Impacts of Grid Electricity Supply on Micro Enterprises In Ekiti State

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Abstract

This paper presents the assessment of the effect of grid electricity on the micro enterprises in Ekiti State of Nigeria using four geographic locations as case study. Data for the research work were gathered through the use of questionnaires, and semi structured interview while secondary data were obtained from existing information available in reports and documents to supplement field data. It was discovered that the availability of grid electricity in Ekiti State will stimulate the establishment, growth and expansion of small and micro enterprises though the present epileptic supply constituted a bottleneck to development. Currently, most enterprises in Ekiti State relied on optional power generator plant to remain in business even when it causes high cost of production, air pollution and noise pollution.

KEYWORDS: Impacts, Grid electricity, Micro, Enterprise, Ekiti State

Introduction

The Nigerian national economy is characterized by myriad of problems which has constituted a bottleneck to developmental oriented governance. Some of the most disturbing among the problems are the menace of unemployment and security challenges. Nigeria is faced with the challenge of curbing increase in crime rate, unprecedented increase in prostitution, high mortality rate, political thuggery as a result of reasons connected with youth unemployment. The dwindling economic growth and development attributable to insufficient number of economic activities call for people to be engaged in entrepreneurship in the form of small and medium scale enterprises in order to improve the economic growth and development of the country. In all developing economies like Nigeria, the positions of policy makers, economists and international development partners are that small and medium enterprises [SMEs] are a potential driving force for their industrial growth and economic development (Maleko, 2005). The smallest in this group

is the microenterprises, which are also touted as a veritable tool for eradicating poverty in the society. Poverty is caused by inadequate incomes and this, the SMEs could effectively contend with. Evidences abound that in economies where enterprises have been actively promoted and encouraged, they have recorded decline in the poverty rates. This is especially true of Asia whereas in sub-Saharan Africa, more and more people have sunk deep into poverty. India, for instance, illustrates a model of bottom-up, demand driven, grass root-led economy depending much on local entrepreneurial energy and less on foreign direct investment. Her economic growth projected to be among the fastest in region is expected to be achieved via a young confident population as it releases its creative entrepreneurial energies (Kirubi, 2006). This can also be achieved in Nigeria if the necessary imperatives are put in place to actively promote youth entrepreneurship using SMEs.

A small-scale enterprise is a business that employs a small number of workers and does not have a high volume of sales. Such enterprises are generally privately owned and operated as sole proprietorships, corporations or partnerships. Though the legal definition of a small-scale enterprise varies by industry and country, entrepreneurship comprises any purposeful activity that initiates, maintain or develop a profit-oriented business in interaction with internal situation of the business or with the economic, political and social circumstances surrounding the business (Wikipedia). Microenterprise is usually a business that employs a small number of employees. It will usually operate with fewer than 10 people and is usually started with a small amount of capital. Most microenterprises specialize in providing goods or services for their local areas and it serves a vital purpose in improving the quality of life for people in developing countries. Microfinance seeks to help microenterprises by giving small amounts of capital to these businesses as loans. This allows poor individuals or families to start their own businesses, earn

income and benefit their communities (Investopedia). In developing countries, microenterprises comprise the vast majority of the small business sector because of the relative lack of formal sector jobs for the poor. It will add value to a country's economy by creating jobs, enhancing income, strengthening purchasing power, lowering costs and adding business convenience thereby forming the most common type of business.

In developed countries like the United States, the microenterprise is defined as a business with five or fewer employees. Many of these businesses have no employees other than the self-employed owners. Additionally, such microenterprises generally need less than $35,000 in loan capital and do not have access to the conventional commercial banking sector. Even when the enterprises are in place, it is faced with the problems of inadequate market, poor fund, unfavorable tax regime, high overhead cost occasioned by poor grid electricity.

