

Towards assuring households' food security in rural Nigeria: Have cooperatives got any place?

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Abstract: The place of cooperatives in the lives of rural households in Nigeria as is the case in many developing countries of the world can not be overemphasized. This is attributable to the fact that cooperative has been used as a veritable strategy to meeting income and production shortfalls especially among farming households. Again, cooperative provides an easy and well-accessible source of credit to meeting households' obligations with little or no collateral requirements and the stringent conditions often attached to loan acquisition from the formal financial institutions. The results presented here rely on data collected from a random sample of 292 respondents in Ekiti State, Nigeria using well-structured questionnaire. Data were analysed using descriptive statistics, dietary diversity index measures and probit model. Analysis of results indicates that mean age of respondents is 53 years with average household size of 8. Respondents' distribution by gender reveals that there are more male-headed households than female-headed households with about 37 percent and 52 percent of the former and the latter having no formal education respectively. However, respondents' distribution by food security status revealed that there are more food-insecure male-headed households than female-headed households. This is attributable to the fact that in many of the female-headed households, incomes are usually pooled to meet households' needs. Moreover, the results of the probit analysis employed reveals that respondents belonging to cooperatives are more food-secured than those not belonging to cooperatives. Other determinants of food security status among respondents in the study area include age, marital status, gender, educational level, household size and income. While the coefficient of education is positively related to respondents' food security status that of household size is negatively related to it. In other words, the higher the educational level of respondents, the more food secured they are. It is therefore recommended that investment in human capital development should be intensified and that cooperative activities should be encouraged and assisted especially at their formative stages since this can serve as a hub to meeting the Millennium Development Goals (MDGs) of a well-informed society, reducing poverty by half and ending hunger.

Key words: Cooperatives, Food security, MDGs, Rural households, Ekiti State

INTRODUCTION

Developing countries across the globe have continued to grapple with a number of problems ranging from poverty, widening inequality, food insecurity, environmental hazards to insecurity of lives and properties just to mention

a few. Worse still, a number of measures put in place to cushion the effects of these problems by national governments of these countries have yielded little or no appreciable results. The resultant effect of these anomalies is manifested in the generally low level of well-being among the

inhabitants of these countries. However, participation in cooperatives activities has been described as a veritable way of reducing the impact of poverty on rural households. This is attributable to the fact that formal financial institutions (banks) have kept credit out of the reach of poor people (Osuntogun, 1975; Steel and Webster, 1989). Due to the dearth of banking services in rural areas, the Rural Banking Scheme was introduced in 1977 and Commercial Banks were required under it to open rural branches. A total of 776 rural branches were opened by commercial banks in three phases, which expired in 1989 (Balogun and Otu, 1991). These were complemented by the establishment of People's Bank of Nigeria (PBN) in 1989 and the private sector corollary of PBN is Community Banks (CBs) in 1990. The PBN and CBs were required to eliminate the problems of collateral lending, high interest rates, promotion of adequate spatial distribution of rural bank branches and to inculcate banking habits in rural areas. Though there was a significant improvement in banking services during these periods but the economic recession experienced in Nigeria in the late eighties and the resultant distress in the banking sector arouse increased interest in credit cooperatives. Thus, the loans from credit cooperatives were considered as a viable alternative to those from these formal financial institutions (Osayamwen, 1995).

Cooperatives therefore are people-based and value-based economic enterprises, founded upon well-defined ethics and principles, which include "concern for community". This dual (social + economic) character is unique to cooperatives, which makes them the ideal and in fact, the only vehicle to ensure equitable distribution. They have

the flexibility to fit into any political system while reinforcing national commitments for equity, democracy and good governance. Cooperatives are the only means to bring the poorest segments of society into an organisational fold as legally recognised entities, providing opportunities for employment and better income along with the needed support services (Prakash, 1999). Cooperatives are community-based, rooted in democracy, flexible, and have participatory involvement, which makes them well suited for community development (Gertler, 2001; Brown, 1997; Fields and Sigurdson, 1972; Craig, 1993). Co-operatives can provide locally needed services, employment, circulate money locally and contribute to a sense of community or social cohesion (Quarter, 1992). Often-marginalized segments of communities have the opportunity to be represented in co-operatives, where in many other organizations they are left out (Fairbairn, 1995; Bruce 2000). Co-operatives can also be seen as an agent for the process of community development. Essentially, all co-operatives are a form of community economic development. As Ketilson *et al.* (1992) states that, "the process of developing and sustaining a co-operative involves the processes of developing and promoting community spirit, identity and social organization".

