

Local Institutions in Poverty Reduction and Welfare in Farm Households in Core Igbo States of Nigeria

Emerole Christopher Ogbonna^{1*}, Anyiro Chidozie Onyedikachi¹ & Osondu Charles Kelechi¹

¹Department of Agricultural Economics and Extension, Abia State University, Umuahia Campus, PMB 7010, Umuahia, Abia State, Nigeria

*Correspondence: Emerole Christopher Ogbonna, Department of Agricultural Economics and Extension, Abia State University, Umuahia Campus, PMB 7010, Umuahia, Abia State, Nigeria. E-mail: emerolechriso@yahoo.co.uk

Abstract

This study examined local institutions, poverty status and welfare of farm households in core Igbo culture area of Nigeria. A total of 290 farm households were surveyed to identify and analyze the benefits of members who belonged to local institutions. Quarterly data collection lasted from February 2008 to December 2011. Data were analyzed using descriptive statistics, savings inequality indices, and regression technique. Education level among heads of farm households was high. Area of farm lands owned by households varied between < 1.0 and 5.0 hectares. Members of farm households belonged to local institutions and made social and economic contributions. Financial contributions were accessed as loans and were shared as savings by members at the end of the year. Status of poverty among the households was positively influenced by household size and negatively by gender, and level of education of head of household. Other negative determinants were number of livestock owned, manual operated transport assets, auto- transport assets, information communication assets, member of households holding administrative/elected position in local institutions, number of local institutions to which households belonged, number in a household that are active members in local institutions and volume of credit taken from the institutions. Inequality in savings by households in the institutions was moderate. To encourage growth and self reliance in farm business we recommended that farm households should join high performing local institutions that give opportunities of making reasonable savings in a year.

Keywords: Local Institution; Social capital; Savings inequality; Igbo Culture Area

1. Introduction

In Nigeria, with dominance of small-scale farmers decline observed in food production has partly been blamed on low investment in agriculture arising from unavailability of farm credit and farmers' inaccessibility to the available formal credit facilities (Olaitan, 2006; Emerole, 1996). Availability of credit is truly an issue that depends on supply factors of credit source and is quite different from accessibility to credit which is a demand driven concern. These among other issues bedeviling agriculture have provoked need to increase investment in agriculture through interventions that cushion the conditions including encouraging farmers to form groups or local institutions that enable them access micro loans from the institutions/groups or other formal lending financial sources. Operations of Nigeria's Family Economic Empowerment Programme (FEAP), Nigerian Agricultural Cooperatives and Rural Development Bank (NACRDB), National Fadama Programme, and National Investment Loans in Agriculture rely greatly on the liquidity risk

management power and power of interactions of these institutions in assuring identity and accountability to the members getting involved in such programmes.

A number of farmers come together with unifying interest of improving their occupational operations and hence livelihood and form a group or institution within their village or community levels. The motivation and the unifying interest amongst members in such group suggest like-mindedness and potential to work for and even help each other absorb variability in personal income and other economic shocks.

Many of these traditional institutions and groups are social, others are economic while yet a good number serve both social and economic purposes in livelihood of their members. When the groups are social groups, they help in creating social capital which among other assets includes institutional identity, relationships within, members' attitudes, and values that govern interactions among them as a people. These contribute to economic and social development of the communities (Grootaert & van Bastelaar, 2001). In Igbo culture area local institutions are characterized with some social dimensions like provision of food (Okeke, Eneobong, Uzuegbunam, Ozioko, & Kuhnlein, 2008), healthcare services, and day-care/primary education for children of members. Within these communities abound group cooperatives, group religious, group mutual associations, and group Fadama. The economic groups concern themselves with their mutual interest that revolve around solving problems of primary production and marketing of whatever is their products and services. These institutions help member households to invest for generating annual seed money for farms and/or other targeted projects such as performance of marriage ceremonies.

The percentage of people living on less than US\$1.25 daily (the poor) in Nigeria jumped from 47.2 percent in 1981 to 62.4 percent in 2005 (World Bank, 2009). Farm households in South Eastern part of the country are predominantly the poor Igbos, that manage their traditional occupation mainly on small scales. They earn poor incomes from farms and therefore have increasing drive to diversify income sources from off-farm works (Okafor, 1991; Okali, Okpara, & Olawoye, 2001; Emerole, Nwosu, Onyenweaku, & Ukoha, 2008). Reconciling poverty challenges with activities of these local institutions and groups, is the main thrust of this study which addressed the following specific objectives: (i) identification and classification of local institutions in traditional Igbo States of Nigeria; (ii) analyses of farm household's mean monthly contributions (savings) to local institutions in the study area; (iii) determination of factors that influence poverty status of farm households that are members of local institutions in the area. and (iv) analyses of annual savings inequality in local institutions and its influence on welfare of farm households'.