The term grid is usually used to describe an entire continent's electrical network, a regional transmission network or may be used to describe a sub-network such as a local utility's transmission grid or distribution grid. Therefore, an electrical grid is an interconnected network for delivering electricity from suppliers to consumers. It consists of three main components- electricity generation, transmission and distribution. The transmission network conveys the power over long distances through thick vegetations to its wholesale customer. Upon arrival at the service location, the power is stepped down again to the required service voltages for industrial, commercial and residential consumption. The development of electricity in Nigeria is dated back to 1898 when the first generating plant was built in the city of Lagos from where it spread to other parts of the country and in 1972 the Federal Government promulgated decree No 24, which saddled the National Electric Power Authority (NEPA) with the responsibility to generate, transmit and distribute electricity to all nooks and crannies of the nation. The National Integrated Power Project (NIPP) was initiated in 2004 by the Federal Government of Nigeria to boost the nation's overall generating capacity. As a result of the

inadequate electricity supply to meet the Nigeria economic growth, the federal government enacted the Electricity Power Sector Reform (ESPR) act on the 11th March, 2005 with a view to making the private sector the leading engine of growth and reintegrate Nigeria into the global economy as a platform to attract foreign direct investment in an open and transparent manner. The reform culminated in the repeal of the National Electricity Power Authority (NEPA) and the electricity act and it's restructuring from vertical integration structure into 18 unbundled autonomous companies which consist of one transmission company, six generation and eleven distribution companies respectively. The act further provided for the establishment of the Nigeria Electricity Regulatory Commission (NERC) the Rural Electrification Agency (REA) and the National Electricity Liability Company (NEMNCO), which are special purpose entities created to manage the residual assets and liabilities of the defunct NEPA after privatization of the unbundled companies. The act also provided for the establishment of a Power Consumer Assistance Fund, to subsidize under privileged electricity consumers. A holding company called PHCN was put in place to manage the different sectors while undergoing privatization processes (www.nigeriasystemoperator.org). Even with above listed efforts of the Nigerian government to reform the grid electricity, the PHCN has not faithfully discharged its responsibilities. This has affected the micro enterprises and this paper attempt to assess the impacts of grid electricity on micro enterprises.

Methodology

The Study Area

This gives an overview of the geographical location of Ekiti State (Nigeria) situated entirely within the tropics. It is located between longitudes 40 51 and 50 451 East of the Greenwich meridian and latitudes 70 151 and 80 51 north of the Equator. It lies south of Kwara and Kogi State, east of Osun State and bounded by Ondo State in the east and in the south. Ekiti State has 16 Local Government Councils. Upon its creation on October 1st 1996 the population of Ekiti State was 1,750,000 with the capital located at Ado-Ekiti. The 2006 population census by the National Population Commission put the population of Ekiti State at 2,384,212 people and the

population growth rate was at 1.5 percent in September, 2012 the time of data gathering. Ekiti as a people settle in nucleus urban patterns, well linked with network of roads. The State can boast of more than 127 large and small towns located on hills and valleys mainly an upland zone rising over 250 metres above sea level, Ekiti has a rhythmically undulating surface. The landscape consists of ancient plains broken by steep-sided outcropping dome rocks (www.ekitistate.gov.ng). Ekiti State has fairly good infrastructural set up such as good roads, availability of safe water, good health facilities, and availability of grid electricity, telecommunication services, tourist attractions, skilled personnel, interstate trade and security, which could provide good entry for investment. Identification of the specific areas studied was made based on secondary information, dense population, geographic spread, business activities, government presence and fully conscious that the areas in question were already connected to grid electricity and that the study area can vividly represent the characteristics of Ekiti State. Four towns, namely, Ikere-Ekiti, Otun-Ekiti, Ikole-Ekiti and Ado-Ekiti were selected for detailed study. Even when agriculture is the main occupation of the people of Ekiti, small, medium and micro enterprise activities abounds.

2.1 Nature and sources of data

The study combined quantitative and qualitative methods, including field visits and electricity availability appraisal to analyze the social and economic significance of access to electrificity in Ekiti State. The guiding questions were tailored to obtain responses particularly on the availability of grid electricity, possession of standby generator, effect of usage of the generator on the enterprise, effect of generator on the environment, cost benefits and their general views on economic growth of the State. 120 questionnaires were evenly distributed to six types of enterprises namely welding, tailoring, milling, beer selling, barbing and electronics repairs in the

chosen study areas to reflect fair geographical spread to collect a consistent set of data from direct observations, 104 questionnaires were returned amounting to 87%.(Tables 1 and 2).. Semi structured interviews were conducted with selected operators of micro enterprises to elicit further information on the impact of electricity on the growth of micro enterprises in the State. Table 3 shows the percentage dependency on electricity and various functions it is used for. Field visits were undertaken to appreciate the micro enterprise when grid electricity was available and when there was outage. This provided supplementary information and helped in cross-validation of data collected from the questionnaires. The impact of electricity was assessed relying on the data harnessed from the stated approaches using the six listed micro enterprises. The supply of electricity in Ekiti State is very erratic and the enterprises are quite used to switching back and forth between the grid electricity and optional generator for their enterprises. Thus, the erratic power supply permitted one to observe and compare the cost of operation of the enterprises under three scenarios of use of grid electricity alone, combined use of grid electricity with standby generator and the use of optional generator alone. The approaches were consistent and considered adequate to establish the impacts of grid electricity on micro enterprises in Ekiti State.

