MSI Journal of
Multidisciplinary Research (MSIJMR)

Constraints Analysis of Garden Egg (*Solanum melongena*) Marketing in Aniocha South Local Government Area of Delta State, Nigeria.

Okonkwo-Emegha, K. PhD[1*], Dr. Okafor Ifeoma Pethronila[2], Dr. Adejoh Sunday[3]

[1] Department of Agricultural Economics & Extension, Nnamdi Azikiwe University Awka, Nigeria.

[2] Department of Business Administration and Management, Federal Polytechnics Oko, Nigeria.

[3] Department of Agricultural Economics & Extension, Nnamdi Azikiwe University Awka, Nigeria.

*** Correspondence:** Okonkwo-Emegha, K. PhD

Contact: k.okonkwo-emegha@unizik.edu.ng

The authors declare that no funding was received for this work.

OPEN ACCESS

Received: 19-June-2025

Revised: 27-June-2025

Accepted: 28-June-2025

Published: 01-July-2025

Copyright © 2025, Authors retain copyright. Licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. https://creativecommons.org/licenses/by/4.0/ (CC BY 4.0 deed)

This article is published by **MSI Publishers** in **MSI Journal of Multidisciplinary Research (MSIJMR)**

ISSN 3049-0669 (Online)

Volume: 2, Issue: 7 (July-2025

ABSTRACT: This study investigates the constraints analysis of garden egg (Solanum melongena) marketing in Aniocha South Local Government Area of Delta State, Nigeria. A structured questionnaire was used to collect data from a random sample of 100 garden egg marketers. Analytical tools, including regression analysis and mean 4-point likert scale, were employed to achieve the study objectives. The R-square value of 0.615 suggests that the included variables collectively explain 61.5% of the variability in profit. Regression analysis identifies significant predictors of profit, thus, sex is significant at 1% level of probability increase in profit by 10,891.97 units. Marital status is significant at a 1% level and profit increases by N5, 915.074 units, household size has a t-value of 6.01*** statistically significant at 1% probability level increase in profit by N1, 582.307 units. The coefficient for marketing experience is 483.914 units increase in profits and statistical significance at a 5% level. Education has a t-value of -3.37*** at 1% statistically decrease in profit by N535.324 units. Transportation have positive coefficients (0.511 and 0.340,

respectively) with t-values indicating statistical significance at a 5% level. The study also assesses constraints faced by garden egg marketers, revealing a consensus (grand mean of 3.16) that challenges such as high transportation costs (mean 3.8), lack of storage facilities (mean 3.5), perish ability (mean 3.8), inadequate infrastructure (mean 4.2), and inadequate capital (mean 4.3) are significant obstacles. The study recommends targeted interventions to address these challenges and enhance the overall profitability and sustainability of garden egg marketing in the study area.

Keywords: *Constraints, Analysis, Garden Egg, Marketing*

1. INTRODUCTION

Eggplant nutritious value is comparable to the values of other common vegetables. Its fresh weight is composed of 92.7% moisture, 1.4% protein, 1.3% fibre, 0.3% fat, 0.3% minerals, and the remaining 4% consists of various carbohydrates and vitamins (A and C) (Okonkwo-Emegha, 2025). It also contains water (about 92.5%), protein (1%), fat (0.3%), and carbohydrates (6%). Similarly, eggplant contains nutrients such as dietary fiber, folate, ascorbic acid, vitamin K, niacin, vitamin B6, pantothenic acid, potassium, iron, magnesium, manganese, phosphorus, and copper (USDA, 2019). The crop is usually intercropped with okra, tomato, fluted pumpkin and hot pepper under rain-fed conditions and often results in reduction of yield of both component crops possibly due to similarity in the growth pattern and duration (Okonkwo-Emegha, 2025). Vegetable farming has its origin in the northern region and a major economic activity during the dry season involving many youths (Okonkwo-Emegha, Umebali & Obiekwe, 2025). Thus, Nigeria's climate is influenced by its geographical location and topography, leading to district wet and dry season (Emegha, 2023).

