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Appraisal and Comparative Analysis of the Privatized Nigerian Electricity Sector: Pre and Post Reforms Experience

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ABSTRACT: The Nigeria's electric power sector has undergone several policy reforms to address the myriads of issues and challenges confronting the sector for several years. The reforms were implemented in order to establish a highly competitive market to improve management performance and efficiency, increase generation, and attract private investors and enhancing reliable and cost-reflective power supply system. It is noticeable however, that there seems to be no significant improvement in the sector, even after the privatization process. This work assessed and compared the performance of the electric power sector in the pre and post-reforms eras, reviewed its implications and impacts on the living standard of the people. It also identified and discussed some critical issues and challenges confronting the sector, and made useful recommendations in ensuring, a reliable and effective electric power supply system. The study used both quantitative and qualitative descriptive, survey design approach. Relevant data were collected from both primary and secondary sources and field survey mechanism. The research instrument used was a self-designed questionnaire titled "Questionnaire on Appraisal and Comparative Analysis of the Privatized Nigerian Electricity Sector (QACAPNES)" to elicit information from the sample that served as data for the study). Three experts validated the instrument. The four research questions raised were descriptively answered. The data were collected and analyzed descriptively (using weighted mean and standard deviation. The internal consistency of the questionnaire items was ascertained through the split-half method, and the responses were subjected to correlation analysis at a 0.05 significance level, yielding a coefficient of 0.81, a value high enough for the instrument to be considered reliable. For the research questions, a mean mark of 3.5 and above was recorded as "True", and a mean mark below 3.5 was assumed as "False". The result of the analysis showed that no significant improvement has been made that is totally different from the pre-privatization era except the successful unbundling of defunct Power Holding Company of Nigeria (PHCN) into generation, transmission and distribution companies. The study recommended full implementation of a cost-reflective tariff system, diversification of energy generation sources and a holistic review of the privatization policies for optimum performance.

Keywords: Cost-reflective tariffs, electric power, generation, privatization, reforms.

Introduction

Efficient and reliable electric power supply system is a basic requirement for industrialization, economic growth and improved standard of living. An efficient power supply system produces multiplier effects that is capable of reducing poverty, underdevelopment and massive unemployment that is so prevalent in Africa (Adebanji, 2017). Less than about 200 million population are connected

to the grid. Even those who are connected to the grid, still experience erratic and fluctuating electric power supply (Awosope, 2014; Adebanji, 2022).

The Nigeria's electricity supply system is absolutely insufficient, unreliable and grossly inefficient. Electricity consumptions have increased over the years, due to rising population growth and increasing commercial and industrial activities. As population increases, there is more pressure on the available electric power installations, thereby creating a very wide gap between supply and demand, leading to inefficiency and perennial power outages. The electric power sector is plagued with lack of reliable data base, insufficient gas supply, estimated billing system and vandalism. The inefficiency in the sector remains one of the major barriers towards becoming one of the largest economies globally by the year 2030 (Idowu et al, 2019).

Privatization can be described as a practice of allowing private organizations to manage public utilities effectively and efficiently (Oluleye and Kogian, 2019). Some have argued that privatization can lead to more revenue generation, creation of more jobs, effective capital market that will benefit consumers and enhances a healthy competitive business platform (Adebanji et al, 2021). This is based on the belief that private organizations possess better organizational proficiency and efficiency than public organizations.

The Federal Government of Nigeria (FGN), based on this premises, believed that the privatization reforms will be the best solution to some of the challenges in the sector. The FGN therefore, carried out so many reforms aimed at improving the efficiency in the sector through involvement of private investors for optimal performance (Oyeleke, 2020). This is intended to set up a healthy competitive market that will enhance productivity towards customer's satisfaction at reduced tariffs. However, Nigerians are not well satisfied with the post-reforms' performance (Abioluwajumi and Osagbe, 2020). Succinctly put, the power sector in the country is yet to produce the desired result of the reforms. Even after the reforms, the problems still persist. It seems there is no significant improvement in the sector and the prospects for better performance is not in view.

