Acta Scientific AGRICULTURE (ISSN: 2581-365X)

Volume 4 Issue 8 August 2020

Research Article

Socio-Economic Factors of Cooperative Farmer's and their Food Intake in Yewa North Local Government Area of Ogun State

Oluwasanya OP[1]*, Nwankwo FO[2], Aladegoroye OR[1] and Ojewande AA[3]

[1]*Department of Cooperative and Rural Development, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria*

[2]*Department of Cooperative Economics and Management, Nnamdi Azikiwe University, Awka, Nigeria*

[3]*Department of Banking and Finance, Osun State University, Osogbo, Nigeria*

***Corresponding Author:** Oluwasanya OP, Department of Cooperative and Rural Development, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria.

Received: March 31, 2020

Published: July 30, 2020

Abstract

The study analysed effect of socio-economic characteristics of cooperative farmers' on their food intake in Yewa North Local Government Area, Ogun State with a view to providing policy information toward enhancing the nutritional status of Nigeria. Hunger and malnutrition in developing countries like Nigeria requires the improvement of goals to lower the rate of frequently malnourished individual. There is problem of food and nutrition security in the world today. The data was collected through multistage sampling to obtain useful data from 112 households. It was revealed that 76.8% of the household farmers had average income below N30,000 per month. The household farmer's expenditure was N4,961.24 and per capital average expenditure was N925.605. This showed that poverty level is very critical and needs urgent attention in the study area. On this note, it was recommended that appropriate, attainable and practicable programme should be done to alleviate poverty and enhance income among rural farmers and that there should be a redistribution of income to favour low income earner so as to benefit the identified poor and likewise be extended to all Nigerians most especially food insecure and vulnerable individual.

Keywords: Low Income Earner; Household; Food Intake; Cooperative Farmer

Introduction

Nigeria is one the most vulnerable nation as to poor food intake among her citizen. Food problem is so chronic that an average man could not eat three square meals with his family. This situation is so bad that some people turn to beggar so as to put food on their table and this is because stable job among the people is not circulating and those who got job large number of them is poorly paid in the essence some live less than one dollar per day and could not afford nutritious meal. This problem is so acute in Nigeria and must be dealt with urgently, if the country will at peace. Akinyele [1] argued that Nigeria is still characterized by high reliance on food imports. That malnutrition is widespread in the entire country and rural areas are especially the most vulnerable to chronic food shortage, malnutrition, unbalanced nutrition, erratic food supply, poor quality foods, high food costs, and even total lack of food.

The problem of food and nutrition security in Nigeria has not been adequately and critically addressed, despite various approaches at addressing this menace. Ojo [2] observed that the protein consumption was put at 5gm/caput per day which is far cry from Food and Agriculture Organization recommended level of 35gm/caput per day. The reasons attributed to this by most researchers are the low level productivity of resources employed arising from the inefficient allocation of resources in poultry industry [2]. The situation is different in developed countries where the protein intake per capital is about 90g with more than 65g of it from animal source. For several reasons food consumption is of interest to the Nigerian economy. First, the volume of food consumed by rural farming households by far represents a large proportion of aggregate from output. This being so, the pattern of food consumption exerts a decisive influence on the level and composition of total agricultural output produced. Second, the quantity and quality of food consumed by households affect their health and economic well-being and these in turn have significant repercussions on the general level of economic activities and productivity.

Despite, government efforts to increase food production through the introduction of special agricultural projects in conjunction with the World Bank and other related Agricultural Development Projects (ADPs) such as; Agricultural Development Projects (ADPs) in 1975, Operation Feed the Nation (OFN) in 1976, Green Revolution in 1980, Directorate for Food, Road and Rural Infrastructure (DFRRI) including development policies, like Structural Adjustment Programme, Better Life Programme and Family Support Programme, yet the Nigerian economy still pose the problem of under-nutrition and malnutrition to average Nigerian consumer. Food consumption is the key element of life quality and strength. Insufficient food intake causes weakness in physical ability, cognitive/intellectual development especially the children, emotional and spiritual balance, metal stability, and life expectancy [3]. Hence, policy that will enhance proper food intake should be put in place and strictly implemented.

