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## **Impact of Power Supply on Small Scale Businesses in Nigeria, Fisheries Post-Harvest Challenges**

**Sule Abiodun**

NIOMR RESEARCH LAGOS, NIGERIA

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### **ABSTRACT**

The study investigated the impact of power supply on small scale businesses in Nigeria with particular attention to fisheries post-harvest challenges. The study adopted exploratory research design and was carried out in Lagos State, Nigeria. It was carried out within Ajah, Badagry and Epe-Eredo from where two fishing communities were selected from each of the communities and twenty five fishermen were selected using snowballing from each of the community resulting in a total of 150 fishermen. Data was collected by means of questionnaire which was analysed descriptively. The result of this study indicated that power supply plays significant role in fisheries post-harvest as it aids in appropriate storage; aids in preserving the nutritional values of the fish; minimize spoilage and ensure that fish is attractive and in good condition on distribution; and enables fishers to conduct their business processes without fear of loss. The second finding in the study revealed that epileptic power supply in Nigeria has negative impact on fisheries post-harvest as it leads to increase the cost of operation; losses in the quantity and quality of fish; it leads to high cost in fish preservation and storage and reduced profit margins; and leads to sale of fish at low prices due to deterioration in quality. Finally, the result also showed that constant power supply will lead to better preservation of the fishes, minimizes quality deterioration; reduces the widening gap between fish supply and demand; and will slow the action of bacteria and the rate of spoilage. Based on these findings, the study concluded that power supply is inevitable for the growth and sustainability of the fishing sector in Nigeria; and thus recommends adequate power supply to minimize fish spoilage.

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**Keywords:** Power supply, challenges, fisheries post-harvest challenges.

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### **Introduction**

The constant supply of electricity supply is vital to the survival of most small scale businesses in any country. This implies that an epileptic power supply can significantly obstruct the productivity and subsequent growth of any sector. In Nigeria, the challenge faced in relation to power supply is well documented, in view of the terrible experiences faced by consumers (Akuru&Okoro, 2014). Small scale businesses are not exempted from the challenges caused by epileptic power supply (Onochie, Egware&Eyakwanor, 2015). Small and medium scale businesses in developing countries are contributors to economic growth and generate employment and income as well as reduce poverty level. In view of the significant role played by SMEs, policies have been enacted by the government to boost this sector and cater to their needs. In spite of all the efforts to aid the development of this sector, there are still constraints such as constant power supply that hinders their activities.

Fishery and aquaculture is a small and medium scale business, which provides employment opportunities to people especially in local communities. It is a dynamic sector with opportunities for investments. The business is however faced by key challenges in the distribution of their products such as post-harvest losses, logistics, seasonality and epileptic power supply. The cost of fish preservation and storage is a challenge faced by the fishery sector, which tend to decrease the value of the fish caught (Cheke, 2014). Fishing artisans encounter huge post-harvest losses owing to the lack of suitable facilities to enhance handling, storage and distribution. Power supply plays a huge role in the preservation and storage of fish, and its inadequacy leads to poor profit margin for the fishers. Furthermore, the costs that arise from fishers seeking alternative ways to preserve their fish is transferred to the final consumers which causes shortage and inability to save or even invest into any important capital project that can influence on the society.

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### **Statement of research problem**

Power supply is directly or indirectly significant to every economy and should be accessible to every business for maximum effectiveness in their operations (Ezenta et al., 2021). In fisheries sector, power supply aids in appropriate storage thereby preserving the nutritional values of the fish. However, they still employ the use of obsolete fishing equipment in view of their limitations in terms of preservation (Okeowo et. al., 2015). Their pursuit for development is hindered by inadequate and unreliable electric power, which largely contributes to the post-harvest loss often experienced by them. Given the foregoing, this study examines the impact of power supply on small scale businesses in Nigeria; with a focus on Fisheries post-harvest challenges.

