ANALYSIS OF RURAL HOUSEHOLDS' FOOD SECURITY STATUS IN OGUN STATE, NIGERIA*

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Abstract. Although food is one of the basic necessities of life, food insecurity remains a major problem in Nigeria. This paper analyzes the factors influencing food security among rural households in Ogun State, Nigeria. Data were collected with multi-stage sampling procedure and analyzed with descriptive statistics and Probit regression model. The results show that mean age and household size of the respondents were 43 years (std dev = 13.31) and 5 (std dev = 3.28) respectively. The mean per capita household expenditure per day was N113.57. Using two-third mean per capita expenditure as food security line, 70.1 percent of the households were food secure, while 36.7 percent were food secure with dollar per day per person food security line. Factors that contributed to food security status of the households at two-third mean per capita household expenditure and a dollar per day were dependency ratio, marital status, age, and income. It was recommended that in order to increase food security, rural dwellers should be encouraged to diversify their income sources, among others.

Keywords: food security, food expenditure, rural households

INTRODUCTION

Food is the most important basic necessity of life. Therefore, to be food secure is a primary economic development goal of many developing countries. "Food security exists when all people, at all time, have physical, social and economic access to sufficient, safe and nutritious food to maintain a healthy and active life" (FAO, 2008). According to Iram and Butt (2004), food security can be defined as a broad concept, which includes issues relating to nature, quality, food access and security of the food supply system. FAO (2012) reported that almost 870 million people were chronically undernourished between 2010 and 2012, while the number of hungry people in the world remains unacceptably high in many developing countries. It was also reported that the livelihoods of most of the extremely poor households depend on agriculture and other farm related activities. More recently, FAO (2015) estimated that 796.6 million people in the world suffered from chronic under-nutrition between 2014–2016.

Specifically, the percentage of food insecure households in Nigeria was reported as 18 percent in 1986, and this grew to 40 percent in 2005 (Sanusi et al., 2006). It was also reported that per capita growth of production of major food items in Nigeria has not been able to bridge the food demand-supply gap of the ever increasing population. However, agriculture, which is the backbone of food security, has been left in the hand of aged farmers. The youths do not want to engage in agriculture

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because its subsistence nature makes it a direct route to abject poverty. In addition, since productivity is low and the population keeps increasing, the resultant effect is high cost of food items which reduces households' purchasing power and worsens food security and poverty (Asenso-Okyere and Jemaneh, 2012).

It should be further noted that the global food price crisis of 2007–2008 affected food security status of most Nigerians, particularly those in rural areas. Prices of almost all food commodities were higher in 2008 compared to their values in 2007. Between May 2007 and May 2008, prices of major staples in Nigeria such as rice increased by 107 percent and garri (cassava flakes) by about 60 percent. This led to high inflation, which increased from 5.4 percent in 2007 to 9.7 percent in 2008. Therefore, in absence of increase in wages, income purchasing power and the level of nutrition were greatly reduced (NISER, 2008). Coupled with the global food price crisis was the hike in fuel pump price, which indirectly increased food prices. Also, insecurity and religious insurgencies in the Northern part of the country hindered transportation of some food items to other parts of the country. This directly affected the prices of some food items such as cowpea, onion, pepper, among others with serious implication for food security (The Nation, 2015).

Several factors could be responsible for food insecurity. However, one of the most notable factors is the inability to access adequate food due to lack of sufficient income. Furthermore, the problem of food insecurity is more pronounced in rural areas than urban because residents in urban areas earn higher incomes. Therefore, they have reasonably higher incomes and are able to cater to their families and combat food insecurity, while those in rural areas are mostly subsistence farmers and proceeds from the farm are barely able to sustain the family needs. There are also some idiosyncratic shocks which predispose rural households to food insecurity. Such shocks include drought, fire incidence, flooding etc. Moreover, rural dwellers often lack the required capital asset to absorb such shocks. This makes them more prone to food insecurity (Chikaire et al., 2015).

