

THE EFFECTS OF UNSTABLE POWER SUPPLY ON STUDENTS' ACADEMIC PERFORMANCE IN SELECTED PUBLIC POLYTECHNICS IN OGUN STATE, NIGERIA

Elizabeth Musa¹, Auwal Mohammed Adamu²

¹Registry, Federal Polytechnic, Ilaro, Ogun State, Nigeria.

²General Studies Department, Federal Polytechnic, Ilaro, Ogun State, Nigeria.

DOI: <https://www.doi.org/10.58257/IJPREMS36500>

ABSTRACT

Power supply is key in the delivery of educational service in tertiary institutions because both teachers and learners need power for their academic activities. This study examine the effects of unstable power supply on Students academic performance in Ogun State. Data were collected from selected Public Polytechnics in Ogun State using cross sectional survey and in-dept structured questionnaires. The sample were drawn using purposeful sample technique and the data were analyzed using descriptive and inferential statistics. The results of the descriptive statistics showed that unstable power supply affect the use of functional equipment at laboratories, workshops, and classrooms which in turn affect students' academic performance. The results obtained from logit regression revealed that unstable power supply have negative and significant impact on Students' academic performance in the Polytechnics. This implies that unstable power supply impact negatively on students' academic performance. The study therefore recommended the federal government should declare state of emergency on the issue of power supply in technical institution as well as the support of industrial sector to ensure stable power supply in the Nigerian Polytechnics.

Keywords: unstable power supply, academic performance, educational service

1. INTRODUCTION

Power supply play an important role in man's daily activities because man depends on energy to work efficiently and enjoy the goodies of life. The dependency on electricity becomes more obvious in the twenty-first century with widespread of energy usage in practically every aspect of human life from household usage to entertainment, education and industrial use. According to Aremu and Adeyemi (2011), adequate power supply is associated with efficiency, prosperity, and higher productivity in all sectors of the economy. Power supply is key in the delivery of educational service in tertiary institutions because both teachers and learners need power for their academic activities. Students' academic performance influence the success or failure of any academic institution (Naran and Abdullah, 2016).

The problem of power supply is one of the challenges facing the development of every sector in Nigeria and educational sector is not an exception as teaching and learning have become hampered due to the inadequate power supply in our various institutions. Inadequate power supply affects the students' academic performance. The public universities and polytechnics in Nigeria suffer from inadequate power supply which have affected the performance of both academic staff and their students because electricity have been acknowledge to be the life wire of academic activities such as teaching and learning, research, workshop etc (Agba, 2015). However, public universities and Polytechnics in Nigeria are suffering from inadequate power supply which have precarious effect on academic staff performance. Irregular power supply in the Tertiary Institutions have reduce the time spent by academic staff and students in conducting research and practicals. It also reduce the time spent by students on their studies, especially when students who preferred study at night sometimes walk to school campuses to access electricity. The situation becomes precarious when most of our tertiary institutions could not afford to provide electricity throughout the night amid rising cost of fuel and limited resources. The unstable power supply in Nigeria has been a big challenge to both the old and the young. People from all facet of life have been seriously affected. Students of tertiary institutions are adversely affected as they need electricity to read, search for online materials, practical, workshops, online classes and many other academic activities. Successive government over the years kept making promises on ensuring adequate power supply but the promises are yet to be fulfilled. On their own part, the Nigerian students over the years have also voiced out their grievances as they wish to have better learning environment as their contemporaries in the western world.

The objective of the study is to investigate the effect of poor power supply on Students' academic performance. More specifically to examine the effect of poor power supply on academic activities and determine the challenges the students encountered in the pursuit of their academics due to unstable power supply. This will help to proffer solutions to the problems of power supply in the tertiary institutions. the study is divided in to five sections. This part of the study gives the introduction, followed by section two which provides the review of related literature. Section three provides the methodology of the study and section four which gives the presentation and analysis of the result. The last section, provides the summary, conclusion and recommendations emanating from the study.