2. Methodology

2.1 Study Area

This study involved a survey of farm households in states located within the traditional Igbo culture states of Nigeria. These are namely Abia, Anambra, Ebonyi, Enugu, Imo, parts of Rivers and Delta States. Farming is the predominant traditional occupation of many households in this high population density (> 900 persons per square kilometer) region (Okafor, 1991; FRN, 2007). The region stretches from the rainforest vegetation of Rivers/Abia and Imo states to the derived savanna vegetative belt of Anambra/Delta states of Nigeria. Two distinct seasons (rain and dry) characterize the region. The rain season stretches from month of April to October and the dry season is experienced from month of November to March yearly. The topography is partly flat and rolling in many parts of Igbo Delta areas, (Imo and Abia States) and partly hilly and undulating in other parts (Enugu, and Anambra States). Flood and gully erosion are ecological problems ravaging the area as the soils are of the deep porous ferralithic type (Nweke & Winch, 1980; Ugwumba, Okoh, Ike,

Nnabuife, & Orji, 2010). Prominent Rivers draining the region are Niger, Imo, Anambra, Orashi, Aba, Azumini blue, and Cross River.

2.2 Sampling Procedures

In selecting respondent households, three-stage random sampling technique was adopted. In the first stage of the sampling, three states out of the five were randomly selected. The states selected were Abia, Anambra and Imo states. Abia and Imo States each have three agricultural zones; with Anambra state having four agricultural zones. Thus, ten agricultural zones were involved in this survey. The agricultural zones are administratively made up of Local Government Areas (LGAs). Abia State has seventeen (17) LGAs; Anambra State has twenty one (21) LGAs; and Imo State has twenty seven (27) LGAs. These gave a total of sixty five (65) LGAs in the ten respondent agricultural zones of (Aba, Umuahia, and Ohafia in Abia State; Owerri, Orlu and Okigwe in Imo State; Onitsha, Ihiala, Aguata, Anambra and Awka in Anambra State). In the second stage, one agrarian community was chosen from each agricultural zone. The communities are Umuekechi Asa from Aba zone, Ndioro from Umuahia zone, Eluama Isuikwuato from Ohafia zone of Abia State; Ohaji from Owerri zone, Ehime Mbanjo from Okigwe zone and Nkume from Orlu zone of Imo State; Ogbaru from Onitsha zone, Otuocha from Anambra zone, Okija from Ihiala zone and Agulu from Awka zone of Anambra State. In the third stage, twenty nine farm households were chosen at random from each of the selected communities, giving a sample of two hundred and ninety (290) farm households involved in this study. Thus 87 farm households were chosen from each of Abia and Imo States, and 116 farm households were chosen from Anambra State, reflecting the number of Agricultural zones in each state. A household was recognized as an economic unit consisting of a group of persons who live in the same dwelling and dine together for at least 3 of the 12 months in a year. This concept is in line with the definition put forward by De Janvry and Sadoulet (2001) in their study of income strategies amongst rural households in Mexico.

2.3 Data Collection

The chosen households were visited at the end of each quarter of the year with a structured interview schedule to collect primary data on consumption expenditure, household size, membership to local groups/institutions, status/position of participating member(s) in the groups/institutions, benefits (income) of members from groups/institutions, contribution of members to groups/institutions, and their perception of annual welfare issues for the years 2008 to 2011 cropping seasons. Six enumerators who administered the questionnaire by personal interview method were consistently used in generation of this panel information, two for each state collecting the same data from the same farm households using the same semi-structured questionnaire.

2.4 Analytical Model

The data collected were analyzed both descriptively and inferentially. Income inequality indices (Gini, Hoover, and Theil) and their welfare functions were computed and used to analyze the annual per capita savings/expenditure of households in each groups/institutions. The variables measured were annual number of members per institution (A_i); Savings (Income) per institution (E_i); Savings (income) per individual $\hat{e} = (A_i/E_i)$ and Relative Savings (income) Deviation $D_i = E_i/\sum E - A_i/\sum A$. With these, some indices were estimated which included:

$$\text{Gini Index } G = 1 - \sum G / \sum A / \sum E$$

$$\text{Hoover Index } H = \sum \text{absolute Relative income deviations} / 2$$

$$\text{Theil Index } T = \sum \ln(\hat{e}) * \text{absolute Relative Income} / 2$$

Welfare functions = Median per capita expenditure:

$$\text{Gini welfare } WG = \hat{e}_G * (1 - \text{Gini})$$

Hoover Welfare $W_H = \hat{e}_H * (1 - \text{Hoover})$

Theil Welfare $W_T = \hat{e}_T * (1 - \text{Theil})$... (Foster & Sen, 1997)

Rural head count ratio was used in determining incidence of poverty in the households.

Thus $H = q/n$

Where:

q = Number of poor farm households in each local institution;

n = Total number of households in each local institution;

and Poverty gap index $P_g = (P_L - I_A) / P_L$

P_L = Poverty line (Mean expenditure of the farm households);

I_A = Average income of Poor Farm households.