Garden egg production also called vegetable farming which the production is done at any season using certain infrastructures such as green houses, irrigation, watering can and other production facilities. In most parts of Nigeria, there are two distinct seasons, the rainy season and the dry season, the rainy season is the regular cropping season and this starts in April and stops in October, while the dry season starts in November and ends in March (Okonkwo-Emegha, Isibor & Adejoh, 2024). Garden

egg is cultivated all year round in different parts of Nigeria and West Africa and serves as the main source of income for many rural farmers and households. Production is however constrained by a wide range of pests and diseases reducing total production as well as production quality as affected by fluted pumpkin (Okonkwo-Emegha et al., 2020. In Nigeria today lack of infrastructure and poverty have been the challenge in the marketing of garden egg and has also affected the marketers in the area (Emegha, 2023). Despite the nutritional value of garden egg and its marketing constraints none of these studies have been able to establish the challenges confronting the marketing in Aniocha South Local Government Area, Delta State, Nigeria. It is this gap that this research sought to fill by examining the constraints analysis of garden egg marketing in Aniocha Local Government Area of Delta State. Therefore, the broad objective of this study was to analyze the constraints of garden egg marketing in Aniocha South local government Area of Delta State. However, the specific objectives were to: determine the factors affecting profit of garden egg marketing and identify the constraints faced by garden egg marketers in the study area.

2. **LITERATURE REVIEW**

Constraints faced by garden egg marketers

High cost of transportation is one of the constraints confronting the garden egg marketers in the study area. Lack of adequate transport services at reasonable cost has been a long time problem militating against marketing of garden egg. In economic analysis, decision making does not relate to one issue or question but to a number of challenges may be attached (Elechi, offor & Emegha, 2019). Lack of transport services refer to absence of the transport service in important agricultural marketing areas, high freight charges due to inadequacy, lack of all-weather roads and transport vehicles, unsuitability of the existing transport facilities for the transportation of some produce like fruits, vegetables, eggs , among others, from the rural areas (Adakaren, 2014). The society is a single inter-connected system in which each of its elements (agriculture) performs a specific function in the maintenance of the systemic equilibrium (Emegha, 2020). An efficient network of road is vital for effective and efficient agricultural marketing; however, the majority of Nigerian rural

roads are in very deplorable conditions thus leading to high cost of transportation and the result to inefficient marketing performance.

- **Lack of storage facilities**

  Another problem associated with the poor marketing for agricultural produce in Nigeria is the existence of an inefficient and inadequate storage system. As a consequence, there is a substantial waste at the farm level and the poor storage system also contributes to price fluctuations in the agricultural markets whereby produce prices are low during harvest and adversely affecting farmers' incomes. The lack of adequate storage and processing facilities accounts for divergence between national food security and household food security. Even if the total production of food seems adequate at the aggregate level, it will not lead to significant improvement in food security unless the food is available for consumption at the right time and in the right form (Emegha, 2025). In developing country like Nigeria the dynamics of local economic conditions has repercussions on prediction (Emegha, et al., 2025).

Concept of Agricultural Marketing

The Concept of Agricultural Marketing

Agricultural marketing consist of two major concepts viz., "agriculture" and "marketing". The first concept agriculture aims at producing the agro food products with the use of natural factors for the welfare of human. It is fully depends on natural processing. The second concept marketing refers to the activities that are done by the business organizations to promote their products and services to their targeted customers (Kiruthiga, Karthi & Asha, 2015). In marketing the targeted customers can be attracted and maintained by creating strong customer values for them in the organization. It is possible through, effective market survey, market trending, better customer service and satisfaction, customer focus and continuous follow up. The concept agricultural marketing includes many activities starts from production process till its retailing.

The activities involved are production planning, cropping and harvesting, warehousing, grading, transportation and final distribution. There are varieties of agro products which are produced with dual purpose of domestic consumption as

well as exporting. In the chain of agricultural marketing number connecting links such as farmers, suppliers, functionaries, importers, exporters, external beneficiaries and customers are involved Ukwuaba, Agbo & Ihemezie, (2019). Agricultural marketing involves all those physical, legal and economic services, which are necessary to make products from the producers available to the consumers in the form desired by the consumers, at the place desired by the consumer and at the price agreeable to the producers and consumers for effecting a change of possession (Arene 2016). Agricultural marketing is the performance of all business activities involved in the flow of goods and services from the point of initial agricultural production until they are in the hands of the ultimate consumer. This includes assembling, handling, storage, transport, processing, wholesaling, retailing and export of agricultural commodities as well as accompanying supporting services such as market information, establishment of grades an information, establishment of grades and standards, commodity trade, financing and price risk management and the institutions involved in performing the above functions. In Nigeria, the interest rates increases as a result of inflation, which makes the central bank to raise interest rate and pose as a huge problem to agricultural marketers (Emegha, Ofobuike & Ochuba, 2025).