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## Research objectives

The study specifically aims to;

1. Examine the importance of power supply to fisheries post-harvest.
2. Assess the effect of epileptic power supply on fisheries post-harvest.
3. Determine the extent to which constant power supply minimizes fisheries post-harvest loss.

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## Research questions

1. What is the importance of power supply to fisheries post-harvest?
2. What is the effect of epileptic power supply on fisheries post-harvest?
3. To what extent will constant power supply minimize fisheries post-harvest loss?

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## Literature review

In any production process, power supply is an important factor and an insufficient supply can affect economic activities either directly or indirectly and can cause overhead costs to businesses and the economy in general (Ezenta et al., 2021). The prominence of power supply cuts across every facet of the economy as it is used by everyone, both individuals and businesses therefore it should be accessible. For production to be effective, especially in economic development, power should be generated (Ibiene et al., 2018). Epileptic power supply has led to individuals, businesses and organizations generating their own power using generators which are not just expensive to purchase and maintain but also pollute the environment. These costs that arise from businesses generating their own power are transferred to the final consumers thus creating hardship, shortage and inability to save or even invest into any important capital project that can influence on the society.

In fisheries sector, power supply aids in appropriate storage thereby preserving the nutritional values of the fish. Small scale fisheries are a sub-division of the fisheries sector in Nigeria and are also called artisanal fisheries as they make use of obsolete fishing equipment. The other subdivisions are commercial and aquaculture fisheries (Okeowo et al., 2015).

In Nigeria, the pursuit for development is hindered by inadequate electric power supply mostly because generation, transmission and distribution infrastructure are inadequate. Power supply is still very unreliable characterised by high voltage variations, persisted dependence on self-generated electricity and frequent blackouts (Adenikinju, 2015). The problem of ineffectual power supply in Nigeria begins with inferior materials being procured and installed, tinkering with meters, removal of armoured cables and high tension wires, etc. climate also affects thermal energy and hydroelectric power which are the most significant electric supply in Nigeria. Others include non-payment of utility bills by individuals and businesses, vandalism of vital materials which can cause a blackout for months and non-prosecution of vandals (Ibiene et al., 2018).

### *Fisheries post-harvest challenges*

Small scale fisheries in Nigeria experience post-harvest losses which are the disposal of fish or sale of fish at somewhat low prices due to deterioration in quality (Adelaja et al., 2017). This results in potential loss of revenue for the fishers, processors and marketers. These losses happen along the fish distribution chain, from capture to marketing stage (Olusegun & Matthew, 2016). Fish is a commodity that perishes easily and as a result, fisheries are faced with challenges such as lack of suitable shore-based facilities to handle, collect, store, market and distribute the fish such as lack of refrigeration systems and quality packaging which can cause reduction in safety and quality of fish, leading to a loss (Dechert, 2020), epileptic power supply, high cost of transportation, bad road network systems to deliver catches in good time to the markets, unsatisfactory processing methods and lack of access to information from local and foreign markets.

### *Empirical review*

Adenikinju (2015) analysed the cost of infrastructure failure in the electricity sector in Nigeria and provided a sturdy argument to back up the importance of energy supply. He maintained that the epileptic supply of electricity in Nigeria has imposed significant cost on the industrial sector.

Okafor (2017) studied the development crisis of the power supply and what it implies for the industrial Sector in Nigeria. Using descriptive analysis to corroborate the views of other authors, he argued that poor and incompetent electricity supply has adverse effect for industrial development in Nigeria. Iweama, Iweka and Alfa (2020) examined the impact deficit electricity supply has on small and medium scale enterprises in Kano state, Nigeria, using a sample size of 50 randomly selected respondents. Results from the data analysed indicated that electricity supply outages and the costs forced by power supply outages severely affected the operation of small and medium scale enterprises. Ezenta et al. (2021) studied power supply instability and sales performance of twenty frozen foods firms in Aba, Abia state, Nigeria. Findings indicated that a significant relationship exists between irregular power supply and profitability, as well as alternate source of power supply and profitability.