In investigating determinants of poverty status, a multivariate regression analysis using probit model was used. This helped to validate qualitative results with respect to household and social capital characteristics of the households belonging to local institutions. The variables were adapted from Donnelly-Roark, Quedraogo, and Ye (2001) who used poverty status as dependent variable (poor=1; non-poor =0) exposing the relevant household and group-based independent variables associated with the possibility of being poor. The probit model thus used was defined as follows:

$$Y_{ij} = \alpha_j + \beta_j \sum_{k=1}^s H_{ijs} + \varepsilon_{ij} \quad (1)$$

Where the H_{ijs} are vectors of s explanatory variables of the j th household, its derived social capital from local institutions and its village level characteristics; Y_{ij} is a vector of binary variables such that $Y_{ij}=1$ if the j th household exists below poverty line and 0 otherwise. Since Y_{ij} can only assume two different values for existence in this village setting, 1 or 0, the expected probability was defined as follows:

$$E(Y_{ij}) = E[\alpha_j + \beta_j \sum_{k=1}^s H_{ijs} + \varepsilon_{ij}] = \alpha_j + \beta_j \sum_{k=1}^s H_{ij} E(H_{ij}) \quad (2)$$

Equation (2) defines the proportion of households with characteristics (H_{ij}) likely to explain the poverty status and social capital derived from their groups/institutions in the villages. The empirical model was specified thus:

$$\begin{aligned} DEP_{ij} = & \beta_0 + \beta_1 \ln(GH_{ij}) + \beta_2 \ln(ED_{ij}) + \beta_3 \ln(HS_{ij}) + \beta_4 \ln(OC_{ij}) + \beta_5 \ln(FS_{ij}) + \beta_6 \ln(LS_{ij}) \\ & + \beta_7 \ln(AM_{ij}) + \beta_8 \ln(EP_{ij}) + \beta_9 \ln(NG_{ij}) + \beta_{10} \ln(CA_{ij}) + \beta_{11} \ln(BT_{ij}) \\ & + \beta_{12} \ln(RT_{ij}) + \beta_{13} \ln(MT_{ij}) + \varepsilon_{ij} \end{aligned} \quad (3)$$

Where variables are as defined in Table 1. The dependent variable is the poverty status of the household as defined in equation (1). The explanatory variables were continuous, binary or discrete in forms. It was hypothesized that a household escaping from poor would positively be influenced by: GH_{ij} , ED_{ij} ; FS_{ij} ; LS_{ij} ; AM_{ij} ; EP_{ij} ; CA_{ij} ; BT_{ij} ; RT_{ij} ; MT_{ij} and NG_{ij} ; but would negatively be influenced by: OC_{ij} ; and HS_{ij} .

Table 1. Description of Probit Analyzed Variables

| Variable | Type | Description |
|-------------------|------------|--|
| DEP _{ij} | Binary | 1 if the jth household is poor; 0 otherwise; |
| GH _{ij} | Binary | 1 if household headed by a male; 0 otherwise; |
| ED _{ij} | Continuous | Number of years of formal education; |
| HS _{ij} | Continuous | Household size - refers to number of persons living and feeding from same pot |
| OC _{ij} | Binary | 1 if household major occupation was farming; 0 otherwise; |
| FS _{ij} | Continuous | Size of farmland owned by the household in hectares; |
| LS _{ij} | Discrete | Number of owned livestock (Poultry, Sheep, Goats and Pigs); |
| AM _{ij} | Discrete | Number in household that are active members of local groups/institutions; |
| EP _{ij} | Binary | 1 if household member in a group/institution holds elective position; 0 otherwise; |
| NG _{ij} | Discrete | Number of local groups/institutions to which member(s) of household belong; |
| CA _{ij} | Continuous | Amount of credit obtained from groups/institutions for farming in Naira; |
| BT _{ij} | Binary | 1 if household owns bicycle and/or wheelbarrow or truck; 0 otherwise; |
| RT _{ij} | Binary | 1 if household owns radio/ Television; 0 otherwise; |
| MT _{ij} | Binary | 1 if household owns motored transportation (Car, pickup, motorcycle, tricycle); 0 otherwise; |

3. Results and Discussions

3.1 Socio-Economic Characteristics of Farm Households

The socio-economic characteristics of the respondent farm households in shown in Table 2. The table 2 showed size of farmland varied from one state to another in the area. Less than 15.00 percent of the farm households in Imo and Abia States cultivated up to 1.0 hectare annually. In Anambra state, the condition was more critical as 31.90% of the farm households cultivated less than 1.0 hectare per annum. Population density in this part of Nigeria is greater than 900 persons per square kilometer (Okigbo, 1991; FRN, 2007), such that the available farmland was usually fragmented amongst the indigenous households. However, cumulative of 85.06%, 68.10%, 87.36% of farm households cultivated at least 1.0 hectare of farmland annually in Abia, Anambra and Imo States respectively.

Household size of at most 6 persons was observed among 25.29% of the farm households in Abia State, 33.62% in Anambra State, and 36.78% in Imo State. In the same states, household size of at most 13 persons was observed among 56.32%, 54.31%, and 44.83% respondents respectively. Relatively larger sizes of at least 13 persons were observed among 18.39%, 12.07%, and 18.39% of households in Abia , Anambra and Imo States respectively.

