NIGERIAN JOURNAL OF PUBLIC SECTOR MANAGEMENT (NJPSM)

The Problems and Prospects of Power Sector in Nigeria: A Case Study of the Benin Electricity Distribution Company (BEDC) In Edo North Of Nigeria

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Abstract
This study examines the problems and prospects of power sector in Nigeria with emphasis on the Benin Electricity Distribution Company in Edo North of Nigeria. This study is necessitated by the fact that electricity firms have a primary responsibility to ensure a hitch free electricity supply to run the nation's economy. It is in view of this that the study seeks to investigate whether the Benin Electricity Distribution Company in Edo State has improved service delivery in Edo North; also to determine if the reforms of the firm has improved the prospect of power distribution in Edo North. The above objectives established the basis of the study's hypotheses. Data were sourced primarily through the use of questionnaire administered on 155 respondents who are employees of the firm in Edo North. Collated data were analyzed using simple percentages and the chi-square statistical tool. The result of the study showed that the reform of the firm has significantly improved the prospects of power distribution by BEDC in Edo North. Also, the reform has significantly improved the operational efficiency and service delivery of BEDC in Edo North. Recommendations were however made in line with the findings of the study. Among such recommendations include the need for BEDC to invest in the purchase of new equipment in order to replace the obsolete ones that are no longer functional. This stands to guarantee improve service delivery and operational efficiency of the organization, in addition to sourcing long term funds from the capital market, as power distribution is capital intensive that requires huge among of capital that can hardly be sourced from the money market, among others.

Keywords: Problems and Prospects; Nigeria's Power Sector: Benin Electricity Distribution Company; Edo North of Nigeria

Introduction

Electricity plays a pivotal role in modern economic development, as it powers industries, households, and essential services (Ogunleye, 2022). In Nigeria, the power sector has long been characterized by inefficiencies, underperformance, and inadequate infrastructure, resulting in unreliable electricity supply and limiting the country's economic growth. Historically, the National Electric Power Authority (NEPA), which was later restructured into the Power Holding Company of Nigeria (PHCN), held a monopoly over electricity generation, transmission, and distribution. However, NEPA/PHCN was plagued by inefficiencies, corruption, and poor service delivery, prompting calls for reform (Ogunleye, 2022).

In response, the Federal Government of Nigeria initiated the power sector reform agenda, culminating in the enactment of the Electric Power Sector Reform Act (EPSRA) in 2005. The Act facilitated the unbundling of PHCN into 18 successor companies, comprising six generation companies (GenCos), 11 distribution companies (DisCos), and one transmission company (TCN) (Federal Ministry of Power, 2013). These entities were subsequently privatized, with the aim of introducing competition, enhancing efficiency, and attracting private sector investment.

The Benin Electricity Distribution Company (BEDC) was established as one of the 11 DisCos responsible for distributing electricity to end-users. Specifically, BEDC serves four states Edo, Delta, Ekiti, and Ondo with the mandate to improve electricity distribution efficiency and customer service. The privatization of BEDC was expected to resolve several systemic issues, including poor power supply, aging infrastructure, and financial losses.

In Edo State, the company has faced widespread criticism for persistent power outages, estimated billing practices, poor customer relations, and inadequate investment in infrastructure. These challenges have sparked debates about the effectiveness of the reforms and privatization in the sector in achieving its intended objectives (Eze, 2021). Critics argue that the reforms had failed to address systemic issues such as corruption, weak regulation, and inadequate funding, which continue to hinder the sector's progress (Eze, 2021).

The reform of the Benin Electricity Distribution Company (BEDC) was met with widespread skepticism from both industry experts and the general public. Many critics argued that reforms would not solve Nigeria's electricity distribution challenges, particularly in Edo State, due to persistent infrastructure deficits, poor management, weak regulatory enforcement, and the general inefficiency that had plagued the sector for decades (Okafor, 2018). Concerns were raised that BEDC, under the current ownership structure, would not be able to provide stable electricity, improve customer satisfaction, or achieve financial sustainability (Adebayo & Yusuf, 2020).

