



Empirical Analysis of the Factors Promoting Food Insecurity among Farming Households in Ebonyi State, Nigeria.

Esheya, Samuel Esheya; Ogbonna, Sylvanus Ibeabuchi; Nwandu, Peter Ifeanyi

Department of Agricultural Economics and Extension, National Open University of Nigeria, Kaduna Campus, Kaduna State.

ARTICLE INFO

Article No.: 012624015

Type: Research

Full Text: [PDF](#), [PHP](#), [HTML](#), [EPUB](#), [MP3](#)

Accepted: 28/01/2024

Published: 10/03/2024

***Corresponding Author**

Esheya, Samuel Esheya

E-mail: sesheya@noun.edu.ng,

Phone No.: +2348035745363.

Keywords: Analysis, Factors, Promoting, Food, Insecurity, Food insecurity, Multiple regression analysis, Farm household.

ABSTRACT

Food insecurity, hunger, malnutrition and undernourishment are on the rise in Nigeria and Ebonyi state in particular. This study analysed the factors promoting food insecurity among rural farming households in Ebonyi state of Nigeria. Multi-stage sampling technique was used to select three hundred rural farming households for the study. Frequency and percentage distribution, likert rating scale and Ordinary Least Square (OLS) multiple regression model were used to analyse data. Findings show that majority of the respondents 55.2% had no formal education while 93.7% had no access to formal loan. Results also show that factors such as poverty (mean = 3.7), poor crop yield (mean = 3.6), illiteracy (3.5), lack of improved crop/livestock varieties (mean = 3.4), lack of governmental support (mean = 3.3), high cost of farm input (mean = 3.2), pests/disease attack (mean = 3.1) and socio-political crises (3.0) play critical role in promoting food insecurity. Result of the multiple regression analysis revealed that the coefficient of multiple determination (R²) was 78.2%, while the adjusted (R²) was 64.5%. Thus, it was recommended that government should provide adequate security and farm incentives such as grants, subsidized inputs, loan, improved crop/livestock varieties and modern farm equipment for the rural farming households to enable them overcome food insecurity in Ebonyi state in particular and Nigeria at large.

INTRODUCTION

Food is fundamental to human existence. People are said to be food secured when the quality and quantity of food is sufficient and available to them. It is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food (United Nations' Committee on World Food Security, 2020). Food security is perceived at the global, international, national, state, household and individual levels. A country, state or household is food secure when the majority of the population has access to food of adequate quality and quantity, consistent at all times. Okpolu et al., (2018) stated that food insecurity boils down to inability of households to have reliable access to food in sufficient quantity and quality to enjoy active and healthy life. Food availability and affordability has declined dramatically in many states in Nigeria including Ebonyi due to insecurity. Thus, absence of food in adequate quantities and qualities results to hunger and undernourishment (Muhammad et al., 2023). Hunger is defined as a condition synonymous with chronic undernourishment; where undernourishment itself is defined as a state, lasting for at least one year, of the inability to acquire enough food to meet dietary energy requirements (Food and Agricultural Organisation, 2019).

Otaeha (2013) observed that food insecurity exists when people are undernourished as a result of the physical unavailability of food, their lack of social or economic access to adequate food. Food insecure people are those whose food intake falls below their minimum energy requirements as well as those who exhibit physical symptoms caused by energy and nutrient deficiencies resulting from an inadequate or unbalanced diet or from the body's inability to use food effectively because of infection or disease (Ubokudom et al., 2021). Ebonyi is one of the states in Nigeria richly blessed with abundant natural and human resources that if properly harnessed can feed its people and export the surpluses to other parts of the country and even beyond; but it is unfortunate that the state is experiencing persistent food crisis at recent times both in terms of quantity and quality (Esheya, 2019).

