EFFECT OF ELECTRICITY POWER ON THE PERFORMANCE OF SMALL AND MEDIUM SCALE ENTERPRISES IN KADUNA METROPOLIS

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Abstract

The study examined the effect of electricity power on the performance of SMEs in Kaduna Metropolis. The study specifically examined the effect of electricity power on the productivity, profitability and cost-competitiveness of SMEs in Kaduna Metropolis. The study selected 70 SMEs in Kaduna North and South LGAS within Kaduna Metropolis, in which 60 SMEs responded. The study made use of structured questionnaire to collect data from selected SMEs in the study area. Analysis of data was carried out using the descriptive statistics and chi-square technique. The results showed that the respondents disagreed that electricity power has improved their level of productivity, cost-competitiveness and profitability. The results of the chi-square tests indicated that electricity power exerts significant impact on the productivity (Chi=9.158; P=0.027<0.05), profitability (Chi=7.423; P=0.024<0.05) and cost-competitiveness (Chi=5.494; P=0.031<0.05) of SMEs in Kaduna Metropolis. The study therefore maintained that electricity supply has strong influence on SMEs performance in Kaduna Metropolis. The study suggested that government should invest massively in alternative sources of energy. Moreover, foreign investment should be encouraged and pre-paid meters should be distributed to all households. This will help improve electricity situation in Nigeria.

Keywords: Electricity Power, Kaduna Metropolis, Power supply, Small and Medium Scale Enterprises.

Introduction

Electricity is *sine qua non* to the operational performance of a firm whether small or large. Access to electricity and attached high cost of tariff poses serious challenge to the growth and expansion of SMEs in a developing economy like Nigeria. This position is well articulated by (Osobase, 2014) who reported that a significant number of SMEs in African countries rated inadequate electricity supply as their number-one problem. Furthermore, the cost and time expended to obtain self-generated electricity is higher in developed countries compared to their developed counterparts. Functional power system is very germane to the growth process and development of an economy. The truth is that without electricity, no country can attain a

reasonable level of industrialization and economic development. The power sector serves as an agent of growth across all the sectors of the economy and revolves around all sectors. Little wonder, (Ofoegbu, 2013) maintained that the development and utilization of electricity is strongly associated to industrial development, business growth, economic growth and living standards.

Over the years, electricity crises in Nigeria has made SMEs losses significant amount of funds (Akuru, 2014). SMEs have continued to incur losses day in and day out due to inadequate supply of electricity. Poor supply of electricity is not unconnected to the ineptitude of electricity providers and government. The poor state of electricity has received comments from stakeholders in various sectors. Consumers are not provided with sufficient amount of electricity because local utility firms receive little power transmission from the electric grid (Iwayemi, 2008). Similarly, transmission companies transfer the blame on the generating stations that generate meager MW capacity. In addition, the generating firms defend themselves by claiming that they are not provided with enough gas to power their plants or put the blame on the failure of the transmission companies to optimally transmit MW capacity that is being generated. This has been the order of the day in the power sector in Nigeria.

It is no longer news that Nigeria is blessed with enormous sources of energy. The country is blessed with thermal, solar, hydro, biomass, coal and oil resources, yet the nation is energy deficient. The energy deficiency syndrome of Nigeria is as a result of the underdeveloped nature of its power sector (Ado, 2015). Available facts from the Nigerian Bureau of Statistics indicated that close to 40% of the Nigerian populace has access to electricity. There is a wide gap in the distribution of electricity supply between formal and informal sectors, rural and urban areas, and residential and industrial areas in urban centers (Udah, 2010). The unreliability and inadequacy of power supply has debarred SMEs from performing at their best.

Statement of Problem

Electricity is a catalyst for industrialization and economic growth. Functional power supply system to SMEs is critical in order to reduce their cost of acquiring and maintaining alternative sources of energy. Various policies have been designed by the Federal, State and Local governments to promote the growth of SMEs in Nigeria due to their contributions to output expansion and job creation. It should be noted that these policies can come to fruition if and only if SMEs are provided with regular power supply. Presently, SMEs devote large amount of money to acquire, fuel and maintain generating plants as a back-up for unreliable power supply. SMEs incur higher cost on self-generated electricity than publicly provided electricity, which has skyrocketed their operational expenditure and decreased their performance.