The major problem before the reforms was the handling of too large generation, transmission and distribution sectors by the vertically-integrated monopolistic government agency-defunct Power Holding Company of Nigeria (PHCN). However, after the partial implementation of the reforms-unbundling of Nigerian Electricity Supply Industry (NESI) into generation, transmission and distribution companies, some other major problems emerge as a result of lack of correct information of the existing infrastructure (Onyekwera et al, 2017).

Okibe and Mokuye (2018) appraised the electricity reforms and electric services delivery in Nigeria. The work used a descriptive assessment analysis method to assess the impact of the reforms before and after privatization policy. The findings of the study concluded that the failure of the privatization programme started during the pre-privatization process because of government interference and control. The work recommended repositioning of operations of the privatized sector for better performance. Kayode et al (2018) suggested the use of embedded distributed generation (EDG) as a better alternative to the use of centralized power generation system. The study exploits the benefits and usage of using EDG. It also reviewed the various reforms and the associated challenges.

Oluleye and Koginam (2019) reviewed the Nigerian electric power sector reforms through an historical review of the power supply system in the country. The authors identified the major

challenges in the sector as shortage of gas, high operational cost, lack of initial capital for investment. The study also recommended the usage of cost-reflective tariff system, reduction in the numbers of people with unmetered electricity consumers and diversification of power generation sources. Idowu et al (2019) reviewed the Nigeria's electric power reforms act, and identified some major issues and challenges before and after the implementation of the privatization programme. Some of the challenges identified are slow growth in the generation capacity, poor distribution network indebtedness, technical losses and high capital investment. The work also proffered some vital solutions to the problem such as proper metering system.

Omale (2020) carried out an impact assessment study of the privatized power sector on the electricity consumers using Karu local government area in Nasarrawa state, Nigeria as a case study. The study used both quantitative and qualitative analysis method through the use of questionnaires. The work concluded that the privatized power sector has impacted negatively on the people with too high electricity bills without corresponding services e.t.c. The authors emphasized need to curb the excesses of the distribution companies by regulating quality services with provision of meters to replace the estimated bills.

This work assessed and compared the performance of the electric power sector in the pre and post-reforms eras, reviewed its implications and impacts on the living standard of the people. It also identified and discussed some critical issues and challenges confronting the sector, and made useful recommendations in ensuring, a reliable and effective electric power supply system.

1.1 The Pre-Privatization Era

The generation, transmission and distribution of electric power supply is being controlled unilaterally by the defunct National Electric Power Authority (NEPA) during this period. The utility company, NEPA's operations and control was monopolistic. The management of the entire power supply system-generation, transmission and distribution was too difficult to manage.

The power sector performed abysmally below expectation, due to increasing bureaucracy and high level of corruption in the system. Almost about 50% of the entire population of about 150 million people then, were not connected to the grid. The available generation during this period was about 3.718 MW out of the installed generation capacity of 8644 MW. In order to boost the generation capacity, the FGN introduced the National Integrated Power Project (NIPPs) in 2004 to install gas power stations all over the country.

Some of the major challenges during this period are insufficient generation, high indebtedness of the customers to the utility companies, obsolete infrastructures, poor maintenance, shortage of gas supply for the thermal stations, too low level of water for the hydro stations, too high operating costs of utility's machinery and infrastructures, continuous vandalization of power installations, scarce foreign exchange, high technical losses, deficient transmission and distribution facilities.

1.2 The Electric Power Sector Reform

In order to ensure an efficient and cost-effective power supply system, that will attract private investments, the FGN signed into law, another power reforms Acts, that transferred power

from NEPA to PHCN in March, 2005. The PHCN was unbundled into six Generation Companies (GENCOs), one Transmitting Company of Nigeria (TCN) and eleven distribution companies (DISCOs). The eleven DISCOs are shown in Figure 1.