Ebonyi state has given considerable policy attention to food security over the years but the desired outcome has not been achieved possibly due to inefficient management of available resources and lack of continuity of policy implementation. According to Akamere et al., (2018), volatility in resources flows arise from the fact that the country depends largely on oil for its revenue while the huge potentials in other natural resources such as agriculture and solid minerals remain untapped. A recent report indicates that 68% of Nigerians live below the international poverty line of \$1.25 per day. Eradicating extreme poverty and hunger occupied a priority position in Nigeria under the

Millennium Development Goals (MDGs) which Ebonyi state was not an exemption. This laid a solid policy foundation in the agricultural sector to address the challenges of chronic hunger, food insecurity, and malnutrition (Omogo et al., 2023).

Low level of agricultural productivity often leads to scarcity of food, which in turn results in hunger and starvation with adverse consequences on malnutrition (Esheya, 2023). Bridging productivity gaps in the country through interventions that enhance the production of crops rich in micronutrients, bio-fortification, and agricultural intensification with applications of improved inputs and crop varieties is apt to have positive impact on food availability, dietary diversity, and micronutrient intake (IITA, 2018; Nurudeen et al., 2019). USAID (2011), proposes several key steps to increasing agricultural productivity which is in turn key to increasing rural income and reducing food insecurity. They include: boosting agricultural science and technology; securing property rights and access to finance; enhancing human capital through education and improved health; and conflict prevention, resolution mechanisms, democracy and good governance based on principles of accountability and transparency in public institutions and the rule of law are basic to reducing vulnerable members of society. Since inception of the present administration in Nigeria, hunger has appreciated in Ebonyi state where economies have slowed down due to economic shocks, deprivation and worsening insecurity. According to FMARD (2018), food production in Nigeria is increasing at less than 3% while population growth rate is estimated to be well above 3% per annum. This low level of food production when compared to the ever-increasing population growth in the state suggests food insecurity, hunger and undernourishment (Esheya, 2022).

Although many authors have worked on related literature; for instance, Omonona et al., (2007), analysed food security situation among urban households in Lagos state of Nigeria. Orewa and Iyangbe (2009), assessed the degree of food insecurity in rural and low-income urban population of Nigeria. Abubakar and El-Rasheed (2020), conducted an empirical study on the extent of hunger and food insecurity in Gombe State of Nigeria; while Nurudden and Shaufique (2019) examined the determinants of food security among households in Nigeria using food and non-food expenditures. Okpolu et al., (2018) conducted research on the household food security among rural household in Afikpo North Local Government Area of Ebonyi state. They opined that in spite of some effort being made by government and individuals, food insecurity still persists.

Therefore, certain factors could be responsible for this persistent problem and such factors need to be

identified and appropriately addressed to terminate the dreaded problem of food insecurity. Hence, hunger eradication should remain a key commitment of decision-makers at all levels. Against this background, this study becomes imperative to analyse the factors promoting food insecurity among farming households in Ebonyi state.

The specific objectives were to: describe the socio-economic characteristics of the farming households; identify the factors promoting food insecurity; and determine the effects of socio-economic variables on the food security status of farming households in the study area.

MATERIALS AND METHODS

Study area

This research was conducted in Ebonyi state of Nigeria. Ebonyi state is located in the South-east geopolitical zone of Nigeria. Ebonyi is composed of thirteen local government areas with an estimated population of 4,339,136 based on the 2005 census and the inhabitants are spread across 5,935 square kilometres (National Population Commission, 2006). The State shares border with Benue State to the North, Enugu State to the west, Imo and Abia States to the south and Cross River State to the east. The tropical climate of the state is broadly of two seasons which are the rainy season between April and October and dry season between November and March. The temperature throughout the year ranges between 21 °C to 29 °C and humidity is relatively high. The annual rainfall varies from 1,150mm in the northern areas to 2,000mm in the southern areas. The state enjoys luxuriant vegetation with high forest zone (rain forest) in the south and sub-savannah forest in the northern fringe (Ebonyi State Ministry of Information, 2011). The state is predominantly dominated by the Igbos with other minority ethnic groups from neighboring states. The people of the state are predominantly farmers and traders. The main crops produced in the state are rice, cassava, yam, palm produce, maize, groundnut, plantain, banana, fruits and vegetables (Esheya, 2021).