Research Objectives

The broad objective of the study is to examine the effect of electricity power on the performance of SMEs in Kaduna Metropolis. The specific objectives of the study are to:

i. investigate the effect of electricity power on the productivity of SMEs in Kaduna Metropolis.
ii. assess the effect of electricity power on the profitability of SMEs in Kaduna Metropolis.
iii. To explore the effect of electricity power on the cost-competitiveness of SMEs in Kaduna Metropolis.

Research Hypotheses

In alignment with the objectives, the following hypotheses are formulated to guide the study. They are stated as follows:

$H_{01:}$ Electricity power has no significant influence on the productivity of SMEs in Kaduna Metropolis.
H_{02}: Electricity power has no significant influence on the profitability of SMEs in Kaduna Metropolis.
H_{03}: Electricity power has no significant influence on the cost-competitiveness of SMEs in Kaduna Metropolis.

Literature Review

State of Power Supply in Nigeria

It is a well-known fact that power supply in Nigeria is inadequate. The desire of the Nigerian economy to be among the league of industrialized nations is cut-off by erratic and epileptic supply of power (Ado, 2015). The poor supply of electricity in Nigeria can be attributed to inept generation, transmission and distribution. Despite the large amount of financial and non-financial resources diverted to the power sector since 2004, power supply is still inadequate, erratic and unreliable featured by persistent power outage, high current fluctuation and high dependence on self-generated power supply (Iwayemi, 2008); (Ado, 2015). To (Ekpo, 2009), Nigeria has been tagged a generator-economy as large proportion of electricity consumers relies heavily on generating sets. The aspiration of the Nigerian economy to be fully industrialized has been distorted by incessant electricity crises, reoccurring power outages, excessive operational costs and low competitiveness (Udah, 2010). The capacity utilization of the manufacturing sector which is averagely 40% is still considered low compared to industrialized nations like China and Malaysia that has a capacity utilization of more than 75%, coupled with high transmission and distribution losses indicates that the Nigerian power sector performance is abysmally poor. Power cut is a common phenomenon in Nigeria. (Iwayemi, 2008) posited that manufacturing firms encountered 317 power outages in 2004. The rate of power outage rose tremendously by 26% in 2005 and 43% in 2006. To provide lasting solutions to power crises in Nigeria, the Federal government gave licenses to private firms to operate in the generation, transmission and distribution subsectors of the power industry. However, this initiative failed to provide expected results as power supply in Nigeria is still inadequate, erratic and unreliable.

The reliability of electricity supply has attracted the interest of policymakers, stakeholders and domestic and foreign investors. This is particularly important for investors, who take infrastructural development into consideration before committing their resources to investment. Unreliability of power supply is a challenge confronting both domestic and industrial consumers. Unreliability of power supply makes it difficult for domestic consumers to use their electrical appliances and hinders the production activities of industrial consumers. Ineffective power system poses great threat to the socioeconomic development of a country. Loss of productivity, paucity of investment, poor competitiveness, poor governance and low level

of welfare development are amongst the threats of inefficient power system in Nigeria and Africa (Oseni, 2013).

Business enterprises react to inadequate supply of electricity differently. This can be in terms of nature of business, location, reduction of output, substitution of factor inputs and self-generation (Ado, 2015). Self-generation strategy is the commonly adopted by business enterprises. Firms make attempt to generate their own electricity during period of power-cut. (Ologundudu, 2014) reported that inadequate and epileptic supply of electric power makes firms obligate to self-generated electricity and equally increases their operational expenditure. According to World Bank report (2015), firms in Nigeria spend enormously on self-generated electricity, which is 20 times as much as the cost expended on public power supply. Firms have no choice than to resort to self-generated electricity as technique for minimizing the costs of inadequate power supply. However, self-generated electricity increases the risk of costs of firms with respect to damages of raw materials, destruction of production equipment, loss of output, dwindled productivity and loss of productive workhours (Ebernard, 2009). The cost of self-generated electricity is significantly higher than grid-supplied electricity. Thus, the differences in costs between these two sources of electricity constrain the possibilities of self-generated electricity as an effective solution to the inadequacy of power supply in Nigeria.