2.2 Theoretical framework

Efficiency Theory

Agricultural marketing systems efficiency theory emphasizes that performance of certain functions and services by various marketing organizations and agencies ensures that commodities and product move from producers to consumers. However, these functions attract costs, often at a considerable magnitude, affecting both marketing and marketing efficiency. Crawford as cited by (Annepu, 2017) further noted that an efficient marketing system is one capable of moving goods from producer to customer at the lowest cost consistent with the provision of the services that customers demand. Once the costs involved in marketing have been identified, then means can be devised to make the system more efficient. Increases in efficiency can be achieved in a variety of ways: by increasing the volume of business using improved handling methods; investing in modern technology; locating the business

in the most appropriate place; implementing better layouts and working practices in production; improving managerial planning Ukwuaba, Agbo & Ihemezie, (2019).

Theory of supply

In the context of this study, supply deals with the distribution of garden egg within the marketing channel. Supply is a major force operating in the market environment (Egesi & Ebe, 2021). Theoretically, supply means the amount of those commodity, producers (farmers) are able and willing to offer for sale at a given price. The supply of a commodity, service or input is the quantity of a commodity that producers or marketers are willing and able to bring into the market at a series of possible prices during a specified period. For instance, the supply of garden egg is the quantity the marketers are willing and able to bring to the market at a particular price either on or off season. Supply also plays significant role in a purely competitive market system and is purely guided by price mechanism. Supply could be physical or economic as the case may be. Physical supply refers to the available quantities or stocks of the product, while economic supply is the product reaching the market at a given price, time and place. Factors that affect the supply of agricultural commodities such as garden egg include: the prices of inputs or resources, production technology, transportation cost, government policy (taxes or subsidies), prices of other goods and services (such as complementary/joint products and competitive products), expectations about future market conditions (especially with respect to prices and competitor's action), number of producers in the market, as well as weather and climate (Olumide, 2015).

3. METHODOLOGY.

Research Design

This study employed survey design as adopted by Akpan, *et al.,* (2012) as cited by Okonkwo-Emegha, (et al), 2019. This design were chosen because it is social research.

Study Area

Delta State

The study was conducted in Delta State, Aniocha South Local Government Area. Aniocha South is one of the 25 local government in Delta state. The local

government area has 18 communities which include: Ogwashi- uku, Ubulu- Uku, Ubulu-Uno, Ashama, Abah Unor, Aboh -Ogwashi, Isha -Ogwuasi, Oloh Ogwashi, Azagba Ogwashi, Isheagu, Adonte, Egbudu-Akah, Ejeme-Aniogor, Ejeme- Unor, Ewulu, Nsukwa, Ubulu-Okiti, Ukwu-Oba and Umute. Aniocha South is a humid (260) tropical rain forest zone, it is located between longitude 6°45'1"E and latitude 6°1' 53" N. (www.anambrastate.govt.ng 2015). The state has an average annual rainfall of about 2667mm in the coastal areas and 1905mm in the northern areas. The rainfall is heavier in July with a short break in August. The state has an annual average temperature range of 29°c to 38°c. It has an estimated land area of 17,698 square kilometers which 1770km^2 is made up of fresh water swamp, 5840km^2 of mangrove swamp and 10088km^2 of rainforest. Thus, with abundant ground and surface water resources in the state. There is potential for production of crops, fish and livestock and marketing of vegetables in the area. The major economic activities of the people are farming. The crops grown are tree crops such as rubber, oil palm, tuber crops, cereals and assorted vegetablesThe state lies between longitude 5°N and 6°45'N East and latitude 5° and 6°30' North, shares boundaries with Edo State to the South-west, Anambra to the East and Bayelsa state to the south. The state has a population of 4,098,391 by the census figure of 2006 (NPC, 2006).

Figure 1: Political Map of Delta State.Researchgate.net, (2025)

Population to the Study

The population of the Study were all the registered garden egg marketers (1,025) in Aniocha South Local Government Area (LGA) of Delta state.

