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FOOD INSECURITY STATUS OF RURAL MICROFINANCE HOUSEHOLDS IN EKITI STATE, NIGERIA

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Abstract. Food insecurity remains a serious threat to development in developing countries globally. Several studies have been conducted on food insecurity. However, none of these studies have focused on the relationship between microfinance households' food security status and the attributes of the microcredit they accessed. Therefore, this study was carried out to bridge this gap by providing relevant information in this regard. The paper therefore presents a food insecurity profile of rural microcredit households in Ekiti State, Nigeria. A multi-stage sampling technique was used to select 386 households for this study. Data collection was carried out using a well-structured questionnaire. Descriptive statistics and Foster, Greer and Thorbecke (FGT) food security index were used to achieve the study objectives. The findings revealed that the average age of a rural microcredit household head was 47.28 years, while the average household size was 7 people. Average credit borrowed by the respondents was about N78,012.01. It was further revealed that average monthly food expenditure per capita was N3,108.41 from which a food security line of ₦2,072.27 was determined. Based on the estimated food security line, 62% and 38% of the respondents were classified as food secure and food insecure, respectively. Furthermore, the study showed that food insecurity incidence was most prevalent among respondents that were over 60 years, as 86% of them were food insecure. The results further showed that respondents with no formal education were more food insecure than their counterparts with formal education as 78% of them were food insecure. Also, those with more than 12 people in their households showed higher incidence of food insecurity, as 90% of them are food insecure. Furthermore, respondents without microcredit facility exhibited higher food insecurity incidence than those with microcredit facility, as 64% of them were food insecure. The paper concludes that food insecurity is very rife in the study area. Therefore, the study suggests that efforts should be directed towards acquisition of basic education which could enhance the earning potentials of respondents and provision of social security services. Coupled with an intensive campaign on birth control and family planning, this could enhance respondents' access to microcredit facilities and invariably lower the food insecurity situation in the study area.

Keywords: food security, food security incidence, Nigeria, rural households, severity

INTRODUCTION

Notable among the challenges of the developing countries including Nigeria is food insecurity. Food security connotes producing food that will go round every citizen in terms of quantity and quality as well as having reliable and unhindered access to a sufficient quantity of affordable nutritious food (Olukunle, 2021; Akinyele, 2019). Food insecurity exists when people lack access to a sufficient amount of safe and nutritious food for normal growth and development and an active and healthy life (Amos, 2018). In other words, FAO (2015) asserts that the absence of any of the food security dimensions, namely, food availability, access, utilization and stability implied in the foregoing food security definition indicates food insecurity (Olukunle, 2021). A number of

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factors have been posited for food insecurity in Nigeria. For instance, Olukunle (2021) linked factors such as: poverty, mechanization of food production, processing, storage, distribution processes, conflict, climate change, economic downturns, high cost of healthy diets and high level of inequality to food insecurity.

Recent statistics indicate that more than 53 million (about 26%) Nigerians are hungry (Olukunle, 2021). The hunger may be linked to their inability to engage in income generating activities because they lack startup capital and/or access to credit for production due to their unbankable nature. The roles of credit in production/entrepreneurial activities have been variously documented (Islam, 2020; Adewale et al., 2022). This inability of potential entrepreneurs to access productive credit from the conventional credit markets led to an innovative arrangement of group lending that relies on social collateral against physical collateral. This innovative credit delivery arrangement motivated the formation of microcredit groups everywhere, including the study area (Ekiti-state).

Successive governments at one time or another have keyed into some regional or sub-regional food security intervention programmes. The relatively recent food security policy interventions according to Amos (2018) include: Africa Regional nutrition strategy 2015–1025, conditions for African rice development programmes, ECOWAS zero hunger initiative, food security support programme, agricultural transformation agenda, e-wallet mechanism, among others. The formation of the micro-credit groups makes potential credit beneficiaries stand a better chance of accessing credit from any of the credit sources (government, NGOs, microfinance banks etc.). The innovative credit arrangement has been serving as a platform for credit institutions to reach out to the unbankable potential entrepreneurs in terms of credit disbursement. However, World Bank (2014) noted that the momentum generated towards upscaling food and nutrition security with these interventions is yet to produce a desirable result. Against this background, this study examined the food security profile of rural microfinance households in Ekiti-state, Nigeria. Several studies have been conducted on food security/insecurity (Salau, 2020; Akukwe, 2020; Leisner, 2020; Oluwatayo et al., 2021; Erokhin and Gao, 2020; Fikire and Zegeye, 2022; Wudil et al., 2023); however, none of these studies examined the relationship between microfinance households' food security status and the peculiarity of the microcredit they accessed. Therefore, this study was carried out to bridge this literature gap by providing relevant information in this regard.