The Acts is to enhance private utility companies to be involved in generation, transmission, and distribution of electricity (Sambo et al, 2010). The purpose of the reforms acts is to provide the necessary legal framework to the reforms. This has indeed changed the long-term monopolistic management of NEPA that was established in 1972. The three-primary focus of the power reforms Acts are to ensure rapid increase in generation capacity, effective transmission of the generated power and reliable distribution of the transmitted power to all electricity consumers (Sambo et al,2010).

Figure 1. Eleven distribution companies in Nigeria (KPMG, 2016)

1.3 Post-Privatization Regime

The Nigerian electricity Supply Industry (NESI) was privatized in 2013. The privatization programme was aimed at improving and developing electricity installations, increasing the generation capacity and improve power supply delivery to the consumers. In ensuring that these laudable goals are achieved, a Multi-Year Tarriff Order (MYTO) tariff system was developed by the Nigerian Electricity Regulatory Commission (NERC). It is a tariff system that is derived to be cost-reflective and at the same time enhancing efficiency in the system.

Even, after the implementation of the reforms, the power sector is still prevalent with so many challenges like, frequent interference of the deregulation processes, poor maintenance of the obsolete or dilapidated infrastructures, power installation vandalization, insignificant increase in the generating capacity, high technical and commercial losses, defective metering systems, high indebtedness of customers to the companies, too high estimated electricity tariffs, obsolete equipment e.t.c.

`One of the major problems of the DISCOs, is liquidity. Most of the distribution companies continue to suffer from technical and financial losses. The rising cases of financial losses can be observed to have started right from inception in 2013 (PWC, 2019). This indeed affected the DISCOs in meeting up with their financial obligations to the Nigerian Bulk Electricity Trading Plc

(NBET) and others in the entire power value chain-GENCOs, TCN, banks, gas supply company e.t.c. The FGN has rescued the DISCOs so many times to prevent total collapse of the sector. Some of the notable achievements are increase in installed power generation capacity, expansion of the transmission network rolling out of meters and modest progress to boost utility revenues

1.4 Statement of the Problem

The power sector reforms carried out by the FGN is yet to produce the desired results (Anyaehie and Iwuamadi, 2020). It seems there is no significant improvement in the power sector and the prospects for better performance is not in view. Some of the problems that existed before the reforms still persist even after the privatization process. Most Nigerians are not well satisfied with the post-reforms' performance. The failure of the policy to restore efficiency in the sector and the continuous power outages has made so many people to lose fate on the viability of the policy. The objective of this study is to carry out a comparative assessment on the performance of the sector before and after privatization, identify the challenges, prospects and to make useful recommendations in ensuring a reliable and effective electric power supply system.

1.5 Objectives of the Study

The aim is to assess and compare the performance of the privatized electric power sector in the pre and post reforms eras.. The specific objectives are to:

(a) Review the pre-privatization and post-privatization reforms
(b) Identify issues, challenges and prospects of the post privatization period
(c) Conduct a comparative assessment of the pre-reform and post-reform eras and suggest ways of ensuring reliable power supply in post-privatization period

1.6 Research Questions

The research questions are:

(1) Is the privatization process transparently done?
(2) Is there any significant improvement in the electricity supply industry since the implementation of the privatization programme?
(3) What are the identified major challenges facing the privatized Nigerian electric power sector?
(4) How can power sector stakeholders and investors ensure sustainable electricity supply system?

