

SOCIAL CAPITAL, FOOD CONSUMPTION EXPENDITURE AND RURAL POVERTY REDUCTION IN NIGERIA

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Abstract. This study examines the contribution of social capital to food consumption expenditure as a measure of rural poverty in Oyo state, Nigeria. Specifically, it examines the dimensions of social capital, determines the poverty status of farming households, and analyses how social capital influences consumption expenditure to indicate the level of poverty reduction among the respondents. Primary data was collected using a structured questionnaire. The random sampling approach was used to sample 150 rural farming households. Descriptive statistics, the Foster, Greer, and Thorbecke (FGT) poverty index, and Tobit regression analysis were used to analyze the data. Evidence of social capital was provided through individual participation in different associations, groups, and cooperatives. The average per capita monthly expenditure was estimated at ₦35,226.67 (\$37.48). Poverty is more prevalent among females and relatively lower among people between 31 and 40 years of age. People with higher per capita expenditure have relatively lower rates of poverty. Household size, age, and participation in social groups have a statistically significant effect on poverty reduction. Consequently, investment in social capital can smooth the consumption of the poor, thereby reducing poverty.

Keywords: social capital, consumption, poverty, FGT, Tobit, rural

INTRODUCTION

One of the challenges that many countries, especially developing ones, are currently confronting is their inability to control the rate of poverty (Abdussalam et al., 2014; Singh and Chudasama, 2020). The poverty of people living in these countries exposes them to poor living conditions, negative returns on businesses, disease and poor food consumption. In most poor nations, a substantial percentage of impoverished people can be found in rural regions, which are notable for having a significantly higher poverty rate than urban areas (Arham and Dai,

2020). In Nigeria, 16.8% of the population is classified as vulnerable to multidimensional poverty, while 51.4% of the population is classified as multidimensionally poor. The multidimensional poverty index (MPI) (ranges between 0 and 1) for the country, which is adjusted to account for the severity of deprivation, is estimated at 0.291. The average deprivation score for those living in multidimensional poverty, known as the depth of deprivation (intensity), is 56.6% (OPHI, 2017). Despite the significant resources (human and physical) allotted by successive administrations to reduce the country's poverty rate, high incidence and depth of poverty continue

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to have unfavorable effects in Nigeria (Nigeria Human Development Report, 2019). Despite its wealth, Nigeria is currently ranked third in the world for poverty, with 47 percent of the population classed as extremely poor in 2016 and 95.1% in 2022 (Dauda, 2016; World Bank, 2022). Nigeria's poverty rate has risen over time. The prevalence of poverty has had a severe impact on the economy, causing great destruction and becoming a barrier to growth and progress. Despite numerous anti-poverty programs and measures to alleviate the issue, Nigeria is dealing with a severe and enduring poverty barrier (Abdussalam et al., 2014; Jaiyeola and Choga, 2021).

Social capital, a potential byproduct of cooperative societies, may have an impact on initiatives to combat poverty and members' consumption per capita. It can ensure members' labor-generated funds can be used to address household issues, launch enterprises, pay for their children's tuition, buy cars, construct homes, and other things (Ringim and Shuaib, 2017). According to Gillinson (2004), social capital is a term used to describe the significance of local networks and how they improve people's lives by increasing productivity. A flow of future income is produced by the store of common knowledge, standards, guidelines, periodic activity, and expectations carried by such groups (Gatzweiler and Hagedorn, 2002). According to Putnam (2000), social capital consists of interpersonal relationships (in a group setting) and the reciprocity and reliability standards that develop as a result. Social capital in local groups is defined as the active and critical participation of group members in group activities. This type of participation fosters organizational skill, which in turn fosters strength and empowerment—two necessary conditions for taking action (Akpabio, 2005; Farrell and Thirion, 2022).