Literacy level was quite high among heads of households in the area as only 8.05%, 14.66%, and 6.90% of them had no formal education in Abia, Anambra and Imo States respectively. Cumulatively, 32.18%, 32.76%, and 21.83% of heads of farm households attempted and/or completed primary education in Abia, Anambra and Imo States respectively. In like manner, 44.83%, 42.24% and 39.08% of the heads attempted and/or completed secondary schools in Abia, Anambra and Imo States respectively. As few as 3.45%, 1.72% and 9.20% of heads of farm households attempted tertiary education (Universities, Colleges of education, Polytechnics, and schools of professional studies), while as high as 11.49%, 8.62%, and 22.99% completed tertiary education in Abia, Anambra and Imo States respectively. A good proportion of highly educated persons headed farm households indicating that farming was not left under the control of poorly

Experimental Agriculture & Horticulture

educated individuals in the area. Education helps to improve farmer's capacity to use existing assets better (intimate knowledge of local environment) and create new assets and opportunities.

A large proportion of these farm households (68.97% in Abia, 60.34% in Anambra, and 73.56% in Imo States) were headed by males while the females headed farm households in the proportions of (31.03% in Abia, 39.66% in Anambra, and 26.44% in Imo States).

Table 2. Socio-economic characteristics of farm households in Abia, Anambra and Imo states of Nigeria 2008- 2011

| Variable | States | | | | | |
|---|--------------|------------|-----------------|------------|------------|------------|
| | Abia (n= 87) | | Anambra (n=116) | | Imo (n=87) | |
| | Freq. | Percentage | Freq. | Percentage | Freq. | Percentage |
| Annual Farm Size (Ha): | | | | | | |
| < 1.0 | 13 | 14.94 | 37 | 31.90 | 11 | 12.64 |
| 1.0 — 3.0 | 37 | 42.53 | 41 | 35.34 | 43 | 49.43 |
| 3.1 — 5.0 | 25 | 28.74 | 26 | 22.42 | 23 | 26.44 |
| > 5.0 | 12 | 13.79 | 12 | 10.34 | 10 | 11.49 |
| Household Size (Number): | | | | | | |
| 1 — 6 | 22 | 25.29 | 39 | 33.62 | 32 | 36.78 |
| 7 — 3 | 49 | 56.32 | 63 | 54.31 | 39 | 44.83 |
| > 13 | 16 | 18.39 | 14 | 12.07 | 16 | 18.39 |
| Level of Formal Education of Household head (years): | | | | | | |
| No formal Education | 07 | 8.05 | 17 | 14.66 | 06 | 6.90 |
| Primary School Education | 28 | 32.18 | 38 | 32.76 | 19 | 21.83 |
| Secondary School Education | 39 | 44.83 | 49 | 42.24 | 34 | 39.08 |
| Tertiary Institution Attempted | 13 | 14.94 | 12 | 10.34 | 28 | 32.19 |
| Household Headship: | | | | | | |
| Male-Headed | 60 | 68.97 | 70 | 60.34 | 64 | 73.56 |
| Female-Headed | 27 | 31.03 | 46 | 39.66 | 23 | 26.44 |

Source: Field Survey, 2008 – 2011

3.2 Identification, Classification and Investments in Local Institutions

Identification of institutions has been recognized as crucial since it is the starting point of endogenous development processes (CIKOD & UCC, 2004). Table 3 shows types and distribution of these institutions as observed amongst the Igbo dominated states of southeastern Nigeria. The local institutions as shown in Table 3 are religious meetings, NGOs, age grades, gender-based groups, Fadama groups and dance groups. Others are cooperative societies, Fadama groups, Hunters groups and trade associations.

Religious meetings embraced the largest proportion of the households' indicative of the fact that they are predominantly religious (Christians). As large as 89.66%, 68.97% and 90.80% of member households in Abia, Anambra and Imo States respectively had their members belonging to religious meetings. The local institution that embraced the least of household membership in the area was hunters' association involving 9.48%, 10.34% and 13.79% in Anambra, Abia and Imo States respectively. Gender-based, parents/Teachers', traders', associations, cooperative societies, and Fadama groups involved not less than 50.00% of members of the households sampled in the states. Household membership in the dance groups, age grades, and NGOs varied amongst the states. These variations reflected level of awareness, interests and cultural values attached to these local institutions in the states. Confirming this was the distribution of resource commitment in terms of number of meetings attended and time spent in meetings as well as the mean monthly cash savings in the institutions by the households. Household members attended religious meetings between 5 and 6 times, spending between 6 and 7 seven hours monthly on the average and saved between ₦12, 000.00 and ₦15, 000.00 every three months. Time and money invested in NGO meetings,

PTAs, and dance groups and traders' meetings were relatively small and varied greatly in the area. NGOs and PTAs are two institutions prevalent in the area but were not culturally traditional and cash contributions in them were mandatory and never regarded as savings.