Problem statement

The Nigerian food insecurity situation is still described as appalling despite a number of efforts geared towards addressing the problem proved abortive [4]. Food security is a fundamental objective of development policy and also a measure of its success. A nation without food security may collapse and eventually, there will be unrest and as a result many may constitute nuisance in the community. Thus, insufficient food has negative impact on the health status and equally causes undesirable socio-economic limitation in terms of low income, high infant rate, child abuse, low life expectancy and human productivity. Poverty and insufficiency food consumption are two equal things. Hence, inadequate food causes economic adversity in the nation that is vulnerable. Insufficient food intake and poverty are intricately linked. Suffice it principal socio-economic problems have been afflicting to say that inadequate food consumption has negative impact in the world over the years, particularly in Nigeria. The case is worsening in Nigeria and can be traced to number of factors, ranging from inadequate access to endowment such as employment, education, health care facilities, good food, proper sanitation system, good water supply, poor infrastructure development, inadequate access to capital and land, credit facilities, lack of access to market for the good and service that the poor produce so as to offer them for sale, also inadequate or non-involvement of the poor in the design of the programmes for poverty allocation. This is nothing but denial of choices and opportunities for living a tolerable life and causes the vulnerable live without fundamental freedoms of action and choice. Therefore, a practicable and dependable policy should be put in place to curb this acute food problem in Nigeria.

Objectives of the Study

The broad objectives of this study was to examine the impact of socio-economic factors of cooperative farmers and their food intake in Yewa North Local Government Area, a typical rural town in Ogun State, Nigeria.

The specific objectives were to:

- Examine the socio-economic characteristics of cooperative farmers in the study area;
- Determine the rural farmers per capital food expenditure by their income group;
- Assess the influence of socio-economic factors on food intake in the study area; and
- Evaluate their consumption pattern.

Research Methodology

Study area

The study was carried out in Yewa North Local Government Areas (YNLGA) in Ogun State Nigeria. The Yewa LGA was formerly Egbado North Local Government Area. Its headquarters at Ayetoro (7º14'00''N and 3º02'00"E in the north-east of the Area), came into existence via Local Government edict No.9 of 1976. This area shares boundaries with Imeko/Afon Local Government in the north, Yewa South Local Government in the south, the Republic of Benin in the west and by Abeokuta North and Ewekoro Local Government areas in the east. Other important settlements in the local government include Joga Orile, Saala Orile, Owode Ketu, Igbogila, Igan Okoto, etc. The inhabitants are mainly Yorubas most of whom are farmers. The area covers 2,087 km^2 with a population of 181,826 [5]. The area produces many agricultural products, has 97 public primary schools and 19 secondary schools and a Technical College but yet not as developed compared to other local government areas in the state.

Sources and methods of data collection

Both primary and secondary data were used for this study. The primary data were collected through a well structured questionnaire and personal interview, where necessary, to gather necessary and relevant information from cooperative farmers on their food intake. Secondary data were sourced from relevant journals, publications, statistical bulletin, reports and the internet.

Sampling size and techniques

Multi-stage sampling procedure was used for this study. In the first stage, ten communities were randomly selected from the Local Government Area (LGA). The second stage involved random selection of eight (08) agrarian communities out of the ten selected in stage one. The third stage involved random selection of twelve (14) cooperative farmers from each of the selected communities in the second stage in Local Government Area (LGA). Thus, one hundred and twelve farmers were used for the analysis.

Method of data analysis

A combination of descriptive and inferential statistics tools were employed for the purpose of achieving the objectives of the study. Descriptive statistics (means, standard error of means, percentile etc.) which were then summarised in a simple table to form the data analysis etc., Tobit probability model and regression techniques were employed in the analyses of the study data. The Tobit model is a statistical model proposed by James Tobin [6] to describe the relationship between a non-negative dependent variable y_i, and an independent variable (or vector) xi assuming that there is a latent variable which linearly depends on the independent one trough a parameter (beta) that determines the relationship between the independent and latent variables. According to Verbeek [7], Tobit regression is usually the best model when the dependent variable is continuous and has a constrained range, represents a positive variable. This statistical model has previously been used in studies such as Trabelsi., *et al*. [8], Hussainey and Al Najjar [9], but also the pseudo R squared can be computed by Efron, McFadden, Cox and Snell, and Count. R software also provides pseudo R squared based on McFadden's formula, like. The Tobit model also called a censored regression model, is designed to estimate linear relationships between variables when there is either left- or right-censoring in the dependent variable (also known as censoring from below and above, respectively). Censoring from above takes place when cases with a value at or above some threshold, all take on the value of that threshold, so that the true value might be equal to the threshold, but it might also be higher. In the case of censoring from below, values those that fall at or below some threshold are censored. Tobit model estimate can be given as

