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POWER SECTOR REFORM AND ENERGY UTILIZATION IN ENUGU NORTH LOCAL GOVERNMENT AREA OF ENUGU STATE, NIGERIA, 2013-2023

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Abstract
Nigeria's power sector started to undergo seizures about thirty years ago. The large, medium, and small-scale businesses in the nation have been severely harmed by the power utility's poor services. With a focus on the implementation of pre-paid metering systems and power consumption by families and businesses in Enugu North LGA, this study investigates the power sector reforms and energy utilization in Enugu North Local Government Area of Enugu State, Nigeria, between 2013 and 2023. Theoretical groundwork was provided by the Rational Choice Theory. The study used a cross-sectional research design and combined the use of questionnaires with a documentary approach to collect data. As an analytical tool, descriptive and content analyses were used. The results showed that the pre-paid metering system has not increased the quantity of energy utilized by houses and businesses in Enugu North LGA.

Keywords: Post-Paid Metering System, Power Consumption, Power Sector Reform, Rational Choice Theory, and Pre-Paid Metering System.

Introduction

For about three decades now, the power sector in Nigeria has been in an epileptic condition, which has negatively affected large, medium, and small-scale industries as a result of poor services from power utilities. This deplorable state of the electrical power industry in Nigeria is consequential to the low level of economic development in the nation. Every other industry relies on the power sector for optimal performance (Phillips, 2014; Onodugo et al, 2014). Also, the system is expected to innovate and make use of advances in knowledge and technology (Audu, 2013, p. 25). These learnings and experiences so far gained in the production process should enable the system to expand and produce better output than previously as a result of the existence of economies of scale as well as the learning effects (Agbo, 2014; Kalu et al, 2014). The rise in international economic activity necessitates a rise in electrical generation, and the global power demand has become unavoidable.

Access to electricity is vital for households and businesses to improve their quality of life and function efficiently. However, the power sector in Nigeria has experienced several challenges over the years, with power supply often inadequate to meet demand (Okafor, 2008). This has led to significant economic losses as well as negative impacts on the quality of life of Nigerians. Adaramola et al. (2020) opined that this insufficient power supply has resulted in inadequate power generation, transmission, and distribution, leading to regular power outages. They explain that Nigeria's electricity capacity is insufficient to meet the country's energy needs. The power sector in Nigeria has been plagued with challenges such as poor infrastructure, inadequate investment, and inadequate power generation capacity (Adekoya, 2016). These challenges have resulted in low power supplies to areas such as Enugu North LGA, leading to an energy crisis.

The Electric Power Sector Reform Act (EPSRA), which was put into effect by the federal government of Nigeria in 2005 with the intention of reforming and privatizing the power industry, was created to address this energy issue (Oyedepo et al., 2015). By 2013, the essential

reforms had been implemented, resulting in a system of private generators and distribution corporations. Nigeria's power sector reforms included breaking up the sector into generating, distribution, and transmission entities.

The aim of the power sector reform is to improve the operational efficiency of the sector and increase investment in the sector to boost power generation capacity and supply. As a result, the government has executed several other reforms aimed at improving the power sector's efficiency, effectiveness, and sustainability, including the privatization of the power sector, the establishment of regulatory bodies, and the introduction of various energy policies and programmes (Nwakonobi & Ezeaku 2018; Ochinanwata et al, 2020). According to them, these reform measures have positively impacted the Nigerian power sector but require much more implementation.

The Enugu North Local Government Area (LGA) of Enugu State, Nigeria, is a densely populated and economically vibrant area in the state that has experienced significant challenges leading to an insufficient power supply and low energy utilization. According to the National Population Commission of Nigeria, the estimated population of Enugu North Local Government Area as of 2021 is about 225,004 people. However, this number is an estimate and may not be exact and may change over time due to migration and other factors (National Population of Nigeria, 2021). The area has experienced regular power outages, which have negatively impacted the growth and development of businesses and households, leading to frequent business closures and inconvenience for residents. Enugu State has implemented various policies and programmes to improve the power sector in the state. For example, the state government established the Enugu Electricity Distribution Company (EEDC) to manage and distribute electricity to various areas in the state, including Enugu North LGA (Onyia & Ajah, 2015). However, despite these efforts, Enugu North LGA still experiences inadequate power supply, leading to low energy utilization in the area. This has negative effects on socioeconomic development in the area as businesses, schools, hospitals, and other essential services rely on electricity to function properly (Odumodu & Ezenwaji, 2018; Anowor & Agbarakwe, 2015; Nwonye et al, 2023). The level of energy consumption and utilization in Nigeria is high, and energy demand is projected to grow significantly in the coming decades. Akinbami et al. (2019) highlight the need for more efficient energy utilization and conservation initiatives in Nigeria.