1. *Materials and methods*

The study used both quantitative and qualitative descriptive, survey design approach. Relevant data were collected from both primary and secondary sources, oral interview, direct visitation and field survey mechanism. The research instrument used was a self-designed questionnaire titled "Questionnaire on Appraisal and Comparative Analysis of the Privatized Nigerian Electricity Sector (QACAPNES)" to elicit information from the sample that served as data for the study). Three experts validated the instrument. The instrument consisted of two sections, A and B. Section A requested the respondents' bio-data, such as the gender identification, age range, ownership and the type of metering system, Section B contained

items relating to the questions of the study with the alternative response of True or False. Questionnaires with twenty-five (25) well-structured questions were constructed and administered to about 350 electricity consumers in Ado-Ekiti, Nigeria, out of which 312 were returned. The four research questions raised were descriptively answered. The data were collected and analyzed descriptively (using weighted mean and standard deviation. The internal consistency of the questionnaire items was ascertained through the split-half method, and the responses were subjected to correlation analysis at a 0.05 significance level, yielding a coefficient of 0.81, a value high enough for the instrument to be considered reliable. For the research questions, a mean mark of 3.5 and above was recorded as "True", and a mean mark below 3.5 was assumed as "False".

Results

The data received were analyzed using mean and standard deviation to answer the research questions, and the results are as presented in the following subsections:

(1) **Gender**

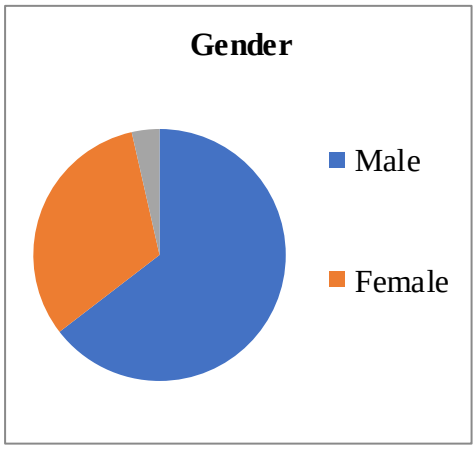

Figure 2: Gender of participants

The participants consist of 202 males and 110 females.

(ii) Age range of participants

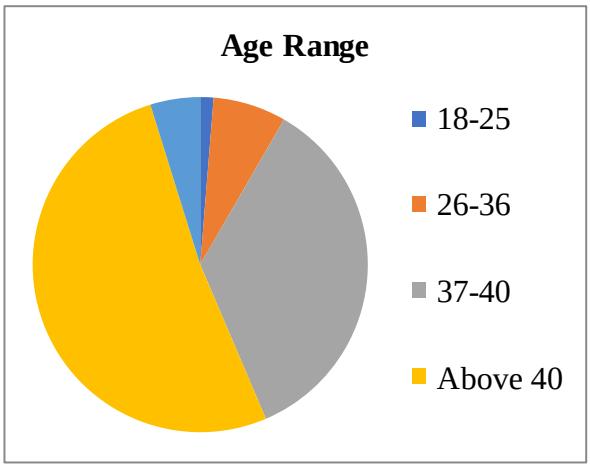

Figure 3: Age range of participants

Majority of the participants 161 (51.60%) are 40 years above; 110 (35.26%) belong to the range 37-40 years; 22 (7.05%) belong to 2 (6-36) years and 4(1.28%) belong to the (18-25) years and about 15 (4.81%) people preferred not to say as in Figure 3.

(iii) Ownership

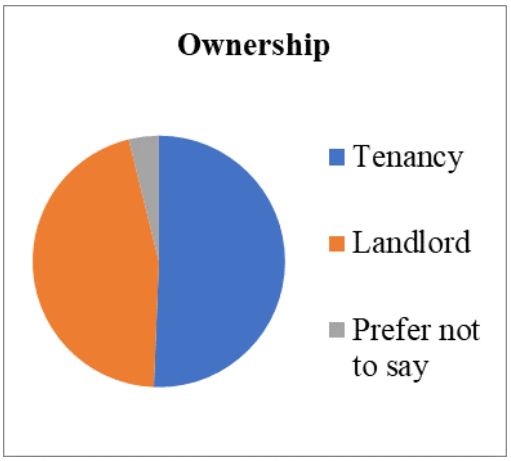

Figure 4: Ownership

The ownership of the house where the participants live is being referred to as in Figure 4. The number of participants who are tenants are 158 (50.6%), the landlords are 142 (45.5%) while 12 (3.85%) prefer not to say.