$$y_i^* = \beta^t x_i + e_i \quad i = 1,2,\ldots,n \quad \text{..(1)}$$

Where:

e_i Random error, the set represents all the variables

y_i^* Represents (latent variable) it is generated through traditional linear regression model according to the formula $(I_i = \beta^t x_i)$ it is non-observer when $y_i^* < 0$.

y_i, x_i is the independent variable and the dependent variable known each $i = 1,2,\ldots n$. Generally, it can be defined as follows:

$$y_i = \{\beta^t x_i + e_i \text{ if RHS} > 0 \quad \text{..(2)}$$

While [10] knew (Tobit Regression Model) and supposed the dependent variable observer y_i for observers $i = 1,2,\ldots,n$ is achieved as follows:

$$y_i = \max(y_i^*, 0) \quad \text{..(3)}$$

Dependent Variables	Definitions
Total Food	Total food expenditure per month (₦)
Industrial Products	Expenditure on baked foods, bakery, pastry and beverages, semovita, butter, bread, corn flakes per month (₦)
Other animal protein sources	Expenditure on egg and milk per month (₦)
Plant protein	Expenditure on legumes – beans, soya beans per month (₦)
Energy giving food	Expenditure on cereals, garri, fufu, yam flour, cassava flour, plantain, cocoyam, potato per month ((₦). Expenditure on vegetables and fruits.
Fruveg	Expenditure on vegetables and fruits per month (₦).
Fruveg	Expenditure on cooking oils, pepper per month (₦).
Other food	Expenditure on rice, maize and other cereals per month (₦).
Cereals	Expenditure on beverages, tea and coffee per month (₦).
Beverages	Expenditure on cassava flour per month (₦).
Cassava flour	Expenditure on yam, cocoyam and potato per month (₦).
Yams	Expenditure on other animal product like pork, chicken, turkey, bush meat, snail, crab, prawn per month (₦).
Other meats	

Table 1: Operational and definition of dependent variables.

Source: Field survey, 2017.

Dependent Variables	Definitions
HHI	Household income (₦).
Age	Age of cooperative farmers (years)
Education	Years of spent in school
Gender	1, if male and 0, if female
HHS	Household size of cooperative farmers
Unmarry	1, if unmarried, 0 otherwise
Single	1, if single, 0 otherwise.

Table 2: Operational and definition of independent variables.

Source: Field survey, 2017.

Results and Discussion

Results and discussion of the study were presented in line with stated objectives. It discusses the results and findings that emanated from the use of descriptive statistics such as frequency, percentages, mean, standard deviation, standard errors and Tobit regression analysis.

Socio-economic characteristics of respondents

As presented in table 3, results revealed that 79.5% of the farmers are male while the female farmers are 20.5% only. This also indicates that predominance of male farmers is an indication that farming in the study area is labour intensive while the women contributes a less significant role. 78.0% of the respondents' falls within the age category of ≤ 30 and ≤ 50 and the mean age is 41 years. This implies that majority of the respondents are in their active age. Majority (48.2%) of the respondents had between 5 and 8 and the mean household size is 6 households. This implies that they have more dependent who fed from their low income and has a lot of detriments on household feeding pattern, thus, they could not take into consideration the nutrition feeding pattern.