Small scale enterprises expend on the average, 27% of their investment on self-generated electricity and they are equally confronted with enormous cost imposed by incessant power outages (Lee, 2010). Large enterprises are not left out from the persistent electricity crises in Nigeria. The Manufacturing Association of Nigeria (2014) asserted that Nigerian firms spend about 38% of their production cost on self-generation of electricity. In addition, 25% of investment in huge industrial projects is devoted to alternative source of power supply (Ado, 2015). As a matter of fact, financial institutions demand for evidence of effective generating plants before providing credit facilities to producers and contractors (Akuru, 2014). This however indicates that the inadequacy and unreliability of power supply is faced by small and large-scale firms in Nigeria. The business environment of Nigeria is partly dysfunctional as a result of infrastructural deficiency (power, transportation and telecommunication). The World Bank (2014) stated that the greatest challenge bedeviling firms and enterprises in Nigeria is ineffective infrastructure especially electricity supply.

Importance of Electricity to SMEs

Electricity is one of the most important blessings that science has given to mankind and it plays a huge part in our day to day activities. SMEs in Nigeria depend heavily on electricity as a factor input, without which they will be unable to create goods or offer services to their customers. The reliance of SMEs on electricity providers reflects the importance to electricity supply to the operations of SMEs.

Some common importance of electricity to SMEs include:

i. Communication and marketing/advertisement
ii. Transportation
iii. Production of goods
iv. Storage
v. Powering of equipment/machineries for the production of essential items like food, clothing, etc.
vi. Reduction in cost of production

Communication and marketing/advertisement

Effective means of communication, advertisement and marketing of products through the use of phones, media and internet to boost business activities.

Transportation

Electricity has brought about modern means of transportation such as electric trains and vehicle for effective movement of goods/products to the markets/consumers.

Production of goods

It has brought about a rapid increase in the production (mass production) of essential goods and product, hence a reduction in the prices of those commodities.

Storage

Warehouses, cold rooms and storage homes are powered by electricity to preserve perishable and durable goods.

Powering equipment/machineries

Equipment/machineries are powered with electricity for the production of essential items like food, clothing, etc.

Reduction in cost of production

It is cost effective compared to when SMEs are run on generator

SMEs in Nigeria

SME is an important sector in an economy, especially in a developing country like Nigeria, due to their enormous contributions to economic growth, employment generation and wealth creation. According to (Adeyemi, 2014), SMEs in developing countries contribute about 50% to the gross domestic product and 65% to employment level. SMEs is a strategy for alleviating poverty in developing economies. SMEs also help to improve the standard of living of the Nigerian populace, contribute to gross capital formation, foster innovation, invention and creativity and provide opportunities for entrepreneurial training and development (Osotimehin, 2012). Unfortunately, the contributions of SMEs have not been strongly felt on the Nigerian economy. The non-significance of the SMEs on the Nigerian economy can be linked to the enormosity of challenges bedeviling the sector. (Agwu, 2016) commented that the major challenges facing SMEs in Nigeria include erratic and irregular supply of power, inadequate financing, inadequate market research, heavy reliance on limited markets for finished goods, poor business acumen and lack of proper documentation of records amongst others. Similarly, (Adeyemi, 2014) contended that lack of managerial expertise, lack of access to funds from financial institutions, infrastructural decadence with respect to roads, railway and power supply, and poor technological know-how are the major challenges of SMEs in Nigeria.

Review of Empirical Studies

Various studies have been carried out to examine the impact of electricity on the performance of SMEs in Nigeria and other countries. Ologundudu, 2014 investigated the epileptic nature of electricity supply and its consequences on industrial and economic development in Nigeria between 1972 and 2010. The study sought the impact of industrial output, capital, labour, electricity supplied and technology on the GDP per capita of Nigeria using the ARDL

technique and the granger causality test. The results showed a bidirectional causal relationship between electricity supply and economic performance. This implies that electricity supply predict economic performance and vice-versa.

Akuru, 2014 examined the economic implication of constant power outages on SMEs in Nigeria. The study selected 32 SMEs in various industries as samples for the study, in which data collected are analyzed with the use of descriptive statistics. The findings revealed that the main constraints on the growth and performance of SMEs in Nigeria include lack of financing, poor infrastructure (power supply and road networks), difficulty to get machines and spare parts and difficulty to get raw materials.