Several studies highlight the challenges facing the power sector in Nigeria. For example, Aderounmu et al. (2021) reveal the impact of power outages on the Nigerian economy. They explain that power outages negatively impact Nigerian businesses, leading to economic losses. Okeke et al. (2019) examined the power sector's performance in Enugu State, Nigeria, and found that only 47% of households had access to electricity. The study further revealed that power generation, transmission, and distribution in the state had significant deficiencies, leading to inadequate power supply to the state, especially Enugu North LGA. They emphasize the need for improved energy supply in Enugu State. Ezirim, Eke, and Onuoha (2016); Tallapragada and Adebusuyi (2008); and Joseph (2014) evaluate Nigeria's energy sector reform, while Uzorh et al. (2020) examine renewable energy utilization in Enugu State.

To address these challenges, the government has started implementing power sector reforms and programs aimed at improving access to electricity, increasing energy efficiency, promoting renewable energy, and implementing energy conservation measures. For example, the Nigerian Electricity Regulatory Commission (NERC) introduced the Nigerian Electricity Supply and Installation Standards (NESIS) initiative, which sets standards for efficient energy utilization to promote better electricity supply in Nigeria. However, there is still a need to explore the impact of these reforms and energy utilization in Enugu North LGA. Through this research, new insights can be gained into the challenges and opportunities in the power sector

in Enugu North LGA and can improve the power sector's performance in the area.

In general, the Power Sector Reform and Energy Utilization in Enugu North Local Government Area of Enugu State, Nigeria, 2013– 2023 is a crucial topic that necessitates additional research in order to pinpoint appropriate strategies and models that can be used to increase the efficiency and sustainability of the power sector in the area. *Therefore, it is necessary to evaluate the effectiveness of the power sector reform and energy utilization in Enugu North LGA to identify the gaps and challenges in the sector and propose solutions to improve energy utilization in the area.*

In light of the foregoing, the objective of this study is to assess the efficiency of the power sector reform and energy usage in Enugu North LGA in Enugu State, Nigeria, from 2013 to 2023. In particular, to determine whether the implementation of pre-paid meters has increased power consumption by homes and businesses in Enugu North LGA,

Prepaid Metering System and Power Consumption

Electricity is a significant driver of economic growth and development in any country. It plays a vital role in the provision of energy for domestic, industrial, and commercial use. In Nigeria, the power sector has faced several challenges over the years, leading to an inadequate and unreliable power supply across the country. To address this problem, the Nigerian government introduced prepaid metering systems as a means of promoting energy efficiency, reducing energy waste, and improving accountability in the power sector. The Enugu North Local Government Area (LGA) is one of the areas in Nigeria that has implemented the prepaid metering system. However, there have been concerns that this system has not led to an increase in power consumption by households and businesses in the region.

The impact that the pre-paid metering system has on power consumption by households and businesses is one of the most widely debated aspects of the relationship between power sector reform and energy utilization. For many, the pre-paid metering system is one of the key features of energy sector re-engineering in Nigeria that has been relatively successful. A device that monitors the quantity of electrical energy utilized by a residence (family), a business, or an electrically powered item is referred to as electric metering technology (Ogujor & Otasowie, 2010). Pre-paid meters (also known as prepayment meters) are meters that have been pre-paid. The most typical billing unit is the kilowatt hour, which measures the energy used by a load at one kilowatt for one hour, or 3,600,000 joules. The electricity meter continuously measures the instantaneous voltage (volts) and current (amperes). Watts, which represent the instantaneous electrical power as a result, are then added up over time to represent the energy used (Obafemi & Eugene 2013).

Pre-paid metering systems have become increasingly popular in many countries, including Nigeria, as a means of encouraging energy efficiency, reducing energy waste, and promoting accountability in the power sector. However, there is a conflicting range of studies that evaluate the impact of pre-paid metering systems on power consumption and usage patterns. This section attempts to synthesize the existing studies' evidence to evaluate the relationship between pre-paid metering systems and power consumption in households and businesses.

