model fit was strong ($R^2 = 0.420$; $F(3, 89) = 21.485$, $p < 0.001$), indicating that 42% of the variation in sustainable pricing strategies is explained by the three factors-acceptability, accessibility, and availability. Among these, accessibility ranked highest, followed by availability and acceptability. For greater public support, policymakers must prioritize service reliability and transparent tariff structures, such as MYTO.

4.2.1. Regression Coefficients

The regression coefficients revealed that all three predictors- Acceptability (A), Accessibility (B), and Availability (C)- had positive and statistically significant effects on the dependent variable, $p < .001$ for all. The unstandardized and standardized coefficients are presented in Table 3. Dependent variable: stakeholder perceptions of the Multi-Year Tariff Order (MYTO).

Table 4.9: **Regression Coefficients**

Predictor	B	Std. Error	B	t	Sig.
Constant	1.72	0.29	-	5.88	.000
Acceptability (A)	0.41	0.11	.368	3.78	.000
Accessibility (B)	0.75	0.10	.640	7.96	.000
Availability (C)	0.50	0.10	.467	5.04	.000

Source: Authors' computation (2025)

4.2.2. Regression Model Summary

A multiple linear regression was performed to predict stakeholder satisfaction (D) from Acceptability (A), Accessibility (B), and Availability (C) of electricity. The model yielded a multiple correlation coefficient (R) of 0.648, indicating a strong positive relationship between the predictors and the dependent variable. The R^2 value of 0.420 suggests that approximately 42.0% of the variance in stakeholder satisfaction is accounted for by the combined effects of A, B, and C. The adjusted R^2 of 0.400, which adjusts for the number of predictors and sample size, further supports the robustness of the model.

Table 4.10: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.648	0.420	0.400	.93

***Source**: Authors' computation (2025).*

4.2.3. ANOVA Results

The analysis of variance (ANOVA) indicated that the regression model is statistically significant, $F(3, 89) = 21.49$, $p < .001$. This result implies that the predictors jointly contribute significantly to the prediction of the dependent variable.

Table 4.11: ANOVA

Source	Sum of Squares	Df	Mean Square	F	Sig.
Regression	55.36	3	18.45	21.49	.000
Residual	76.44	89	0.86		
Total	131.81	92			

***Source**: Authors' computation (2025)*

Discussion

The findings of this study provide strong proof of the positive and significant influence of acceptability, accessibility, and availability on sustainable electricity price policy, particularly in the context of a developing country like Nigeria. The findings of this study contribute to the existing literature on sustainable energy policy, particularly in sub-Saharan Africa, where affordability and infrastructure issues are still at large.

Hypothesis 1 examined the relationship between the acceptability of electricity tariff and pricing policy sustainability. The significant and positive correlation in this research corroborates earlier submissions by Tieben and Woolf (2020), who argued that clear communication and adequate explanation of tariff design play a role in securing public trust and cooperation. In the same vein, Bhattacharyya (2011) emphasized that the acceptability of electricity tariffs by users is greatly improved if the customers value the cost drivers involved, i.e., generation, transmission, and distribution costs. This study validates these claims by demonstrating that even in impoverished settings, stakeholder acceptance is not only a function of the tariff level but also of the perceived equity and transparency of the pricing system.

Hypothesis 2 tested the influence of accessibility on sustainable electricity pricing. The results indicate a positive and strong correlation, which implies that sustainable pricing models must facilitate broader and more inclusive access to electricity services. The finding supports the work of Foster and Rana (2020), who contended that affordability- and inclusivity-focused pricing reforms significantly enhance electricity access, particularly in poor or marginalized areas. On top of this, Kojima and Trimble (2016) highlighted that sound electricity tariffs can catalyze public and private investment in the sector that manifests in infrastructure expansion and broader physical access. This study adds nuance to this debate by demonstrating that accessibility is not only a product of affordability but also of reliability, ease of connection, ease of metering, and support services offered to users-factors that are intimately tied to sustainable pricing.