Sampling Method

A multi-stage sampling technique was used for the study. Using Yamane (1967) method at a precision level of 5%, data were collected from three hundred (300) randomly selected rural households from six selected local government areas of Ebonyi State (Ebonyi, Ohaukwu, Ikwo, Ishielu, Afikpo North and Onicha respectively) with the aid of structured questionnaire. Stage 1 involved the selection of two Local Government Areas from each of the three Agricultural zones in Ebonyi state. In stage 2, five communities were selected from each local government

based on susceptibility to security threats. Stage 3 involved the selection of ten respondents from each community from the list of registered farmers obtained from the local government areas. This gave a sample of three hundred respondents (6 LGAs X 5 communities X 10 farmers = 300 respondents). However, only two hundred and eighty-eight (288) completed copies of the questionnaire were retrieved and used for the study.

Analytical Techniques

Descriptive and inferential statistical tools were used to analyze data. Frequency and percentage distribution was used for objective (i) while likert rating scale was used to realize objective (ii). Ordinary Least Square (OLS) multiple regression model was utilized for analyzing objective (iii).

Model Specification

According to Gujarati and Porter (2009), the multiple regression analysis model is stated as follows;

Implicit function: $Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8)$

Explicit function: $Y = a_0 + a_1 X_1 + a_2 X_2 + a_3 X_3 + a_4 X_4 + a_5 X_5 + a_6 X_6 + a_7 X_7 + a_8 X_8 + e_t$

Where:

Y = Food insecurity

X₁ = Gender (dummy)

X₂ = Age (years)

X₃ = Marital status

X₄ = Educational qualification (years)

X₅ = Household size (number)

X₆ = Farming experience (years)

X₇ = Farm size (hectares)

X₈ = Access to credit (dummy)

e_t = error term

a₀ = constant

a₁-a₈ = multiple coefficients

RESULTS AND DISCUSSION

Socio-economic features of respondents

Table 1 showed that majority 75.7% of the respondents were males while 24.3% of them were females. This reveals that farming households in the study are dominated by male household heads. It also shows that most of the respondents 66.7% fell within the age range of (21–40) years. This indicates that majority of them were still vibrant, active and productive in farming. According to Basudeb et al., (2007), most rural farmers were agile and physically disposed to pursue agricultural production and related activities. The result further reveals that majority of the respondents 91.3% were married while 55.2% had no formal education. This finding shows the need to assist the farmers to

improve on their level of education to widen their knowledge and increase their flexibility in adopting modern farming methods. Again, greater majority of the respondents 76.0% had household size of between (11-20) persons. Obviously, large household size is an important factor in agricultural production for the supply of manual farm labour (Omotesho et al., 2010).

Also, 78.8% of the respondents had farming experience of 21 years and above. Thus, given the necessary support in terms of grants, inputs and subsidy, the respondents had adequate years of farming experience that enable them engage in extensive farm production so as to avert hunger and undernourishment in their respective farm households. Results in Table 1 further reveals that majority of the farmers produce at subsistence level as 67.2% of them maintain farm size of between (1 and 4) hectares. This shows that they are mainly small-scale farm households. Small scale farming affects human capital, labour requirement and land tenure arrangement, as it would not allow for meaningful investment and returns on agricultural production. Finally, the result in Table 1 shows that a whopping percentage of the respondents 93.7% had no access to formal loan. This implies that they face financial incapacitation in carrying out agricultural production in the study area. Credit is an important factor in agricultural production especially in purchasing of farm inputs and hiring of labour (Abah et al., 2020).