(iv) Type of Metering System

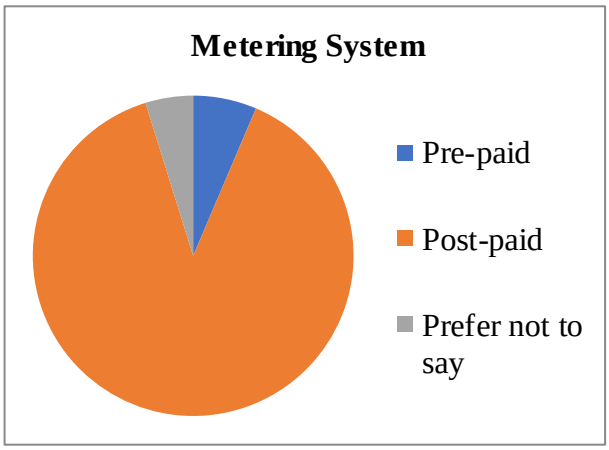

Figure 5: Metering system of participants

The type of metering system being used is also an important factor. 20 (6.41%) participants used prepaid metering system; 277 (88.87%) used postpaid and 15 (4.81%) preferred not to say.

Research Question 1: Is the pre-electric power sector privatization process transparently done?

Table 1

Average responses on whether the electric power sector reforms pre-privatization exercise was transparently done?

S/N	Items	True		False	
		N	%	N	%
1	Most Nigerians were not aware of the privatization of the Electric power sector	105	33.7	207	66.35
2	The information about the power sector reforms were not properly disseminated	73	23.5	239	76.6
3	The electric power sector reforms passed through due process.	71	22.7	241	77.24
4	Some of the privatized companies were sold to friends and relations of the government in power, then.	239	76.76	73	23.40
5	The privatization process was done without bias- it was sold to the most competent hands.	72	23.1	240	76.12
	Average	**112**	**35.95**	**200**	**64.10**

It is shown in Table 1 that 105 (33.7%) of the respondents agreed that most Nigerians were not aware of the pre-privatization reforms; 73 (23.5%) respondents agreed that the information about the power sector reforms were not properly disseminated ; 71 (22.7%) of the respondents agreed that the electric power sector reforms passed through due process; 239 (76.76%) of the respondents agreed that some of the privatized companies were sold to friends and relations of government in power, then (Omale, 2020) and 72 (23.1%) of the respondents agreed that the privatization exercise were carried out without bias. The average of the number of respondents that agreed about the electric power reforms pre-privatization exercise was transparent enough is 112 (35.85%). This shows that the electric power reforms pre-privatization exercise was not transparent enough.

Research Question 2: Is there any significant improvement in the power sector after the implementation of the reforms?

Table 2 : *Average number of responses on the significant improvement made in the power sector after the implementation of the reforms*

S/N	Items	True		False		Rank
		N	%	N	%	
1	The privatization of the electricity sector has led to improved service delivery to consumers.	63	20.0	249	80	1st
2	The electric power supply is now more stable than the pre- privatized era.	136	43.7	176	56.3	5th
3	The management of the electric power sector under the privatized companies is better than those in the pre-reforms era.	143	45.85	169	54.17	6th

4	The GENCOs and the DISCOs that took over the ownership of the sector are competent to ensure stable power supply.	71	22.76	241	77.24	2nd
5	The present electricity tariff structure is sustainable for efficient running of the electric power sector at distribution level.	103	33.01	209	66.99	3rd
6	The privatized power sector has made some significant improvement after privatization.	104	33.31	208	66.61	4th
	Average	101.66	32.37	210.34	67.41	