Doe, 2014 examined the effect of electric power fluctuations on the profitability and competitiveness of SMEs in the Accra Business District of Ghana. The study employed the systematic sampling technique to select 70 SMEs in the area. Data was collected with aid of structured questionnaires and was analyzed with the use of regression analysis. The results indicated unreliable power supply makes it difficult for SMEs to produce in higher quantities and quality, thus resulting to low level of sales and profitability. Furthermore, it is found that low profitability adversely influences the return on asset and return on investment of selected SMEs. The competitiveness of SMEs is positively related to their level of profitability.

Abdullahi, 2014 investigated the challenges affecting the performance of SMEs in Nigeria, using Kano State as case study. The study utilized the simple random sampling technique to select 125 SMEs in Kano State. Data for the study was generated through the distribution of questionnaires to SMEs owners. The result of the descriptive statistics revealed that the frontline challenges facing SMEs in Kano State are financial problem, infrastructural problem (inadequate power supply, road, railway and telecommunication), management problem, marketing problem, technological problem, lack of skilled labour, unfavourable policy of the government, multiple taxation, strategic planning problem and locational problem.

Aworemi, 2014 economically analyzed the factors influencing the performance of SMEs in Ilorin Metropolis, Kwara State. The study randomly selected 250 SMEs within the three local government areas in Ilorin Metropolis. Performance of the firm was measured by return on investment while the independent variables include financial constraint, infrastructural facilities, efficiency of management, favorability of government policy,

education and technical know-how of owners, labour, patent laws, consistency of state and government policy, power supply, bureaucracy of banks on credit provision and efficiency of internal managerial characteristics of owners. Data was collected by distributing questionnaires to SMEs owners/managers and was analyzed with the use of correlation and regression analysis. The results indicated that power supply, labour, patent laws, policies of state and local governments and financial constraints are the significant factors that drive SMEs performance in Ilorin Metropolis.

Kamara, 2017 assessed the impact of electricity supply on the performance of SMEs in Sierra Leone. The study found that electricity supply is positively related to the performance of SMEs in Sierra Leone. Furthermore, it was found that the challenges of electricity supply on SMEs development in Sierra Leone amongst others include poor system of electricity transmission and distribution, inability of generating capacity to match the demands of electricity in urban areas, heavy reliance on thermal and hydroelectric power, unskilled labour and high cost of electricity tariff.

Gbeve, 2015 examined the effect of erratic power supply on SMEs in Kumasi Business District of Ghana. The study sampled 80 SMEs operating in the study area. Primary data, which is questionnaire, was used to collect data from respondents. The findings indicated that erratic power supply from the national grid poses great threat to the profitability of SMEs. Furthermore, it was found that close to half of selected SMEs owners resort to self-generated electricity, thus incurring additional cost coupled with the high tariff they pay to the electricity company. In addition to this, it was pointed that erratic power supply in Ghana is attributed to various agencies responsible for power supply, because they have not invested adequately and planned properly to improve power situation.

Onugu, 2005 examined the problems and prospects of SMEs in Nigeria. The study randomly selected 300 SMEs in Nigeria. The SMEs cut across various sectors of the Nigerian economy. Data for the study was generated by the use of structured questionnaire. The results indicated SMEs have contributed enormously to the growth and industrialization of countries across the globe. SMEs in Nigeria have performed below expectation due to their managerial immaturity, economical instability and frequent changes in government policy. Furthermore, it was found that the top-five greatest challenges confronting SMEs in Nigeria are managerial problem, little or no access to finance, infrastructure underdevelopment, policy inconsistencies and bureaucracy of government and multiple taxation.

Osobase, 2014 examined the relationship between electricity generation, supply and manufacturing sector performance in Nigeria between 1975 and 2011. Index of manufacturing sector productivity was used to measure the performance of manufacturing sector while electricity generation, capacity utilization, inflation rate, exchange rate and government expenditure are employed as the independent variables. The correlation analysis, granger causality test and Johansen integration technique was adopted as the estimation techniques. The results showed a weak positive relationship between electricity generation and manufacturing productivity index in Nigeria. Furthermore, a unidirectional causality was found electricity generation and index of manufacturing productivity. The study maintained that epileptic power supply dwindles the growth of manufacturing sector in Nigeria.

