



Comparative analysis of Households' food Security in Ekiti State, Nigeria

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ABSTRACT

Despite several attempts to combat hunger and improve national food security level by the government, many are still going to bed hungry. The extent to which government efforts improve food security level of her populace would be better known from household level. Therefore, this study carried out comparative analysis of households' food security status in Ekiti State, Nigeria. Multistage sampling technique was used to stratify Ekiti State into rural, peri-urban and urban. Thereafter simple random sampling method was used to select thirty percent of Local Government Areas (LGAs) and communities respectively. One hundred and seventy-two randomly selected household heads formed the sample size. Questionnaire administered in form of interview was used to elicit information from the respondents. Data collected were analysed using both descriptive and inferential statistics such as frequency counts, percentages, mean, Pearson product moment correlation and analysis of variance. Results revealed that most respondents (64%) were low-income earners. Most (79.7%) did not have equal economic access to available food items; thus consumed more of carbohydrate food. Majority (34.9%) and (18.7%) of those that were food secured were from peri-urban and rural areas respectively. Significant relationship was found between farm size ($r = 0.214$, $p = 0.005$), income ($r = 0.210$, $p = 0.006$) and respondents' food security status. The result of analysis of variance revealed that significant difference in food security level existed across the strata ($f = 11.749$, $p = 0.000$). Based on the conclusion reached that farm size and income had positive influence on food security, it was recommended that farming should be encouraged and subsidized through government positive intervention. Government should also integrate rural areas in her development programmes for adequate and timely provision of needed social amenities such as good roads, effective extension services, delivery, agricultural inputs and effective agricultural produce marketing. This will go a long way in making farming interesting and thus enhancing food security in the study area.

Keywords: food security, households, food availability, economic access.

INTRODUCTION

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Pérez-Escamilla, 2017). Access to adequate food constitutes the most serious problem for most Nigerian households today. In

measuring food security of households, variables such as availability, accessibility and affordability are commonly used in extension. Food availability connotes the physical presence of food in large amounts. Use of term availability is often confusing since it can refer to food supplies available at both household level and at a more aggregate (regional and national) level (Abdullahi *et al.*, 2019). Researchers have operationalised food accessibility in two ways, that is, physical

accessibility which means available food is within the reach of households or economic accessibility which means ability of households to buy or acquire physically accessible food; that means food available in their area is within their means (Leroy *et al.*, 2015).

Despite all the strategies put in place at the national level to make sure that effects of malnutrition is reduced to the barest minimum or totally eliminated, millions of people lack food security intermittently because approximately 70% of the Nigerian population lives below the poverty line (Osabuohien *et al.*, 2018). Among the reasons for rural-urban migration is seeking for a better living of which food security is inclusive (Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), International Organization for Migration (IOM) and the World Food Programme (WFP), 2018), but can it be concluded that households are more food secured in urban areas than rural areas. The available studies such as food poverty and livelihoods issues in rural Nigeria (Omobowale, *et al.*, 2013) and analysis of rural households' food security status in Ogun State, Nigeria (Oyekale, *et al.*, 2017); tend to concentrate on rural or farm households. This trend tends to study rural areas in isolation neglecting the fact that there is a kind of connectivity among rural, peri-urban and urban households when it comes to the issues of food production, distribution and security. The general objective of this study is to compare household food security level in Ekiti State, Nigeria.

METHODOLOGY

The research was carried out in Ekiti State, Nigeria. The State is situated entirely within the tropics. It is located between longitudes 4⁰ 54' to 5⁰ 45' East of Greenwich Meridian and Latitudes 7⁰ 15' – 8⁰ 5' North of Equator. The study population consisted of household heads

from the selected rural, peri-urban and urban communities from the study area. Multi-stage sampling procedure was used. The whole Ekiti State was stratified into urban, peri-urban and rural local government areas (Christopher, 2006). Urban local government areas include Ado, Efon, Ikere, Ijero and Ikole; peri-urban local government areas are Moba, Oye, Irepodun/Ifelodun, Gbonyi, Ekiti East, Ekiti West and Ekiti South West. While rural ones include Ise Orun, Emure, Ilejemeje and Ido Osi. Simple random sampling was used to select 30% of Local Government Area (L.G.A.) in each stratum, that is, two local government areas from urban, two local government areas from peri-urban stratum and one local government areas from rural stratum. The same percentage was used to select three communities from averagely eleven communities in each L. G. A. Twelve respondents were also randomly interviewed from each of the 15 communities selected, but only 172 of 180 respondents as sample size gave complete responses that could be analysed.