RESULTS AND DISCUSSION

An attempt was made to investigate both the qualitative and quantitative impact of electricity on the production of various micro-enterprises in Ekiti State. Observations were made and questions were asked to elicit data on production of listed enterprises during the “with” and “without” electricity scenarios. Using this criterion, three production efficiency indicators, namely of use of grid electricity alone, combined use of grid electricity with standby generator and the use of optional generator alone per month were used to estimate the impact of electricity on micro-

enterprises (Tables 4). It was found that availability of grid electricity allowed a reduced cost of production and provided a significant beneficial impact of electricity on microenterprises studied. The cost of using grid electricity is found to be the lowest thereby increasing the profit from all enterprises studied. As expected, the complete reliance on optional generator was quite very costly and could cause an entrepreneur to fold up. This view was cheered by Foster and Steinbuks (2008) as they asserted that in most of the countries of Africa, the average cost of generating electricity in-house is significantly higher than the cost of electricity from the public grid. Even when grid electricity is erratic in Ekiti State, the little available fraction still caused a reduction in cost when compared with the use of generator alone.

Grain Milling

18 questionnaires were returned out of 20 distributed to grain milling shop owners. They all have the grid powered induction motors and petrol powered machines in order to remain in business. The impact of grid electricity was felt on the cost of purchase of fuel, effect of air pollution and cost of purchase of alternative machine. It was however observed that the erratic power supply exposed them to menial work of starting the petrol engine each time they want to grind pepper or other grains. Grid electricity are clean, easy to operate and cheaper than other sources. The increase in accesses and uses of grid electricity services for production by microenterprises have proved to be an important factor in improving the physical and financial assets of entrepreneurs and this was in agreement with the views of Meadows et al (2006). According to the findings obtained through interview from the studied areas, the profitability of enterprises like grain milling was highly dependent on the cost of electricity services paid as monthly bills.

Tailors

The comments during an interview from tailors revealed that using electricity for production for electric motor machines are faster than the manual machines because it is easy and fast to operate and meets the customer's requirements with good finishing. The use of generator could only assist in sewing while charcoal pressing iron will be used to press the cloth. This will usually reduce the work rate and require more mental concentration to achieve customer standard. Additional advantages include electric machines having high speed, comfort, and using little human energy to operate. It was further observed that to owning electric machines leads to higher standards of living for the entrepreneurs and higher customer quality requirements.

Welders

18 out of 20 questionnaires distributed were returned and four welding shop owners were interviewed to supplement the findings from field visits. It was observed that the erratic nature of the grid electricity in the State is affecting their works even when they have diesel generators, the cost of fuel, the poisonous byproducts and the noise produced by the generators among other inconveniencies, made the enterprise worrisome. They opined that, their net profit would be reasonable if the grid electricity is adequately provided and that they will be willing to pay the appropriate tariff as long as the service is effectively available. They condemned the way estimated is distributed even without the power is not provided. However, the financial position of welders during an interview reflected improvement as they could adequately cater for their basic necessities of life and better living standards.

Hair barbing Salons

18 out of 20 questionnaires distributed were returned. Four barbing salon owners were interviewed based on the impacts of grid electricity on their enterprises. Their shops required

only a small generator- usually the 650VA type and the price is about #15,000.00. Though it is affordable, they contended that the grid electricity will enhance their enterprise as they would be able to use continuous play of music to attract customers. The hazards of pollution, noise and regular purchase of fuel made grid electricity the most preferred. The salon owners however, admitted that their relative turnover made from the business enterprise has sustained their improved living conditions.