There are three basic pillars of food security: availability, access, and utilization. Food availability is usually viewed with reference to food supplies at the household, regional or national level. Food access is achieved when households and all individuals within them have sufficient resources to obtain appropriate foods for a nutritious diet (Riely et al., 1999). Access is a function

of income available to the household, distribution of income within the household, and price of food. Food utilization is the effective biological use of food which determines if a diet is rich enough to provide sufficient energy and essential nutrients, potable water, and adequate sanitation. Effective food utilization is a function of knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper child care, illness management, and cultural taboos that affect access to nutritious food.

Obayelu (2012) used the 18 item food security module for comparative analysis of household's socio-economic and demographic characteristic and food security status in urban and rural area of Kwara and Kogi State of North-Central Nigeria. The study observed that the 18 item food security module is a valid tool to classify household into food security status of adults or children in the area. Furthermore, the study revealed that 23.7 percent households were food secure using the 10 adult food security questions, 42.4 percent household heads were classified as food secure using the 8 child food security questions and 15.9 percent were classified as food secure using the 18 questions.

Dada (2011) analysed the dynamic relationship between oil prices and food insecurity in Nigeria using a Vector Autoregressive Regression approach. The results of the estimation revealed that over dependence on oil resulted in the neglect of the agricultural sector, hence decline in the production of food for the teeming population in Nigeria. The variance decomposition also showed that high imports of food had contributed significantly to shocks in food supply, but not significant in determining food security. It was recommended that there is an urgent need for policies to be formulated to enhance domestic production of staple foods and reduce the over dependence on oil resource in Nigeria.

Orewa and Iyangbe (2009) examined food insecurity among the rural and low income urban households and the coping strategy adopted in Edo, Edo State. A 48 hour recall method was used in obtaining data on the household's daily food intake. Food security index was computed and rank ordering coping method were used. The study revealed that 79 percent and 71 percent of the low income urban and rural households respectively were food secure. The study further revealed that the depth and severity is more within the rural households and 25 percent increase in daily calorie intake is required by low income urban households to meet the FAO recommended daily allowance in the study area.

Fakayode et al. (2009) examined the food security status of farm households in Ekiti State. The USDA approach for the analysis of farm food security was used to measure the intensity of food severity among farm households. The result revealed that 12.2 percent of the farm households were food secure, 43.6 percent were food insecure without hunger, 35.9 were food insecure with hunger (moderate) and 8.3 percent were food insecure with hunger (severe). Cassava, yam and their products were shown to contribute to food security status of the farm households. Their study further revealed that high cost of transportation, poor receipts from farm output sale, inadequate storage facilities for yam and inadequate processing facilities for cassava were the constraints faced by farm households in the production of major staple food crops.

Idrisa et al. (2008) examined the food security status among farming households in Jere local government area of Borno state, Nigeria. The result revealed that the incidence of food insecurity was higher among the age group of 40–49 years (27.5%) while the depth and severity was higher (0.24 and 0.41 respectively) among the age group of 50 years and above. Their study also shows that households with large family size, low income level and low level of education were mostly affected by food insecurity condition.

Babatunde et al. (2007) examined the socio-economic characteristic and food security status of farming households in Kwara state. The study revealed that 36 per cent and 64 per cent of the households were food secure and food insecure respectively. The Shortfall/Surplus index revealed that the food secure households exceeded the recommended calorie intake by 42 per cent, while the food insecure households fell short of the recommended calorie intake by 38 per cent. Using a logit regression model it was discovered that household income, household size, educational status of household head, and quantity of food obtained from own production were the factors determining the food security status of farming households in the study area

Sanusi et al. (2006) examined the food security status of households headed in public and private secondary and primary schools in some local government area in Lagos and Ibadan. They used 18-question module to collect information and classify households into food secure, food insecure without hunger, and food insecure with moderate hunger. The results revealed that the housing and living conditions and access to basic social facilities had significant association with the food security status of the respondents. It was further revealed that education and income of the household heads were the factors accounting for food security and food insecurity status of the respondents. It was also discovered that teachers from Lagos were more food secured than their counterparts in Ibadan. The overall food insecurity status was estimated to be over 70 percent.