Table 3. Types, distribution and cash savings in local institutions to which respondent's member households belong in southeastern states of Nigeria (2008-2011)

| State | Type of Local Institution | Number of Household in local institutions | Percentage (%) of sampled Households | Mean monthly Meetings Attended (Hours Spent) | Mean Quarterly Household Cash Savings (₦) |
|-------------------------|------------------------------|---|--------------------------------------|--|---|
| Abia (n=87)* | (i) Service-Based: | | | | |
| | Religious meetings | 78 | 89.66 | 5 (6.00) | 12,000.00 |
| | NGOs | 19 | 21.84 | 1 (3.00) | 1,500.00† |
| | Age grades | 54 | 62.07 | 2 (4.00) | 2,000.00 |
| | Gender-based | 73 | 83.91 | 2 (5.00) | 1,450.00 |
| | Dance groups | 22 | 25.29 | 1 (4.00) | 1,200.00 |
| | Parents/Teachers association | 68 | 78.16 | 1 (3.00) | 2,000.00† |
| | (ii) Production: | | | | |
| | Cooperative societies | 57 | 65.52 | 3 (6.00) | 3,000.00 |
| | Fadama groups | 73 | 83.91 | 2 (6.00) | 2,500.00 |
| | Hunters association | 09 | 10.34 | 4 (4.00) | 3,000.00 |
| | Trader associations | 76 | 87.36 | 2 (2.00) | 5,000.00 |
| Anambra (n=116)* | (i) Service-Based: | | | | |
| | Religious meetings | 80 | 68.97 | 6 (7.00) | 13,500.00 |
| | NGOs | 34 | 29.31 | 2 (4.00) | 2,500.00† |
| | Age grades | 33 | 28.45 | 1 (2.00) | 1,200.00 |
| | Gender-based | 76 | 65.52 | 1 (2.00) | 1,550.00 |
| | Dance groups | 42 | 36.21 | 2 (5.00) | 2,200.00 |
| | Parents/Teachers association | 69 | 59.48 | 1 (2.00) | 2,500.00† |
| | (ii) Production: | | | | |
| | Cooperative societies | 50 | 43.10 | 2 (4.00) | 4,500.00 |
| | Fadama groups | 62 | 53.45 | 3 (6.00) | 3,500.00 |
| | Hunters | 11 | 09.48 | 2 (3.00) | 2,500.00 |
| | Trader associations | 83 | 71.55 | 3 (3.00) | 9,000.00 |
| Imo (n=87)* | (i) Service-Based: | | | | |
| | Religious meetings | 79 | 90.80 | 6 (7.00) | 15,000.00 |
| | NGOs | 23 | 26.44 | 2 (4.00) | 3,200.00† |
| | Age grades | 14 | 16.09 | 1 (2.00) | 4,000.00 |
| | Gender-based | 71 | 81.61 | 1 (2.00) | 3,450.00 |
| | Dance groups | 25 | 90.80 | 2 (5.00) | 2,200.00 |
| | Parents/Teachers association | 72 | 82.76 | 1 (2.00) | 2,000.00† |
| | (ii) Production: | | | | |
| | Cooperative societies | 67 | 77.01 | 2 (4.00) | 2,300.00 |
| | Fadama groups | 78 | 89.66 | 3 (6.00) | 3,500.00 |
| | Hunters | 12 | 13.79 | 2 (3.00) | 2,100.00 |
| | Trader associations | 57 | 65.52 | 1 (2.00) | 6,000.00 |

Source: Field Survey, 2008 -2011; * Multiple responses observed; † Contributions to PTA and NGOs were not available as savings to members

Each of these institutions had internal rules governing behavior of their members and was type that created public goods (social capital) which, accumulated for use of people who are members overtime (Grootaert & van Bastelaar, 2001). The different types of the institutions performed different roles, and created different social networks. Social interactions in the institutions became capital from persistence of their effects both at structural and cognitive levels. Structural social capitals in them facilitated information sharing (eg. belonging to same profession, having common

Experimental Agriculture & Horticulture

interest); collective action and decision making (eg. synchronization of needs and their execution time) through established roles, social networks, and other social structures. Usually, these are supplemented by rules, procedures and precedents established by others who had done so in the past, making them traditional. Cognitive social capital here was their shared norms, values, trusts, attitudes, and belief being people from the same community that have enjoyed a common heritage. Members of these institutions invested resources (inputs- money, time, efforts) in the institutions and reaped benefits (outputs- identity, ties of reciprocal exchange, savings, and loans).

3.3 Poverty Status and Factors

Table 4. Types, distribution and poor households in local institutions in southeastern states of Nigeria (2008-2011)