The conclusion is that cooperatives and similar member-owned businesses are an extremely flexible form that can be adapted successfully to solve a variety of economic problems. However, their successful application requires a great deal of promotional effort, attention to detail, and investment in human capital. A key conclusion of the study is that self-help organisations by the poor is a pre-condition for successful anti-poverty work

and that cooperatives can play an important role in this struggle. The conclusions are that the development of cooperatives and similar self-help organisations is a vital aspect of participatory development, and that without some form of self-organisation by the poor wider development would not be sustainable. The poor must be involved in the ownership of the development process, through their own local, democratically controlled economic organisations. If the cooperative form did not exist, it would have to be invented (Johnston, 2003). It is in view of the foregoing that this paper explores the role played by cooperatives in ensuring households' food security in rural Nigeria.

LITERATURE REVIEW

Linking Food Security with the Informal Financial Sector

Food security is defined as access by all people, at all times to sufficient food for an active and healthy life and includes at a minimum the ready availability of nutritionally adequate and safe foods, and an assured ability to acquire acceptable foods in socially acceptable ways (FAO, 1997; Sarah, 2003). Access to adequate food is a necessary but not a sufficient condition for a healthy life; a number of other factors, such as the health and sanitation environment and household or public capacity to care for vulnerable members of the society, also come into play (von Braun *et al*, 1992). The inability of the poor to have access to needed food can be attributed to low income and food production. Food insecurity on the other hand connotes a temporary shortfall of adequate food for a proper diet (transitory food insecurity) as well as

a long term food shortage called chronic food insecurity.

Rural and urban households cope with transitory food insecurity by diversifying their source of income through selling assets, or by resorting to informal financial credits, savings and insurance markets. The informal financial sector now acts as the place of solace for the rural poor to augment their consumption needs and meet other basic necessities of life. For the attainment of food security in Nigeria, there is therefore no gainsaying the prime position of the informal financial sector in ensuring consumption smoothing all year round for the rural and urban poor. In achieving this, farmers operating on small scale and having scattered farms needs to be brought together and properly organised to take advantage of group actions as this will make them to be better equipped to take advantage of credit access from the informal sources. Again, government must play an active role through assisting the informal lenders either through education or creating an enabling environment for competition. Proper organization of the informal financial sector will reduce the pressure on the formal sectors like banks and other specialized institution.

Credit acquisition from the formal financial institutions poses some specific problem for the poor whether rural or urban. The poor have little or no collateral to offer. Savings and credit amounts and instalments are very small, raising transaction costs per unit (Zeller *et al*, 1997). The informal financial sector has been and will for a long time remain the last hope for credit acquisition for inhabitants of developing countries. This is because of the ease of obtaining loan from this source and the less arduous and formal

procedures involved in processing this loan and the collateral requirements. Informal financial sector in Nigeria is comprised mainly of village money lenders, agricultural produce merchants, friends, business associates and other sources of credit acquisition available to rural and urban dwellers apart from the organised/specialized formal financial sources.

The informal financial sector provides important savings, credit, insurance, and social security services to the poor. However, the weakness of this sector appear to be the lack of medium-and long-term loans for production and technology adoption and the lack of monetary savings options with real returns. Moreover, informal arrangements are often restricted to the community or district levels, and therefore may be seriously limited in their ability to pool covariate risks across regions and to mobilize capital and allocate it to different regions and economic sectors. Also, the high interest rate charged on loan obtained from the informal sector discourages investment in agriculture. This directly or indirectly impacts on the attainment of food security in most of these developing countries. On the part of the borrower, the risk of non-repayment of loan is very high because of the familiarity involved and this further limits the amount of loan disbursed from these sources. Informal financial sector has very important roles to play towards the attainment of food security. This is due to the fact that increased agricultural production (a precursor to food security) is only achievable when there is availability of credit to enhance increased production from subsistence agriculture to large scale agriculture. These and many more underscore

the important role that cooperatives play in ensuring food security.