Sampling Procedure / Technique

Two stage sampling techniques were used in selection of the garden egg marketers for the study. **In stage 1,** Aniocha South was purposively selected due to the dominance of garden egg marketers in the area. **In stage 2,** five markets were randomly selected – Isheagu market, Adonte market, Egbudu-Akah market, Ewulu market and Nsukwa market. **In stage 3,** twenty (20) garden egg marketers from each of the selected markets were randomly selected, making it a total of (100) respondents that were selected for the study.

Method of data Collection

Data for the study were collected through primary and secondary source. The primary source would be through the use of constructed questionnaires with questions stemming from the objectives in order to get a valid data to facilitate a proper research work which would be administered to the garden egg marketers. The secondary source of data collection will be done by reviewing of related books, journal, article, and internet and reports to get information and it was referenced properly.

Data Analysis

Data were achieved using multiple regression model and 4-Likert scale.

Model Specification

Multiple Regression Model:

Four functional forms; the linear, exponential, semi log and double log function. The explicit form of the functional forms includes; the profit function multiple regression will be used to determine the factors affecting the profit realized by garden egg marketers. The four functional forms of the model are exp licitly specified as:

1. Linear form:

$$y = bo + b_1X_1 + b_2X_2 + b_3X_3 + \cdots + b_{13}X_{13} + ei$$

2. Semi-log:

$$y = bo + b_1logX_1 + b_2LogX_2 + b_3logX_3 + \cdots + b_{13}logX_{13} + ei$$

3. Double-log;

$$Logy = bo + b_1logX_1 + b_2LogX_2 + b_3logX_3 + \cdots + b_{13}logX_{13} + ei$$

4. Exponential form:

$$logy = bo + b_1X_1 + b_2X_2 + b_3X_3 + \cdots + b_{13}X_{13} + ei$$

4. RESULTS AND DISCUSSION

Factors Affecting the Profit of Garden Egg Marketing

The factors affecting the profit of garden egg marketing is presented in Table 1. The F-statistic of 18.17*** is significant at a 1% level of probability, which indicates that the overall model is statistically significant. The R-square value of 0.615 suggests that the included variables collectively explain 61.5% of the variability in profit. At least, one of the independent variables is affecting the profit of marketers.

The coefficient for **sex** is 10,891.974 with a t-value of 4.33***. This suggests that being male (assuming male is the reference category) is associated with a statistically significant at a 1% level of probability increase in profit by 10,891.97 units. The coefficient for **marital status** is 5,915.074 with a t-value of 5.55***, indicating that individuals with certain marital statuses (compared to the reference category) have a statistically significant impact on profit. As the number of married marketers increases, profit increases by N5, 915.074 units. The coefficient for household size is 1,582.307 with a t-value of 6.01***. This suggests that a larger household size is associated with a statistically significant increase in profit by N1, 582.307. The coefficient for marketing experience is 483.914 with a t-value of 2.02**, indicating that more farming experience is associated with a statistically significant increase in profit by N483.914. The coefficient for education is -535.324 with a t-value of -

3.37***. This implies that higher education is associated with a statistically significant decrease in profit by N535.324 units. Both loading and off-loading and transportation have positive coefficients (0.511 and 0.340, respectively) with t-values indicating statistical significance at a 5% level. This suggests that these operational activities are associated with an increase in profit by 0.511 – loading and offloading, and 0.340 transportation units respectively. However, variables such as sex, marital status, household size, education, marketing experience, and certain operational activities (loading and off-loading, transportation) are found to be statistically significant predictors of profit. Equally, the direction of the coefficients indicates whether the variables have a positive or negative impact on profit. For example, being male, having a larger household, more marketing experience, and engaging in certain operational activities are associated with increased profit, while higher education is associated with decreased profit.