However, despite these criticisms, BEDC has continued to operate within its jurisdiction, striving to implement reforms, improve service delivery, and attract private investment to enhance the power distribution network. While challenges remain, it is important to critically assess whether these concerns about the reforms were justified or whether BEDC has made tangible progress that contradicts the negative predictions (Eze, 2021).

Furthermore, critics contended that private investors lacked the capacity and commitment to invest significantly in infrastructure and that regulatory authorities such as the Nigerian Electricity Regulatory Commission (NERC) would be too weak to enforce compliance (Akpan, 2020). However, there is evidence that BEDC has engaged in several infrastructure expansion and maintenance projects, raising the question of whether privatization has led to meaningful progress in network development and efficiency (Adegbite & Musa, 2023).

This study, therefore, seeks to provide an objective assessment of BEDC's performance post-reformation period in Edo North of Edo State. By examining operational efficiency, service delivery, prospect of power distribution, the study aims to determine whether the concerns of critics were valid or whether BEDC has defied

Objectives of the Study

The overarching aim of this study is to critically evaluate the problems and prospects of the Benin Electricity Distribution Company (BEDC) in Edo North, Edo State. To achieve this, the study focuses on the following specific objectives:

1. To identify if reforms in power distribution has checkmated operational challenges faced by BEDC in Edo North, Edo State.

2. To determine if reforms in power distribution has improved the prospect of power distribution by BEDC in Edo North, Edo State.

Review of Literature

Power Sector Reform

Power sector reform is a policy shift that moves electricity systems from government monopolies to open, market-driven structures. Key actions include unbundling state utilities**,** introducing private investment**,** and setting independent regulation (Eze, 2021).

The concept of reforms has been given different meanings by different scholars. Taylor (2022), averred that the concept lends itself to those strategies carried out by government and its agencies geared towards public good. What this means is that reforms connote the unusual shift in paradigm away from statuesque to a more or less advanced stage of development, the essence of which is to bring about improvement on the former state of things. Taylor (2022), further opined that reforms find expression in the way and manner certain changes are made and, ultimately, the outcome of goals and objectives achieved at the terminal end of such reforms. According to Nwosu and Dike (2020), corroborating the earlier notion about what constitutes a reform, as popularized by Taylor, noted that reform, at whatever level of analysis, is a concept that is used to refer to those body of regulations and guiding principles that outlines what government intends to, not only formulate in its policy concerns; but essentially, those principles that set out specific time frame on how the reform objectives will be achieved. From the points of view of Nwosu and Dike, the drive for reform begins at the origin and ends at the terminus, after which government and its agencies can peer-review and evaluate itself to be able to determine the level of success or failure of the reforms.

Reforms in the Nigerian Electricity Sector

Nigeria's electricity sector was historically managed by the Power Holding Company of Nigeria (PHCN), which was widely criticized for inefficiency, poor service delivery, and inadequate infrastructure (Adenikinju, 2019). In response to these challenges, the Electric Power Sector Reform Act (EPSRA) of 2005 was enacted, leading to the unbundling of PHCN into generation, transmission, and distribution companies (Ogunleye, 2022). In 2013, the government privatized the distribution companies. (DisCos), including BEDC, transferring ownership to private investors under the Nigerian Electricity Supply Industry (NESI) framework (Ebhota &Tabuga, 2020).

Privatization in Nigeria's electricity sector was introduced as a strategic reform to enhance efficiency, attract private investment, and improve electricity supply. Before privatization, the sector was dominated by the state-owned National Electric Power Authority (NEPA), which later became the Power Holding Company of Nigeria (PHCN). However, due to inefficiencies, corruption, and inadequate infrastructure, the government decided to unbundle and privatize the electricity industry (Adenikinju, 2019). The Electric Power Sector Reform Act (EPSRA) of 2005 provided the legal foundation for privatization, leading to the establishment of the Nigerian

Electricity Regulatory Commission (NERC) and the restructuring of PHCN into six generation companies (GenCos), eleven distribution companies (DisCos), and one transmission

company (TCN) (Ogunleye, 2022). The Benin Electricity Distribution Company (BEDC) is one of the privatized DisCos serving Edo, Delta, Ondo, and Ekiti States.