The independent variables of this study are socio-economic characteristics such as total income, farm size, household size and occupation were measured at both nominal and interval level. The dependent variable of this study is food security status and it was measured using the scores obtained from food availability, affordability, adequacy and frequency of consumption of food items.

RESULTS AND DISCUSSION

Socio-economic characteristics of households in the study area Marital status of household heads

Table 1 shows that 87.2% of the household heads were married; 0.6% were divorced; 7% were widowed while 5.2 % were separate. That implies that most of the households sampled consist of both husbands and wives that may be

knowledgeable about information on the food security status of their different households. Despite the different views on the effect of marital status on food security, when the issue of household is being discussed, the term marital status is paramount. Adenike (2016) stated that married household heads are better off in terms of their food security status in relation to their unmarried counterparts. Thus, households' marital status was therefore anticipated to positively influence the food security status of households.

Household size

Table 1 below shows that 15.7% of households had low household size, 73.8% had average household size and 10.5% had high household size as shown below. Household size alone may not be able to predict level of food security, even though it could indicate level of household' food needs. Families with large household size are more vulnerable to food insecurity than smaller families more especially when their economic access to available food is limited. On the other hand, family with more household size with more working members and income could have high food security. This is line with Pérez-Escamilla (2017) who reported positive and significant relationship between household size and food security.

Income

Household heads in the study area were categorised into four groups as shown in Table 1 below. Most of the household heads (64%) were low income earners, 1.2% were very low income earners, 30.2% were high income earners while 4.7% were very high income earners. This result is in tandem with that of Ewebiyi (2014) who also reported low income level among rural households in southwestern Nigeria. Those with low income might have low economic access to available food. It had been noticed that the Nigerian food problem is not simply one of inadequate calories-protein intake

per capita relative to some prescribed nutrition norm, of equal importance are the inequalities in economic access to available food supplies. Such inequalities in access to food emanates from the underlying inequalities in the distribution of personal income and wealth. Therefore, any measure to tackle inequalities in access to available food supplies must address the underlying income inequalities (Leroy *et. al.*, 2015).

Youths' participation in agriculture is important to the development of any agrarian nations. Though, the ability to attain food security through agriculture is reduced by the lack of access to agricultural land, technologies and modern farming practices and youth disinterest in agricultural as a career (Feighery, Ingram, Li, Keddy, 2011). At the same time, most youth do not currently see agriculture as a viable career path given the low productivity rates and the current state of drudgery involved in agriculture, especially in Africa (Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), and the World Food Programme (WFP), 2015). Rural youths are forced to migrate to cities as they do not find enough incentives, profit and favourable environments to live and work. This has decreased youth involvement in agriculture in recent years (Adekunle, Adefalu, Adisa & Fatoye, 2009).

In Nigeria, youth constitute about 60% of the population and have over the years made significant contributions to National Development (Adekunle *et al.*, 2009). The integration of youth in agricultural activities is therefore an important factor toward the development of agricultural sector due to their innovative behaviour, greater physical strength and a fast rate of learning (Kimaro, Towo & Moshi 2015). Moreso, mobilizing youth for agricultural careers development and using their potential to find innovative and future-

oriented agricultural approaches may be a solution to the current food insecurity challenges facing Nigerian agriculture.