METHODOLOGY

Study Area- This research work was conducted in Ekiti State, Nigeria. Ekiti State is one of the six states constituting the southwestern region of Nigeria. Although some parts of the region are fairly urbanized, the greater majority of the population still lives in rural areas. The State is situated entirely within the tropics. Ekiti State is chosen as the study area because of its prominent agricultural activities being the primary occupation of the inhabitants of the study area.

Data Sources and Sampling Technique- Primary data were collected through the aid of well-structured questionnaire. A multistage random sampling was employed in the study to select the respondents. Based on the division of the state into three senatorial districts; Ekiti North, Ekiti Central and Ekiti South, three Local Government Areas (LGAs) were selected from each district. This made a total of 9 LGAs out of the 16 LGAs in the state. 12 rural communities were later selected with at least one from each of the LGA based on probability proportionate to size and a total of 300 copies of questionnaire were administered out of which only 292 were used for the analysis.

Methods of Data Analysis- A number of statistical tools were employed in this study. These include; descriptive statistics, dietary diversity measures and probit model.

Descriptive Statistics- This was employed to summarize the socioeconomic characteristics of households in the study area. Tables, means, and frequencies were used to summarize the data obtained.

Dietary Diversity Measures - This measure was employed to categorise respondents into food secure and non-food secure group (Ruel, 2002; Hoddinott and Yohannes, 2002). In the survey, a number of food consumed by the respondents were identified. A food secure benchmark of 0.5 was determined based on how respondents are. In all, 15 common food items (with three food items belonging to each of the five classes of food) and water (as the 16th food item) were used and respondents with a benchmark ≥ 0.5 classified as food secure (1) while those with a benchmark < 0.5 were classified as food insecure (0).

Probit Model - This was employed to ascertain the relationship between respondents' food security status and their membership of cooperatives. Other households' socioeconomic variables were also included as regressors in the model. The dependent variable (Y) takes the value '1' for food secure and '0' otherwise.

The explicit form of the model is specified as:

The probit model (Gujarati, 1995) used was of the

$$\text{form: } \Pr (Y_i = 1) = F (X_i \beta)$$

Where, Y_i = Food security status (1 or 0)

X_1 - Age (years)

X_2 - Marital Status (married = 1, unmarried = 0)

X_3 - Educational Status (years)

X_4 - Household Size

X_5 - Gender (Male = 1, Female = 0)

X_6 - Membership of Cooperatives (Yes = 1, No = 0)

X_7 - Primary Occupation (Farming = 1, Non-farming = 0)

X_8 - Income (Naira)

$$\beta_1 - \beta_8 = \text{Coefficients}$$

$$\varepsilon_i = \text{Error term}$$

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Respondents- This involves a descriptive analysis of the various socioeconomic characteristics of respondents. Among the several features presented and discussed are: age, gender, marital status, household size, educational level, primary occupation and level of income.

Age of Respondents- As indicated in Table 1, the percentage of respondents with ages less than 30 is 2 percent. Those with age between 31 and 40 years are 10.3 percent, while those with age between 41 and 50 are 29.1 percent. Respondents with age between 51 and 60 years are 34.9 percent and those with age above 60 years are 23.6 percent. Thus, average age of the respondents is 53 years indicating that majority of the respondents are fairly old.

Table 1. Distribution of Respondents by Age

| Age | Frequency | Percentage |
|--------------|------------|------------|
| 5-30 | 6 | 2.1 |
| 31-40 | 30 | 10.3 |
| 41-50 | 85 | 29.1 |
| 51-60 | 102 | 34.9 |
| > 60 | 69 | 23.6 |
| Total | 292 | 100 |

Source: Field survey data, 2007

Marital Status of Respondents- Distribution of respondents by marital status as shown in Table 2 below indicates that over two-third (62.7 percent) of them are married 19.5 percent are single, 7.5 percent divorced and 10.3 percent widowed. This shows that most of the respondents in the study area are married.