Stages of Reforms in the Nigeria's Electricity Sector

Recent reforms of Nigeria's electricity sector took place in the following phases:

1. Unbundling of PHCN (2005-2010) – PHCN was divided into GenCos, DisCos, and TCN.
2. Privatization of GenCos and DisCos (2013) Private investors acquired controlling stakes in GenCos and DisCos, while TCN remained under government control.
3. Introduction of Regulatory Frameworks (2015-present) NERC was
4. strengthened to enforce market rules and pricing regulations.

Challenges of Reforms in the Nigeria's Electricity Sector

Despite its goals, reform has faced significant challenges that have limited its
Success:

- **Poor Infrastructure:** Distribution companies, including BEDC, inherited aged and weak infrastructure, leading to frequent breakdowns (Adenikinju, 2019)
- **Financial Instability:** Many DisCos, including BEDC, struggle with revenueCollection and debt servicing, affecting their ability to invest in improvements (Adegbite& Musa, 2023).
- **Regulatory Inconsistencies:** Frequent government interventions and lack of stable policies have created uncertainty for private investors (Ogunleye, 2022).
- **Low Power Generation and Supply:** Privatization has not addressed the fundamental issue of inadequate power generation, leading to continued supply shortages (Eze, 2021).
- **Customer Dissatisfaction:**Many consumers are unhappy with billing disputes, estimated billing, and lack of prepaid meters (Ojo & Salami, 2021).

Prospects in the Nigerian Electricity Sector

Despite the challenges, there are opportunities for improving the reform model:

- **Investment in Metering Technology:** Expanding prepaid metering to eliminate billing disputes and improve revenue collection.
- **Strengthened Regulatory Oversight:** NERC must enforce strict performance standards and ensure tariff structures are fair and sustainable.
- **Infrastructure Upgrades:** Encouraging private-public partnerships (PPPs) to modernize aging electricity infrastructure.
- **Renewable Energy Integration:**Diversifying energy sources by promoting solar and wind power to supplement grid electricity.
- **Tariff and Pricing Reforms:**Implementing cost-reflective tariffs to enable DisCos to cover costs and invest in service improvements.

Theoretical Framework Review

This Study was analyzed using the Principal-Agent Theory which provides insights into the rationale for power sector reform in Nigeria. The Principal-Agent Theory is an economic and organizational theory that examines the relationship between a principal (such as an employer, government, or investor) and an agent (such as an employee, contractor, or manager) who is authorized to act on behalf of the principal The theory highlights the challenges that arise

when the agent's interests do not align perfectly with those of the principal, leading to inefficiencies, moral hazards, and agency costs (Jensen & Meckling, 1976).

The core problem in the Principal-Agent relationship is information asymmetry. Where the agent has more knowledge about their actions than the principal. This knowledge gap allows the agent to act in ways that serve their own interests rather than the interests of the principal. For example, in the privatization of Nigeria's electricity sector, private electricity distribution companies (DISCOs) act as agents of the government (the principal). If the DISCOs prioritize profit maximization over service delivery, they may neglect necessary infrastructure investments, leading to poor electricity supply.

One of the key challenges in Principal-Agent Theory is moral hazard, which occurs when the agent takes risks because they do not bear the full consequences of their actions. In the Nigerian electricity sector, for instance, private firms that receive government subsidies may lack the incentive to improve efficiency, knowing they will still be financially supported.

Another challenge is adverse selection, which happens when the principal cannot fully assess the agent's competence or intentions before delegating responsibilities. If the government privatizes electricity distribution to companies without adequate technical expertise or financial capacity, service delivery may suffer despite privatization efforts (Eisenhardt, 1989).

To mitigate agency problems, Principal-Agent Theory suggests implementing monitoring mechanisms, performance-based incentives, and contractual safeguards. The government can establish strict regulatory policies, enforce service-level agreements, and introduce penalties for non-performance to ensure that privatized electricity firms operate in the public's best interest. Additionally, transparency and competitive bidding processes in privatization agreements can help reduce the risk of selecting inefficient or corrupt agents.