Prepaid metering systems are digital devices that enable consumers to pay for electricity in advance, based on their usage and consumption patterns. Electricity metering, according to Chisanga (2006), refers to the process of installing and using equipment that measures the quantity and direction of electricity flow intended for consumption. The utility company can determine how much the consumer should be charged by documenting the electric energy units that a particular household has consumed and

applying established rates that are published on the bill and made available to the consumer. To put it another way, a prepaid energy meter allows power utilities to collect electricity bills from customers before they use it. The prepaid meter is also known for its prepaid recharge capability and the ability to communicate information with utilities about the customer's consumption details. An automated system is a device that is used to monitor and control the load (Nwankwo & Njogo 2013). *The purpose of this system is to promote transparency in billing, reduce energy waste, and encourage energy efficiency among consumers. Several studies have examined the impact of prepaid metering systems on power consumption and usage patterns in Nigeria.*

According to Afolabi et al. (2019), prepaid metering systems have led to a reduction in power consumption in households and businesses in Nigeria. The study found that consumers who use prepaid meters tend to be more cautious about their power consumption and usage patterns, as they are aware of the cost implications of their energy usage. This has led to a reduction in energy waste and an improvement in energy efficiency among consumers using prepaid metering systems. In a study conducted by Adewuyi et al. (2018), pre-paid metering systems were found to improve energy efficiency by reducing power consumption for residential users. The introduction of pre-paid metering systems resulted in an average reduction in power consumption of approximately 34% compared to conventional metered billing systems. Residential users took action to reduce their energy usage, and as a result of that the introduction of pre-paid metering systems helped to reduce energy wastage.

Olawole et al. (2016) opined that prepaid metering systems were effective in reducing energy theft and improving revenue collection in the power sector. The study showed that prepaid metering systems help reduce the incidence of meter bypass and illegal connections, which are common problems in Nigeria. By doing this, the prepaid metering system promotes accountability and transparency in the power sector, leading to an overall improvement in power distribution and consumption patterns. Moreover, Ahmed, Al-Sumaiti, Gogate, & Patil (2019) found that businesses using pre-paid metering systems reduced their power consumption significantly due to the transparency and flexibility offered by the system. As pre-paid metering systems offer the ability to recharge accounts as often as needed, business users were motivated to monitor their power consumption and take steps to decrease it, which, in turn, allowed them to save on operational costs.

On the contrary, a study by Olaniyan et al. (2019) revealed that prepaid metering systems did not result in an increase in power consumption by households and businesses in Nigeria. The study found that consumers using prepaid meters tend to limit their energy usage, even when they have prepaid credits in their accounts, due to the fear of running out of credit and the long delay in recharging the meter. This suggests that the prepaid metering system may have unintended consequences for power consumption and usage patterns in Nigeria.

Olajire, Aderinto, and Ademola (2019) found that the introduction of pre-paid metering systems did not translate into a significant reduction in power consumption among households. The study concluded that energy conservation behaviour varies widely among households, which minimizes the effect of the introduction of new schemes for regulating energy consumption. One of the potential challenges faced by pre-paid metering systems is payment models, such as unit pricing, which may not reflect true energy unit prices affecting households. Zainab, Yaya, and Suleiman (2021) researched the impact of pre-paid metering payment models on the power consumption of households in Nigeria. The study revealed that unit pricing had a considerable effect on households' power consumption, as it was shown to increase households' willingness to adhere to energy conservation practices.

Prepaid metering systems were shown to be ineffective in decreasing energy poverty,

particularly among low-income households in Nigeria, according to a related study by Adekola (2018). According to the report, purchasing prepaid meters and topping off their accounts is expensive for those with modest incomes. Because alternative energy sources like kerosene lamps and generators are more readily available and affordable than prepayment metering systems, many homes continue to utilize them.

Despite the mixed evidence, pre-paid metering systems are found to encourage users to conserve energy, which could reduce energy wastage in the long term. A study conducted by Adenikinju and Adeyemo (2016) concluded that users of pre-paid metering systems tend to be more energy-conscious than conventional meter users. Users are offered greater control over their power consumption in real-time; billing details are transparent; and recharging is straightforward. Moreover, consumers tend to be more informed about the actual cost of their energy use, which could result in a reduction in energy wastage and, hence, a reduction in power consumption. However, not all consumers are satisfied with pre-paid metering systems, which create consumer-type classifications based on attitudes towards the system and their consumption patterns. For instance, multiple incidents have been reported where consumers found it difficult to recharge their meters via card-based systems (Suleiman, Seidu, & Ugwuishiwu, 2018). The challenges in recharging have led some meters to run out of credit (Omotosho, Ayoola, & Fayomi, 2015; Anowor et al, 2022). Therefore, it's essential to study consumer satisfaction and usability in association with the overall effect of pre-paid metering systems.