| State | Type of Local Institution | Number of Household in local institutions | Households Below Poverty line | Mean Per Capita Daily Consumption (₦) |
|----------------------------|------------------------------|---|-------------------------------|---------------------------------------|
| Abia (n=87)* | (iii)Service-Based: | | | |
| | Religious meetings | 78 | 68 (87.18) | 186.5 |
| | NGOs | 19 | 07 (36.84) | 196.9 |
| | Age grades | 54 | 42 (77.78) | 163.7 |
| | Gender-based | 73 | 49 (67.12) | 154.1 |
| | Dance groups | 22 | 14 (63.64) | 153.8 |
| | Parents/Teachers association | 68 | 50 (73.53) | 262.4 |
| | (iv)Production: | | | |
| | Cooperative societies | 57 | 39 (68.42) | 107.5 |
| | Fadama groups | 73 | 51 (69.86) | 198.9 |
| Hunters association | 09 | 07 (77.78) | 134.9 | |
| Trader associations | 76 | 34 (44.74) | 212.7 | |
| Anambra (n=116)* | (iii)Service-Based: | | | |
| | Religious meetings | 80 | 70 (87.50) | 174.3 |
| | NGOs | 34 | 12 (35.29) | 198.7 |
| | Age grades | 33 | 19 (57.58) | 141.6 |
| | Gender-based | 76 | 56 (73.68) | 135.3 |
| | Dance groups | 42 | 39 (92.86) | 151.2 |
| | Parents/Teachers association | 69 | 47 (68.12) | 159.2 |
| | (iv)Production: | | | |
| | Cooperative societies | 50 | 37 (74.00) | 117.4 |
| | Fadama groups | 62 | 49 (79.03) | 186.4 |
| Hunters association | 11 | 08 (72.72) | 99.6 | |
| Trader associations | 83 | 56 (67.47) | 210.9 | |
| Imo (n=87)* | (iii)Service-Based: | | | |
| | Religious meetings | 79 | 60 (75.95) | 144.6 |
| | NGOs | 23 | 14 (60.87) | 199.9 |
| | Age grades | 14 | 10 (71.43) | 143.3 |
| | Gender-based | 71 | 60 (84.51) | 164.4 |
| | Dance groups | 25 | 19 (76.00) | 97.1 |
| | Parents/Teachers association | 72 | 58 (80.56) | 222.0 |
| | (iv)Production: | | | |
| | Cooperative societies | 67 | 51 (76.12) | 112.2 |
| | Fadama groups | 78 | 62 (79.49) | 188.7 |
| Hunters association | 12 | 09 (75.00) | 96.7 | |
| Trader associations | 57 | 11 (19.30) | 228.3 | |

Source: Field Survey, 2008 -2011; US\$1.00 ≈ ₦150.00; Figures in Parentheses are percentage poverty; * Multiple responses observed

Poverty or inability of a person in a household to live on at least US\$1.25 daily was prevalent in the study area at the time of this survey. Table 4 reveals distribution of poor households in the different local institutions to which they were members. The table 4 showed that quite a large proportion of farm households belonging to local institutions were poor and varied from one state to another in the region. It varied from 19.30% amongst traders association in Imo state to 92.86 amongst dance group in Anambra State. Within the states, poverty varied also. In Abia State, it varied between 36.84% of households with members belonging to Non-Governmental Organizations and 87.18% of households belonging to religious group meetings. In Anambra State, it varied between 35.29% of households in NGOs and 92.86% amongst households belonging to dance groups. In Imo State, it varied between 19.30% of households belonging to traders association and 84.51% of households belonging to gender-based institutions.

Thus, gender-based associations, religious group meetings, NGOs, dance groups, and traders associations had poverty vulnerable members in the area.

Table 5. Probit determinants of factors influencing poverty status among farm households that are members of local institutions in Core Igbo States in Nigeria

| Independent Variable | Probit estimator Coefficient | t-ratio |
|--|------------------------------|-----------|
| Constant | -2.63 | -6.1 *** |
| Male headed Households (GH _{ij}) | -1.77 | -58.2*** |
| Level of Education of H/H Head (ED _{ij}) | -0.06 | -3.40*** |
| Household Size (HS _{ij}) | 0.09 | 5.8 *** |
| Farming as main Occupation of head (OC _{ij}) | 0.0004 | 0.9 |
| Farm Size (Ha) (FS _{ij}) | 0.04 | 1.44 |
| Number of Livestock owned (LS _{ij}) | -0.08 | -12.3*** |
| Number of active H/Hs in Institution (AM _{ij}) | -11.90 | -2.5** |
| Members in admin/elected positions (EP _{ij}) | -0.05 | -10.53*** |
| Number of local institutions belonged (NG _{ij}) | -0.00016 | -2.59** |
| Amount of loan obtained from Institution (CA _{ij}) | -0.0016 | -2.46** |
| Manual transport Assets owned (BT _{ij}) | -1.499 | -10.38*** |
| Auto transport Assets owned (MT _{ij}) | -1.16 | -14.42*** |
| Information providing assets owned (RT _{ij}) | -1.56 | -47.05*** |
| Pseudo R ² | 73.0% | |
| Log-Likelihood | -68.654 | |

Source: Field Survey, 2008 = 2011; Dependent Variable = Poverty status: Poor=1; Non-Poor =0.