Majority (76.8%) of the respondents' earn below ₦30.000.00. This indicates that the level of poverty in the area is seriously alarming and it urgent attention and so as to improve their feeding ability. Majority, (83.0%) of the respondents is married, this shows that they are responsible, thus, had family that depends on their meager income which invariable affect their feeding pattern adversely. This indicates that majority of the respondents had family responsibility. And they would like to venture into business that could earn them more income to put food on the table for their household. 48.0% of the respondent had primary school education, and 17.9% of the sampled cooperative farmers had no formal education, which shows that the level of education among the farmers is low, thus had adverse effect on their feeding pattern and their productivity including their income because they would not be able to adopt new technology to improve their productivity as said by Oladipo and Adekunle [11] that individuals with higher educational attainment are usually being faster adopters of innovation, that why urgent attention is need to get them literate either through adult education using the extension workers. Majority (99.1%) of the respondents are mainly farmers while 0.9% practiced farming as secondary occupation. The implication of this is that the community is agrarian in nature and thereby, concentration should be given to them to improve and make their farming system better than what it is presently.

Variables	Frequency	Percentage	Means
Gender			
Male	89	79.5	
Female	23	20.5	
Age (years)			
≤ 30	29	25.9	
31 - 40	30	26.8	
41 - 50	28	25	41
51 - 60	13	11.6	
> 60	12	10.7	
Household size (number)			
1 - 4	44	39.3	
5 - 8	54	48.1	
9 - 12	13	11.6	6
> 13	1	1.0	
Household income (₦)	86	76.8	
Below ₦ 30,000	86	6.3	
₦ 30,001 - ₦ 40,000	7	6.3	
₦ 40,001 - ₦ 50,000	10	8.9	₦23,679.02
₦ 50,001 - ₦ 60,000	6	5.4	
Above ₦ 60,001	3	2.7	
Marital status			
Married	93	83.0	
Single	12	10.7	
Divorced	2	1.8	
Separated	3	2.7	
Educational level			
No formal education	20	17.9	
Primary education	54	48.2	
Secondary education	21	18.8	
Tertiary education	17	15.1	
Major occupation			
Farmers	111	99.1	
Others	1	0.9	

Table 3: Socio-economic characteristics of cooperative farmers.
Source: Field Survey, 2017.

Determinants of rural farmers food expenditure

Total food expenditure of individual farmers is presented in table 4. The results revealed that the total food expenditure is ₦4,961.24. The proportion of the food for energy giving food, protein and vegetable fruits in total food expenditures are 54.18%, 32.19% and 13.63 respectively. food expenditure per cooperative farmers is about ₦925.605 which implies that an individual in the sample expended on food per month. The expenditure per each farmer on energy giving food is very high. A fairly small amount was expended on fruit and vegetables per month. Indicates that they fed more on energy food without considering the nutrition aspects of feeding, this is as a result of poverty reading in the area and urgent attention is needed to aid and help them out of this serious menace. Summarily, the results indicate that the sampled households consumed higher quantity of carbohydrates (energy giving) and relatively small amount of vitamins.

Items	Household expenditure (₦)	Percentage income (%)	Per capital expenditure (₦)	Food share percentage (%)
Rice	1020.71	4.311	190.431	20.57
Cassava	443.08	1.871	82.664	8.93
Yarn flour	270.71	1.143	50.506	5.46
Beans	386.38	1.632	70.086	7.79
Cocoyams	461.96	1.951	86.187	9.31
Fufu	181.43	0.766	33.849	3.66
Plantain	137.50	0.581	25.653	2.77
Semovita	152.73	0.645	28.498	3.08
Beverages	328.75	1.388	61.334	6.63
Pasteries	20.00	0.085	3.731	0.40
Fish	716.88	3.028	133.746	14.45
Egg (Beet)	225.45	0.952	42.062	4.54
Vegetable	127.95	0.540	23.871	2.58
Pepper	217.68	0.913	40.612	4.39
Oil	251.70	1.063	46.959	5.07
Spices	16.52	0.070	3.082	0.33
Others	1.79	0.008	0.334	0.04
Total	₦ 4,961.24	0.947	₦ 925.605	

Table 4: Distribution of rural farmers' food expenditure food items.
Source: Field Survey, 2017.

