

ENERGY CRISIS, POVERTY, INDUSTRIALIZATION AND THE CHALLENGES OF ACHIEVING DEVELOPMENTAL GOALS IN NIGERIA

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Abstract

Energy resources have remained one of the major resources to industrialization of any nation especially when judiciously and effectively utilized for developmental purposes. Its proper utilization is a strong factor in achieving the Millennium Development Goals (MDGs) in Nigeria. Access to energy is an essential tool decrease rate in poverty and promotion of economic growth, communication technologies, education, industrialization, agricultural improvement and expansion of the nation's economy in general. To achieve millennium aims and objectives, effective control of the energy sector is required as it requires abundant, reliable, and cost-effective energy access. In spite of how Nigeria is blessed with natural and human resources, she lacks the foresighted leadership at federal, state and local levels to convert these resources into blessings for sustainable development. The Nigerian energy industry is probably one of the most inefficient in meeting the needs of its customers globally. This is most evident in the persistent disequilibrium in the markets for electricity and petroleum products, especially kerosene and diesel. The dismal energy service provision has adversely affected living standards of the population and exacerbated income and energy crisis in an economy where the majority of the people live on less than Three Hundred Naira per day. Yet, Nigeria is regarded as the sixth largest exporter of crude oil in the world. Nigeria's persistent energy crisis has weakened the industrialization process, and significantly undermined the effort to achieve sustained economic growth, increased competitiveness of domestic industries in domestic, regional and global markets and employment generation.

Keywords: Energy crisis, Poverty, Industrialization, Barrier, Developmental goals.

Background to the Study

Energy resources are paramount resources to industrialization of any nation especially when judiciously and effectively utilized for developmental purposes. Africa is one of the most blessed continents in the world with Nigeria as the leading producers of crude, natural and human resources but lack of proper utilization of these resources has adequately affected the nation bringing high level of poverty in spite of these abundances of blessing

Energy crisis in Nigeria may be considered as a contributory factor to high level of poverty in Nigeria as it hinders sustainable economic growth and development as it affects the productivity of workers, in that it demoralizes the morale of workers who are compelled to work in anti-productive work environment. Energy crisis has human resource management implications, in that; it contributes to the

poor health conditions of the workers in both private and public organizations. It is the inability or lack of access to adequate energy resources like fuel, kerosene electricity, gas, and diesel. It is a serious “canker worm” that has eaten deeply into the economic and development of the country. Why would a country so blessed with abundant human and natural resources like Nigeria allow its population suffers from energy poverty? Why has the Nigerian energy sector continued to plummet in performance? This is because; the Nigerian energy industry is probably one of the most poorest and inefficient in meeting the needs of its citizens globally. This is most evident in the persistent disequilibrium in the markets for electricity and petroleum products, especially kerosene and diesel. The dismal energy service provision has adversely affected living standards of the population and high level of poverty in the country.

According to Umoren (2001) majority of the people live on less than Three Hundred Naira per day. Yet, Nigeria is regarded as the sixth largest exporter of crude oil in the world. Nigeria's persistent energy crisis has weakened industrialization process, increased poverty and significantly undermined the effort to achieve sustained economic growth, increased competitiveness of domestic industries in domestic, regional and global markets and employment generation. Despite being a world ranking exporter of liquefied natural gas (LNG), Nigeria's gas-dominated electric grid experiences frequent system collapse linked often to inadequate gas supply. The activities of oil militant particularly in the Niger delta region which has resulted in gas and oil pipeline vandalisation in the oil and gas sector of the economy has drastically affected the petroleum products and electricity supply in the country thereby causing a huge problem. Also the scarcity of fuel and kerosene combined with hoarding and inflation of kerosene prices has induced greater use of wood for the low and middle income classes with adverse environmental consequences. Diesel shortages have crippled industrial production dependent on diesel-generated private electricity supply. According to the Minister for Energy the subsidy to support the imports of gasoline alone will be in the range of N700 to N800 billion in 2008. The weaker political pressures exerted by consumers of kerosene (the poor and low middle class) and diesel (industrial sector) on the government and the constraints on public financing of large scale imports of these products. Nigeria's energy crisis is exemplified by such indicators as electricity black-outs and brown-outs and pervasive reliance on self-generated electricity. This development has occurred despite Nigeria being energy-resource abundant. Nigeria's electricity market, dominated on the supply side by the state-owned Power Holding Company of Nigeria (PHCN) formerly called the National Electric Power Authority (NEPA) has been incapable of providing minimum acceptable international standards of electricity service reliability, accessibility and availability for the past three decades.