### *Theoretical Framework: The Neoclassical growth model*

The Neoclassical growth theory proposes that the overall functioning of an economy is considerably influenced by technological change (Masoud, 2013). It outlines labour, capital and technology as the forces necessary for the growth of an economy and shows that the extent of economic growth is

determined by an increase in inputs and technical improvement. A marginal increase in the source of economic growth is boosted by a rise in labour inputs. Labour input grows gradually when there are more people at work which will help in increasing working hours. Small scale fisheries make a significant contribution to the economy as they play an important role in fish export as well as reduce poverty at the household level. With epileptic power supply, these small scale fisheries will be affected as there will be loss due to spoilage.

## Methodology

This study is exploratory in nature and was carried out in Lagos State, Nigeria. The use of purposive sampling method was employed in selecting three coastal areas Ajah, Badagry and Epe-Eredo. From each of these areas two fishing communities were selected making a total of six fishing communities. Random sampling was used in selecting twenty five fishermen each making a total of 150 fishermen as the study's sample size. Questionnaire was used in eliciting responses from the respondents. The questionnaire was structured on a four point likert scale format and was distributed with the aid of research assistants recruited for the purpose of interpreting the questionnaires to the fishers given their low level of literacy. The data collected was analyzed using descriptive statistics such as frequency distribution and percentages.

## Data presentation and Analysis

### RQ1: What is the importance of power supply to fisheries post-harvest?

**Table 1: Showing the importance of power supply to fisheries post-harvest**

Statement		SA	A	D	SD	Percentage in agreement
Power supply aids in appropriate storage	F	69	77	1	3	<b>97.3</b>
	%	46.0	51.3	0.7	2.0	
Power supply aids in preserving the nutritional values of the fish	F	32	95	10	13	<b>84.6</b>
	%	21.3	63.3	6.7	8.7	
Power supply minimize spoilage and ensure that fish is attractive and in good condition on distribution	F	49	92	7	2	<b>94.0</b>
	%	32.7	61.3	4.7	1.3	
Power supply enables fishers to conduct their business processes without fear of loss	F	92	39	11	8	<b>87.3</b>
	%	61.3	26.0	7.3	5	

### Field survey (2021)

With above 86% on the average, the respondents are in support that power supply is very important to fisheries post-harvest. This is so because power supply aids in appropriate storage; will aids in preserving the nutritional values of the fish; minimize spoilage and ensure that fish is attractive and in good condition on distribution; and will enables fishers to conduct their business processes without fear of loss.

### RQ2: What is the effect of epileptic power supply on fisheries post-harvest?

**Table 2: The impact of the epileptic power supply on fisheries post-harvest**

Statement		SA	A	D	SD	Percentage in agreement (%)
Epileptic power supply may make the fishers source for an alternative supply and increase the cost of operation	F	48	102	0	0	<b>100.0</b>
	%	32.0	67.9	0.0	0.0	
Epileptic power supply causes losses in terms of food quantity and quality	F	109	39	0	2	<b>97.7</b>
	%	72.7	25.9	0	1.3	
Epileptic power supply leads to high cost in fish preservation and storage and reduced profit margins	F	39	111	0	0	<b>100.0</b>
	%	25.9	73.09	0	0	
Epileptic power supply leads to sale of fish at low prices due to deterioration in quality	F	69	78	3	0	<b>98.9</b>
	%	45.9	51.9	2.0	0	

### Field survey (2021)

Table 2 above revealed that above 97.7% of the respondents are in support that epileptic power supply in Nigeria have negative impact on fisheries post-harvest. The is so because epileptic power supply may make the fishers source for an alternative supply and increase the cost of operation; causes losses in terms of food quantity and quality; leads to high cost in fish preservation and storage and reduced profit margins; and leads to sale of fish at low prices due to deterioration in quality.