Tobit regression analysis for food expenditure

Tobit regression analysis is presented in table 5-7 below. The result explained the effect of socio-economic characteristics (marital status, household size, sex, education level, age and household income) on food items. Tobit regression parameters for each farmer food items/groups as well as on total food expenditure. Income indicate negative and significant influence on expenditure, this indicates that aside earning more income they need to be well enlighten on important of good food intake. Age has significant effect on the consumption of the food items as well as on income. But, was negative in cereal, non-food expenditure, protein and others were positive. The household size has positive effect on all the food items and a significant effect on yam flour, cocoyam, and cassava. The essence of this result is that consumption expenditure on energy giving food is higher comparison to others. The coefficient of the household size is positive in-line with all. Household size increases in the food item for energy giving food. The household size significantly affect protein and vegetables with a positive value which means that as household size increases definitely the consumption expenditure on fruit and vegetables increases. Sex and marital status are significant to the consumption expenditure on the food commodity except energy giving food, non-food expenditure and total income, revealed that much of energy food are consumed by both single and married this will significantly affect their fertility and productivity adversely. Where the single consumed less of animal protein, cassava, cereal, cocoyam, protein, vegetable and yam flour, the married consume more of these commodities. In the case of sex, it has no significance effect on total food expenditure except on energy giving food and food expenditure. It also revealed that total expenditure of female household head on food in less than that of female household head. In the same vein, women expenditure on food items is less than that of their male counterpart who is household heads. This is not unexpected because on the average the income of male who is household head is higher than their female counterpart. Education has significant influence on animal protein, energy giving food, other food, plant protein and yam flour but its influence is not significant on vegetable, beverages, cassava, cereal and nonfood expenditure. But, education has significant effect on animal protein sources [12-17].

Explanatory variables	Beverages	Other food	Vegetable and Fruits
Constant	120.29	-93.252	-28.715
Age	0.82689	5.1633	1.4249
	(0.1226)	(0.7554)	(0.3834)
Household size	10.803	38.177	27.075
	(0.2800)	(0.9037)	(1.273)
Female	211.07	186.23	80.663
	(1.038)	(0.9037)	(0.7200)
Married	-133.67	56.741	107.881
	(-0.7730)	(0.1581)	(0.5530)
Single	-358.28	-600.44	-83.862
	(1.732)*	(-1.278)	(-0.3284)
Education	56.032	114.32	25.313
	(1.732)	(3.488)***	(1.420)
Log likelihood	-11866.4	-11866.4	-11866.4
R^2/square r	0.0423	0.1408	0.0414

Table 5: Distribution of Food intake by cooperative farmers.
Source: Field Survey, 2017.

Food community items/groups		
Explanatory variables	**Animal Protein**	**Plant protein**
Constant	120.29	571.25
Age	0.82689	-2.2080
	(0.1226)	(-0.3794)
Household size	10.803	31.587
	(0.2800)	(0.6483)*
Female	211.07	239.54
	(1.038)	(1.365)
Married	-133.67	-346.2
	(-0.7730)	(-1.133)
Single	-358.28	-711.29
	(1.732)*	(-1.778)
Education	56.032	52.345
	(1.732)	(1.875)*
Log likelihood	-11866.4	-11866.4
R^2/square r	0.0877	0.0650

Table 6: Distribution of protein food expenditure.
Source: Field Survey, 2017.

Explanatory variables	Cassava	Cereal	Cocoyam	Plantain	Yam flour
Constant	135.53	816.80	401.33	2157.4	196.14
Age	7.8618	-3.9119	4.4777	13.543	6.1963
	(1.258)	(-0.3114)	(0.6648)	(0.5207)	(1.158)
Household size	54.500	31.074	20.664	217.90	75.949
	(1.524)	(0.4323)	(0.5363)	(1.464)**	(2.480)**
Female	265.45	363.43	262.83	1399.4	165.64
	(1.409)	(0.9595)	(1.294)	(1.785)*	(1.026)
Married	65.171	69.676	-329.69	-605.80	-32.815
	(0.1987)	(0.1056)	(-0.9325)	(-0.4437)	(-0.1168)
Single	-44.721	-909.34	-813.83	-3204.9	-493.54
	(-0.1041)	(-1.053)	(-1.7580)	(-1.793)*	(-1.342)
Education	0.77781	76.028	34.757	219.41	43.454
	(0.2596)	(1.262)	(1.076)	(1.759)	(1.693)
Likelihood	-11866.4	-11866.4	-11866.4	-11866.4	-11866.4
R^2/square	0.0381	0.0493	0.0601	0.0879	0.0843

Table 7: The distribution of energy giving Food commodity item/groups.