2. LITERATURE REVIEW

There have been studies on the impact of power supply on education. The view of Ogunode and Ayoko (2022) is that constant power supply is the cornerstone of the entire educational system and has a direct influence on the objective of the educational system. Phiri et.al (2021) explored a descriptive cross-sectional survey method to examine the impact of electricity power outage on students' life activities in Zambia. The results revealed that constant electricity power outages has a negative impacts on students academic activities in the university which in turn affects their academic performance. This implies that affects students academic life in the University. Narad and Abdullah (2016) as well as Malik and Signh (2016) studied the impact of power supply on students' academic performance and concluded that provision of adequate power supply has a direct influence on students' academic performance in academic institutions. In another study, Joseph and Ogunede (2021) examine the impact of epileptic power supply and University Students' performance in Abia State. The findings from their study revealed that epileptic power supply affects students study habits and learning processes which consequently affect their academic performance. Agba (2015) studied the effect of electric power supply on work performance of academic staff in Public Universities in Nigeria and found that the incessant power supply has negative impact on the work of academic staff in public universities which include teaching and research. Similarly, Mostafa (2014) study the effect of power outage on academic performance and found that power outage has negative influence on the students' academic performance. This study is designed to use various students' academic activities that are affected by power supply to investigate how epileptic power supply affects their overall academic performance with the consequent objective of proffering solution to the identified problems.

3. METHODOLOGY

This research work will adopt primary data with the aid of questionnaire to generate information from the respondents in the selected Public Polytechnics in Ogun State. Appropriate sample shall be drawn from each Polytechnic population using Proportional Stratification sampling technique. Empirical data collected by examining questionnaire will be use to evaluates the variations in the identified students' academic activities affected by power supply as well as their opinion on how it affect their learning process.

Descriptive Statistics will be used in summarizing the data obtained while Multivariate analysis technique known as Principal Component Analysis will be used for inferential purpose. These will hopefully provide answers that will meet the objectives of the research work.

4. DATA PRESENTATION AND RESULTS

Data Presentation

This section provides the presentation and analysis of data using descriptive statistics.

4.1 Biological Data of the Respondents

Table 4.11. AGE OF THE RESPONDENTS

Age Group	Frequency	Percentage (%)
18 Years and Below	5	2.00
19-25 Years	149	59.60
26-29 Years	65	25.20
30 Years and above	33	13.20
Total	250	100

Source: Authors' computation with the aid of STATA

The data on the table 4.11 above shows that only 2 percent of the respondents were below 18 years. The majority of the respondents were between the ages of 19-25 years (59.60%), 26-29 years (25.20%), and the remaining 13.20 percent of the respondents were above 30 years. This implies that the majority of the respondents were in the category of the youth.

Table 4.12 GENDER OF THE RESPONDENTS

Gender	Frequency	Percentage (%)
Male	112	44.80
Female	138	55.20
Total	250	100

Source: Authors' computation with the aid of STATA

The data on the table 4.12 above revealed that 44.80 percent of the respondents were male, while the remaining 55.20 percent were female. This indicates that most of the students in polytechnics in Ogun State are female.

Table 4.3 Availability of functional electrical operated equipment

NO	ITEMS	SA	A	U	D	SD	MEAN
1	Electrical equipment are required for training in the workshop	99	111	15	19	6	1.888
2	Operational equipment are required for laboratory	98	109	20	17	9	2.3
3	Projectors are used for lecturing in the classrooms	89	116	21	21	3	3.03
4	Personal computers are required for efficient learning in classrooms	101	78	35	19	17	1.89
5	Adequate computers are used in e-library	111	98	17	19	5	2.81

Source: Authors' compilation with the aid of STATA

The results provided in table 4.2 about students' usage of electric equipment in their academics. The results revealed that functional electrical equipment are available at workshops, classrooms, laboratories and library. This indicates that constant electricity is required for effective training in the workshops, laboratories and Classrooms.

Table 4.3 Students' Experience of power failure

NO	ITEMS	SA	A	U	D	SD	MEAN
1	Power failure destruct workshop training	78	119	25	17	13	2.088
2	Power failure affect the conduct of practicals in the laboratory	82	115	24	17	12	3.15
3	Epileptic power supply discourage the use of projectors in classrooms	122	89	21	22	6	2.52
4	Poor power supply discourage students from visiting e-library for their studies	103	114	12	17	4	3.05
5	Poor power supply reduce the length of time students devoted for their studies	111	124	5	8	2	2.95

Source: Authors' compilation with the aid of STATA

The results in table 4.4 shows that the students usually experience incessant power failure on the campus which affect their various academic activities at workshops, laboratories, libraries and classrooms. The unstable power supply also reduce the length of time students devoted for the studies.