*** Significant at 1.0%; ** significant at 5.0%

Estimates of factors influencing poverty amongst households that formed members of local institutions are shown in Table 5. The table 5 revealed that 11 out of 13 independent variables significantly influenced the poverty status of farm households that belonged to local institutions in the study area. The only very highly significant ($P < 0.01$) positive variable was household size. Households with larger number of persons lived below poverty line. This was plausible, since having many mouths to be fed meant higher chances of converting most available household resources into consumption expenditure. The very highly significant ($P < 0.01$) negative variables were 7 in number and included: male headship of households, level of education of head of household, number of livestock owned, number of members holding administrative and/or elective positions in the institutions, ownership of manual transport assets (trucks, wheelbarrows, bicycles), ownership of auto transport assets (tricycles, motorcycles, pick-up vans, buses), and ownership of information communication assets (radios, television sets, computers with internet facilities). Other

Experimental Agriculture & Horticulture

significant ($P < 0.05$) negative variables were: number in a household that are active members of local institutions, number of local institutions to which members of a household belonged, and amount of credit obtained from local institutions by a household. These were equally plausible, since any increase in each of the variables will bring about a significant reduction in poverty status of the affected farm household in the area. By giving loans to members and encouraging savings, the local institutions are helping in reducing poverty.

3.4 Savings Inequality in Local Institutions

Contributory savings by members to the local institutions are often shared by contributors at the end of the year. They are wealth and in the short run a form of income to members. Like any other form of income or wealth, savings display a characteristic inequality and when considered as parts of a pool exert some welfare influences on the contributors. These inequalities as observed among the different local institutions are measured with savings indices and shown in Table 6.

The table 6 shows the inequality in the annual distribution of savings – an aspect of wealth of farm households who belonged to local institutions. The table 6 showed positive inequalities indices in the savings of farm households who are members of local institutions in all measures of Gini, Hoover, and Theil coefficients. The Gini coefficient of 0.8 compared very well with the Hoover coefficient of 0.7 for all the households saving in the local institutions. The Hoover index which showed the proportion of all the savings that would have to be redistributed to achieve a state of perfect equality indicated 80.00% for the local institutions in the area. The Theil index of 8.2 is relatively larger than the Hoover index 0.7 indicating that there was moderate inequality in distribution of savings among member farm households in these local institutions in the area.

Table 6. Annual savings inequality indices and welfare functions from local institutions in Core Igbo States of Nigeria

| Local Institution | *Members Per Institution | Savings Per Institution (₦) | Savings Per Household (₦) | Relative Savings Deviation | Inequality Indices | | |
|-----------------------|--------------------------|-----------------------------|---------------------------|----------------------------|-----------------------|--------------|---------------|
| | | | | | Gini | Hoover | Theil |
| Dance Group | 89 | 1,495,200 | 16,800 | 0.036 | 133,072,800 | 0.036 | 0.350 |
| Gender-based | 220 | 4,257,000 | 19,350 | 0.102 | 936,540,000 | 0.102 | 1.006 |
| Age grades | 101 | 2,181,600 | 21,600 | 0.052 | 220,341,600 | 0.052 | 0.519 |
| Hunters Groups | 32 | 729,600 | 22,800 | 0.018 | 23,347,200 | 0.018 | 0.181 |
| Fadama Groups | 213 | 6,070,500 | 28,500 | 0.146 | 1,293,016,500 | 0.146 | 1.498 |
| Cooperative Societies | 174 | 5,115,600 | 29,400 | 0.123 | 890,114,400 | 0.123 | 1.266 |
| Traders' Association | 216 | 12,960,000 | 60,000 | 0.312 | 2,799,360,000 | 0.312 | 3.433 |
| Religious meetings | 237 | 28,795,500 | 121,500 | 0.692 | 6,824,533,500 | 0.692 | 8.102 |
| Totals | 1,582 | 41,605,000 | 26,298.99 | | 13,120,326,000 | 1.481 | 16.355 |
| Inequality Measures | | | | | 0.8007 | 0.7405 | 8.178 |
| Welfare Function | | | | | 5,241.39 | 6,824.59 | -188.77 |

Source: Computed from Survey Data, 2011; * Multiple membership was observed

A review of decomposed savings per household showed higher savings associated with households belonging to religious meetings and traders associations compared to low savings seen with households belonging to dance groups and gender-based groups. Higher savings by households held

great potential for reducing poverty among member households in the institutions. The welfare implication is some slight feel of insecurity and heightening of competition, among relatively low savers while the highly large savers might be involved in abuse of property rights. The low savers can only invest lightly to push up economic growth but sluggishly.

4. Conclusions and Policy Implications

This study concludes as follows:

1. Members of farm households in core Igbo states of Nigeria belonged to local institutions, which enabled them interact socially and economically;
2. Each household had member (s) belonging to more than one local institution at a time;
3. Membership of a local institution in the area permitted households to make some contributions and generated social capital;
4. Many member farm households to the local institutions had their members living below poverty line;
5. Their poverty status was positively and significantly influenced only by their household size. Households with larger number of persons were more likely to have lived below poverty line.
6. Seven very highly significant ($P < 0.01$) negative variables influenced their poverty status. These included: male headship of households, level of education of head of household, number of livestock owned, number of members holding administrative and/or elective positions in the institutions, ownership of manual transport assets (trucks, wheelbarrows, bicycles), ownership of auto transport assets (tricycles, motorcycles, pick-up vans, buses), and ownership of information providing assets (radios, television sets, computers with internet facilities).
7. Three other significant ($P < 0.05$) negative variables were: number in a household that are active members in local institutions, number of local institutions to which a household belonged, and amount of credit obtained from local institutions by a household.
8. There was moderate inequality in the distribution of savings among member households in the local institutions in the area. The Theil index of 8.2 relative to smaller Hoover index of 0.7 among the groups confirmed this in the area.