Table 2. Distribution of Respondents by Marital Status

| Marital Status | Frequency | Percentage |
|----------------|------------|------------|
| Married | 183 | 62.7 |
| Single | 57 | 19.5 |
| Divorced | 22 | 7.5 |
| Widowed | 30 | 10.3 |
| Total | 292 | 100 |

Source: Field survey data, 2007

Educational Background of Respondents-

As revealed in Table 3, about one-third (36.6 percent) of the respondents are educated up to tertiary level. Those with primary and secondary education are 17.5 and 26.7 percents respectively. However those having no formal education are 19.2 percent. In general, respondents in the study area are fairly educated and one wonders while this does not reflect as such in the food security status and earning potential of the respondents.

Table 3. Distribution of Respondents by Educational Background

| Educational Level | Frequency | Percentage |
|---------------------|------------|------------|
| No formal education | 56 | 19.2 |
| Primary education | 51 | 17.5 |
| Secondary education | 78 | 26.7 |
| Tertiary education | 107 | 36.6 |
| Total | 292 | 100 |

Source: Field survey data, 2007

Household Size of Respondents-

Household size of respondents (Table 4) were grouped into those between 1-3, 4-6, 7-9, 10-12 and more than 12. The distribution shows that 14.4 percent have sizes ranging between 1-3, 27.8 percent are in the range of 4-6, 45.5 percent are in the range of 7-9, 6.8 percent within 10-12 and about 5.5 percent of the respondents have their size more than 12 members. Average household size of respondents is 8 indicating a fairly large size.

Table 4: Distribution of Respondents by Household Size

| Household Size | Frequency | Percentage |
|----------------|------------|------------|
| 1-3 | 42 | 14.4 |
| 4-6 | 81 | 27.8 |
| 7-9 | 133 | 45.5 |
| 10-12 | 20 | 6.8 |
| >12 | 16 | 5.5 |
| Total | 292 | 100 |

Source: Field survey data, 2007

Primary Occupation of Respondents-

Going by the distribution in Table 5, majority of the respondents are engaged in farming (35.6 percent). This is closely followed by those engaged by government (civil servants) with a percentage of 22.9 percent. Also a sizeable number of the respondents are self-employed (16.8 percent). In general, the distribution reveals the relative importance of farming as the main source of income for majority of the respondents in the study area.

Table 5: Distribution of respondents by primary occupation

| Primary Occupation | Frequency | Percentage |
|-----------------------|------------|------------|
| Farming | 104 | 35.6 |
| Government Employment | 67 | 22.9 |
| Trading | 35 | 12.0 |
| Private Firm | 37 | 12.7 |
| Crafts and Artisan | 49 | 16.8 |
| Total | 292 | 100 |

Source: Field survey data, 2007

Membership of Cooperatives-

Households' distribution by membership of cooperatives (Table 6) indicated that about 78 percent belong to one cooperative or the other while only about 22 percent do not belong to any cooperative. This is attributed to the understanding that people now have about easy accessibility to credit facility through cooperatives.

Table 6: Distribution of Respondents by Cooperative Membership

| Membership of Cooperative | Frequency | Percentage |
|---------------------------|------------|------------|
| Yes | 227 | 77.7 |
| No | 65 | 22.3 |
| Total | 292 | 100 |

Source: Field survey data, 2007

Income Level of Respondents-
Respondents' distribution by income level (Table 7) shows that majority of the respondents (42.8 percent) earn between N5, 001 and N10, 000. Those earning above N20, 000 are 16.1 percent. The distribution generally show that over three-quarter of the respondents earn below N20, 000 a month. This is very low considering the current cost of living in the study area and this further

explains why majority are into one form of cooperative activity or the other.