Nigerian youth have the potentials to promote agriculture because most of them must have been socialized into farming from their teenage ages. However, their unwillingness to take agriculture as a profession has contributed to the poor agricultural performance over the years; contributing to food and meal insecurity. Therefore, increasing population demands for an increase in food security to combat hunger in the developing nation like Nigeria calls for the involvement of youth. This is because in Nigeria, farming population is aging (Aphunu and Atoma, 2010). It is practically impossible for this aged generation dominating agricultural sector to deliver the expected productivity to meet food needs of the ever growing population (Adesina and Eforuoku 2016) if programmes that will attract the youth are not implemented. Youth as the successor farming generation is one of the determinants of food security in the future and should be viewed as an integral part of the solution to food security. Youth unemployment is a major challenge facing both developed and developing countries including Nigeria. Empowering the youth involves providing opportunities for the youth to earn incomes so that their livelihoods would be improved. Provision of job opportunities among others has the potential to reduce or prevent migration of the youth into the cities, where their intended aims are not met.

Occupation distribution of respondents.

Table 2 below shows that 30.2% household heads took farming as their primary occupation, 34.9% household heads engaged in civil service work as their primary occupation, 15.7% were

traders and 19.2% had personal handwork as primary occupation. The result further shows that reasonable percentage of respondents in rural and peri-urban areas made farming their primary occupation, that is, 8.1% of 20.4% and 12.8% of 40.1% respectively. This might be so because farming ensures food security among households (Abdullahi *et. al.*, 2019).

Farm size distribution of respondents

Households' farm size was categorised as small size, average size and big size based on the mean (1.24), standard deviation (1.36), minimum size (0.02ha) and maximum size (10ha) of farm size. It was observed that 34.3% of household heads had small farm size; 34.9% had average farm size; 8.7% had big farm size while 22.1% did not have. The result shows that more of those in the rural and peri-urban areas had average and big farm size. All other things being equal, those with average and big size of farm were more likely to be food secured than those with small size or no farm because farming activities such as mixed cropping, planting crops that mature at different times, home gardening and use of proven varieties are strategies to boost the level of food security. This result is also supported by Nkomoki *et al.*, 2019 who found that increase in farm size increased household food security.

Indicators of households' food security Availability of food items in the study area

Table 4 below shows that most of the food items were always available because "always available" carries the highest percentages in the study area, for instance: cereals had 93.6%; roots and tubers had 97.7%; legumes and nuts 79.1%; fruits and vegetables 74.4% and so on. This means that food availability in the study area was not a problem so there is a tendency that people in the study area may be food secured if they have economic

access to the available food. The result further implies that the households in the study area might consume more of energy giving food items since they were the most available food items. Although, physical accessibility of food items is an indicator of households' food security, it does not solely guarantee households' food security because the availability might be at the aggregate level (Abdullahi *et. al.*, 2019).

Household affordability of food items

Table 5 below shows that more than 79.7% of households always afforded root and tuber food items, 74.4% fats/oils, 56.4% fruits and vegetables, and 52.9% legumes/nuts. The majority (74.4%) of the households could occasionally afford animal foods such as meat, fish and egg and 58.7% could occasionally afford cereals. This implies that households could not equally afford all the food items. They might be deficient in protein since they could not always afford protein producing food items such as animal products compared to carbohydrates

Adequacy of food items afforded by households

Table 6 shows that greater percentage of the households in the study areas were able to afford adequate root and tuber food items with percentage of 80.2%, fats/oils with 76.2% and legumes/nuts with 63.4%. While only few of the respondents (29.7%) could adequately afford animal food such as fish and meat and 48.8% fruits and vegetables. This implies that many households would be lacking nutrients obtainable from animal products, fruits and vegetables. Since roots and tubers had the greatest percentage, it means that people consumed more of carbohydrates than any other food items (Leroy *et. al.*, 2015).

Frequency of household weekly consumption of food items

Table 7 below reveals that the households in the study area frequently (5-7 times a week) consumed food items obtained from fats and oils such as red oil and groundnut oil with percentage of 65.1%, in the same vein, root and tuber such as garri, yam, cocoyam and potatoes with percentage of 57.1%. These energy-giving food items are with the means of 3.576 and 3.500 respectively. Also, households also consumed cereals and fruits/vegetables with means of 3.160 and 3.128 respectively. Other food items such as legumes and animal products which are sources of protein were not frequently consumed which could lead to nutrient deficiency

Households' food security level

Table 8 shows that 23.8% of the households had low food security level, 62.8% had average food security level while 13.4% had high food security level. It shows that most of the households that had average food security. It could be seen that majority of those that had average and high food security were from peri-urban and rural areas while more of households that had low food security were from urban. This means that more of those in rural and peri-urban could afford food better than some in the urban, so being in the city/urban does not really imply having high food security. This is line with Corinna and Francois (2014) who confirmed that rural households are more food secured than urban households.