Empirical Review

Adenikinju (2020), analyzed the effects of electricity sector privatization on service delivery and economic growth. Using a quantitative approach, the study collected data from electricity consumers, distribution companies (DisCos), and regulatory agencies. The findings revealed that while privatization improved efficiency in billing and revenue collection, electricity supply remained unreliable due to inadequate infrastructure and regulatory challenges.

Ogunleye and Salami (2019), conducted a mixed-method study examining the performance of privatized electricity distribution companies in Nigeria, The researchers used both survey questionnaires and interviews with stakeholders. Including government officials, private investors, and electricity consumers. Their findings indicated that privatization had increased investment in infrastructure, but inefficiencies in power transmission and generation continued to limit service reliability. The study recommended stronger regulatory frameworks to ensure accountability in the sector.

Eze and Nwankwo (2021) assessed consumer satisfaction following the privatization of electricity distribution companies in Edo State. Using a descriptive survey design, the researchers collected data from 500 households and businesses through structured questionnaires. The

results showed that most consumers were dissatisfied with electricity supply due to frequent outages, estimated billing, and high tariffs. The study suggested improved metering systems and government intervention to address affordability issues.

Adenikinju (2019), conducted a study on electricity distribution efficiency in (2019) Nigeria before and after privatization. Using a descriptive survey design, the researchers collected data from 50 households and businesses through structured questionnaires. The study found that while privatization improved revenue collection, it did not significantly enhance the stability of electricity supply. According to the study, challenges such as weak infrastructure, regulatory inefficiencies, and energy theft continued to limit the effectiveness of privatized distribution companies.

Eze (2021) analyzed the operational performance of selected Nigerian electricity distribution companies, including BEDC. Using a quantitative approach, the study collected data from electricity consumers, distribution companies (DisCos), and regulatory agencies The findings indicated that although privatization had increased financial accountability, it did not lead to substantial improvements in service reliability. The study also revealed that customer complaints about estimated billing and frequent power outages remained widespread.

Ojo and Salami (2021), argued that customer satisfaction had improved in some areas where prepaid metering had been effectively implemented. Using a descriptive survey design, the researchers collected data from 250 house

Methodology

Research Design

The study adopted a cross sectional survey method which was carried out in different areas of operations of Edo Electricity Distribution Company within Edo north, in which data were extracted concurrently with the aid of questionnaires served on the staff of the organisation.

Population and Sampling

The population of this study are staff of Edo Electricity Distribution Company within Edo North. The six biggest towns in the senatorial district were selected for tor the purpose of this study. The staff population was (250) distributed among six major towns in the senatorial districts as indicated below. Table 3.1 shows the distribution of the population of the study.

Table 1: Distribution of Population among the Six Towns in Edo North.

Section	Number	%
Agenebode	50	20.0
Auchi	52	21.0
Afuze	29	11.5
Sabongida Ora	29	11.5
Igarra	50	20.0
Okpella	40	16.0
Total	250	100.0

Source: Field Survey 2026

The population of this study was a finite one (250). This permitted the researcher to adopt Yamane (1964) model for determining the sample size of a finite population. The model stated that

$$N = \frac{N}{1+ N(e)^2} - - - \text{(Onwe 1998:19)}$$

Asika (1991:114), Osuala (1993:43).

n = required sample size
N = Population of the study (250)
I = statistical constant
e = maximum level of error at 5%

Therefore

$$n = \frac{250}{1+ 250 \text{ x } (0.05)^2}$$

$$n = \frac{250}{1.63}$$

n = 155

The sample size was distributed to the participating population using proportional stratification (Onwe 1998:20, Asika 1991:114, osuala 1993:42). Table 2 demonstrates the distribution of sample size.

Table 2 Proportional Stratification

Section/Units	Number	%	Proportional Stratification	No Found Useful
Agenebode	50	20.0	0.20 x 153 = 31	30
Auchi	52	21.0	0.21 x 153 = 32	30
Afuze	29	11.5	0.115 x 153 = 18	13
Sabongida Ora	29	11.5	0.115x 153 = 18	14
Igarra	50	20.0	0.20 x 153 = 31	28
Okella	40	16.0	0.16 x153 = 25	20
Total	250	100	155	135

Source: Field Survey 2026

Table 2 above shows that all the strategy of the population contributed to the sample proportionally. Operationally the table shows the number of questionnaire administered to each of the participating district. A total number of 155 questionnaires were distributed among the respondents. After retrieval, 135 of the questionnaires were found useful for the purpose of the study. This shows a rate of success of 87%.