Ofoegbu, 2013 examined the effects of contextual factors on the performance of SMEs in Ilorin Metropolis. The study randomly selected 140 SMEs in the area. The contextual factors considered in the study are capital, availability of raw material, electricity, enabling environment, available market, state of economy, competition and government policy. Data for the study was obtained through administration of questionnaire to respondents and was analyzed logit regression technique. The results showed that electricity, enabling environment and available market are the significant contextual factors that affect SMEs performance in Ilorin Metropolis while availability of raw material, state of economy, competition and government policy have weak impact on SMEs performance in Ilorin Metropolis.

Nyanzu, 2016 analyzed the effect of power supply on the performance of SMEs in Ghana. The study is a comparative analysis between SMEs in Tema and Northern Ghana. The study used the World Bank Survey to select 710 firms in Tema and Northern Ghana. The findings showed that the presence of power outages, which is the frequency and number of hours of power outages adversely affect the performance of selected SMEs with respect to profitability. The results further showed that SMEs operating in Northern Ghana are greatly affected by power outage than SMEs in Tema.

Methodology

The study is confined to Kaduna Metropolis. Kaduna Metropolis is the capital of Kaduna State. Kaduna metropolis is notable for trading and agricultural activities and is among the urbanized and densely populated cities in Nigeria. The population of the study comprises of 70 SMEs in Kaduna Metropolis. The study employed the purposive sampling technique to select 70 SMEs in two local government areas within Kaduna Metropolis. The local government areas are Kaduna North and Kaduna South.

Structured questionnaire was used to generate data for the study. The questionnaire is divided into two parts. The first part supplied information on the firm-characteristics of SMEs while the second part provided information on how electricity power affecting the performance of SMEs. The items are structured on a four-point rating scale (1=strongly disagree to 4=strong agree). The questionnaire was administered to 70 SMEs owners/managers in two local government areas within Kaduna Metropolis, only 60 copies were returned, giving a response rate of 85.7%. The data was analyzed with use of descriptive statistics (mean and standard deviation) and the Pearson chi-square technique was employed to test the research hypotheses at 5% significance level. The Statistical Package for Social Science (SPSS) is used to analyze the data.

Presentation of Results

The results are presented as follows:

Table 1: Firm Characteristics of selected SMEs (N=60)

Variables		Frequency	Percent	Valid Percent	Cumulative Percent
Type of SMEs					
Valid	Sole-proprietorship	30	50.0	50.0	50.0
	Partnership	17	28.3	28.3	78.3
	Family-Owned Business	9	15.0	15.0	93.3
	Private Limited Company	4	6.7	6.7	100.0
	Total	60	100.0	100.0	
Industry of Operation					
Valid	Mining/Manufacturing	14	23.3	23.3	23.3
	Agriculture/Agro-Allied	16	26.7	26.7	50.0
	Service	13	21.7	21.7	71.7
	Construction/Engineering	10	16.7	16.7	88.3
	Others	7	11.6	11.7	100.0
	Total	60	100.0	100.0	
Years of Active operation					
Valid	Less than 10 years	16	26.7	26.7	26.7
	11-20years	36	60.0	60.0	86.7
	Above 20 years	8	13.3	13.3	100.0
	Total	60	100.0	100.0	
Location					
Valid	Kaduna North LGA	27	45.0	45.0	45.0
	Kaduna South LGA	33	55.0	55.0	100.0
	Total	60	100.0	100.0	
Net-Worth of SMEs					
Valid	Less than ₦10million	8	13.3	13.3	13.3
	₦11-₦100million	35	58.3	58.3	71.7
	Above ₦100million	17	28.3	28.3	100.0
	Total	60	100.0	100.0	
Size of Workforce					
Valid	Less than 20 staff	11	18.3	18.3	18.3
	20-50 staff	37	61.7	61.7	80.0
	Above 50 staff	12	20.0	20.0	100.0
	Total	60	100.0	100.0	

Source: Author's Extraction from SPSS (2019)