Relationship between selected respondents' socio-economic characteristics and household food security level

Table 9 below shows that there is no significant relationship between marital status, primary occupation of households in the study area and their food security level. The p-value for marital status is 0.452 with chi-square value of 5.751

while p- value for primary occupation is 0.625 with chi-square value of 4.382. This implies that, the fact that households consisted of married husbands and wives did not mean that such households would be more food secured than households with single parents. Table 10 shows that only farm size and total income had significant relationship with food security level with p-value of 0.005 and 0.006 respectively at the 0.05 level of significance. This means that those with large farm size and much income could afford food better than those with small farm size and low income. This result is supported by Lawal and Adebo (2008) who posited that a lot of income generating activities can be diversified into to generate wealth and ensure food security within households, such activities include snail farming, rabbit rearing and management, grass cutter domestication and crops production and processing. This result is further supported by Nkomoki *et. al.* (2019) who found that increase in income and farm size increase household food security.

Difference in food security level of urban, peri-urban and rural households

The result of the Analysis of Variance (ANOVA) in Table 11 revealed a significant difference in food security level across the strata ($p=0.000$) at 0.05 level of significance. Thus, null hypothesis just stated above is rejected. There is a significant difference in food security levels of households in urban, peri-urban and rural of the study area. Table 12 shows Duncan separation of means, rural and peri-urban strata had the highest means of 82.4857 and 79.8261 respectively. This means that more of those in rural and peri-urban could afford food better than some in the urban regardless of either they used most of their income to secure food or not, so being in the city/urban does not really imply having high food security. This is line with Corinna and Francois (2014)

who confirmed that rural households are more food secure than urban households

CONCLUSION

Based on the empirical findings from this study, the following conclusions are drawn, most respondents were married. Households' farm size and income positively influenced households' food security level. Primary occupation had no significant relationship with food security level of the respondents. There was also significant difference in food security level among respondents within the strata of the study area. The study concluded that more of households in the rural and peri-urban areas of the study had high food security level compared to those in urban. It is recommended that a food policy, which encourages and recognizes farming as a respectable and lucrative occupation should be intensified. Government should provide farmers with subsidies so as to reduce the cost of production. There is need to also reduce rural-urban migration by integrating rural areas in the development programs so that required amenities would be available in the rural areas where most of food for urban people is produced, thus problem of food insecurity could be reduced. Training and opportunity should be given to people on how to diversify into different income generating activities because higher income ensures food security within households.

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Fruits and Vegetables	1	0.6	43	25
Animal products	1	0.6	52	30
Fats and Oils	1	0.6	10	5.3
Miscellaneous	6	3.5	43	25

Source: Field survey, 2017

Table 1: Distribution of households based on socioeconomic characteristics

Variables	F	%	\bar{X} & SD
Marital status			
Married	150	87.2	
Divorced	1	0.6	
Widowed	12	7.0	
Separate	9	5.2	
Household size			
			5.23±2.04
Low (2 – 3)	27	15.7	
Average (4 – 7)	127	73.8	
High (8 – 13)	18	10.5	
Income level (₦)			
			36,407.56±23,208.52
Very low income (7000 – 13,199)	2	1.2	
Low Income (13,200 – 36,408)	110	64.0	
High income (36,409 – 59,616)	52	30.2	
Very high income (59,617 – 250,000)	8	4.7	

Source: Field survey, 2017

Table 2: Distribution of household heads by primary occupation

Food Items	Frequency of food items consumption								Means
	Don't eat at all		1-2 Times		3-4 Times		5-7 Times		
	F	%	F	%	F	%	F	%	
Cereals	0	0.0	28	16.3	85	49.4	59	34.3	3.160
Roots and Tubers	0	0.0	12	7.0	62	36.0	98	57.0	3.500
Legumes and Nuts	0	0.0	41	23.8	97	56.4	34	19.8	2.959
Fruits and Vegetables	0	0.0	29	16.9	92	53.5	21	29.7	3.128
Animals food	0	0.0	62	36.0	74	43.0	36	20.9	2.849
Fats and Oils	0	0.0	13	7.6	47	27.3	112	65.1	3.576
Miscellaneous	27	15.7	74	43.0	43	25.0	28	16.3	2.419