Method of Data Analysis

Data obtained were refined for all purposes and case of comprehension. To achieve this, we used tables, percentages and where necessary used means and charts. The stated hypotheses were tested using the non – parametric static chi-square (x^2) The formula is mathematically presented as:

Formula: $x^2 = \Sigma \frac{(fo - fe)^2}{fe}$

Where x^2 = output of the chi-square model
fo = observed frequencies
fe = expected frequencies

Decision rule: If X^2 calculated is $\geq X^2$ table reading, then reject the null hypothesis and accept the alternate hypothesis

Data Analysis and Discussion of Findings

Data Analysis

a. Analysis of Data on Personal Information

Table 3 Sex of Respondents

Sex	No of Respondents	% of Respondents
Male	74	54.9
Female	61	45.1
Total	135	100

Source: Field Survey, 2026

The table 3 above shows the sex of respondents. Out of a total number of 135 respondents, 74 or 54.9% are male while 61 or 45.1% are female. This shows that majority of the respondents are male

Table 4: Years of Experience

Years	Male	%	Female	%	No of Respondents	% of Respondents
0-2	21	15.9	15	10.5	36	26.4
3-4	33	24.0	30	22.6	63	46.6
5-7	12	9.0	8	6.0	20	15.0
8 years & above	8	6.0	8	6.0	16	12.0
Total	**74**	**54.9**	**61**	**45.1**	**135**	**100**

Source: Field Survey, 2026

Table 4 above was drawn to determine how long respondents have worked with the firm. 35 or 26.4% (21 males and 15 females) have worked from 0 to 2 years; 62 or 46.6% (33 males and 30 females) have been there from 3 to 4 years; 20 or 15% (12 males and 8 females) of the respondents have worked from 5 to 7 years while 16 or 12% (8 males and 8 females) indicated 8 years and above.

Table 5 Your Educational Qualification

Qualification	Male	%	Female	%	No of Respondents	% of Respondents
NONE/FSLC	10	7.5	8	6	18	13.5
SSCE/WASC	4	3	10	7.5	14	10.6
OND/NCE	19	14.3	9	6.8	28	21.0
HND/BSc and above	41	30.1	34	24.8	73	54.9
Total	**74**	**54.9**	**61**	**45.1**	**135**	**100**

Source: Field Survey 2026

Table 5 above was drawn to determine the educational qualification of the respondents. 18 or 13.5% (10 males and 8 females) of the respondents had no certificate or had first school leaving certificates; 14 or 10.6% (4 males and 10 females) of them had O/Level certificates; 28 or 21% (19 males and 9 females) had OND/NCE while 73 or 54.9% (41 males and 34 females) had HND/BSc and above.

b. Analysis of Data on Research Questions

The relationship between reforms and operational efficiency/service delivery of BEDC in Edo North of Nigeria.

Table 6 The reform has ushered in operational efficiency/service delivery in your organization

Responses	Male	%	Female	%	No of Respondents	% of Respondents
Strongly Agreed	21	15	31	22.6	52	43.6
Agreed	12	9	8	6	20	15.0
Disagreed	17	12.8	2	1.5	19	14.3
Strongly Disagreed	24	18.1	20	15	44	33.1
Total	**74**	**54.9**	**61**	**45.1**	**133**	**100**

Source: Field Survey 2026

Table 6 above highlights data to ascertain if the reform has ushered in operational efficiency/service delivery in BEDC. 52 or 37.6% (21 males and 31 females) of the respondents strongly agreed that the reform has ushered in operational efficiency/service delivery in the organization; 20 or 15% (12 males and 8 females) agreed on the same issue; 19 or 14.3% (17 males and 2 females) disagreed on the issue while 44 or 33% (24 males and 20 females) of the respondents strongly disagreed on the issue. Following the above analysis, reform has ushered in operational efficiency/service delivery in your organization as indicated by 78 or 58.6% of the respondents

The relationship between reforms and prospects of power distribution by BEDC in Edo North

Table 7 Reform has improved the prospects of power distribution by BEDC in Edo North.