Nigeria's chronic energy infrastructural gaps which have existed since the large scale inflow of oil income in the mid-1970s has worsened in recent times despite huge amounts of public expenditure in this government dominated and controlled industry. The billion dollars of public investment into capacity expansion in the energy industry contrast sharply with the extremely poor supply outcomes measured by refinery output, rise in imported fuels and frequent power outages and voltage variation. If energy is adequately managed in the country, it will lead to the growth of economic activities which will help control poverty.

Akin (2008) sees energy as an essential component of the modern society in that all production and manufacturing activities revolve around it. It is used in industry, agriculture, production, material processing, communications and likewise. It cannot be over-estimated how essential it is that energy supply is consistent especially in an increasingly industrious and business-centric country such as Nigeria. Julia and Murao (2008) informed that Nigeria happens to be the centre of a large energy reservoir, having the 10th largest oil reserve in the world. In the same view Adamolekun (2003) noted that crude oil has been the main source of energy as well as revenue in the country. The increased dependence has no doubt been of benefit at large to the country by providing employment, development of infrastructure, opportunities for strategic alliances between Nigeria and other countries and primary source of income in the country. In the same measure, it has led to unfortunate economic lapses and setbacks in socio-economic development. Ake (1991) noted that the process of refining crude oil is quite expensive and requires a lot of capital investment. It is often the case that resources for other sectors of the economy are digressed of the potential decline in the demand of crude oil from the international market. Other countries are beginning to seek alternative sources of energy that are cheaper and more environmentally friendly. Beside the external effects, Nigeria in itself is affected by energy crisis arising. Conflicts are peculiar to areas where the crude oil exists. Lives and property are being lost on a daily basis and the tension in the area makes the residents live in constant fear of attacks. Top on the list of these causes of energy crisis is corruption and embezzlement of funds budgeted for the energy sector. The Federal Audit report of 2001 revealed that, the Power and Steel sector lost in just a year more than 4 billion naira through misappropriation (Emuka, 2008).

A national survey conducted in 2003 ranked the Power Holding Company of Nigeria (one of the key players in the Nigeria Energy Sector) as second most corrupt public institutions in the country after the Nigeria Police which 50 J. Public Adm. Policy Res. ranked as the first (Adekeye, 2003). Sometimes corrupt staffs of Power Holding Company of Nigeria cancel bills of customers after payment of between 40 to 50% of such bills as bribe (Dale & Davies 1994). Corruption in the Power and Steel sector of the country has prevailed because some of the key leaders in politics and administration are directly or indirectly involved in the misappropriation of funds of the sector. Contracts in the sector are awarded to politicians as compensation for political patronage. These politicians lack the necessary skills/expertise to execute such projects. Kilby (1969) noted that with the amount of crude oil the country exports, 2.2 million barrels a day, it is ideally expected that it should be able to provide energy for its citizens. However, the case is not so; the supply of electricity nationwide is lacking. On average, citizens in most regions receive only 6 hours supply of electricity daily at best (Kilby, 1969).