Hypothesis 3 tested the relationship between electricity availability and sustainable pricing. The positive relationship therein corroborates earlier empirical evidence from Jamasb, Newbery, and Pollitt (2005), who argued that cost-reflective tariffs are a prerequisite for long-term investment in electricity infrastructure. By the time tariffs capture the true cost of supply, utilities become more able to upgrade and maintain their systems, and thus supply electricity in a more stable and reliable manner. Similarly, Trimble, Yoshida, and Saqib (2011) found that countries with artificially low, politically motivated tariffs are more likely to face unconsolidated service due to chronic underinvestment. The study confirms that availability-characterized by frequency,

duration, and quality of supply-is a direct outcome of sustainable pricing frameworks that allow for operational viability and infrastructure maintenance.

Nevertheless, the findings are not inconsistent. Specifically, Prasad (2008) published an opposite view that affordability-based tariff reforms do not necessarily result in improved availability and reliability. In other African countries, Prasad argued, even if tariffs are made reasonable, dysfunctions such as poor utility management, corruption, and unresponsive regulatory administration may undercut benefits in service delivery. This paradox highlights the multi-dimensional, complicated character of developing country power systems, wherein tariff reform may itself prove insufficient to yield sustainable results without complementing accompanying reforms in governance and institutional strength.

Cumulatively, this research highlights co-relation of the three dimensions of electricity service-acceptability, accessibility, and availability-in delineating the success of sustainable electricity tariff programs. It affirms the notion that tariff design in developing countries must be balanced in terms of cost recovery and social acceptability while inducing growth and development in services. Further, the research has shown that stakeholders feel most content when pricing mechanisms are transparent, services are being offered reliably, and electricity availability is being offered equitably to all socioeconomic tiers. In conclusion, these findings reinforce the argument that electricity cannot be priced sustainably in isolation. Rather, it must form part of an integrated supra policy response balancing economic, technical, and social considerations of provision of electricity services.

5. Conclusion, Policy Implications and Recommendations

5.1. Conclusion

The summary of the findings of this study is that the success of electricity pricing policy (especially MYTO) in developing countries such as Nigeria is greatly determined by stakeholder experiences in terms of the acceptability, accessibility, and availability of electricity services. Specifically, this study confirms that the acceptance of the public towards price reforms increases when electricity tariffs are effectively communicated and transparently justified, thereby enhancing the legitimacy and effectiveness of these policies. First, improved accessibility-i.e., easier connections to the power grid, comprehensive metering, and ease-of-payment systems-particularly benefits marginalized and under-served populations, toward general stakeholder satisfaction and the long-term viability of pricing regimes. Second, power supply reliability and availability emerged as a fundamental determinant, reaffirming the principle that uninterrupted supply is central to engendering public trust and long-term investment in power infrastructure. Cumulatively, these results call for the design of electricity tariff frameworks that are not exclusively cost-recovery driven but also reflect user-centric concerns, equity of service, as well as infrastructural limitations faced by households in emerging economies. Only such a balancing act can support a fair and sustainable electricity sector transformation.

5.2. Policy Implications

This study provides important insights for electricity pricing reforms in Nigeria and similar

developing economies:

a. Transparent and Inclusive Tariff Setting- acceptability's influence highlights the need for transparent and participatory pricing processes. NERC should involve consumers in tariff reviews to build trust and reduce resistance.
b. Expand Access Infrastructure- accessibility being the top predictor suggests prioritizing grid expansion, metering, and support for off-grid systems, especially in underserved areas.
c. Balance Cost-Reflectiveness with Social Equity- tariffs must reflect real costs while protecting low-income users through lifeline rates, cross-subsidies, or targeted energy vouchers.
d. Link Pricing to Service Reliability- given the importance of availability, pricing models should reward utilities for improved reliability using performance-based regulations.
e. Strengthen Oversight and Governance- regulators must enforce compliance, monitor service quality, and ensure that tariff revenues are reinvested in infrastructure (Prasad, 2008).

5.3. Recommendations

a. Improve Electricity Access- invest in metering, digital billing, and responsive service channels.
b. Communicate Tariff Changes Clearly. Use inclusive, transparent communication to explain pricing structures.
c. Ensure Reliable Supply- boost grid reliability and storage systems to justify pricing reforms.
d. Adopt Tiered Pricing- introduce pricing based on usage levels, regions, or income to balance affordability with cost recovery.

Track Stakeholder Feedback- conduct regular surveys to monitor satisfaction and adjust strategies accordingly.

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