Table 1 presented the firm-characteristics of selected SMEs. Information about the type of SMEs, industry of operation, years of active operation, location, net-worth and size of workforce outlined in Table 1. The results

showed that majority of selected SMEs operate sole-proprietorship form of business (50%). This implies that the affairs of the business is managed and controlled by one person, who is the owner. The distribution pattern of SMEs in Kaduna Metropolis affirmed the position of Adeyemi (2014) that majority of SMEs are one-man business or sole-proprietorship. On the basis of industry, majority of the SMEs operate in Agriculture/Agro-Allied (26.7%) and Mining/Manufacturing (23.3%) sectors respectively. With reference to the years of operation, 26.7% have been in active operation for than less than 10 years while 60% and 13.3% have been in existence between 11-20 years and above 20 years respectively. On the aspect of location, 45% of the SMEs are located in Kaduna North LGA while 55% are domiciled in Kaduna South LGA. The net-worth shows that 13.3% have a net-worth below ₦10million and 86.7% above ₦11million. Furthermore, 61.7% of the SMEs have a size of workforce between 20 and 50 staff.

Table 2: Summary Statistics of Respondents' Opinions on the Effect of Electricity on SMEs Performance (N=60)

S/N	Items	N	Mean	Standard Deviation	Remark
1.	The firm enjoys adequate supply of electricity.	60	1.68	0.57	Disagreed
2.	The firm uses more publicly provided electricity than self-generated electricity.	60	1.75	0.57	Disagreed
3.	The firm pays the exact electricity charges it consumes.	60	1.80	0.66	Disagreed
4.	The firm experience less power outage in a month.	60	1.75	0.60	Disagreed
5.	The electricity that is supplied comes with high current that supports the equipment of the firm.	60	2.57	0.91	Agreed
6.	Use of Electricity supply has reduced the operational expenditure of the firm.	60	1.78	0.65	Disagreed
7.	Use of electricity supply has increased the	60	2.07	0.73	Disagreed

	productivity of the firm.				
8.	Use of electricity supply has enhanced the profitability of the firm.	60	1.60	0.61	Disagreed
9.	Use of electricity supply has enhanced the cost-competitiveness of the firm.	60	1.68	0.57	Disagreed
10.	Use of electricity supply has stimulated the sales growth of the firm.	60	1.73	0.61	Disagreed
11.	The firm has been enjoying economies of scale as a result of regular supply of electricity.	60	1.77	0.67	Disagreed
12.	Use of electricity supply has given the firm competitive advantage.	60	1.62	0.61	Disagreed

Source: Author's Extraction from SPSS (2019)

Table 2 presented the descriptive statistics (mean and standard deviation) of the opinions of respondents on how electricity supply affects their firm performance. The items were structured on a four-point rating scale ranging from 1=strongly disagree to 4=strongly agree. A benchmark mean was set at 2.50. Mean values of items higher than 2.50 indicates that the respondents generally agreed to such items. Conversely, mean values of times less than 2.50 indicate that respondents generally disagreed to such items.

The result showed that the respondents generally agreed that electricity is supplied with high current that supports the equipment of the firm (M=2.57; SD=0.91). Furthermore, the respondents disagreed that: they do not enjoy adequate supply of electricity (M=1.68; SD=0.57); they use more of publicly-provided electricity than self-generated electricity (M=1.75; SD=0.57); they pay for the exact amount of electricity consumed (M=1.80; SD=0.66); they experience less power outage in a month (M=1.75; SD=0.60); use of electricity reduced their operational expenses (M=1.78; SD=0.65); use of electricity increased their productivity (M=2.07; SD=0.73); use of electricity increased their profitability (M=1.60; SD=0.61); use of electricity enhanced their cost-competitiveness (M=1.68; SD=0.57); use of electricity stimulated their sales growth (M=1.73; SD=0.61); use of electricity brings economies of

scale (M=1.77; SD=0.67) and use of electricity gives them competitive advantage (M=1.62; SD=0.61).

Testing of Hypotheses

The Pearson chi-square technique is used to test the research hypotheses at 5% significance value. If the probability of the Pearson chi-square is less than 0.05, the null hypothesis is rejected. Conversely, if the probability of the Pearson chi-square is higher than 0.05, the null hypothesis is accepted.

Hypothesis One:

$H_{0:}$ Electricity power has no significant influence on the productivity of SMEs in Kaduna Metropolis.