Table 1: Distribution of respondents by socio-economic features (n = 288)

S/N	VARIABLE	FREQUENCY	PERCENTAGE
1.	Gender		
	Male	218	75.7
	Female	70	24.3
2.	Age		
	10-20	12	4.2
	21-30	66	22.9
	31-40	126	43.8
	Above 40	84	29.1
3.	Marital status		
	Single	0	0.0
	Married	263	91.3
	Divorced	0	0.0
	Widowed	25	8.7
4.	Educational qualification		
	No formal Education	159	55.2
	Attended Primary	78	27.1
	Attended Secondary	51	17.7
	Attended Tertiary	0	0.0
5.	Household size		
	5-10	34	11.8
	11-15	106	36.8
	16-20	113	39.2
	Above 20	35	12.2
6.	Farming experience		
	1-10	29	10.1
	11-20	32	11.1
	21-30	140	48.6
	Above 30	87	30.2
7.	Farm size		
	1-2	91	31.6
	3-4	103	35.8
	5-6	53	18.4
	8-10	29	10.1
	Above 10	12	4.1
8.	Access to formal loan		
	Access	18	6.3
	No access	270	93.7

Source: Field survey, 2022.

Factors promoting food insecurity

The distribution of respondents according to their perception on factors promoting food insecurity among farm households in Ebonyi state was analysed using a 4-point likert rating scale as presented in table 2. Following the decision rule, mean scores of 2.5 and above indicated agreement while those below 2.5 showed disagreement. Based on the result in table 3, the respondents agreed that factors such as poverty (mean = 3.7), poor crop yield (mean = 3.6), illiteracy (3.5), lack of improved crop/livestock varieties (mean = 3.4), lack of governmental support (mean = 3.3), high cost of farm input (mean = 3.2), pests/disease attack

(mean = 3.1) and socio-political crises (3.0) play critical role in promoting food insecurity in the study area. Table 2 further revealed that the respondents were of the opinion that factors such as low level of farm technology (mean = 1.8), environmental hazards (mean = 2.0), scarcity of farmland (mean = 2.1) and poor extension services had no pronounced influence on the promotion of hunger and malnutrition in the study area. This finding is in consonance with that of Otaeha (2013) who opined that poverty, conflict, bad governance, natural disaster, high cost of farm input as well as low literacy level were the major factors promoting food insecurity in Nigeria.

Table 2: Distribution of respondents by perception on factors promoting food insecurity

S/N	FACTOR	SA	A	D	SD	MEAN	DECISION
1.	Poverty	852	225	0	0	3.7	Agree
2.	Socio-political crises	460	318	84	25	3.0	Agree
3.	Environmental hazards	64	81	362	64	2.0	Disagree
4.	Poor extension services	96	114	406	26	2.2	Disagree
5.	Low literacy level	708	258	36	7	3.5	Agree
6.	Lack of governmental support	572	282	64	19	3.3	Agree
7.	Poor crop yields	696	303	26	0	3.6	Agree
8.	Scarcity of farmland	124	78	262	100	2.1	Disagree
9.	Pest/disease attack	392	438	80	4	3.1	Agree
10.	High cost of farm inputs	452	366	92	7	3.2	Agree
11.	Lack of improved crop/livestock varieties	660	264	70	0	3.4	Agree
12.	Low level of farm technology	76	69	288	102	1.8	Disagree

Source: Field survey, 2022. *Decision rule: Take 2.5 and above as agree, otherwise as disagree

Effects of socio-economic variables on food security

Result of the multiple regression analysis presented in table 3 revealed that the coefficient of multiple determination (R^2) was 78.2%, while the adjusted (R^2) was 64.5%. This result implies that about 78.2% change on the dependent variable (food insecurity) was caused by the combined effects of the socio-economic variables included in the multiple regression model. The outstanding 21.8% variation was attributable to some variables that are relevant to it, but were not incorporated in this multiple regression model. In comparison, the value of coefficient of multiple determination R^2 (78.2%) is very close to that of the adjusted (R^2) indicating that the multiple regression model was not exaggerated. Again, the value of the F-ratio (1.34) is low which indicates statistical reliability as the value of the standard error estimates (0.168) was also low. The coefficients of gender (X_1) and age (X_2) were positive and statistically significant at 1% level respectively. This is an indication that both gender and