Organizations with social capital serve both social and economic functions in ensuring their members' well-being. Many of these organizations are social, while others are economic. If the groups are social, they contribute to the development of social capital. This, among other things, includes the institution's identity, internal dynamics, participant attitudes, and the values that direct their interactions as a group, all of which aid in the communities' economic and social growth (Grootaert and Bastelaer, 2002; Demir, 2021). Social components that characterize the culture of some local institutions include the provision of food, healthcare services, credit facilities, and daycare or primary school for members' children (Herrington and Mix, 2020; Gilbert et al.,

2022). Across communities, cooperative organizations, religious groups, mutual association groups, age grade groups, and farmers' groups flourish. The social capital benefits from these groups generate solutions to issues with the primary production and sale of goods and services, and economic groups are also concerned with their members' shared interests (Anyiro, 2022).

A growing body of research shows that key factors like growth, equity, and poverty reduction can be influenced by social capital. Associations and institutions with social capital offer a loose structure for managing information exchange, activity coordination, and group decision-making. Growing evidence suggests that social capital contributes to sustainable development through its ability to manage opportunities, risks, and shocks. As a result, it bolsters individuals' ability to deal with poverty and vulnerability, settle disputes, and share useful knowledge (Malherbe et al., 2020). It also decreases transaction costs, offers contract enforcement, provides access to cash for households with limited credit, encourages the use of new industrial technology, and, perhaps most critically, creates chances for risk sharing (Isham, 2002; Malherbe et al., 2020).

This study focuses on identifying the dimensions of social capital, the level of food consumption expenditure, and the poverty status of rural farming households and the empirical effect of social capital on poverty using consumption expenditure measure. Its outcome is expected to provide a clear insight into the potential of social capital as a viable means to improve the food consumption capacity of the poor. In addition, the recommendations of this study will be helpful to social networking groups, cooperative business societies, and union organizations since they will incorporate numerous strategies to enhance the performance of such institutions.

LITERATURE REVIEW

Social capital as a concept highlights the values of cooperation and group action, solidarity and trust, and networks of lateral connections between and among households, groups, and communities. In the view of Grootaert (2001), the concept of social capital covers social ties, networks, socio-cultural norms, and values that promote interaction between individuals and groups. Consequently, this capital enhances the socioeconomic prosperity of its beneficiaries. The definition of social capital

by the World Bank (2008) as the institutions, standards, and connections that influence social interactions both in quality and quantity explains the relevance of the subject to the improvement of human lives (Putman, 2001; Rivera et al., 2019). The main benefits derived from social capital, as identified by Sofoluwe et al. (2021), are associated with positive economic outcomes that are determined by different factors. In most rural communities, especially in developing nations, social capital is a vital source of support for the improvement of the economic activities of local people (Dijkhof, 2019).

To operationalize social capital, a measurement approach is suggested (World Bank, 2004; Roslan and Russayani, 2010). The relevant measure was preliminarily divided into seven factors by Grootaert and Bastelaer, 2002), including membership of association in terms of numbers, extent of group heterogeneity, attendance at meetings, participation index, level or degree of informality of groups and association, financial contribution scores and community initiation. These factors emphasize association or group activity, membership and participation as substantial elements of social capital. Subsequent work by Grootaert et al. (2004) suggested six areas for the measurement and assessment of social capital, namely cooperation and collective action, trust and solidarity, social inclusion and cohesion, groups and networks, information communication, and political action with empowerment. This latter form of assessment has been widely adopted by researchers in the area of social capital (Roslan and Russayani, 2010; Sofoluwe et al., 2021). Nonetheless, the practical benefits of social capital lie in its utilization to reduce widespread poverty among people in rural areas.

Theoretically, social capital concepts are situated in social capital theory. This theory is premised on the principle that social capital encompasses economic advantages, trust, network size and diversity, and the demographic composition of individuals in the social capital framework. Hence, the theory is built upon the principles of economic advantage, trust, the size of networks, the diversity of networks, and the demographic composition of members within associations. As espoused by Putnam (2004), since the theory of social capital is rooted in providing short- and medium-term advantages to individuals, households and community groups, its application to social welfare, especially poverty status and consumption patterns, merits scrutiny. But, in spite of the anticipated contribution of social

capital to boosting the economic conditions of the rural populace, limited empirical studies exist on the dimensions of social capital and its contribution to rural poverty reduction through improvement of the consumption patterns of the poor.