**RQ3: To what extent will constant power supply minimize fisheries post-harvest loss?****Table 3: Showing the extent to which constant power supply minimize fisheries post-harvest loss**

Statement		SA	A	D	SD	Percentage in agreement (%)
It will enable the fish to be preserved from the point it is caught till it gets distributed	F	109	39	0	2	<b>97.7</b>
	%	72.7	25.9	0	1.3	
It will help to minimize quality deterioration	F	39	111	0	0	<b>100</b>
	%	25.9	73.09	0	0	
It will reduce the widening gap between fish supply and demand	F	39	111	0	0	<b>100</b>
	%	25.9	73.09	0	0	
It will slow the action of bacteria and the rate of spoilage	F	49	92	7	2	<b>94.0</b>
	%	32.7	61.3	4.7	1.3	

**Field survey (2021)**

The table above shows the respondents opinions on the extent to which constant power supply minimize fisheries post-harvest loss. With above 94% support to the individual items on the table, we conclude that constant power supply will enable the fish to be preserved from the point it is caught till it gets distributed; will help to minimize quality deterioration; will reduce the widening gap between fish supply and demand; and will slow the action of bacteria and the rate of spoilage.

**Discussion, Conclusions and Recommendations**

The result of this study indicates that power supply is very important to fisheries post-harvest. This is so because power supply aids in appropriate storage; will aids in preserving the nutritional values of the fish; minimize spoilage and ensure that fish is attractive and in good condition on distribution; and will enables fishers to conduct their business processes without fear of loss. This result is in support with the study by Ezenta et al., (2021) and Ibiene et al., (2018) who indicated that power supply is central in any production process, including fishing and its impact has both directly or indirectly influence cost of production. The prominence of power supply cuts across every facet of the economy as it is used by everyone, both individuals and businesses therefore it should be accessible.

The second finding in the study revealed that epileptic power supply in Nigeria has negative impact on fisheries post-harvest. The is so because epileptic power supply may make the fishers source for an alternative supply and increase the cost of operation; causes losses in terms of food quantity and quality; leads to high cost in fish preservation and storage and reduced profit margins; and leads to sale of fish at low prices due to deterioration in quality. The result agrees with Ezenta et al. (2021);Iweama, Iweka and Alfa (2020); Okafor (2017); Okeowo et al., (2015) whose respective studies indicated that epileptic power supply causes severe damage to frozen food including fisheries post-harvest as it leads to spoilage, high loss of quality and quantity of fish among others.

Finally, the third result shows that constant power supply will enable the fish to be preserved from the point it is caught till it gets distributed; will help to minimize quality deterioration; will reduce the widening gap between fish supply and demand; and will slow the action of bacteria and the rate of spoilage. The result confirms the result of some earlier studies such as Iweama, Iweka and Alfa (2020); Okafor (2017); Okeowo et al., (2015) respectively.

From the foregoing and the result from this study, we conclude that power supply is inevitable for the growth and sustainability of the fishing sector in Nigeria. Power supply encourage large harvesting of fish as there is a guarantee of fish preservation should the sale for the day remain low. For this reason, this study recommended constant power supply in the country to help all aspect of production in the country.

**REFERENCES**

- Adelaja, O. A., Kamaruddin, R. B. & Chiat, L. W. (2017). Ensuring Food Security by Reduction of Post-Harvest Fish Losses in Small-Scale Fisheries, Nigeria. *International Journal of Environmental & Agriculture Research (IJOEAR)*, Vol-3, Issue-12.
- Adenikinju O.S (2015). Analysis of the cost of infrastructure failure in a developing economy: The case of electricity sector in Nigeria. AERC Research paper 148; Kenya.
- Akuru, U. B., & Okoro, O. I. (2014). Economic implications of constant power outages on SNEs in Nigeria. *Journal of energy in Southern Africa*, 25(3), 61-66.
- Cheke, B. (2014). Markets and marketing of fish and fishery products in Nigeria. IIFET Australia Conference Proceedings
- Dechert, K. (2020, April 22). Reducing Post-Harvest Losses in Nigeria's Aquaculture Sector Contributes to Sustainable Development. Agrilinks <https://agrilinks.org/post/reducing-post-harvest-losses-nigerias-aquaculture-sector-contributes-sustainable-development>
- Ezenta, O. N., Osagie, L. U., Okoroafor, C. & Ordu, B. C. N. (2021). Power supply fluctuation and sales performance of frozen foods business: a study of Aba metropolis Nigeria. *British Journal of Marketing Studies*, 9(3), 13-31. DOI: <https://doi.org/10.37745/bjms.2013>
- Ibiene, D., Clinton, A. & Chinago, A. B. (2018). State of power supply in Nigeria, the way out. *International Journal of Development and Sustainability*, Vol. 7 No. 2.
- Iweama, V. O., Iweka, A. N. & Alfa, H. (2020). Impact of deficient electricity supply to small and medium scale enterprises in Kano-Nigeria. *Advances in Management*, Vol 17(2).