As shown in Table 2, the average number of responses on the significant improvement made in the power sector after the reforms (as ranked from Table 2). 63.(20%) participants agreed that privatization of the electric sector has led to improved service delivery to the consumers; 136 (43.7%) respondents agreed that the electric power supply is more stable than the pre-privatization era ; 143 (45.85%) of the respondents agreed that the management of the privatized companies is better than those in the pre-reforms era; 71(22.76%) ;agreed that the GENCOs and the DISCOs that took over the ownership of the sector are competent to ensure stable power supply ;103 (33.01) respondents agreed that the present electricity tariff structure is sustainable for efficient running at distribution level; 104 (33.31%) agreed that the privatized power sector has made some significant progress since inception. The average numbers of hours that each participant enjoy electric power per day is as in Figure 6. 157 (50.32%) of the participants have supply from 1-6 hours/day; 100 (32.05%) have supply for 7-12 hours/day; 30 (9.62%) have supply for 13-18 hours/day; 16 (5%) have supply for 19-24 hours/day and 9 (2.88%) prefer not to say.

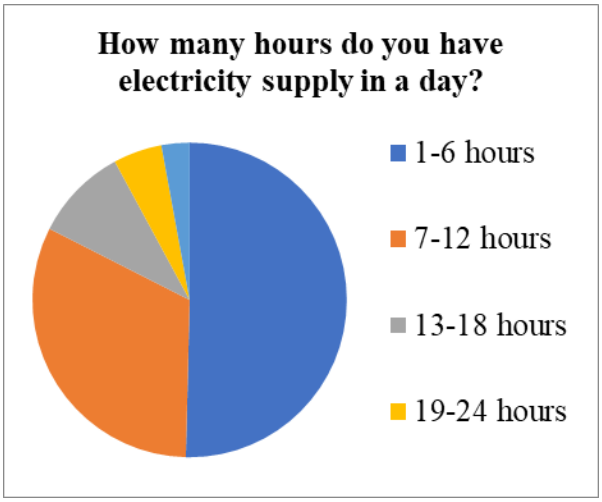

Figure 6: Average numbers of hours of electric power supply to participant in a day

Research Question 3: What are the identified major challenges confronting the privatized Nigerian electric power sector?

Table 3 *Average responses of respondents on the identified major challenges confronting the privatized Nigerian electric power sector*.

S/N	Items	True		False	
		N	%	N	%
1	Inability of the privatized companies to meet load demand due to insufficient generation	247	79.17	65	20.83
2	Insufficient power supply system due to obsolete and poor maintenance culture of the available infrastructures	237	75.96	75	24.04
3	High level of bribery and corruption among most staff of the companies	291	93.27	21	6.78
4	Most of the distribution companies are unable to perform optimally due to high level of indebtedness and fraudulent practices (Electricity thefts) from the consumers.	298	95.51	14	4.49
5	Issuance of arbitrary high estimated bills to customers	278	89.10	34	10.9
6	Large number of unmetered electricity consumers leading to electricity theft	297	95.19	15	4.81
7	The inefficiency of the distribution companies is as a result of financial and technical incompetency of the managers.	291	93.27	21	6.73
8	The inefficiency of the power sector is as a result of lack of gas supply and low water level	265	84.94	47	15.06
9	The major problems of the privatized companies are financing and non-reflective tariff.	260	83.33	52	16.6

Table 3 showed the average responses on the identified major challenges confronting the sector. Some of the suggested responses based on the highest number of responses are that most of the distribution companies are unable to perform optimally due to high level of indebtedness and fraudulent practices (Electricity thefts) from the consumers and the corrupt staff members.; large number of unmetered electricity consumers leading to electricity theft; inability of the privatized companies to meet load demand due to insufficient generation ; insufficient power supply system due to obsolete and poor maintenance culture of the available infrastructures; high level of bribery and corruption among most staff of the companies; the inefficiency of the distribution companies as a result of financial and technical incompetency of the managers; the inefficiency as a result of lack of gas supply, low water level of the hydro stations, poor financing and non-cost reflective tariff regime.

Research Question 4: How can power sector stakeholders and investors ensure sustainable electricity supply system?