Poor energy electrification is another cause of energy crisis in the republic, this is because there are many rural areas in the country that are yet to even have access to any electrical power. They still rely on some other mechanical sources of energy like fuelwood (Oliver and Atmore 1996). Fuelwood combustion results in emission of poisonous gaseous substances. This does nothing to detract from Nigeria's image of being one of the world's largest producers of carbon emissions, closely associated with global warming. Others, who can afford to, acquire privately owned generators which are barely cost-effective (Davies, 1998). Rapley (1996) noted that another major causes of energy crisis in the fourth republic is power failure in Nigeria this is due to conventional power generation uses fossil fuels

(which a layman would call: coal, gas, and oil). These are non-renewable energy sources, and are being used up very rapidly. Fossil fuels take millions of years to form, and with heightened global demand they may be exhausted much sooner than later (Ekundare, 1973). The future of electrical power generation from fossil fuel combustion is threatened by escalating fuel prices and by adverse environmental consequences of large scale combustion of carbon-rich fuels (Adamolekun, 2003). Combustion of these fuels unleashes intolerable amounts of carbon dioxide to the environment contributing to turning the Earth's atmosphere to a greenhouse with the harmful effect of producing global warming. In this regard, Adenikinju (2008) informed that coal-fired plants, while offering electricity on the cheap is the worst culprit, and power utilities that propose these plants are increasingly incurring enormous (capital) costs in assuring adequate emissions control and carbon dioxide sequestration to minimize the pollution they unleash on the environment. Natural gas (mostly methane) also adds significant amounts of carbon dioxide to the environment. Meeting these challenges adds significant costs to electricity production from the use of the non-renewable primary energy resources (Falola & Heaton 2008). In other words, there is every indication that electricity production from the mix of conventional fossil fuels will occur in the future at increasing cost to consumers than the current levels.

Industrialization which had grown slowly after World War II through the civil war boomed in the 1970s, despite many infrastructure constraints (Onyemelukwe, 1982). Growth was particularly pronounced in the production and assembly of consumer goods, including vehicle assembly, and the manufacture of soap and detergents, soft drinks, pharmaceuticals, beer, paint, and building materials (Isuntokun, 1979). The government invested strongly in infrastructure from 1975 to 1980, and the number of "parastatals" jointly government and privately owned companies proliferated. The Nigerian Enterprises Promotion decrees of 1972 and 1977 further encouraged the growth of an indigenous middle class. Onimode (2000) heavy investment was planned in steel production. With Soviet assistance, a steel mill was developed at Ajaokuta in Kogi State, not far from Abuja. Agriculture and associated projects generally declined, although the government undertook large-scale irrigation projects in the states of Borno, Kano, Sokoto, and Bauchi with World Bank support (Onimode, 2000).

Agbonifo (1986) noted that the oil boom revenues led to a rise in per capital income, especially for the urban middle class. Inflation, particularly in the price of food, promoted both industrialisation and the expansion of agricultural production. With the government encouraging food crops, the traditional export earners peanuts, and cotton, cocoa, and palm products declined in significance and then ceased to be important at all. Nigeria's exports became dominated by oil. Olusoji (1998) The first transformation to an industrial economy from an agricultural one, known as the Industrial Revolution, took place from the mid-18th to early 19th century in certain areas particularly in Africa but due to energy crisis in Nigeria that has resulted to high rate of kidnapping and militancy, particularly in the Niger Delta region it has slow down the pace of economic development in the affected areas.

Statement of the problems

Nigeria is one of the richest countries in the world and the richest Black Country in terms of mineral resources in Africa (Adenikinju, 2008). It is also evident that Nigeria is the only poor oil rich country in the world. Statistically speaking, Nigeria should have been among the first seven developed countries of

the world because she is endowed with abundant natural resources, such as oil, gas, and other vital Agricultural products like oil palm, rubber, cocoa, cassava, rice, groundnut etc. Nigeria has abundant natural resources than Malaysia. Worthy of note, that Malaysia discovered palm kernel from Nigeria, today she is among the largest producers of palm oil. A shift in the agricultural sector to energy exploration constitutes a major problem in Nigeria. This implies that, the country is not harnessing her natural resources (energy) judiciously. Nigeria also exports electricity to countries, like Benne republic, Ghana while the citizens cannot boast of regular power supply to our homes and industries. It is not a mere coincidence, United States and United Kingdom is considered to be developed while others, like Nigeria are under developed. In all our human and material resources and daily oil revenue, at least 33.3 million barrels daily and 15 billion barrels a year, how well are Nigerians faring? These basic human needs which must be available to each Nigerian citizen to make him or her tolerably happy and comfortable as human being living in an oil rich country are in most cases unavailable. It is against this problem that this paper is centered.