The challenges facing the poor constitute a subject of interest in poverty analysis. Poverty affects the well-being of the people, and social capital may be a variable of interest to those seeking to reduce poverty (Ishise and Sawada, 2009; Imandoust, 2011; Ernan and Ahmadriswan, 2017). Dijkhof (2019) argued that social capital exerts a positive effect on poverty reduction, although the beneficiaries of such capital are not clearly determined.

In recent times, empirical studies have focused on different aspects of social capital and different categories of people using different methodological approaches. Osei and Zhuang (2020) analyzed an empirical connection between social capital, entrepreneurship, and women that could help to reduce poverty in rural areas. The outcomes of the study, which used Structural Equation Modelling (SEM), indicate that significant and positive relationships exist among social capital factors, female entrepreneurship and poverty. However, the magnitude of the contribution of social capital to poverty appears unclear. The previous study of Sofoluwe et al. (2021) was limited to highlighting the factors involved in social capital acquisition. While the identification of the factors that determine social capital is crucial, the empirical consequences of social capital for the poor, and specifically for consumption smoothing among the poor, also need to be understood. Furthermore, it is not sufficient to determine the factors influencing any livelihood-dependent factor without estimating its potential benefit. In Vietnam, Pham and Mukhopadhyaya (2022) evaluated rural poverty, examining various dimensions of poverty across the areas of health, finance, housing and durable assets. However, their study focused on heterogeneous groups with varying consumption capacity, making it difficult to draw policy conclusions from the results. In addition, household characteristics are not considered important factors for the poverty status of individuals. The earlier study of Ringim and Shuaib (2017) analyzed the empirical connection between social capital, consumption, income and poverty. Their findings suggest that social capital improves consumption through educational attainment.

METHODOLOGY

The study was carried out in rural communities in Oyo state, southwestern Nigeria, at latitude 7.85257°N and longitude 3.93125°E. The area has an equatorial climate with both wet and dry seasons and high humidity. Agrarian activities predominate in the area, with abundant production of various crops, including yam tubers, cassava, mangoes, cashews, palm kernels, corn, millet, melon, tomatoes, okra, and cocoa. The study sample was chosen from agrarian households in a predominantly rural area. A multistage sample process was chosen. This process generated a total of one hundred and fifty responses that could be used in the analysis. Subsequently, five localities were selected based on the concentration of farming activities: Ayete, Igangan, Tapa, Igboora, and Idere. The sampling process continued with a random selection of thirty (30) rural farming households from each of the identified localities. The data collected was primary and the information was gathered using a structured questionnaire. In the five locations selected, professional enumerators were employed as assistants in the data collection process. The collection of the data occurred during the summer of 2023, during the months of May and August. The data was analyzed using descriptive statistics, the Foster, Greer and Thorbecke (FGT) poverty index, and the Tobit regression model. The FGT index was used to analyze the incidence, depth, and severity of poverty, while the Tobit model was used to analyze the effect of social capital on poverty using the proxy of the consumption expenditure of the sampled households.

The FGT index is calculated using the formula:

$$P_{\alpha} = \frac{1}{N} \sum_{i=1}^q \frac{(z - y_i)^{\alpha}}{z} \quad (1)$$

where

- y_i – consumption expenditure of the i^{th} farming household
- α – a non-negative poverty parameter with values of 0, 1 or 2 (0 for incidence of poverty; 1 for poverty depth or gap; 2 for poverty severity or squared poverty gap)
- N – number of respondents
- q – respondents with consumption expenditure below the poverty line (z)
- z – poverty line which categorizes the sample respondents into either poor or non-poor.