Adeniyi and Ojo (2013) examined extent and magnitude of food insecurity and factors that affect household food security in some selected Local Government Areas (LGA's) of Osun State. Head Count Method, Food Insecurity Gap and Squared Food Insecurity Gap were used to assess the food insecurity status of the households. It was discovered that the majority of the rural farming households in the area were food insecure using 2,280 Kcal as the benchmark. The result also shows that 69.9% of the respondents were food insecure. They found that the factors influencing household food security were small family size, high monthly income, and use of modern farm inputs.

Food security among rural households would positively influence sustainability of wealth of the nation. It is pertinent to assess food security status of rural households in order to provide useful follow up on some targets that were set at the 1996 World Food Summit (FAO, 1999). In addition, the findings from the study can inspire policy formulation for ensuring that some Millennium Development Goals (MDGs) are achievable. This study therefore seeks to analyze the correlates of food security in Ogun State Nigeria, using the absolute (naira equivalent of a dollar was used as the benchmark) and relative (two-third of the average food expenditure per person per day was used as the benchmark) food security lines. The study seeks to describe the socio-economic characteristic of the farmers; assess the extent and magnitude of food security of the respondents and identify the factors that contribute to their food security status.

MATERIALS AND METHODS

Study area and sampling methods

The study was carried out in Ogun State using cross sectional data. This is in line with the study of Obayelu (2012), Fakayode et al. (2009) and Orewa and Iyangbe (2010). For sampling purposes, Ogun State Agricultural Development Programme (OGADEP) classified the state into four agricultural zones which are Abeokuta,

Ilaro, Ijebu-Ode and Ikenne (Adewuyi et al., 2009). In this study, multi-stage sampling procedure was used to choose respondents for interview with selective questionnaires. At the first stage, two zones (Ijebu-Ode and Abeokuta) were randomly selected. At the second stage, 2 blocks were randomly selected from Ijebu-Ode zone, and 3 blocks were selected from Abeokuta zone. At the third stage, two cells were randomly selected from each of the blocks. A total of 360 questionnaires were administered, out of which only 354 were used for the analysis. Rejected questionnaires were a result of the omission of important variables. The household heads were interviewed with the aid of a structured questionnaire. The interview was done between January and March 2014. Trained enumerators were used to administer the questionnaire.

Analytical methods

Descriptive statistics were used to describe the socioeconomic characteristic of the farmers. Food security poverty line was computed using the total expenditure of the food items consumed by the respondent in the last seven days. In order to compute the mean per capita household expenditure index, the following equations were adopted:

$$\text{Mean per capita household expenditure (A)} = \frac{\sum_{i}^{n} K_i}{\sum_{i}^{n} H_i}$$

Where: K_i is the monetary value of all food items that were consumed per day by the household, H_i is sum of members in the household. Average food expenditure per person per day was N113.57 with its two-thirds value being N75.71. This two-thirds value is the food security line. Therefore, the proportion of households that were food secured index (FSI) was computed as: $\text{FSI} = \frac{m}{N}$, m is the number of food secured households, N is sample population. When this is multiplied by 100, it gives the percentage of households that were food secured.

Probit regression model

Probit model was used to analyze the factors that contribute to the food security status of the households. This model uses binary dependent variable, and presents the best approach to find the probability of being food secure (Gujarati, 2004). The estimated equation can be expressed as:

$$S_i = a_i + \beta q_i + \mu_i$$
$$S_i = 1 \text{ for } X_i \geq Z_i, \ 0 \text{ otherwise.}$$

Where S_i is the food security index of the individual (it is equal to one if the household is food secure and equal to zero if not food secure), a_i is the constant, q_i is vector of explainable variables, X_i is the average mean per capita household expenditure on food, μ_i is the error term, Z is the benchmark, it two-third of the average mean per capita household expenditure on food. A dollar line of ₦154.7 was also used as the benchmark. Based on reviewed literature, the following explanatory variables were included in the model which was run with STATA 12 software:

q_1 = dependency ratio
q_2 = marital status (married = 1; 0 = otherwise)
q_3 = gender (female = 1; 0 = otherwise)
q_4 = age of respondents? (years)
q_5 = income (monthly income (₦))
q_6 = primary occupation (farming = 1; 0 = otherwise)
q_7 = access to loan (yes = 1; 0 = otherwise)
q_8 = experienced shocks (yes = 1; 0 = otherwise)
q_9 = received remittance income (yes = 1; 0 = otherwise)