Purpose of the Study

The main purpose of this study was to find out impact of energy crisis, poverty and industrialization in Nigeria. Specifically, this study intend to:

1. Examine the causes of energy crisis on industrialization in Nigeria.
2. Determine the relationship between energy crises and poverty on industrialization in Nigeria.

Research Questions

The following research questions were formulated as a guide for this study:

1. What are the causes of energy crisis on industrialization in Nigeria?
2. What is the relationship between energy crisis and poverty on industrialization in Nigeria?

Statement of hypotheses

The following null hypotheses are tested in this study.

Ho1: Energy crisis does not significantly influence industrialization.

Ho2: There is no significant relationship between energy crises and in Nigeria.

Significance of the study

This study will be of importance to our political elites, government, educational planners and administrators at large. To our political elites, it will help them to genuinely set goals and targets to transform the country from a lower middle income country into a modern industrial nation that would provide a decent way of life for its citizens. This would require the design and implementation of a vigorous program of economic development. The government will know those factors that may contribute to energy crisis and it effect on the population. Also it will give them a clearer insight on the cause of pipeline vandalization and it possible impact on the society. To administrators, the study will help investment in education and infrastructure to provide a solid foundation for industrial modernization and economic growth.

Methodology

The study adopted the Ex-post-facto design. Denga and Ali (1989) saw ex-post-facto as, that in which independent variable or variables had already occurred and in which the researcher started with the observation of the dependent variables. He then studied the independent variable or variables in retrospect for their possible relationship to, and effects on the dependent variable or variables. The population of this study was all Civil servant in the Ministry of Power Holding Company in Central Senatorial district in Cross River State numbering 2,750 (Source; Power Holding Company March 2012). The information used for the study will be obtained from the daily/ monthly statistics of energy consumption over a period of 2007 till date. The sampling technique used for the study was being the simple random sampling technique where every member was given equal chance of being selected as a member of the sample. A total of 130 were representing 8% of the estimated population. A structured 35 – item questionnaire on energy crisis and industrialization (ECAI) was constructed by the researcher. The instrument was divided into two parts. Part one consist of the bio-data of the respondents which include place of work, department, marital status of staff, age, sex, and local government area. While section two included items that elicited information on energy crises in Cross River State.

Procedure for data analysis

Descriptive statistics and inferential statistics will be employed to analysis the data using the Statistical Package for Social Sciences version 20 (SPSS). The data collected was subjected to descriptive statistical using mean (\bar{x}) standard deviation (SD) in order to answer the research question while the independent t-test was used to answer the first hypothesis on the other hand; the Pearson product moment correlation was used to answer the second hypothesis. The analysis is presented on the table below:

Table 1: Summary of correlation analysis of the influence of energy crisis on industrialization

Variables	N	Mean	SD	DF	Sig State	r. cal	r. crit.	Decision
Energy crisis	130	56.45	9.59	128	0.05	0.65	0.16	rejected H ₀
Industrialization	130	54.06	7.06					

The descriptive statistics presented in table 1 has clearly shown that the mean for Energy Crisis is 56.45 while that of Industrialization 54.06, their standard deviation are 9.56 and 7.06 with an N value of 130. This table indicates that there is indeed a significant influence of energy crisis and industrialization in Nigeria.

For further statistical test of the research hypothesis, the Pearson Product Moment Correlation was used. The result obtained shows that the r calculated was 0.65 with an r critical value of 0.16. The result shows that there is a significant influence of energy crises and industrialization in Nigeria.