Table 3: Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.158[a]	3	.027
Likelihood Ratio	10.510	3	.015
Linear-by-Linear Association	6.490	1	.011
N of Valid Cases	60		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .90.

Source: Author's Extraction from SPSS (2019)

The result in table 3 shows the Pearson chi-square test developed to test the significance of the null hypothesis to know if electricity power has no significant influence on the productivity of SMEs in Kaduna Metropolis.

The result shows that the value of the Pearson chi-square is 9.158, with probability of 0.027, which is less than 0.05. Thus, the null hypothesis is rejected and the alternate hypothesis is accepted that electricity power has significant influence on the productivity of SMEs in Kaduna Metropolis.

Hypothesis Two

H_0: Electricity power has no significant influence on the profitability of SMEs in Kaduna Metropolis.

Table 4: Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.423[a]	2	.024
Likelihood Ratio	7.632	2	.022
Linear-by-Linear Association	5.126	1	.024
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.80.

Source: Author's Extraction from SPSS (2019)

The result in table 4 shows the Pearson chi-square test developed to test the significance of the null hypothesis to know if Electricity power has no significant influence on the profitability of SMEs in Kaduna Metropolis.

The result shows that the value of the Pearson chi-square is 7.423, with probability of 0.024, which is less than 0.05. Thus, the null hypothesis is rejected and the alternate hypothesis is accepted that electricity power has significant influence on the profitability of SMEs in Kaduna Metropolis.

Hypothesis Three

H_0: Electricity power has no significant influence on the cost-competitiveness of SMEs in Kaduna Metropolis.

Table 5: Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.494[a]	2	.031
Likelihood Ratio	5.499	2	.019
Linear-by-Linear Association	3.063	1	.031
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.35.

Source: Author's Extraction from SPSS (2019)

The result in table 5 shows the Pearson chi-square test developed to test the significance of the null hypothesis to know if Electricity power has no significant influence on the cost-competitiveness of SMEs in Kaduna Metropolis.

The result shows that the value of the Pearson chi-square is 5.494, with probability of 0.031, which is less than 0.05. Thus, the null hypothesis is rejected and the alternate hypothesis is accepted that electricity power has significant influence on the competitiveness of SMEs in Kaduna Metropolis.

Considering the significance of the test carried out on the hypothesis in Tables 3,4 and 5, the null hypothesizes are rejected while the alternatives are accepted, since their probabilities are less than 0.05. This implies that the performance of electricity power has a critical role to play towards the productivity, profitability and cost-competitiveness of SMEs in Kaduna Metropolis and Nigeria at large.

Conclusion and Recommendations

The findings revealed that electricity power exerts significant impact on the performance of SMEs in Kaduna Metropolis. Furthermore, electricity power has significant impact on the productivity, profitability and cost-competitiveness of selected SMEs in Kaduna Metropolis. This implies that electricity supply has greatly reduced - the productivity level of selected SMEs, their ability to generate profit and made their products slightly expensive compared their rivals. Electricity is a key factor entrepreneur must take into consideration in their product, cost and financing decisions. This position supports the empirical findings of (Ofoegbu, 2013); (Akuru, 2014); (Doe, 2014); (Abdullahi, 2014)**;** (Aworemi, 2014)**;** (Gbeve, 2015) and (Nyanzu, 2016) that electricity supply is one of the main challenges impeding the growth and development of SMEs in Nigeria and poses serious threat on their performance level.

Given the unreliable and inadequate state of power supply in Nigeria, which adversely affects SMEs in Nigeria, the following recommendations are put forward:

i. Government should invest massively in other sources of energy such as coal, biomass and solar to generate electricity in Nigeria.
ii. Foreign investment should be encouraged in the power sector. By doing these, foreign investors can bring their expertise and technical-know which will be invaluable to addressing power challenges in Nigeria. Also, public-private partnership should be encouraged in the power sector.
iii. Existing facilities at generating, transmitting and distributing stations should be periodically serviced and properly maintained.

iv. Government should map out a well-articulated to strengthen the linkage between the generating, transmitting and distributing stations.
v. The activities of the distributing companies should be monitored. The act of bringing excessive electricity bills and extorting consumers should be curtailed.
vi. Pre-paid meters should be distributed to all households. Also, the cost attached to the acquisition of pre-paid meters should be made affordable to the common man.

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