Responses	Male	%	Female	%	No of Respondents	% of Respondents
Strongly Agreed	39	28.7	10	7.5	49	36.2
Agreed	5	3.7	43	31.5	48	35.2
Disagreed	15	11.3	5	3.8	20	15.1
Strongly Disagreed	15	11.3	3	2.3	18	13.5
Total	74	54.9	61	45.1	135	100

Source: Field Survey 2026

Table 7 above was drawn to determine if the reform has improved the prospects of power distribution by BEDC in Edo North. 49 or 36.2% (39 males and 10 females) of the respondents strongly agreed that reform has improved the prospects of power distribution by

BEDC in Edo North; 48 or 35.2% (5 males and 43 females) agreed on the same issue; 20 or 15.1% (15 males and 5 females) of the respondents disagreed on the issue while 18 or 13.5% (15 males and 3 females) strongly disagreed on the issue. Following the above analysis, reform has improved the prospects of power distribution by BEDC in Edo North, as indicated by a majority of the respondents of 95 or 71.4%.

Test of Hypotheses.

Our hypothesized statements are tested using the chi-square statistical tool. The tests are conducted at 95% confidence interval at 0.05 significant levels. The degrees of freedom are determined appropriately.

Decision Rule

Accept H_o if Calculated X^2 is less than the critical value of X^2, if not reject H_o and accept H_A

$X^2_{cal} > X^2_{tab}$ reject H_o and accept H_A

Hypothesis One

In line with the above, the null (H_0) and the alternative (H_A) hypothesis are stated below:

Null Hypothesis (H_o): Power sector reform has not significantly improved the operational efficiency and service delivery of BEDC in Edo North of Nigeria.

Alternative Hypothesis (H_A): Power sector reform has significantly improved the operational efficiency and service delivery of BEDC in Edo North of Nigeria.

To test this hypothesis, question on the relationship between power sector reform and operational efficiency and service delivery of BEDC in Edo North of Nigeria was asked.

Table 6: The Relationship Between Power Sector Reform and Operational Efficiency and Service Delivery of BEDC in Edo North of Nigeria

SEX	SA	%	A	%	D	%	SD	%	TOTAL
Male	21	15.0	12	9	17	12.8	24	18.1	74
Female	31	22.6	8	6	2	1.5	20	15.0	61
Total (No) (%)	52	37.6	20	15.0	19	14.3	44	33.1	135 100

Source, field survey 2026

CONTIGENCY TABLE 1

SEX	SA	A	D	SD	TOTAL
Male	(a)21	(b)12	(c)17	(d)24	74
Female	(e) 31	(f) 8	(g) 2	(h) 20	61
Total	52	20	19	44	135

Source, field survey 2026

CELL	O	E	O-E	$(O-E)^2$	$\frac{(O-E)^2}{E}$
A	21	27.4	-7.4	54.76	2.0
B	12	11.0	1	1	0.1
C	17	10.1	6.9	47.6	4.71
D	24	24.2	-0.2	0.04	0.002
E	31	22.6	7.4	54.76	2.4
F	8	9.0	-1	1	0.1
G	2	8.6	-6.6	43.6	5.1
H	20	19.8	0.2	0.04	0.002

Chi square (X^2) calculated =14.604
DF = (R-1) (C-1) = (2-1) (4-1)
(1) (3) DF = 3

At a degree of freedom of 3, at 0.05 significance level, the chi-square table value stood at 7.81

Therefore using the chi-square (X^2) to test at 0.05 level of significance, the calculated chi-square (X^2) value is 14.60 while the tabulated chi-square value is 7.81.

DECISION RULE

Since X^2_{cal} is greater than X^2_{tab} the null hypothesis (H_o) is rejected and the alternative (H_A), which states that power sector reform has significantly improved the operational efficiency and service delivery of BEDC in Edo North of Nigeria is accepted.