Table 2: Summary of the Relationship between Energy Crisis and Poverty

Variables	N	Mean	SD	DF	Sig State	r.cal	r. crit.	Decision
Energy crisis	130	33.25	10.19					
				128	0.05	0.87	0.16	rejected H O
Poverty	130	34.17	11.21					

From the above table, it is clearly shown that the mean for Energy Crisis is 33.25 while that of poverty 34.17, with their corresponding standard deviation of 10.19 and 11.21 with a total subject of 130. This table indicates that there is indeed a significant influence of energy crisis on poverty in Nigeria.

Discussions of Results

Based on the findings above, it has been discovered that there is a significant influence of Energy crisis on industrialization. This result agrees with the work of Aworawo (2002) noted that another major causes of energy crisis in Nigeria result to continues power failure this is due to conventional power generation uses fossil fuels (which a layman would call: coal, gas, and oil). These are non-renewable energy sources, and are being used up very rapidly. Fossil fuels take millions of years to form, and with heightened global demand they may be exhausted much sooner than later (Ekundare, 1993). Also the study of Adamolekun (2003) Conforms to the present studies, as he noted that the future of electrical power generation from fossil fuel combustion is threatened by escalating fuel prices and by adverse environmental consequences of large scale combustion of carbon-rich fuels. Combustion of these fuels unleashes intolerable amounts of carbon dioxide to the environment contributing to turning the Earth's atmosphere to a greenhouse with the harmful effect of producing global warming.

In this regard, Adenikinju (2008) also support the above findings by stating that coal-fired plants, while offering electricity on the cheap is the worst culprit and power utilities that propose these plants are increasingly incurring enormous (capital) costs in assuring adequate emissions control and carbon dioxide sequestration to minimize the pollution they unleash on the environment. From the finding of the second hypothesis, it can be inferred that energy crisis is not significantly related to poverty this result does not agree to that of Agbonifo (1986) noted that the oil boom revenues led to a rise in per capital income, especially for the urban middle class. Inflation, particularly in the price of food, promoted both industrialization and the expansion of agricultural production. With the government encouraging food crops, the traditional export earners peanuts, and cotton, cocoa, and palm products declined in significance and then ceased to be important at all which marks the beginning of shortage in the business sector of the economy. This study is also not in consonance to Olusoji (1998) who informed that the first transformation to an industrial economy from an agricultural one, known as the Industrial Revolution, took place from the mid-18th to early 19th century in certain areas particularly in Africa but due to energy crisis in Nigeria that has resulted to high rate of kidnapping and militancy, particularly in the Niger Delta region it has slow down the pace of economic development in the affected areas.

Conclusion

In spite of the fact that Nigeria is blessed with abundance of energy resources, her level of energy security is nothing to write home about, if not appalling. All fingers are pointing to the government through the NNPC which has been severally accused of corruption and ineptitude. Some stakeholders believe that the major setback to the availability and affordability of energy is the culture of importation with its attendant corruption. In the days when Nigerian refineries were functioning optimally and fuel used to be produced in Nigeria, its price and availability gave the nation a measure of energy security. Today, importation has replaced domestic production leading to scarcity and erratic supply of the energy in different forms. While the government continues to battle Nigeria's energy predicaments from petroleum derivatives and electricity, it would do well to explore alternative sources like solar, wind, biomass, and coal and, if it can properly manage it, nuclear energy, this will promote industrialization and economic growth and development will reduce the state of poverty in the country.

Recommendations

The following recommendations were made based on the above findings:

1. The government should closely study how developed countries transformed their economics and their people and emulate from this good socio-economic development since are very familiar with the success strategies of Japan, Korea, India and China.
2. Late President Umaru Musa Yar'Adua seven point agenda in 2007 should be revisited as he made the provision of emergency on electricity a major priority of his Seven-Point Agenda.
3. Both the government and private sector should organize capacity building programmes which will give them a broader orientation to capitalize and take advantage of opportunities in the domestic, regional and from the global economy.

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