We recommend that members of farm households should continue to interact with other households in some existing local institutions. This will enable them build trust, and enjoy benefits of social networks in discharging their farm production obligations. Since more savings should be encouraged among farm households to enable them make meaningful investments in agriculture, it is only rational that such households should join high performing local institutions that would give them opportunities of making reasonable savings in a year. This will encourage growth in their individual farm businesses and reduce their dependence on loans from outside.

References

- [1] CIKOD, & UCC (2004). *The Role Traditional Queens in Governance and Natural Resource Management*. University for Development Studies (UDS) and University of Cape Coast (UCC) Ghana , Cikod, Cecik.
- [2] De Janvry, A., & Sadoulet, E. (2001). Income Strategies among Rural Households in Mexico. The Role of off-farm Activities. *World Development*, 29(3), 467 – 480.

Experimental Agriculture & Horticulture

- [3] Donnelly-Roark, P., Quedraogo, K., & Ye, X. (2001). *Can Local Institutions Reduce Poverty? Rural Decentralization in Burkina Faso*. Environment and Social Development Unit. African Region. The World Bank. Working Paper Series 2677.
- [4] Emerole, C.O. (1996). *Demand for institutional Credit by Small-Scale Farmers in Nigeria: A Case Study of Nigerian Agricultural and Cooperatives Bank (NACB) in Abia State*. MSc. Thesis in Department of Agricultural Economics and Extension, Federal University of Technology Owerri, Nigeria.
- [5] Emerole, C. O., Nwosu, A. C., Onyenweaku, C. E., & Ukoha, O. O. (2008). Wage Differentials in Employments and Labour Supply Determinants in Smallholder Farm Households of Ikwuano, Abia State Nigeria. *Journal of Research in Agriculture*, 5(2), 8-14.
- [6] FRN (2007). *Federal Republic of Nigeria Official Gazette*. Legal Notice on Public Gazette Details of the Breakdown of National and State Provisional 2006 Census, Abuja, 9(24), 1-7.
- [7] Foster, J. E., & Sen, A. (1997). *On Economic Inequality, expanded edition with a Substantial Annexe*. ISBN 0-19-828193-5.
- [8] Grootaert, C., & van Bastelaar, T. (2001). *Understanding and Measuring Social capital: A Synthesis of Findings and Recommendations from the Social Capital Initiatives*. The World Bank Social Development Family, Environmentally and Socially Sustainable Development Network. Social Capital Initiative (SCI) Working Paper No. 24.
- [9] Nweke, F. E., & Winch, F. A. (1980). *Bases for Farm Resources Allocation in Small holder Cropping System of Southeastern Nigeria. A Case Study of Awka and Abakiliki Villages*. International Institute for Tropical Agriculture (IITA), Ibadan, Nigeria. Discussion Paper No. 4/80.
- [10] Okigbo, N. N. (1991). *Need for consistency in Nigeria's Agricultural Development policy* (pp.33-70). Agricultural Development in Nigeria. Faculty of Agriculture, Obafemi Awolowo University, Ile-Ife, Nigeria.
- [11] Olaitan, M. A. (2006). Finance for Small and Medium Enterprises: Nigeria's Agricultural Credit Guarantee Scheme Fund. *Journal of International Farm Management*, 3(2), 1-9.
- [12] Ugwumba, C. O. A., Okoh, R. N., Ike P. C., Nnabuiife E. L. C., & Orji, E. C. (2010). Integrated Farming System and its Effect on Farm Cash Income in Awka South Agricultural zone of Anambra State, Nigeria. *American-Eurasian J. of Agric. & Environ. Sci.*, 8 (1), 01-06.
- [13] Okali, D., Okpara, E., & Olawoye, J. (2001). *Rural-Urban Interactions and Livelihood Strategies. The Case of Aba and its Region, Southeastern Nigeria*. Working Paper Series on Rural-Urban Interactions and Livelihood Strategies, Working Paper 4. International Institute for Environment and Development (iied).
- [14] Okafor, F. C. (1991). *Population Pressure, Agricultural Change and Environmental Consequences in South Eastern Nigeria*. Project on African Agriculture of the Joint Committee, on Africa Studies. Social Sciences Research Council of Learned Societies, Third Avenue, New York.
- [15] Okeke, E.C., Eneobong, H. N., Uzuegbunam, A. O., Ozioko, A. O., & Kuhnlein, H. (2008). Igbo Traditional Food System: Documentation, Uses and Research Needs. *Asian Network For Scientific information, Pakistan Journal of Nutrition*, 7(2), 365 – 376.
- [16] World Bank (2009). *PovCalNet On-line Database* <http://iresearch.worldbank.org>.