In conclusion, pre-paid metering systems were introduced as a means of promoting energy efficiency, reducing energy waste, and fostering accountability in the power sector. However, the impact of pre-paid metering systems on power consumption remains unclear and inconclusive. The review reveals that the impact of prepaid metering systems on power consumption and usage patterns in Nigeria is mixed. While some studies have found that pre-paid metering systems reduce power consumption due to the transparency and control, they offer, others have not seen a significant reduction in power consumption among households. It is essential to continue research that assesses factors affecting power consumption under pre-paid metering systems, such as payment models and satisfaction. Additionally, pre-paid metering systems could be paired with other energy-saving schemes such as energy-efficient appliances, smart outlets, and energy-efficient lighting programs, which may, in turn, result in more sustainable and energy-conservation behaviors.

Rational Choice Theory

In the social sciences, particularly in economics and political science, a paradigm known as rational choice theory is used to understand and investigate how individuals and groups make decisions. The theory contends that people evaluate the benefits and drawbacks of each choice logically before making a decision in order to maximize their own subjective preferences or utility (Green & Shapiro, 1994). This suggests that individuals consider their options and make decisions they believe will result in the best possible outcome for themselves.

Rational choice theory proponents claim that it can offer an insightful analysis of how people make decisions and that it can be applied to a variety of social phenomena (Riker, 1996). According to Downs (1957), Becker (1968, 1976), Thaler (1985), and Coleman (1986), the theory has been used to explain social interactions, political outcomes, and consumer behaviour. According to one of the main tenets of rational choice theory, decision-makers are rational agents who carefully weigh all of the information at hand, their own preferences, and the costs and benefits of each alternative before making a decision (Simon, 1955; Boudreau, 2005). According to Savage (1954), the theory makes the unrealistic assumption that people have perfect information and the mental capacity to understand it all.

Another assumption is that individuals act independently, without any consideration of other individuals' actions, although this is clearly not true when considering social and political issues. Olson (1965) argues that the assumption of independent action in rational choice theory is unrealistic when considering social and political issues and that individual must often act collectively in order to achieve their desired outcome. Olson proposes the concept of "collective action problems," in which individuals have a shared interest in some outcome but must coordinate their actions effectively in order to achieve it.

Practically speaking, rational choice theory contends that people will make decisions that maximize their overall utility after assessing the advantages and disadvantages of various possibilities. In the pre-paid metering system in Enugu North LGA, homes and businesses had to pay for their energy usage up front, but they also benefited from being able to closely monitor and regulate it. By enabling people to more carefully monitor their usage and make more informed decisions about their energy use, pre-paid metering systems can provide people with greater control over their energy consumption. *This can lead to a decrease in energy consumption as individuals become more aware of their energy use and are incentivized to use less in order to save money.*

As people become more conscious of their energy use and are motivated to use less in order to save money, pre-paid metering systems may result in lower electricity consumption, according to a number of studies (Murray & Stallybrass, 2000; Steinberg & Dessai, 2014). It's likely that both homes and businesses in Enugu North LGA saw the same impact. The rational choice theory makes the assumption that people are rational decision-makers who act in their own best interests. As a result, people are only motivated to conserve energy when it is in their best interests. The theory also makes the assumption that people have access to reliable information regarding the advantages and disadvantages of various energy-saving options. Furthermore, the introduction of pre-paid metering may have also led to a decrease in electricity theft as individuals are less able to illegally tap into the power supply (Nwaogbe & Nnadi, 2017; Agbarakwe & Anowor, 2018; Onodugo et al, 2013). This could also contribute to a decrease in power consumption.

Overall, the rational choice theory is applicable to the introduction of pre-paid metering systems and power consumption, as it suggests that individuals will make energy-saving choices in order to maximize their overall utility. It seems that the rational choice of individuals in Enugu North LGA was to reduce their electricity usage in response to the introduction of the pre-paid metering system, as it allowed them to save money and avoid the cost of having to "top up" their meter frequently. Empirical evidence that pre-paid metering systems can reduce energy usage by motivating people to be more aware of their energy use is consistent with this.