Table 1: Factors affecting the profit of garden egg marketing

Parameters	**Coefficient**	**Std. Error**	**t-value**
Intercept	119004.517	7709.789	15.44
Age	-93.685	70.203	-1.33
Sex	10891.974	2518.008	4.33***
Marital status	5915.074	1064.938	5.55***
Household size	1582.307	263.312	6.01***
Marketing experience	483.914	239.860	2.02**
Education	-535.324	158.659	-3.37***
Loading and off-loading	0.511	0.183	2.79**
Transportation	0.340	0.144	2.36**
F-statistics	18.17***		
R-square	0.615		
Adjusted R-square	0.581		
Obs.	100		

Source: Field Survey, 2024. Significant @ 10% (*), 5% (**), and 1% (***)

Constraints Faced by Garden Egg Marketers in the Study Area

The constraints to the marketing of garden eggs in the study area are presented in Table 4.5. The constraint items were captured in a 4-point Likert scale. A means

threshold of 2.5 was benchmarked for decision units. Variables with a mean score of 2.5 and above were considered a significant challenge to garden egg marketing, whereas those below the threshold are not a challenge. The grand mean, which is 3.16, suggests that, on average, the constraints identified are perceived as a challenge in the enterprise. This means that, collectively, the garden egg marketers in the study area face significant obstacles in their marketing activities. The slightly high mean standard deviation indicates variability in responses, implying that there is some diversity in how participants perceive the challenges. Some challenges may be seen as more severe or less severe by different respondents.

On individual challenges:

Unorganized Market (Mean: 3.5): With a mean score of 3.5, this constraint is perceived as a significant challenge. The high mean suggests that marketers generally agree that the market lacks organization, making it a notable obstacle to effective garden egg marketing.

Price Instability (Mean: 2.9): Although the mean score is slightly above the threshold of 2.5, indicating agreement, the relatively high score (2.9) suggests that there is some concern or among marketers regarding price instability.

Cost of Transportation (Mean: 3.8): With a mean score of 3.8, the high score indicates agreement that the cost of transportation is a significant constraint to garden egg marketing.

Lack of Storage Facility (Mean: 3.5): Similar to the unorganized market, the lack of storage facility is perceived as a significant challenge with a mean score of 3.5.

Perishability (Mean: 3.8): With a mean score of 3.8, perishability is considered a major constraint, as the score is above the 2.5 threshold.

Inadequate Infrastructure (Mean: 4.2): The high mean score of 4.2 indicates agreement that inadequate infrastructure is a significant challenge to garden egg marketing.

Unhealthy Competition (Mean: 2.6): While the mean score is above the threshold, it is relatively moderate (2.6), indicating a somewhat less unanimous agreement on the challenge of unhealthy competition.

Inadequate Capital (Mean: 4.3): The highest mean score of 4.3 indicates strong agreement that inadequate capital is a major challenge in garden egg marketing.

Unorganized market, cost of transportation, lack of storage facility, perishability, inadequate infrastructure, and inadequate capital are identified as critical areas that may require attention and intervention.

Constraints faced by garden egg marketers

Sn.	Constraints faced by garden egg marketers	Mean	Std. Dev.	Decisions
1	Unorganized market	3.5	1.332	Agree
2	Price instability	2.9	1.475	Agree
3	Cost of transportation	3.8	1.424	Agree
4	Lack of storage facility	3.5	1.509	Agree
5	Perish ability	3.8	1.379	Agree
6	Inadequate infrastructure	4.2	1.503	Agree
7	Unhealthy competition	2.6	1.352	Agree
8	Poor market activity	1.8	1.453	Disagree
9	Poor communication	1.3	1.427	Disagree
10	Inadequate capital	4.3	1.448	Agree
	Grand mean	**3.16**	**1.43**	**Agree**

Source: Field Survey, 2025.

5. Conclusion

This study investigated the constraints of garden egg (*Solanum melonena*) marketing in Aniocha South Local Government Area of Delta State, Nigeria.

Regression analysis identifies significant predictors of profit, including sex, marital status, household size, education, marketing experience, and operational activities.

The study also assesses constraints faced by garden egg marketers, revealing a consensus (grand mean of 3.16) that challenges such as an unorganized market, high transportation costs, lack of storage facilities, perish ability, inadequate infrastructure, and inadequate capital are significant obstacles. The study recommends targeted interventions to address these challenges and enhance the overall profitability and sustainability of garden egg marketing in the study area.

6. Recommendations

1. The government should ensure to construct good access road to enable the marketer convey their product to the market in safer and affordable fare
2. The marketing board or the cooperative societies should place stability in the prices of garden egg
3. Storage facilities should be made available by the government; traders should be trained on the best way to store their garden egg till they are fully sold out.