Examining the food security profile of the respondents could help in identifying variables that have important policy implications which can be used in improving the existing food security policies in Nigeria.

RESEARCH METHODOLOGY

Study area

The study was carried out in Ekiti state, Nigeria (Fig. 1). It lies in the south-west of Nigeria. It is located between longitudes 40°51′ and 50°451′ east of the Greenwich meridian and latitudes 70°151′ and 80°51′ north of the equator. Ekiti state is located south of Kwara and Kogi State, East of Osun State and bounded by Ondo State in the east and in the south, with a total land Area of 5887.890sq km (Olajide, 2008). The state was created out of Ondo state in October 1, 1996 and has its capital located in Ado-Ekiti. It has sixteen Local Government Areas. Ekiti state is an agrarian economy with food crop production providing employment and income for more than 75% of the population.

Fig. 1. Map of Ekiti State
Source: https://www.Google map of Ekiti State – Google Search, 2023

Sampling technique

Ekiti state has three agricultural development project (ADP) zones at Aramoko, Ado and Ikole Ekiti, and the sample selection of microcredit facilities was based on the population of these facilities to ensure proper

representation. In each ADP zone, three local government areas (LGAs) were randomly selected. This was necessary for rural representation of the household of the micro credit groups.

At the next stage, there was a random selection of micro credit groups in each of the selected local government areas depending on the number in each LGA. Hence, the number of microcredit groups chosen is a function of the number of microcredit groups available in a particular local government area (probability proportionate to size). The proportionality factor used in the selection of microcredit groups is stated as:

$$X_i = \frac{n}{N \cdot 30}$$

Where

X_i = number of microcredit groups sampled from a local government

n = number of microcredit groups in the particular local government area

N = total number of micro credit in all the local government areas

The desired total number of microcredit groups is 30.

The last stage of sampling involved the random selection of households in each of the selected microcredit groups. In all, a total of four hundred and twenty (420) microcredit households were interviewed (see Table 1). Out of the total of four hundred and twenty questionnaires distributed, only three hundred and eighty six (386) have meaningful information for analysis.

Data collection

This section presents the type of data collected for the study and the instrument used to collect the data. A structured questionnaire and interview schedule were used to gather primary data that are relevant to accomplish the objectives of this study. Information such as: household consumption expenditure on the following food items: roots and tuber, cereals, protein, vegetable, fruits, fats/oils, beverages, condiment and spices and legumes. Other foods were also collected. Other information collected includes: income of heads of households, amount of credit obtained by households, source of credit and demographic characteristics of respondents. Also, secondary data on microcredit groups in Ekiti state were collected from the Poverty Alleviation Programme office in Ado-ekiti.

ANALYSIS OF DATA

Derivation of food security line

To capture all of the households' food expenditure, this study followed Kennedy et al. (2010) in categorizing

Table 1. Sampling procedure for the selection of microfinance households

Senatorial District	LGA	Villages	Population of micro credit group	No of sampled micro credit group	No of questionnaire distributed	No of questionnaire retrieved and completely filled
Ekiti North	Ido/Osi	Ora, Ipere	21	2	28	28
	Ikole	Itapaji, Odo-oro	26	3	42	37
	Moba	Erinmope, Igogo	39	5	70	53
Ekiti South	Ikere	Agamo, Ayede	25	3	42	42
	Gboyin	Agbado, Imesi	26	3	42	39
	Ekiti East	Ilasa, Isinbode	18	2	28	28
Ekiti Central	Ijero	Ayegunle, Ijunrin	26	3	42	42
	Ekiti West	Erio, Ipele	22	3	42	42
	Ado	Ajebamidel, Araromi	50	6	84	75
Total			253	30	420	386

Source: computed from field survey, 2022.

food consumed by the households into groups. Thereafter, 3-day memory recall information (data) on households' expenditure on each of these food groups was collected. This was followed by calculating the average daily expenditure of each household on each of the food groups. The resulting household's average daily food expenditure was used to determine the food security line as carried out by Omonoma and Agoi (2007) where total food expenditure was expressed in per capita term to adjust for household size by dividing each household's total monthly food expenditure by household size.

$$\textit{per capita food expenditure} = \frac{\textit{total household monthly food expenditure}}{\textit{household}} \quad (1)$$

The mean per capita household food expenditure (MPCHFE) is calculated thus:

$$\frac{\textit{total per capita household monthly food expenditure}}{\textit{total number of households}} \quad (2)$$

The relative food security line was constructed based on the MPCHFE of the sampled respondents for each household group. Hence, food insecure and food secure were defined as:

Food insecure household = household food expenditure that is less than 2/3 MPCHFE

Food secure household = household food expenditure that is greater than or equal to 2/3 MPCHFE

Foster-Greer-Thorbecke food insecurity (FGT) index

The study adopted Foster, Greer and Thorbecke (1984) approach to estimate the incidence, depth and severity of food insecurity in the study area. The Foster-Greer-Thorbecke (FGT) index is a generalized poverty measure developed by Erik Thorbecke, Joel Greer and James Foster. It considers the inequality among the poor and allows one to vary the amount of weight on income levels when calculating poverty among households in a country. The reason for using FGT is due to its decomposability of the overall population into sub groups, which allows for comparison.