Table 4

Average responses of respondents on how to ensure sustainable electricity supply system

S/N	Items	True	False

		N	**%**	N	**%**
1	The privatization policies should be reviewed and the companies taken over by the FGN	292	93.54	20	6.41
2	The privatization policies should be reviewed and the companies taken over by more serious and competent investors	251	80.45	61	19.55
3	Pre-paid metering should be made compulsory for every consumer	254	81.3	58	18.7
4	Diversification of energy production options for Renewable Energy Sources will improve the power supply system.	281	90	31	10
5	Increase in electricity generation through fossil fuels	121	38.78	191	61.22
6	FGN should institute appropriate electricity tariffs that reflect the present market conditions.	151	48.40	161	51.60
7	Immediate stoppage or gradual reduction of unmetered electricity consumers	286	91.67	26	8.33

The average responses of the respondents to the research questions is as shown in Table 4. The respondents suggested that the privatization policies should be reviewed and the companies taken over by the FGN; the privatization policies should be reviewed and the companies taken over by more serious and competent investors ; pre-paid metering should be made compulsory for every consumer ; diversification of energy production options for Renewable Energy Sources; FGN should institute appropriate electricity tariffs that reflect the present market conditions ;and that the usage of estimated billing should be stopped immediately.

Discussions

The study's findings showed that the power sector privatization exercise was carried out without much public awareness about their mode of operation. It was not transparently done (Obar and Taba, 2019; Omale, 2020; Olukanmi, 2020). Most of the Nigerian populace were not carried along. Moreover, most of the major decisions were taken in error based on wrong assumptions. It seems, the pre-privatization exercise was politically motivated to favour some individuals. Most of the companies were sold to investors that were not technically and financially competent (Obar and Taba, 2019).

The wrong assumptions made during the pre-privatization exercise is one of the major reasons for the non- performance of the privatized companies. The result of the study showed that there is no significant improvement made over the years since inception of the exercise. The power supply' reliability is not better than the pre-privatization period. It seems that the management of these DISCOs are not ready for the job. For instance, electricity customers are responsible for maintenance, repair of damaged utility installations through communal or individual efforts. Succinctly put, the privatized companies have not made any significant progress since inception

Some of the identified major challenges facing the privatized companies are inability of to meet the load demand due to insufficient generation, *large number of unmetered electricity consumers leading to electricity theft, inability of the privatized companies to meet load demand due to*

insufficient generation, insufficient power supply system due to obsolete and poor maintenance culture of the available infrastructures, high level of bribery and corruption among most staff of the companies.

Some of the ways of overcoming these challenges are reduction or immediate stoppage of unmetered electricity consumers. Pre-paid metering should be made compulsory for every consumer. This will make the DISCOs to be more accountable and efficient to carry out their daily operations optimally. This will also guide against electricity thefts, and direct connections without payments for the electricity consumed. The DISCOs need to prevent or reduces the technical and non-technical losses. Moreover, there is need for a cost-reflective tariff to assist the DISCOs in solving their liquidity issue. The issue of diversification of energy generation through the use of renewable energy sources will indeed improve the electric power system supply.

Conclusions

This work assessed and compared the performance of the electric power sector in the pre and post-reforms eras, reviewed its implications and impacts on the living standard of the people. It also identified and discussed some critical issues and challenges confronting the sector, and made useful recommendations in ensuring, a reliable and effective electric power supply system.

Most of the prevailing issues and challenges in the post privatization regime could be traced to defective privatization exercise. The privatization was not done holistically. The process did not allow competent investors with sufficient technical and financing expertise to handle critical generation and distribution facilities.

Adequate financing of the sector through true cost-reflective tariff structure that reflect the prevailing market conditions should be strictly followed. The privatization of the power sector has not led to any significant improvement in service delivery. There is need to revisit the process and the companies to be awarded to more competent investors. In order to enhance improved power supply system in the country, there is need to address the barriers and challenges militating against the desire to achieving the desired goals on electricity generation mix targets.