7. Reference

1. Achike, A. I., & Anzaku, T. A. K. (2010). Economic analysis of the marketing margin of Benniseed in Nasarawa state, Nigeria. *Agro-Science*, *9*(1).
2. Adakaren, B. (2017). *Raphia Palm Wine Marketing in South-South Nigeria* (Doctoral dissertation).
3. Adesina, C. A., Kehinde, A. L., & Arojojoye, A. O. (2008). Economics of wholesale marketing of tomato fruits in Ibadan Metropolis of Oyo State, Nigeria. *Journal of Agriculture, Forestry and the Social Sciences*, *6*(1).
4. Agbo, F. U., & Usoroh, B. A. (2015). Marketing of estruine shrimps in Awka Ibom State, Nigeria. *Journal of Marketing and Consumer Research*, *15*(7), 63-70.
5. Isibor, C. A., & Okonkwo-Emegha, K. (2023). CONSTRAINTS TO MARKETING OF WATERMELON IN AWKA SOUTH LOCAL

GOVERNMENT AREA OF ANAMBRA STATE. *UNIZIK JOURNAL OF ENTREPRENEURSHIP (ENTREP)*, *4*(1), 88-102.

6. Anuebunwa, F. O., Lemchi, J. I., & Njoku, J. E. (2006). Gari Marketing System in Abia State of Nigeria: An assessment of gari marketing margins. *J. Sust. Trop. Agric. Res*, *17*(2), 21-25.

7. Anuebunwa, F. O. (2008). Marketing of okra in Ebonyi State, Nigeria. *PAT*, *4*(1), 71-81.

8. Annupe Yakanna;(2017), volume 6(issue-10) ISSN No 2277_8179. Problems and prospect of Agricultural marketing in India

9. Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert scale: Explored and explained. *British journal of applied science & technology*, *7*(4), 396.

10. Arene, C. J. (2003). Introduction to agricultural marketing analysis and policy. *Enugu: Fulladu publishing company*, 15-23.

11. Arene, C. J. (2002). Economic analysis of agricultural and rural development projects. *Nsukka: Fulladu Publishing Company*.

12. Asogwa, B. C., & Okwoche, V. A. (2012). Marketing of agricultural produce among rural farm households in Nigeria: The case of sorghum marketing in Benue State. *International Journal of Business and social science*, *3*(13).

13. Berkowitz, H. R. (2000). Marketing. New York: Irwin/McGraw-Hill

14. Crawford, I. M. (1997). Agricultural and food markting management; FAO of the United Nations Corporate Document, FAO office, Rome, Italy

15. Chamo, A. M., Sabo, B. B., Karaye, A. K., & Rabiu, A. M. (2016). Factors affecting watermelon (Citrullus vulgaris) production among farmers of Gada Community, Kazaure Local Government Area, Jigawa State. *Glo. Adv. Res. J. Agric. Sci*, *5*(12), 432-439.

16. Eboh, E. C. (2009). Developing conceptual framework for empirical research. *Developing research Skills: Concepts and conceptual frameworks*, 7-20.

17. Ekerete, B. I., & Asa, U. A. (2014). Constraints to watermelon marketing in Uyo metropolis of Akwa Ibom State, Nigeria. *Journal of Agriculture and Environmental Sciences*, *3*(4), 63-69.

18. Eronmwon, I., Alufohai, G. O., & Ada-Okungbowa, C. I. (2014). Structure, conduct and performance of plantain marketing in Edo State, Nigeria. *Journal of Applied Sciences and Environmental Management*, *18*(3), 437-440.

19. Egesi, Z. O., & Ebe, F. E. (2021). Economic Analyses of Performance of Watermelon Marketing Among Marketers in Owerri Municipal Council Area, Imo State, Nigeria. *Nigeria Agricultural Journal*, *52*(2), 301-305.

20. Kalu, E. N., & Ogbonnaya, O. E. (2019). Globalization and economic nationalism: Engaging the perspectives. *Journal of Arts and Management*, *4*(2), 63-73.

21. Emegha, K. N., Ofobuike, C. L., & Ochuba, K. A. (2025). Assessing the Impact of the USA-China Trade war on Global supply chains: Implications for Nigeria's Inflation Rates. *Advanced Journal of Economics and Marketing Research*, *10*(3), 1-14.