Table 7: Distribution of Respondents by Income Level

| Income Range (N) | Frequency | Percentage |
|------------------|------------|------------|
| ≤ 5000 | 38 | 13.0 |
| 5, 001 - 10,000 | 125 | 42.8 |
| 10,001 - 15,000 | 53 | 18.2 |
| 15,001 - 20,000 | 29 | 9.9 |
| > 20, 000 | 47 | 16.1 |
| Total | 292 | 100 |

Source: Field survey Data, 2007

Food Security Status of Respondents-
Respondents' categorisation based on dietary diversity measures revealed that there are more male-headed respondents than female-headed respondents. However, there are more food insecure male-headed households than female-headed household as depicted in Table 8.

Table 8. Distribution of Respondents by Food Security Status

| Gender | No of Respondents | No food secure | % food secure | No food insecure | % food insecure |
|--------------|-------------------|----------------|---------------|------------------|-----------------|
| Male | 168 | 73 | 43.5 | 95 | 56.5 |
| Female | 124 | 88 | 71.0 | 36 | 29.0 |
| Total | 292 | 161 | | 131 | |

Source: Field survey data, 2007

Determinants of Food Security in the Study Area- A number of variables were used as explanatory variables to explain the determinants of food security status of the respondents. This is shown in Table 9:

Table 9. Probit Results on Determinants of Food Security Status

| Variables | Coefficients |
|---|-------------------|
| constant | 1.576 (20.690) |
| Age (X ₁) | 0.271 (0.133) |
| Marital Status(X ₂) | 4.987 (15.359) |
| Educational Status (X ₃) | 12.637** (6.023) |
| Household Size (X ₄) | -3.080*** (0.906) |
| Gender (X ₅) | -0.437 (11.009) |
| Membership of Cooperative (X ₆) | 4.176*** (1.976) |
| Primary Occupation (X ₇) | -3.900 (6.014) |
| Income (X ₈) | 7.990 * (5.628) |

Source: Computed from field survey data, 2007

* = Coefficient significant at 10%
** = Coefficient significant at 5%
*** = Coefficient significant at 1%

Log likelihood = -26.3107, Number of Observations =292

Figures in parenthesis are standard errors.

The result in Table 9 revealed age, marital status, gender, educational level, household size, income and membership of cooperatives as major determinants of food security in the study area. The coefficient of age is positively related to food security indicating that food security status of respondent increases as their age increases. Also the coefficient of marital status is positive indicating that married respondents are more food secure than single, divorced or widowed respondents. This is attributable to the possibility of couples assisting each other to augment households' needs. Also, while the coefficient of education is positively related to respondents' food security status that of household size is negatively

related to it. In other words, the higher the educational level of respondents, the more food secured they are. Again, respondents with large household size are more prone to food insecurity than those with small size. This is because as household size increases, income per head decline and the less food secure the household becomes. Moreover, respondents belonging to cooperatives are more food-secured than those not belonging to cooperatives. This is as a result of the ease of those belonging to cooperatives having access to credit facility to meet households' needs.

SUMMARY

This study examined the role of cooperatives in ensuring households' food security in rural Nigeria. The study revealed that mean age of respondents is 53 years with a fairly large household size (average household size of 8 members). Respondents' distribution by gender showed that there are more male-headed households than their female-headed counterparts. However, there are more food-insecure male-headed households than female-headed households. Also, household's distribution by educational level indicates that majority of the respondents are educated up to tertiary level with only a few of them having no formal education. Meanwhile, respondents' categorisation by food security status using the dietary diversity measures revealed that there are more food insecure respondents than food secure respondents. The probit model reveals that respondents belonging to cooperatives are more food secure than those not belonging to cooperatives. Also, educated, small-sized and high income respondents are more food secure than

uneducated, large-sized and low income respondents.

CONCLUSION AND RECOMMENDATIONS

Going by the findings of this study, it is generally revealed that cooperatives play a very prominent and significant role towards ensuring food security in Ekiti State. This is attributable to the fact that those belonging to cooperatives being more food secure than those not belonging to any form of cooperative. Hence, it is recommended that:

- Cooperatives need to be properly guided and organised especially at their formative stages, having seen it as a veritable channel of meeting the needs of the poor majority in rural Human capital development through education should be made a priority having found that households with tertiary education are less prone to food insecurity.
- Public enlightenment on birth control and awareness on the need to have moderate household size should also be given urgent attention so as to curtail arbitrary population growth.

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