Methodology

The study employed *the cross-sectional research design. This is a non-experimental, cross-sectional design that involves collecting data from a sample of households and businesses at a specific point in time to examine the relationship between pre-paid metering system and energy consumption. A cross-sectional study is appropriate for this study as it allows for the examination of energy consumption patterns and attitudes among households and businesses in Enugu North LGA, without the need for longitudinal data.*

The rational choice theory was used as a framework of analysis. The theory proposes that individuals make decisions based on their preferences and rationality. In the context of energy consumption, rational choice theory suggests that individuals would monitor and control their energy usage to optimize their utility while minimizing costs. By using pre-paid metering system, individuals have greater control over their energy consumption and can make informed decisions about how much energy they

use and when, leading to more efficient energy use.

We adopted mixed methods of data collection which include questionnaires and documentary methods. *The documentary method of data collection was used to collect secondary data from electricity distribution companies and other relevant sources of data. The secondary data provide information on trends in energy consumption, as well as the implementation and impact of pre-paid metering system in Enugu North LGA. The use of secondary data also help to corroborate findings from the primary data, providing a more comprehensive understanding of the relationship between pre-paid metering system and energy consumption.*

The primary data was collected using structured questionnaires administered to households and businesses in Enugu North LGA. The questionnaires captured information on energy consumption patterns, perceptions and attitudes towards pre-paid metering system, and other factors that may affect energy consumption. The use of questionnaires ensures that a large and representative sample of the population is reached, making it possible to generalize findings to the wider population. According to the EEDC's January 2023 provisional bill dump, Enugu North has 42,742 pre-paid meter users. Therefore, the target population for the study was made up of 42,742 of all pre-paid electricity users in Enugu North Local Government Area, Enugu State, Nigeria.

The sample size is calculated by using the Taro Yamane method

$$n = \frac{1}{1+N}$$

Where

n= desired sample size

N= the entire population

e = level of significance of limit of tolerable error

assumed to be 5% or 0.05

1= unit constant figure

Therefore

$$n = \frac{1}{1+N}$$

$$n = \frac{42,742}{1+42,742\,(0.}$$

$$n = \frac{42,742}{1+42,742\,(0.00}$$

$$n = \frac{42,74}{1+106.8}$$

$$n = \frac{42,}{107}$$

n = 396.29

n = 396

The sample size for this study was set using Yamane's formula, which yielded 396 respondents. Using techniques of random sampling users of pre-paid meters in Enugu North Local Government Area, Enugu State, Nigeria, were given 396 questionnaires. *Therefore, the combination of these methods of data collection provides a robust and comprehensive analysis of the impact of pre-paid metering system on energy consumption patterns in households and businesses in Enugu North LGA.*

Descriptive and content analysis were used to analyze information gathered from open-ended questions in the structured questionnaire administered to households and businesses in Enugu North LGA. The descriptive analysis would involve the use of measures of central tendency and variability to describe the distribution of responses. These methods help to identify key themes and patterns that emerge from responses, and provide a more detailed understanding of the attitudes, perceptions, and behaviours towards energy consumption in the area.

Table 1: Demographic Background of the Respondents.

Gender

Gender	Respondents	Percentage
Female	153	38.6%
Male	243	61.3%
Total	396	100%

Source: Field Survey, 2022

As can be seen from the table above, the male category has the biggest number of respondents to the survey. This is based on the fact that male respondents accounted for 61.3 percent of the 396copies of questionnaires gathered, while female respondents accounted for 38.6 percent.

Table 2: Status

Gender	**Respondents**	**Percentage**
Households	288	72.7%
Businesses	108	27.3%
Total	**396**	100%

Source: Field Survey, 2022

In terms of the questionnaire, the houses and/or families had the biggest number of respondents. This is based on the fact that of the 396 copies of questionnaires gathered, households accounted for 288 respondents (72.7%), while businesses accounted for 108 respondents (27.3%).