Strata	Primary occupation								Total	
	Farming		Civil service		Trading		Personal handwork		F	%
	F	%	F	%	F	%	F	%		
Urban	16	9.3	29	16.9	10	5.8	13	7.6	68	39.5
Peri-urban	22	12.8	24	14.0	15	8.7	8	4.7	69	40.1
Rural	14	8.1	7	4.1	2	1.2	12	7.0	35	20.4
Total	52	30.2	60	34.9	27	15.7	33	19.2	172	100

Source: Field survey, 2017

Table 3: Distribution of respondents based on their farm size

Strata	Farm size								Total	
	Nil		Small size (0.02-0.88ha)		Average size		Big size			
	F	%	F	%	F	%	F	%		
Urban	24	14.0	20	11.6	20	11.6	4	2.3	68	39.5
Peri-urban	13	7.6	29	16.9	19	11.0	8	4.7	69	40.1
Rural	1	0.6	10	5.8	60	34.3	3	1.7	35	20.4
Total	38	22.1	59	34.3	60	34.9	15	8.7	172	100.0

Mean = 1.24, Std. Dev. = 1.36
Source: Field survey, 2017

Table 4: Distribution of food availability in the study area.

Food Items	Never available	
	F	%
Cereals	1	0.6
Roots and Tubers	1	0.6
Legumes and Nuts	1	0.6

Table 5: Distribution of households based on their affordability of food items.

Food items	Never affordable		Occasionally affordable
	F	%	
Cereals	1	0.6	101
Roots and Tubers	0	0.0	35
Legumes and Nuts	0	0.0	81
Fruits and Vegetables	1	0.6	74
Animal products	5	2.9	128
Fats and Oils	0	0.0	44
Miscellaneous	26	15.1	117

Source: Field survey, 2017

Table 6: Households distribution according to adequacy of food items afforded

Food items	Adequacy		Occasionally adequate	
	F	%	F	%
Cereals	3	1.7	88	51.2
Roots and Tubers	1	0.6	33	19.2

Table 7: Distribution of households on the basis of frequency of weekly consumption of food items.

Source: Field survey, 2017

Table 8: Distribution of respondents in food security level

Strata	Food security level				Total	
	F	%	F	%		
Urban	20	11.6	4	2.3	68	39.5
Peri-urban	19	11.0	8	4.7	69	40.1
Rural	21	12.2	3	1.7	35	20.4
Total	60	34.9	15	8.7	172	100.0
High (55 – 63)	6	3.5	9	5.2	5.2	
Total	68	39.5	69	40.1		

Source: Field survey, 2017

Table 9: Chi-square (χ²) values for variables relationship

Occasionally available socioeconomic characteristics	Statistical Tool	Degree of freedom	Always available P-value	Decision
Marital status	5.8 χ ²	6	161.5751	.452 Not significant
Primary occupation	20.3 χ ²	6	136.5751	.625 Not significant

Source: Field survey, 2017

Table 10: Pearson correlation (r) values for some variables

Socio-economic characteristics	Statistical tool	Value	p-value	Decision
Household size	R	.119	.111	Not significant
Age	R	-.046	.542	Not significant
Farm size	R	.214	.005	Significant
Total income	r	.210	.006	Significant

Source: Field survey, 2017

Table 11: Analysis of Variance (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	827.151	2	413.575	11.749	.000
Within Groups	5948.774	169	35.200		
Total	6775.924	171			

Source: Field survey, 2017

Table 12: Duncan table of separation of means in food security status

Strata	N	Subset for alpha = 0.05		
		1	2	3
Urban	68	76.7059		
Peri-urban	69		79.8261	
Rural	35			82.4857

Source: Field survey, 2017