Hypothesis Two

The null and alternative of hypothesis two are stated below:

Null Hypothesis (H_o): Power sector reform has not significantly improved the prospects of power distribution by BEDC in Edo North of Nigeria.

Alternative Hypothesis (H_A): Power sector reform has significantly improved the prospects of power distribution by BEDC in Edo North of Nigeria.

To test this hypothesis, question on the relationship between power sector reform and the prospects of power distribution by BEDC in Edo North of Nigeria was asked.

Table 7 The Relationship between Power sector reform and the Prospects of Power Distribution by BEDC in Edo North of Nigeria

SEX	SA	%	A	%	D	%	SD	%	TOTAL
Male	39	28.7	5	3.7	15	11.3	15	11.3	74
Female	10	7.5	43	31.5	5	3.8	3	2.3	61
Total (No) (%)	49	37.6	48	35.2	20	15.1	18	13.5	135 100

Source, field survey 2026

Contingency Table Two

SEX	SA	A	D	SD	TOTAL
Male	39	5	(c) 15	(d)15	74
Female	(e) 10	(f) 43	(g) 5	(h) 3	61
Total	49	48	20	18	135

Source: Field Survey 2026

CELL	O	E	O-E	$(O-E)^2$	$\frac{(O-E)^2}{E}$
A	39	26.4	11.6	134.56	5.1
B	5	25.8	-20.8	432.64	16.7
C	15	11.0	4.0	16	1.5
D	15	9.9	5.1	26.01	2.6
E	10	21.7	-11.7	136.89	6,3
F	43	21.2	20.8	432.64	20.4
G	5	9.0	-4.0	16	1.8
H	3	8.1	-5.1	26.01	3.2

Chi square (X^2) calculated = 57.60
DF = (R-1) (C-1) = (2-1) (4-1)
(1) (3) DF = 3

At a degree of freedom of 3, at 0.05 significance level, the chi-square table value stood at 7.81

Therefore using the chi-square (X^2) to test at 0.05 level of significance, the calculated chi-square (X^2) value is 57.60 while the tabulated chi-square value is 7.81.

Decision Rule

Since X^2_{cal} is greater than X^2_{tab}, the null hypothesis (H_o) is rejected and the alternative (H_A) which states that power sector reform has significantly improved the prospects of power distribution by BEDC in Edo North of Nigeria is accepted.

Discussion of Findings

The study showed that power sector reform has significantly improved the operational efficiency and service delivery of BEDC in Edo North of Nigeria. This finding agreed with that of Adenikinju (2019), who examinedpower sector reform in Nigeria. Similarly, the finding is also in line with the study of Eze (2021), who explore the post privatization era of BEDC.

The result of the study also showed that power sector reform has significantly improved the prospects of power distribution by BEDC in Edo North of Nigeria. This result also agrees with the study carried out by Ogunleye (2021), in his study on infrastructure renewal in Nigeria power distribution sector.. Similarly, Ler (2021), carried out a study on electricity power reform in Africa that demonstrated similar result. Other authors with similar findings in their studies include

Ojo and Salami (2021); Akpan (2020); Adegbite and Musa (2023) and concluded that privatization can significantly improved the prospects of power distribution globally.

Conclusion

Every organization, irrespective of whether it is public or private deserves to bring succor and promote the development of its area of operations. The result of this study has shown that BEDC has the prospect of improving power distribution and supply in Edo North and improve on its service delivery. One of the major ways through which this can be facilitated is the deployment of modern equipment and experienced personnel to replace obsolete ones and manned sensitive positions respectively.

Recommendations

The following recommendations are made in line with the findings of the study.

- There is the need for BEDC to invest in the purchase new equipment in order to replace the obsolete ones that are no longer functional. This stands to guarantee improve service delivery and operational efficiency of the organization.
- Secondly, the BEDC should engage professional and experience personnel to man sensitive areas of operations in the organization in order to ensure hitch free power supply.
- Similarly, there is the need for the government to pave way for electricity providers to source for long term funds to finance operations from the capital market, as power distribution is capital intensive that requires huge among of capital that can hardly be sourced from the money market.

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