age have positive influence on farm households' ability to provide for their families. Thus, this finding is in line with the a priori expectations (an a priori argument, reason, or probability is based on an assumed principle or fact, rather than on actual observed facts). The coefficients of marital status (X_3) and educational qualification (X_4) had both positive sign and statistically significant at 10% and 1% levels respectively. This is in agreement with the findings of Emmanuel (2018), who observed that marital status and level of education have positive influence on a family's food security. Besides, household size (X_5) was positive and significant at 1% level, farming experience (X_6) was also positive and significant at 1% level, farm size (X_7) is positive and statistically significant at 1% level while access to credit (X_8) is positive and statistically significant as well but at 5% level. The above findings concurred with Okpolu et al (2018) who studied household food security among rural household in Afikpo North Local Government Area of Ebonyi state and obtained similar results.

Table 3: Regression analysis on effects of socio economic variables on the food security status of farming households

Variable (symbol)	Variable (name)	Regression coefficient	Standard errors	T-value	Level of significance
X	Constant	1.573	.514	3.026	.005
X ₁	Gender	.107	.075	1.056	.027
X ₂	Age	.060	.080	.573	.008
X ₃	Marital status	.000	.085	-.003	.100
X ₄	Educational qualification	.133	.103	1.173	.023
X ₅	Household size	.010	.114	.089	.009
X ₆	Farming experience	.082	.084	.883	.041
X ₇	Farm size	.173	.091	2.020	.035
X ₈	Access to credit	.154	.106	1.448	.016

$R^2 = 78.2\%$

Adjusted $R^2 = 64.5\%$

F- Ratio = 1.34

Standard error value = 0.168

Source: Field survey, 2022.

CONCLUSION AND RECOMMENDATIONS

Food unlike other commodities is indispensable for man's existence. Thus, all efforts must be geared towards improving its production and distribution on sustainable basis in every household. Unfortunately, most of the food production activities in Nigeria are carried out by rural farmers who lack capital, skills, security, energy and other necessary inputs required for large scale production. In line with the findings of this study, it was concluded that the socio-economic and political factors that pose threats to agricultural production such as poverty, poor crop yield, illiteracy, lack of improved crop/livestock varieties, lack of governmental support, high cost of farm input, pests/disease attack and socio-political crises should be addressed through wholistic approach. Based on the findings of this research, I hereby recommend as follows:

1. Government should make free and compulsory out of school education programmes a priority through adequate funding of agricultural extension services in order to improve the educational and associated features of the respondents in the study area.

2. Government should provide regular farm incentives such as grants, subsidized inputs, loan, improved crop/livestock varieties and modern farm equipment for the rural farming households.
3. Government should show genuine support for rural farmers in order to reduce poverty, high cost of farm inputs and lack of improved crop/livestock varieties

REFERENCES

- Abah, D., Hembafan V. D and Esheya, S. E (2020). Effects of deforestation on rural household income in Vandeikya Local Government Area of Benue State, Nigeria. *Production Agriculture Technology Journal*, 16 (2): 33-45.
- Abubakar, M. S. and El-Rasheed, S. (2020). An empirical study on the extent of hunger and food insecurity in Gombe state, Nigeria. *Journal of Agricultural Economics, Extension and Social Sciences*. 3(2), 1-9.
- Akamere, F.A.C., Osuagwu, C.I., and Agunonye, J.I. (2018). Nigeria and the challenges of food security: Options and prospects. *Journal of*