Impact of electricity on micro-enterprises

The impact and importance of grid electricity services on micro-enterprises are different from one micro-enterprise type to another. For example, for barbing salon, welding workshops, and Tailoring, lack of electricity services in these micro-enterprises creates significant constraint, if there is no electricity service at a particular time, the enterprises would have to resort to use of standby generator. Availability of grid electricity varies from town to town with Ado Ekiti being the most populated and State capital, the worst hit. Otun Ekiti, because of being fed from Omuaran side, enjoys best grid electricity though enterprises activities were at low ebb.

Six out of eighteen welders that responded to questionnaires were not connected to grid electricity because the voltage profile is usually low and monthly estimated bills were very high even when the voltage could not power their machines. Though, their average monthly expenses were high, their solace was that they are still in business (Table 5). The productive uses of electricity services such as lighting and refrigeration in small shops and service activities, and for lighting, heating in the houses create comforts for the entrepreneurs. The availability of electric lighting in the households enabled household industries to increase working hours which could lead to increased output and income. Availability of electricity services in the study areas allows people to have more working hours. observations showed that barbing shops, beer bars and

tailors shops sometimes extend their working hours to catch on the clean energy provided by the grid electricity. In addition, owners of enterprise affirmed that their children have more time to read when there is good lighting from the grid electricity services. This situation implies that electricity services are important not only for production but also for social benefits.

Conclusion

Adequate availability of grid electricity will provide accelerated development for Ekiti State. It will encourage more interest in micro enterprise thereby reducing unemployment. It will enhance better income and better living since it is usually clean, safe, neat, efficient and friendly. The Government is therefore enjoined to improve on the state of grid electricity in Ekiti State.

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Table 1: Questionnaire Distribution

S/No	Town	No of Samples	No returned	% Returned
1	Ado- Ekiti	30	26	86.7
2	Ikere- Ekiti	30	24	80
3	Ikole- Ekiti	30	30	100
4	Otun- Ekiti	30	24	80
	Total	120	104	86.7

Table 2: Types of Enterprises and Questionnaire Responses

S/No	Type of enterprise	No of Questionnaires distributed	No of Questionnaires returned	Percentage
1	Barbing	20	18	90
2	Welding	20	18	90
3	Tailoring	20	19	95
4	Beer selling	20	16	80
5	Electronics repairs	20	16	80
6	Milling	20	18	90
Total		120	104	86.7

Table 3: Dependency of enterprises on electricity and uses

	Type of enterprise	% Dependency on electricity	Use of Electricity
1	Barbing	100	Powering clippers and lighting
2	Welding	100	Powering welding, grinding and cutting machines
3	Tailoring	100	Powering sewing machine and pressing cloth
4	Beer selling	60	Powering freezers, music box, television and lighting
5	Electronics repairs	50	Soldering iron, testing and diagnosis
6	Milling	100	Powering induction motor

Table 4: Comparative cost analysis

S/N	Enterprise	Working hours/day	Working hours/month	Ave. monthly cost of grid electricity	Ave cost using Grid electricity & Generator	Ave cost using Generator alone
1	Welding	9	25	#4,600.00	#28,600.00	#33,750.00
2	Tailoring	10	25	#2,200.00	#16,750.00	#21,000.00
3	Barbing	6	30	#2,000.00	#4,910.00	#8,730.00
4	Milling	5	30	#2,000.00	#6,365.00	#7,275.00
5	Beer selling	10	30	#3,600.00	#17,100.00	#22,500.00
6	Electronics	6	25	#2,000.00	#4,425.00	#7275.00

Table 5: Impact of Grid Electricity

S/NO	Sample	Responses
1	Availability of grid electricity	Not always available and sometimes when available, it is of low voltage
2	Use of Generator	Possession of standby generator is quite important to remain in business because the average weekly data of grid electricity is about 3 hours/day
3	Effect of generator on enterprise	The use of generator is of great assistance to owners of enterprise. It brought positive effect on business
4	Effect of generator on the environment	The noise from the generator is deafening. The byproduct from the exhaust constitute pollution
5	Cost benefit	The grid electricity is clean, safe, efficient and cheap when compared with use of generator
6	Effect of grid electricity on the enterprise	Grid electricity has positive impacts on enterprise as it will cause higher income and improved standard of living.
7	Effect of enterprise on growth of State	The growth of enterprise has contributed to the growth of the state. This is evidenced by standard of living of the owners of enterprises.
8	General remarks	The rate of growth of the State will be better is the grid electricity is provided to meet the demand of citizens.