It is expressed as:

$$P_\alpha = \frac{1}{n}\sum_{i=1} q\left[\frac{z-y}{z}\right]^\alpha \quad (3)$$

where:

y – per capita household expenditure
z – food insecurity line
n – total population
q – population of the food secure
P_α – food insecurity index.

When $\alpha = 0$, 1 and 2, it measures the incidence, depth and severity respectively. α is a measure of food insecurity aversion.

Table 2. Socioeconomic characteristics of households (respondents)

Characteristics	%	Mean
Gender		
Female	37.05	
Male	62.95	
Total	100	
Age		47.28
21–30	7.77	
31–40	15.29	
41–50	35.75	
51–60	31.35	
>60	9.85	
Total	100	
Formal education (years)		6.78
0	31.35	
1–6	27.46	
7–12	44.75	
>12	20.21	
Total	100	
Household size		7.22
1–4	15.80	
5–8	51.51	
9–12	21.24	
>12	5.44	
Total	100	
Primary occupation		
Farming	42.75	
Non-farming	57.25	
Total	100	

Source: computed from field survey, 2022.

RESULTS AND DISCUSSION

Table 2 presents distribution of household characteristics in percentages. The result shows that 62.95% were males, while 37.05 were females. With regards to age, only 9.85% of the respondents were over 60 years old, while the remaining 90.15% were between 21 and 60 years. This implies that the majority of the respondents are in their active and economically productive ages. In terms of years of formal education, the distribution revealed that (44.75%) of the respondents acquired between 7 and 12 years of formal education, while 20.21% of them acquired more than 12 years of formal education. The average years of formal education of the respondents as indicated on table 2 was 6.78 years. This implies that they would be able to take advantage of opportunities that are inherent in education in order to promote their food security status. Going by household size, more than half (57.51%) of the respondents have a household size between 5 and 8 members while only 15.80% of them are households of 1 to 4 members. The average size of respondents' households was 7 people. This implies that a household's size in the study area is large and may have an adverse effect on available household resources. With respect to the primary occupation of the respondents, more of them (57.25%) are engaged in farming, while the remaining 42.75% are non-farmers. This underscores the importance of farming in the study area.

Table 3. Distribution of respondents by micro-credit borrowed (harnessed)

Micro-credit (₦)	%	Mean
≤30,000	14.24	₦78,012.01
30,000–60,000	33.43	
60,000–90,000	29.07	
90,000–120,000	16.28	
120,000–150,000	4.65	
>150,000	2.33	
Total	100	

Source: computed from field survey, 2022.

Table 3 presents the distribution of households based on the amount of credit facilities harnessed. The result shows that the highest percentage (33.43%) of the respondents borrowed N30,000–N60,000, while only a few (2.33%) of them were able to borrow N150,000. The distribution further revealed that the average micro-credit borrowed was ₦78,012.01. This implies that respondents would be able to invest in income-generating activities with the hope that the proceeds of the investment would enhance access to food.

Table 4 presents the mean monthly per capita food expenditure (MMPCFE) of households and the

Table 4. Mean monthly per capita food expenditure

Food group	FS	% of food group	FIS	% of food group	All respondents	% of food group
Roots and tuber	1,462.06	35	861.47	62	1,231.79	39
Cereals	1,044.33	25	180.63	13	713.17	23
Vegetables	167.09	4	55.58	4	124.33	4
Fruits	41.77	1	6.95	1	28.42	1
Fat & oil	208.86	5	69.467	5	155.42	5
Beverages	208.86	5	27.79	2	139.43	5
Condiments	417.73	10	69.47	5	284.20	9
Legumes	419.27	10	85.09	6	287.76	9
Others	207.34	5	33.02	2	143.88	5
Total	4,177.32	100	1 389.47	100	3,108.40	100
Food security line					2,072.27	

Source: computed from field survey, 2022.