Table 1. Appriori Expectation of the variables
Tabela 1. Wstępnie oczekiwane wartości zmiennych

Variables Zmienne	Expected Sign Oczekiwany znak	Source Źródło
q_1 (dependency ratio wskaźnik zależności)	–	Amaza et al., 2007
q_2 (marital status stan cywilny)	±	Abu and Soom, 2016
q_3 (gender – płeć)	+	Abu and Soom, 2016
q_4 (age – wiek)	±	Arene and Anyaeji, 2010
q_5 (income – dochód)	+	Babatunde et al., 2007
q_6 (primary occupation zajęcie podstawowe)	+	Babatunde et al., 2007
q_7 (access to loan dostęp do kredytu)	+	Babatunde et al., 2007
q_8 (experience shock wstrząsające doświadczenia)	–	Schroeder and Tennessee, 2005
q_9 (received remittance income uzyskanie dochodu z przekazów pieniężnych)	±	Adepoju and Adejare, 2013

RESULTS AND DISCUSSIONS

Table 2 shows the socio-economic characteristic of the respondents. The table revealed that 54 percent of the rural households interviewed were within the age range of 31–50 The mean and standard deviation of the respondents age was 43years and 13.31 respectively. The mean and standard deviation of the respondent's household size was 5and 3.28 respectively. The majority of the respondents were married and female, 70.3 and 64.7 percent respectively. The educational level of the respondents shows 30.5 and 27.1 percent had primary and secondary education respectively. A high proportion (21.5 percent) of the respondents do not have a formal education. 56.2 percent of the respondents were Christian. The table further shows that most of the

Table 2. Socioeconomic characteristic of the respondents (head of rural households)
Tabela 2. Charakterystyka społeczno-ekonomiczna respondentów (głów rodziny w gospodarstwach wiejskich)

	Frequency – Częstość	Percentage – Procent
1	2	3
Age – Wiek		
≤ 20	10	2.8
21–30	59	16.7
31–40	94	26.6
41–50	97	27.4
51–60	62	17.5
61–70	24	6.8
>70	8	2.3
Total – Razem	354	100.0
Sex – Płeć		
Male – Mężczyzna	125	35.3
Female – Kobieta	229	64.7
Total – Razem	354	100.0
Household size – Liczba osób w gospodarstwie		
1–2	74	20.9
3–4	97	27.4
5–6	100	28.2
>6	83	23.4
Total – Razem	354	100
Marital Status – Stan cywilny		
Single – Osoba samotna	69	19.5
Married – Żonaty/zamężna	249	70.3
Divorced – Rozwiedziony(-a)	15	4.2
Widow – Wdowiec/wdowa	21	5.9
Total – Razem	354	100.0

Table 2 cont. – Tabela 2 cd.

1	2	3
Education – Wykształcenie		
No Formal Education – Brak formalnego wykształcenia	76	21.5
Primary education – Wykształcenie podstawowe	108	30.5
Secondary education – Wykształcenie średnie	96	27.1
Tertiary education – Wykształcenie wyższe	67	18.9
Adult education – Absolwent szkoły dla dorosłych	7	2.0
Total – Razem	354	100.0
Religion – Wyznanie		
Christianity – Chrześcijaństwo	199	56.2
Islam	144	40.7
Traditional – Religie tradycyjne	11	3.1
Total – Razem	354	100.0
Income(monthly) – Dochód miesięczny		
<10000	154	43.5
10000–20000	132	37.3
20001–30000	22	6.2
30001–40000	14	4.0
40001–50000	4	1.1
50001–60000	5	1.4
60001–70000	9	2.5
70001–80000	2	0.6
80001–90000	2	0.6
90001–100000	6	1.7
>100000	4	1.1
Total – Razem	354	100.0

Source: own field survey, 2014.
Źródło: badanie własne w terenie, 2014.

respondents earned more than ₦10,000 monthly (43.5 per cent). This implies that most of the farmers were earning less than the minimum wage (₦18250) paid to the civil servant in the state (Vanguard, 2011).