Table 4.3 Perception of Students' on the link of power supply to their Academic performance

NO	ITEMS	SA	A	U	D	SD	MEAN
1	Constant power supply help to enhance students' academic performance	97	139	9	3	2	1.696
2	The use of projector for lecture help our understanding of the subject	98	125	14	10	3	3.15
3	Constant power supply encourage students to visit e-library regularly to enhance their academic performance	103	119	8	12	8	2.52
4	Constant power supply encourages the conduct of more practicals which will enhance students' academic achievement	79	114	26	17	14	2.05
5	Constant power supply increases the length of time students devoted for their studies which may eventually increase their academics performance.	123	94	12	13	8	2.95

Source: Authors' compilation with the aid of STATA

The table 4.5 above revealed that constant power supply enhance students academic activities which in turn improve their academic performance. Similarly, constant power supply on the campus encourages more practicals and the use of projectors in the classrooms which will help to increase students' academic achievement. It also aid increase in the length of time students devoted for their studies which will also help to increase their academic performance.

Table 4.6 Logit Regression Analysis

Dependent Variable:ACAD				
Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	1.889654	.1272705	1.85	0.000
equip	0.0459147	0.0426031	1.08	0.282
ELECT	-.1342637	.03923	-3.42	0.001
R-squared	0.0526			
Adjusted R-squared	0.0450			
S.E of regression	0.080543			
Sum squared resid	0.240023			

The results in table 4.6 above revealed that the coefficient of functional electrical equipment is 0.0459147 with probability value (0.000) which implies that the use of functional electrical equipment in laboratories, workshops and classrooms have positive effect on Students' academic performance. On the other hand, the coefficient of unstable power supply measured by electrical is -0.1342637 with probability value (0.01). in other words, the results shows that there is significant negative relationship between unstable power supply and Students' academic performance in the selected technical Institution in South West Nigeria. This implies that unstable power supply in the polytechnic have negative effect on students' academic performance. This is in support of the findings of Mostafa (2014) which revealed that power outage have a negative influence on Students' academic performance.

5. CONCLUSION AND RECOMMENDATION

Electricity has been recognized as a necessity in tertiary institutions. But its provision in a satisfactory and regular manner to workshops, laboratories, libraries, Classrooms and offices of academic staff have remained epileptic in most Nigerian tertiary Institutions. The study has revealed that the unstable power supply in the country particularly in the technical institutions have negative influence on the Students' academic performance. The study found that technological instructions in the laboratories, workshops and classrooms are not efficient in technical schools due to the problem of unstable power supply in the Institutions. This is because appropriate training equipment cannot be put into full use due to interruptions in power supply. The study therefore recommended that the federal government should declare a state of emergency on the issue of power supply in technical institutions to ensure uninterrupted power supply in the country's technical institutions. The study also call on to the industrial sector which is the beneficial of the graduates to assist the government in ensuring stable power supply in Technical Institutions in Nigeria.

6. REFERENCES

- [1] Agba, M.S. (2015). Electric Power Supply and Work Performance of Academic Staff in Nigerian Universities: A Synergy Analysis. *Journal of Higher Education in Africa*.17(1):1256- 1263.
- [2] Aremu, M.A.& Adeyemi, S.L. (2011). Small and Medium Scale Enterprises as Strategy for Employment Generation in Nigeria. *Journal of Sustainable Development*. ,
- [3] Joseph, O. and Ogundede, V. (2021). Administration of professional development programme in Nigerian higher institutions: challenges and way forward. *Journal of Science of Humanities*. 3(4): 123-132.
- [4] Narad, A.& Abdullahi,B. (2016). The impact of power supply on the Academic performance of Senior Secondary School Students. *Rupkatha Journal of interdisciplinary Studies in Humanities*..8(2):2-19
- [5] Malik, S. and Singh, S.P. (2016). Factors Affecting Academic Performance of Students. *Paripex- Indian Journal of Research*:5(4):80-91.
- [6] Mostafa, E. (2014). The effect of power cuts on University Academic Performance. availableonline@http://www.poweroutage/academic.last accessed.23/09/2023
- [7] Phiri, C., Gabriel M.,Chama, E. &Sebastian, A.2021 An assessment of the impact of Electricity Power Outages on University Students life Lusaka, Zambia A University Perspective. *Canadian Journal of Health Research*. 1(1):1-13
- [8] Ogundede, N.J. and Ayoko, V.O. (2022). Implication of Unstable Power (energy) on Administration of Tertiary Institutions in Nigeria. *European Multidisciplinary Journal of Modern Science*. 6(1):10-18.