- Masoud, N. (2013). Neoclassical Economic Growth Theory: An Empirical Approach. *The Far East Journal of Psychology and Business* 11, 10-33.
- Okafor, E. O. (2017). Development crisis of the power supply and implication for industrial Sector in Nigeria, *Kamlarak Journal*, Vol.6, Pp 83-92.
- Okeowo, T. A., Bolarinwa, J. B. & Ibrahim, D. (2015). Socioeconomic analysis of artisanal fishing and dominant fish species in Lagoon Waters of Epe and Badagry Areas of Lagos State. *International Journal of Research in Agriculture and Forestry* 2 (3), 38–45.
- Olusegun, O. J. & Mathew, O. S. (2016). Assessment of Fish Post Harvest Losses in Tagwai Lake, Niger State, Nigeria. *International Journal of Innovative Research and Development* ISSN 2278–0211, 5(4).
- Onochie, U. P., Egware, H. O., & Eyakwanor, T. O. (2015). The Nigeria electric power sector (Opportunity and challenges). *Journal of Multidisciplinary Engineering Science and Technology*, 2(4), 494 - 502 O

**IMPACT OF POWER SUPPLY ON SMALL SCALE BUSINESSES IN NIGERIA, FISHERIES POST-HARVEST CHALLENGES  
REQUEST FOR INFORMATION**

Dear Respondent,

I am carrying out a study on "Impact of power supply on small scale businesses in Nigeria, Fisheries post-harvest challenges", and you have been chosen to be part of the study. This questionnaire is only for academic purposes. Kindly select the response which applies to you and all information will be kept confidential

Instructions: Please tick (√) as appropriate where

SA = Strongly Agree (SA), A = Agree, D = Disagree (D), SD = Strongly Disagree (SD)

**Key: Strongly agree (4), Agree (3), Disagree (2), and strongly disagree (1).**

S/N	ITEMS	SA	A	D	SD
<b>RQ1</b>	<b>What is the importance of power supply to fisheries post-harvest?</b>				
<b>1</b>	Power supply aids in appropriate storage				
<b>2</b>	Power supply aids in preserving the nutritional values of the fish				
<b>3</b>	Power supply minimize spoilage and ensure that fish is attractive and in good condition on distribution				
<b>4</b>	Power supply enables fishers to conduct their business processes without fear of loss				
<b>RQ2</b>	<b>What is the effect of epileptic power supply on fisheries post-harvest?</b>				
<b>5</b>	Epileptic power supply may make the fishers source for an alternative supply and increase the cost of operation				
<b>6</b>	Epileptic power supply causes losses in terms of food quantity and quality				
<b>7</b>	Epileptic power supply leads to high cost in fish preservation and storage and reduced profit margins				
<b>8</b>	Epileptic power supply leads to sale of fish at low prices due to deterioration in quality				
<b>RQ3</b>	<b>To what extent will constant power supply minimize fisheries post-harvest loss?</b>				
<b>9</b>	It will enable the fish to be preserved from the point it is caught till it gets distributed				
<b>10</b>	It will help to minimize quality deterioration				
<b>11</b>	It will reduce the widening gap between fish supply and demand				
<b>12</b>	It will slow the action of bacteria and the rate of spoilage				