Table 3 shows distribution of average amount per day (per households) and average amount per day per household members spent on food and their monthly income across the different age groups of household heads.

Households whose heads had age less than or equal to 20 years spent more on food than other age groups. This could be due to the fact that they were still young and yet to be saddled with much responsibilities; therefore, more income can be spent on food. Ogundari et al. (2015) found that in Nigeria, younger people spend more on food because they consume more food away from home (FAFH). Also, Zan and Fan (2010) make

Table 3. Distribution of average amount/day/households and average amount/day/household size spent on food and monthly income across age groups

Tabela 3. Rozkład dochodów miesięcznych oraz średniej kwoty wydatków na żywność w przeliczeniu na gospodarstwo domowe i w przeliczeniu na liczbę członków gospodarstwa domowego według przedziałów wiekowych

Socioeconomic group Grupa społeczno-ekonomiczna	Frequency Częstość	Average amount/day/households (N) Średnia kwota/dzień/gospodarstwo domowe (NGN)	Average amount/day/ Household size/members (N) Średnia kwota/dzień/liczba członków gospodarstwa domowego (NGN)	Average monthly income (N) Średni dochód miesięczny (NGN)
Age of head Wiek głowy rodziny				
≤20	10	1 013.99	457.83	7 200.00
21–30	59	820.66	376.70	17 344.63
31–40	94	559.88	182.23	19 079.78
41–50	97	554.36	139.55	17 926.28
51–60	62	467.68	93.87	17 559.13
61–70	24	210.73	31.28	14 745.83
>70	8	378.57	35.99	15 666.66
Gender of head Płeć głowy rodziny				
Male Mężczyzna	125	511.05	158.19	18 193.99
Female Kobieta	229	603.33	194.56	17 123.72
Marital status Stan cywilny				
Single Osoba samotna	69	414.89	121.61	15 571.01
Married Żonaty/zamężna	249	610.11	195.32	17 251.07
Divorced Osoba rozwiedziona	15	598.95	229.69	13 855.55
Widow Wdowiec/wdowa	21	595.91	183.64	29 420.63
Total – Razem	354	570.74	181.72	17 501.64

Source: own field survey, 2014.
Źródło: badanie własne w terenie, 2014.

clear that one of the reasons why young adults spent more on food was because of eating out more, but it reduced it as they grow older. Table 3 further shows that the average amount spent on food per day and the average amount spent on food per day per household size wereN1013.99 and N457.83 respectively for household heads that were under 20 years. The age group of 61–70 years spent the least average amount on food per day and average amount per day per household size (N 210.73 and N 31.28 respectively). The reason could be

that most of their children are grown up and independent or they had moved out of the rural area in search of better jobs in the city. Ogundari et al. (2015) also found that older people spend less on food because they consume less food away from home. Table 3 also reveals that those in the age range 31–40 years earned the highest average monthly income of N1907.78. This could be because they are still active and could still engage themselves in other income generating activities. This is supported by the findings of Anyanwu (2013) which reveals that income relatively decreases with younger age, increases with middle age, and then declines with old age again. Also, Babatunde et al. (2007) found out that the older the age of household head the lower the probability that the household will be food secure.

Table 3 also shows the distribution of average amount per day and the average amount per day per household size spent on food and monthly income across gender. The female headed households had the highest amount spent on food per day and per day per household's size (N603.33 and N194.56 respectively). This could be because wives usually support their husbands in financing the home especially when it comes to kitchen matters (food products). Holmboe-Ottesen et al. (1988) found that women allocate a huge share of the income directly under their control to food and basic needs, compared with the income earned by men.

Table 3 also reveals that male headed households earn more average monthly income than female headed households. This could be because domestic activities take the time away from women that is needed in order to engage in other income generating activities.