Source: Field Survey, 2017.

Significant level: *** (1%), ** (5%), * (10%); Figure in parenthesis are asymptotic to t – value.

Conclusion

From the result obtained from this study, it can be concluded that despite the involvement of the cooperative farmers in multiple activities, the poverty level is still high as they earn low income, and they are illiterate and their propensity to adopt new technology is low, they consumed more of energy giving food and are food insecure and indifferent to nutrition food, they are labour intensive, most of their women contribute insignificant to farming activities.

Recommendations

Based on the findings of the study, the following recommendations are offered:

- Government should introduce the rural farming household to new technology which will improve their farming activities and their productivity thereby increases their income.
- Adult literacy should be encouraged in the study area so as enable them read and know how to feed on nutritious food and thus, improve their health status.
- Rural women should be encouraged to participate in farming.
- Financial flows via agricultural export and influence price in domestic market, which will go a long way to affect dietary pattern and food production in the rural area. Government should make and implement price policy that will promote food and nutrition security in the country.
- The non – governmental organization should also support in the funding of rural communities.

Bibliography

1. Isaac O Akinyele. "Ensuring Food and Nutrition Security in Rural Nigeria: An Assessment of the Challenges, Information Needs, and Analytical Capacity". *IFPRI-ABUJA* (2009)

2. Ojo SO "Productivity and technical efficiency of poultry egg production in Nigeria". *International Journal of Poultry Science* 2.6 (2003): 459-464.

3. Uche M Ozughalu. "Household Poverty and Food Expenditure in Nigeria: An Empirical Test of Engel's Law". *World Applied Sciences Journal* 36.5 (2008): 661-673.

4. Omobowale AO and Ayodele EF. "Food Poverty and Livelihoods issues in rural Nigeria". A review of Poverty, price volatility, efficiency and the impacts of populations shifts (2013): 108-135.

5. National Population Commission of Nigeria (2006).

6. Tobin J. "Estimation of Relationship for Limited Dependent Variables". *Econometrica* 331 (1958): 24-36.

7. Verbeek M. "A Guide to Modern Econometrics, England, John Wily and Sons Ltd" (2004).

8. Trabelsi S., *et al*. "Incremental Voluntary on Corporate Websites, Determinants and Consequences". *Journal of Contemporary Accounting and Economic* 4 (2008): 120-155.

9. Hussainey K and Al-Najjar B. "Futureoriented Narrative reporting: Determinants and use". *Journal of Applied Accounting Research* 12 (2011): 123-138.

10. Herman JB. "Introduction to the Mathematical and Statistical Foundations of Econometrics". Cambridge University Press (2004): 323.

11. Oladipo F and O Adekunle. "Empirical Determination of Socio-economic Status and its Relationship with Selected Characteristics of Rural Male Farmers in Kwara state, Nigeria". *A Research Journal of Agriculture and Biological Sciences* 6.1 (2010): 64-76.

12. Adesimi AA and OO Ladipo. Pattern and intertemporal comparison of household food expenditure in an African semi – urban center: A case study of Ile – Ife, Department of Agricultural Economics, Obafemi Awolowo University, Ife (1997).

13. Anthonio BO and Oni SA. "An empirical analysis of food consumption in Nigeria: A case study of Ibadan city". *The Nigeria Journal of Economics and Social Studies* 11.1 (1999): 17-24.

14. Food and Agricultural World Health Organisation/ United Nations University (1999): Energy protein requirements. Report of a joint FAO/WHO/UNU, expert consultation. Technical report series 72.1 Geneva, WHO 1985 (1999).

15. International Food Policy Research Institute, International Center for Soil Fertility and Agriculture Development. 1-90.

16. Oni SA and Anthonio QBO. "An empirical analysis of food consumption in Nigeria. A case study of Ibadan city". *The Nigerian Journal of Economic and Social Studies* 11 (1974).

17. Rimal AP., *et al*. "Nutrition consideration in food selection". *International Food and Agribusiness Management Review* 3 (2001): 55-70.