Recommendations

Hence, the study recommended the following suggestions to overcome these challenges

- Stoppage or reduction in the number of unmetered electricity customer.
- Development of correct cost-reflective pricing system to enhance quality service delivery and better reward to the investors
- Provision of pre-paid meters to all electricity consumers
- Diversification of energy generation sources to allow for large deployment of renewable energy sources
- The privatized power sector should properly positioned for efficient service delivery

Conflicts of Interest

There are no conflicts to declare.

REFERENCES

(1) Adebanji, B., Ogunlade, B.O. and Adebayo, K.J. (2021). Enhancing The Quality of Engineering Undergraduates Through Effective Entrepreneurship Skills, *European Journal of Education and Pedagogy*, 6(6), 74-81.

(2) Idowu S.S., Ibietan J. and Olukotun A. (2019), Nigeria's Electricity Power Sector Reform: An Appraisal of unresolved Issues, International Journal of Energy Economics and Policy, Vol.19, series 6, pp.336-341.

(3) Oyeleke I.I. (2020), Liberation of the Electricity Sector: The Nigerian Experience, World Journal of Innovative Research (WJIR), Vol.8, (3),pp. 69-75.

(4) Omale A.M. (2020), An Assessment of the Privatization of the Power Sector in Nigerria: A Study of Karu Local Govt. of Nasarawa State, International Journal of Comparative Studies in International Relations and Development, Vol.8, no. 1, pp.36-50.

(5) Kayode O.O., Agbetuyi A.. F., Owolabi B., Obiaka C. and Fagbemiro O. (2018), Power Sector Reform in Nigeria: Challenges and Solutions, IOP Conference Series: Materials Science and Engineering, 2018.

(6) Awosope C.O.A., Nigeria's Electricity Industry: Issues, challenges and Solutions, being the 38th Public Letures at Covenant University, Otta, Nigeria, Public Lecture series, Vol.3,No.2, October, 2014.

(7) Abioluwajumi L. and Osagbe F..S. (2020). An Assessment of the Privatization of the Power Sector in Nigeria: A Study of Benin Electricity Distribution Company (BEDC), International Journal of Social Sciences and Conflicts Management, Vol.5, no 1, June, 2020.

(8) PWC (2019). Pricewaterhouse Coopers'. International Limited, The Nigeria Power Sector solving the Liquidity Crunch, White paper presented at Power sector Round Table Conference hosted by Mainstream Energy solutions Limited on September, 24, 2019.

(9) Onyekumera, C., Ishaku I., Akinnonu P. C. (2017). Electrification in Nigeria:Challenges and Way Farward, Centre for the Study of the Economies of Africa (ESEA) Oct,2017.

(10) KPMG (2016) A Guide to the Nigerian Power Sector, September, 2016, pp.1-39.

(11) Okibe H.B. and Mokuye C.S.(2018). An Appraisal of Power Sector Reforms and Delivery of Electric Services in Nigeria, South East Political Review, Vol.3, no.2, pp. 1-16.

(12) Anyaeline M.U. and Iwuamadi O. C. (2020). Electricity Privatization in Nigeria: Issues and Challenges, IOSR Journal of Electrical and Electronic Engineering (IOSR-JEEE), Vol. 15, no.1, pp.1-9.

(13) Obar. E.A. and Taba M.J.(2019), Navigating the Prevailing Challenges of the Nigerian Power Sector,pp. 1-10.

(14) Olukanmi J.J. (2020). Issues and Challenges in the Privatized Power Sector in Nigeria, Journal of Sustainable Development Studies Vol.6, serire1

(15) Sambo A.,, Garba, B.,Zarima, L.H. and Garji, M.M. (2010), Electricity Generation and the Present Challenges in the Nigerian Power Sector,

(16) Oluleye F. A.and Kogimam A.O. (2019), Nigeria's Energy Sector Privatization: Reforms, Challenges and Prospects, South Asian Research Journal of Humanities and Social Sciences, Vol., issue 2, pp.189-197.