Table 3 shows the distribution of average amount per day and average amount per day per household size spent on food and monthly income across marital status. The results reveal that those who were married spent more on food per day and per day per household size while those that were widowed earn more income.

Food Security Index

The total expenditure on food by the respondents was N202045.36 and average mean per capita household expenditure was N113.57. Using two-third of average mean per capita household expenditure (₦75.71) as the benchmark, food secured households was estimated to be 70.1 percent, the head count of food secured households dropped to 36.7 percent when a dollar per day was used as the benchmark. Omonona and Agoi (2007), FAO (2006) and Oni and Fashogbon (2013) used two-third of average mean per capita expenditure on food as the food secured line. Omonona and Agoi (2007) computed the mean per capita household expenditure per month to be N7,967.19 which was equivalent N265.57 per day.

Table 4 shows the factors contributing to relative food security among rural households in Ogun State. The food security line was set two-third of average mean per capita household expenditure. The results show that dependency ratio significantly (p < 0.1) increases the food security among rural households in rural Ogun State. The marginal effect implies that as there are more

Table 4. Factors contributing to relative food security of rural households in Ogun State
Tabela 4. Czynniki wpływające na względne bezpieczeństwo żywnościowe gospodarstw wiejskich w stanie Ogun

Variables Zmienne	Probability – Prawdopodobieństwo		Marginal effect – Efekt krańcowy	
	Coefficients Współczynniki	Standard error Błąd standardowy	Dy/dx	Standard error Błąd standardowy
1	2	3	4	5
Dependency ratio Wskaźnik zależności	.4908841*	.2545093	.1500619*	.07753
Marital status Stan cywilny	.9124903***	.1916498	3064249***	.06711
Gender Płeć	.0180425	.1789303	.0055048	.05448
Age – Wiek	.0743393***	.0085825	.0227253***	.00262
Income – Dochód	8.06e-06*	4.58e-06	2.46e-06*	.00000

Table 4 cont. – Tabela 4 cd.

1	2	3	4	5
Primary occupation Podstawowe zajęcie	.0140813	.2148498	004291	.06526
Loan – Kredyt	.3501905	.2326251	1070522	.07047
Shocks Wstrząsające doświadczenia	.0488176	.1751751	.0149212	.0535
Remittances Przekazy pieniężne	.1144467	.1955146	.0343877	.05766
Constant – Stała	2.830228	.4351297		

*** Significant @ 1%, ** significant @ 5% and * significant @ 10%.
Source: own field survey, 2014.
*** Zmienna istotna na poziomie istotności 1%, ** zmienna istotna na poziomie istotności 5%, * zmienna istotna na poziomie istotności 10%.
Źródło: badanie własne w terenie, 2014.

children in the household food security will significantly increase by 0.1500619. It could be that those actually working earn small incomes. This is consistent with Omonona and Agoi (2007) findings. Also, marital status (significantly p < 0.01) has the probability of increasing the food security of the rural households. The marginal effect reveals that being married significantly (p < 0.01) increases food security by 0.1500619. Age has the probability of significantly increasing food security status

of the rural households in Ogun State. The marginal effect implies that a unit increase in age will increase food security status by 0.0227253 and it is statistically significant at 1%. The table further reveals that income significantly (p < 0.1) increases food security. The marginal effect implies that a unit rise in income will increase food security by 2.46e^{-06} and is significant at 1%.

Table 5 shows the factors contributing to absolute food security of rural households in Ogun State. A dollar

Table 5. Factors contributing to absolute food security of rural households in Ogun State
Tabela 5. Czynniki wpływające na bezwzględne bezpieczeństwo żywnościowe gospodarstw wiejskich w stanie Ogun

Variables Zmienne	Probability – Prawdopodobieństwo		Marginal effect – Efekt krańcowy	
	Coefficients Współczynniki	Standard error Błąd standardowy	Dy/dx	Standard error Błąd standardowy
1	2	3	4	5
Dependency ratio Wskaźnik zależności	.6378442***	.2473127	.2192786***	.08446
Marital Status Stan cywilny	.64209***	.1943872	.2019213***	.05361
Gender – Płeć	.2135047	.1719255	.0745246	.06064
Age – Wiek	.077844***	.0086196	.0267613***	.00276
Income – Dochód	.0000111***	3.28e-06	3.82e-06***	.00000
Primary occupation Podstawowe zajęcie	.0154179	.2152289	.005314	.07437

Table 5 cont. – Tabela 5 cd.