Table3: Educational Qualifications

Educational Qualifications	**Respondents**	**Percentage**
1st School Leaving Certificate	82	20.7%
SSCE	134	33.8%
Diploma/NCE	99	25%
Degree/HND	54	13.6%
Masters Degree/PhD	27	6.8%
Total	**396**	100%

Source: Field Survey, 2022

According to the survey, the highest number of SSCE Educational Qualifications is 134, which represents 33.8 percent, followed by Diploma/NCE at 99, which represents 25%, 1st school leaving at 82, which represents 20.7 percent, Degree/HND at 54, which represents 13.6 percent, and Masters degree/Ph.D at 27 which represents 6.8%.

Table 4: Awareness of the Introduction of Pre-Paid Metering System

Option	**Numbers of Respondents**	**Percentage**
Yes	396	100%
No	0	0%
Not Sure	0	0%
Total of Respondents	**396**	**100%**

Source: Field Survey, 2022

According to table 4, all respondents are aware of the introduction of pre-paid meters and prefer to use pre-paid meters over post-paid meters. The "No" column is blank, as is the "Not Sure" column. The majority of customers, on the other hand, complain about the high cost, delay, and other issues they have in receiving a pre-paid meter, which is meant to be delivered to them for free.

Table 5: Power Consumption by Households and Businesses.

Option	**Numbers of Respondents**	**Percentage**
Yes	139	35.1%
No	223	56.3%
Not Sure	34	8.6%
Total of Respondents	**396**	**100%**

Source: Field Survey, 2021

According table 5, 223 respondents (56.3%) believe that electricity usage has not increased since the introduction of pre-paid meters, whereas 139 respondents (35.1%) disagree and 34 respondents (8.6%) are unsure. Finally, according to the respondents, the deployment of pre-paid meters in Enugu North Local Government Area of Enugu State has not boosted power consumption by families and businesses.

Findings and Discussion

The introduction of pre-paid metering systems is one of the reforms recently introduced in the Nigerian power sector to address issues of energy theft, billing inaccuracies, and help save power.

The new system allows consumers to pay for power ahead of usage with the aim of encouraging accountability and reducing arbitrary disconnection by the power distribution companies. Enugu North Local Government Area (LGA) of Enugu State, Nigeria has experienced a series of power sector reforms, including the adoption of pre-paid metering systems. However, the impact of this newer technology on the energy utilization pattern of households and businesses within the area is not well understood. An understanding of this impact could inform policymakers on how to improve the effectiveness and efficiency of pre-paid metering systems in promoting energy conservation and efficient utilization.

Adenikinju and Olumuyiwa (2015) examined the effect of pre-paid metering on energy consumption in Nigeria. The study found that the introduction of pre-paid metering system did not result in a significant increase in household electricity consumption. In another study conducted by Olugbenga and Elisha (2016) in Nigeria, it was found that pre-paid metering systems did not significantly affect overall energy consumption in households. Similarly, the introduction of pre-paid metering system did not result in higher energy consumption by households (Mafimisebi & Akande 2017, and Odeh, 2022). Therefore, based on these studies, there is a consensus that the introduction of pre-paid metering system does not lead to higher power consumption by households and businesses.

According to the Enugu Electricity Distribution Company (EEDC) report for the first quarter of 2021, the total energy delivered to customers in Enugu North LGA through pre-paid metering system was 130,572 MWh. This represented only a minimal increase of 1.2% compared to the same period in the previous year when the total energy delivered was 128,956 MWh. This data suggests that the introduction of pre-paid metering system has not significantly increased power consumption in Enugu North LGA. However, it is important to note that other factors such as changes in weather, availability of electricity, and consumer behaviour may also contribute to changes in energy consumption patterns.

Conclusion

This study seeks to evaluate the effectiveness of power sector reform and energy utilization in Enugu North LGA from 2013 to 2023. The study is significant because it will provide insights into the challenges facing the power sector in Nigeria and propose solutions for improving power supply and energy utilization in Enugu North LGA. Based on the available evidence, we conclude that the introduction of pre-paid metering system has not significantly increased power consumption by households and businesses in Enugu North LGA. Additionally, the official data from the Enugu Electricity Distribution Company supports this conclusion. The findings of this study will be useful for policymakers, energy companies, and other stakeholders in the power sector in Nigeria.

Therefore, it is recommended that the use of pre-paid metering system should be further encouraged in Enugu North LGA and other regions in the country. This not only helps to reduce electricity theft and increase revenue for power providers but also promotes energy efficiency by enabling customers to better monitor and control their energy consumption. However, it is important that electricity providers continue to educate customers on the benefits of the pre-paid metering system and how to use it effectively to avoid any negative impact on energy consumption.

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