22. Emegha, N. K. (2023). BOKO HARAM SECT: BANDITRY, INSURGENCY OR TERRORISM? A GLOBAL/DOMESTIC SYNTHESIS OF AN UNRELENTING GROUP. *Arts and Social Science Research*, *13*(4), 267.

23. Emegha, N. K. (2020). Security Agents and Election Monitoring in Nigeria: Engaging International Best Practices. *SOUTH EAST JOURNAL OF POLITICAL SCIENCE*, *5*(1).

24. Emegha, K. N., Bosah P.C., Idigo B.C & Ofobuike L.C. (2025). The effect of climate change on Food security in Nigeria. A Review International Journal of Research and Scientific Innovation (IJRSI). ISSN NO 2321-2705.

Volume Xii issue iv April, 2025. https://doi.org/10.51244/IJRSI.2025.12040076

25. Gustavsson, J., Cederberg, C., Sonesson, U., Van Otterdijk, R., & Meybeck, A. (2011, May). *Global food losses and food waste*.

26. Isibor, A. C., & Ugwumba, C. O. A. (2014). Analysis of Watermelon (Citrullus lanatus) Marketing in Nnewi Metropolis of Anambra State, Nigeria. *Journal of Sciences and Multidisciplinary research*, *6*(2), 1-8.

27. Kiruthiga, karthi, Asha (2015) Agricultural marketing International Journal of Scientific and Research Publication; Volume 5, Issue 4.ISSN 2250_3153

28. Ebiowei, K. P. (2013). Marketing margin and determinants of net return of watermelon marketing in Yenagoa Metropolis of Bayelsa State, Nigeria. *Journal of Experimental Biology and Agricultural Sciences*, *1*(4), 242-246.

29. Maimouna, T., & Jing, W. (2013). Marketing margin analysis of tomato in the district of Bamako, Republic of Mali. *Journal of Agricultural Economics and Development*, *2*(3), 084-089.

30. Mohammad S.Y; Onwuaroh A.S; Panwale.F, Iroegbute U.K. (2021).Assessing the marketing channel of sweetmelon and watermelon in Buachi and Gombe States, Nigeria. Duste Journal of pure and applied science (DUJOPAS); Vol 7 No 1.ISSN 2

31. Kate, O. E., Emmanuel, U. E., & Obiekwe, N. J. (2025). Determinant of Loan Repayment Performance among Smallholder Vegetable Farmer Cooperators in Anambra State, Nigeria. *International Journal of Research and Innovation in Applied Science*, *10*(1), 429-442.

32. Okonkwo-Emegha, K. (2025). Cost-Benefits Analysis of Cucumber (Cucumis Sativus L) Production in Delta State, Nigeria. *International Journal of Research and Innovation in Applied Science*, *10*(2), 350-358.

33. Okonkwo-Emegha, K., Isibor, C. A., & Adejoh, S. (2024). Economic Analysis of production Technologies of watermelon (citrullus lanatus) among smallholder farmers in Akwa-Ibom State, Nigeria. *International Journal for Research in Science and Innovations. DOI: https://doi. org/10.51244/ijrsi*.

34. Okonkwo-Emegha, K., Isibor, C. A., & Adejoh, S. (2024). Economics of organic and non-organic vegetable production among small holder farmers in Cross Rivers State, Nigeria. *International Journal for Research in Science and Innovations. DOI: https://doi. org/10.51244/ijrsi*.

35. Okonkwo-Emegha, K., Umebali, E. E., Isibor, C. A., Obiekwe, N. J., & Ekpunobi, E. C. (2020). Factors influencing the use of organic farming Technology among small scale fluted pumpkin farmers in South-South Zone, of Nigeria. *IOSR Journal of Agriculture and veterinary Science (IOSR-JAVS). www. iosrjournal. org. DOI*, 10-979012380.

36. Okonkwo, K. E., Achoja, F. O., & Okeke, D. C. (2019). Financial Benefit Analysis of Organic Farming of Fluted Pumpkin (Telfairia occidentalis Hook. F.): Evidence from Nigeria. *ANADOLU Ege Tarımsal Araştırma Enstitüsü Dergisi*, *29*(2), 93-102.