- Political Science and Leadership Research*. 4(4), 25-48.
- Basudeb, G., Shabd, S.A., and Benjamin, D. (2007). Food security indicators, measurement and the impact of trade openness. Oxford University Press. 16-24.
- Ebonyi State of Nigeria (2011). Salt of the nation. Accessed on 13th August 2021 from: www.cometonigeria.com/ebonyi-state.
- Emmanuel, O. (2018). Macro-economic environment and agricultural sector growth in Nigeria. *World Journal of agricultural Sciences*. 4(6), 781-786.
- Esheya, S.E. (2023). Socio-economic determinants of yam production in Ohaukwu Local Government Area, Ebonyi State, Nigeria. *Journal of Agricultural Economics, Environment and Social Science*, 9(1), 100-114.
- Esheya, S.E. (2022). Allocative efficiency of tropical manihot selection cassava production in Ebonyi state, Nigeria. *Nigeria Agricultural Journal*. A publication of Agricultural Society of Nigeria (ASN), 53 (1): 35-39.
- Esheya, S.E (2021). Profitability analysis of rice production in Ebonyi North Agricultural Zone of Ebonyi state, Nigeria. *International Journal of Agriculture and Rural Development*. 24(1), 5582-5586.
- Esheya, S.E. (2019). Economics of cassava production in Ohaukwu local government area of Ebonyi state, Nigeria. *AKSU Journal of Agricultural Economics, Extension and Rural Development*, 2 (2): 92 – 98.
- FAO (2019). Food security information for action. Practical guides.
- Gujarati, D.N and Porter, D.C. (2009). Basic Econometrics. Fifth Edition. McGraw-Hill Companies.
- IITA. (2018). Synthesis report of the Nigeria zero hunger strategic review. International Institute for Tropical Agriculture Headquarters: Ibadan, Nigeria. 60 pp.
- Muhammad, M.U., Esheya, S.E and Ibrahim, S. (2023). Technical Efficiency of Small-Scale Production of Date Palm in Jigawa State. *Nigerian Journal of Basic and Applied Sciences*, 31(1), 60-64
- National Population Commission (2006). Census bulletin, Ebonyi state, Nigeria.
- Nurudeen, A.M. and Shaufique, F.A.S. (2019). Determinants of food security among households in Nigeria. *Pakistan Journal of Nutrition*. 5(2), 1680-1688.
- Okpolu, P. I., Enyigwe J.O. and Onele, C.M. (2018). Household food security among rural household in Afikpo North Local Government Area of Ebonyi State. *OSR Journal of Agriculture and Veterinary Science*. 11 (3), 09-17.
- Omogo, E. E., Esheya, S.E. and Gibson N. U. (2023). Economic analysis of yam production in Ohaukwu local government area of Ebonyi state, Nigeria. *International Journal of Agriculture and Rural Development*, 26 (1), 6676-6683.
- Omonona, B.T. and Agoi, G.A (2007). Effect of land use management practices on food security among farming households in Osun state. *Journal of Central European Agriculture*. 8(3), 397-406.
- Omotesho, O.A. and Muhammad, L.A. (2010). Optimal food plan for rural households' food security in Kwara state, Nigeria: The goal programming approach. *Journal of Agricultural Biotechnology and Sustainable Development*. 2(1), 7-14.
- Orewa, S.I. and Iyangbe, C.O. (2009). The food insecurity profile among the rural and low income urban dwellers in Nigeria. *American-Eurasian Journal of Scientific Research*. 4(4), 304-307.
- Otaeha, I. J (2013). Food insecurity in Nigeria: Way forward. *African Research Review. An International Multidisciplinary Journal, Ethiopia*. 7 (4), 26-35.
- Ubokudom, E. O., Esheya, S. E. and Udioko G. U. (2021). Profitability of Biofortified Yellow Cassava Farming in Nigeria: Empirical Evidence from Akwa Ibom State. *AKSU Journal of Agriculture and Food Sciences. Faculty of Agriculture, AKSU*, 5 (2): 100-112.
- UNCWFS. (2020). United Nations' Committee on World Food Security, Food Security: International Food Policy Research. Accessed from: <https://www.ifpri.org> on 12th August 2021.
- USAID (2011). Promoting food security in Sub-Saharan Africa. *The Journal Outlook on Agriculture*. 27, 56-67.
- Yamane, T. (1967) Statistics: An Introductory Analysis. 2nd Edition, Harper and Row, New York.

Cite this Article: Esheya, SE; Ogbonna, SI; Nwandu, PI (2024). Empirical Analysis of the Factors Promoting Food Insecurity among Farming Households in Ebonyi State, Nigeria. *Greener Journal of Agricultural Sciences*, 14(1): 33-39.