determination of the food security line. Surprisingly, the results showed that food insecure households spent 62% of their total MMPCFE on roots and tuber, while the corresponding percentage for the food secured is 35%. The result also showed that well above half (62.57%) of the respondents' (pooled data) total MMPCFE was spent on carbohydrates (since roots and tuber and cereals can be categorized as carbohydrates). Surprisingly too, both the food secure and the food insecure households spent less than 1% (0.9% and 5%, respectively) of MMPCFE on fruits despite the abundance and relatively cheap prices of fruits in the study (rural) area. This might be due to a lack of knowledge regarding nutritional education. This result has serious implications for food security since the condition for food security requires consumption of food in terms of quantity, quality and balancing the food groups consumed. MMPCFE (pooled data) on vegetables, fruits, oil, condiments and spices meat, fish and egg, beverages and legumes was N124.33 (4%), N28.42. (0.91%) N139.43 (4.49%), N155.42 (5%), N296.90 (9.14%) and N338.56 (9.26%), respectively. MMPCFE on other food items was N143.88 (4.63%). The total (pooled data) MMPCFE was N3108.40 from which a food security line of 2072.27 was derived. Based on the food security line, 38% of the households are considered food insecure, while the remaining 62% are food secure.

Table 5 presents rural food insecurity profile by socio-economic characteristics. With respect to the ages of the respondents, food insecurity incidence increased down the group. It was most prevalent (86%) among people whose ages are above 60 years. For food insecurity depth and severity, no pattern was observed. However, while food insecurity depth was 40% and most pronounced among respondents that are over 60 years, food insecurity was most severe (22%) among respondents aged between 41 and 50 years old. This might be due to the fact that as some of them advance in age, their productivity and income decline. This result is consistent with Omonona and Agoi (2007). In the case of years of formal education of the respondents, food insecurity incidence has an inverse relationship with years of formal education. It is most prevalent (78%) among respondents who have no formal education. In term of food insecurity depth, the same pattern as incidence was observed across the group. However, going by the severity, food insecurity was most severe (30%) among the respondents who did not have formal education. This may be because of many opportunities that are associated with education. The higher the level of one's education the more the income such person is likely to earn. This result agrees with Babatunde et al. (2007). With respect to household size, food insecurity incidence has a direct relationship with household size i.e. it increases as household size increases. It is most prevalent (90%) among households whose sizes are more than 12 members. The food insecurity depth and severity were highest (23% and 12%, respectively) among households whose members are between 9 and 12. This might be because a large household exerts pressure on available resources and consequently worsens household per capital resources/ welfare. The result is in agreement with Obayelu (2013).

Table 5. Rural food insecurity profile by socio-economic characteristics

Household characteristics	Definitions	Incidence	Depth	Severity
Age	21–30	0.17	0.15	0.13
	31–40	0.33	0.14	0.06
	41–50	0.50	0.33	0.22
	51–60	0.67	0.26	0.08
	>60	0.86	0.40	0.20
Formal education (years)	0	0.78	0.45	0.30
	1–6	0.63	0.24	0.09
	7–12	0.43	0.21	0.11
	>12	0.14	0.06	0.03
Household size	1–4	0.25	0.17	0.12
	5–8	0.44	0.08	0.02
	9–12	0.64	0.23	0.12
	>12	0.90	0.13	0.03

Source: computed from field survey, 2022.

Table 6 shows the food security status of households based on the credit sources they harnessed. The result revealed that 38%, 27%, 53%, 59% and 50% of the households that sourced their credit from a bank, cooperative, governmental agency, local money lenders and family and friends, respectively, were food insecure. However, 64% of households that did not use any credit were food insecure. The depth and severity of food insecurity

Table 6. Rural food insecurity profile by credit sources harnessed

Credit sources	Incidence	Depth	Severity
Banks	0.38	0.11	0.05
Cooperative society	0.27	0.07	0.03
Government	0.53	0.15	0.06
Agency local money lenders	0.59	0.19	0.09
Family/friends	0.50	0.28	0.17
Others	0.64	0.37	0.23

Source: computed from field survey, 2022.

showed that households that did not use credit have the highest (37% and 23%, respectively) values while cooperative credit households have the least (7% and 3%, respectively).

CONCLUSION AND RECOMMENDATIONS

The study examined the food security profile of microcredit rural households in Ekiti-state, Nigeria. Food security line and three measures of food insecurity were used in determining the food security status and the degree of food insecurity of the respondents in the study area. Sixty-two percent (62%) of the respondents are food secure. However, food insecurity was found to be prevalent among respondents who are over 60 years old, and those with no formal education and respondents with more than 12 household members. Furthermore, respondents that did not harness any credit source have higher incidence of food insecurity, depth and severity than those harnessing any of the credit sources. Based on the findings of this study, the study recommends that efforts should be intensified at building the capacity of respondents through education in order to enhance the earning potentials of the respondents. Awareness on birth control and family planning methods should also be prioritized by the government and non-governmental organizations since increased household size reduces income per capital, which aggravates food insecurity. It is also recommended that social security services and income redistribution programmes in favour of the poor and vulnerable members of society should be considered by the government as well.

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