1	2	3	4	5
Loan Kredyt	.0854408	.1519694	.0293729	.05223
Shocks Wstrząsające doświadczenia	.0026822	.1660932	.0009221	.0571
Remittances Przekazy pieniężne	.0365235	.1902112	.0125052	.06486
Constant – Stała	2.018151	.3964868		

Source: own field survey, 2014.
Źródło: badanie własne w terenie, 2014.

per day was used as the benchmark. The table shows that dependency ratio, marital status, age, and income of the respondents were the factors that have the probability of increasing the food security of the respondents. These factors were significantly at 1%. The marginal effect implies that as the number of dependent increases the food security increases by 0.2192786 ($p < 0.01$). The marginal effect also reveals that as people get married their food security increases by 0.2019213 ($p < 0.01$). Also, as age increases food security increases by 0.0267613 ($p < 0.01$). This is contrary to Babatunde et al. (2007) finding as it used calorie intake to estimate food security. In the same way, a unit rise in income increases food security by 3.82e-06 ($p < 0.01$). This finding is consistent with Babatunde et al. (2007).

CONCLUSION AND RECOMMENDATION

This study used expenditure on food consumed in and outside the house, and from owned produce to assess the food security index of the household. On the relative (two-third of mean per capita food expenditure per day) 70.1 percent of the respondents were food secured while on the absolute (a dollar a day) 36.7 percent were food secured. The state of food security in rural areas is still far from what is expected globally. The female headed households spent more on food than the male headed households. Income is the key determinant of food security on absolute and relative basis. In order to increase the food security of the rural dwellers, they should be encouraged to diversify their income base.

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ANALIZA BEZPIECZEŃSTWA ŻYWNOŚCIOWEGO GOSPODARSTW WIEJSKICH W NIGERYJSKIM STANIE OGUN

Streszczenie. Chociaż jedzenie stanowi jedną z podstawowych potrzeb życiowych, brak bezpieczeństwa żywnościowego pozostaje poważnym problemem dla mieszkańców Nigerii. W niniejszym opracowaniu przeanalizowano czynniki oddziałujące na bezpieczeństwo żywnościowe gospodarstw wiejskich w nigeryjskim stanie Ogun. Dane zebrano w ramach wieloetapowej procedury pobierania próbek, a następnie przeanalizowano za pomocą metod statystyki opisowej i modelu regresji probitowej. Jak pokazują wyniki, średnia wieku respondentów wyniosła 43 lata (odchylenie standardowe = 13,31) przy średniej liczbie 5 osób (odchylenie standardowe = 3,28) wchodzących w skład gospodarstwa domowego. Średnie wydatki dzienne gospodarstwa domowego w przeliczeniu na osobę kształtowały się na poziomie 113,57 NGN. Jeśli przyjąć, że granica bezpieczeństwa żywnościowego odpowiada dwóm trzecim średnich wydatków dziennych w przeliczeniu na osobę, to 70,1% gospodarstw domowych miało zapewnione bezpieczeństwo żywnościowe. Natomiast przy założeniu, że granica ta przypada na kwotę jednego dolara dziennie na osobę odsetek bezpiecznych żywnościowo gospodarstw wyniósł 36,7%. Na bezpieczeństwo żywnościowe gospodarstw przy granicy przebiegającej na poziomie dwóch trzecich średnich wydatków na osobę lub na poziomie jednego dolara dziennie oddziaływały następujące czynniki: wskaźnik zależności, stan cywilny, wiek i dochód. Zaleca się, aby w celu poprawy bezpieczeństwa żywnościowego zachęcać mieszkańców obszarów wiejskich m.in. do dywersyfikacji źródeł dochodu.

Słowa kluczowe: bezpieczeństwo żywnościowe, wydatki na żywność, gospodarstwa wiejskie