Specifically, the FGT indices for incidence, depth and severity are:

$$P_0 = \frac{1}{N} \sum_{i=1}^q \frac{(z - y_i)^0}{z} \quad (2)$$

$$P_1 = \frac{1}{N} \sum_{i=1}^q \frac{(z - y_i)^1}{z} \quad (3)$$

$$P_2 = \frac{1}{N} \sum_{i=1}^q \frac{(z - y_i)^2}{z} \quad (4)$$

To examine the empirical effect of exogenous factors on the likelihood of being poor, a Tobit regression model was specified. The model was originally developed by Tobin (1958) as a consumption model for consumer durables in which expenditure is censored at zero. Mathematically, the model is written as:

$$Y = \alpha_i + \beta X_i + \varepsilon_i \quad (5)$$

where

- Y_i – dependent variable (logarithm of consumption expenditure)
- α – constant or slope parameter
- X – exogenous variable (s)
- ε – error term
- i – cross section observation

The specification of the observed result for the i^{th} observation is written as:

$$y_i^* = \begin{cases} y_i & \text{if } a < y_i < b \\ a & \text{if } y_i \leq a \\ b & \text{if } y_i \geq b \end{cases}$$

where a and b are the censoring limits at the lower and upper levels, respectively, and y represents the censored outcome.

Measurement of variables

The dependent variable is ‘poverty’, measured as monthly consumption expenditure on food. The variable is continuous and denominated in Nigerian currency (Naira) and international currency (\$). The social capital variables include membership of association, participation or involvement in group decision-making processes of associations (representing groups and networks), trust and solidarity among rural people. The socio-economic characteristics of the respondents are also included. These are age of the respondents, gender, education, household size

and occupation. Membership of association is measured as a binary variable (1 = membership; 0 = otherwise). Participation or involvement in group decision-making is measured in Likert form. Similarly, trust and solidarity measures of social capital are measured in Likert form. The measure of age is in years, and gender is binary (male = 1; female = 0). Education is measured in years, while household size is measured as the number of people living under the same roof.

RESULTS AND DISCUSSION

Socio-economic characteristics of sampled households

The sample respondents have varying characteristics (Table 1). Most (75.33%) come from male-dominated households. This is consistent with the prevailing cultural features of most rural communities in Nigeria. The descriptive results also suggest that social capital is predominantly held by males rather than females in the study area. In terms of age demographics, there is evidence of a wide distribution across different age groups. For example, most respondents (58.7%) are in the age bracket of 20 to 39 years; 41.4% are 40 and above. The distribution of ages indicates that the respondents are in the active age bracket, with high social capital potential in addition to being at the age of high consumption pressure. The age information demonstrates the capacity of the respondents to provide relevant information on poverty issues in their environment. The household size distribution shows that 46.7% of the sample have between 4 and 6 people in their households while 19.3% have between 1 and 3 household members. However, there are households with more than 9 members (13.3%). Surprisingly, the educational level is generally low. A relatively high percentage of the sample had not experienced formal education (23.4%) while another 27.6% had been educated to primary level, which is equivalent to six years of education in a formal school system. These groups constitute 51% of the sample. However, 49% had been educated to secondary level and beyond.

Dimensions of social capital

The results in Table 2 highlight the existing dimensions of social capital among the sample. Based on the results, two general dimensions of social capital can be identified. Many respondents were members of groups and social networks. There is also evidence of trust and

Table 1. Characteristics of respondents

Variables	Frequency	Percentage
Gender		
Female	37	24.67
Male	113	75.33
Age		
20–29	34	22.6
30–39	54	36.0
40–49	36	24.0
50–59	13	8.7
60 and above	13	8.7
Household size		
1–3	29	19.3
4–6	70	46.7
7–9	31	20.7
Above 9	20	13.3
Level of education		
No formal education	35	23.4
Primary education	41	27.6
Secondary education	56	37.6
Diploma	12	8.1
Others	5	3.3
Occupation		
Farming	146	97.3
Others	4	2.7

Source: field survey, 2023.

solidarity among the sample respondents. On groups and networks, membership of cooperative (50.7%), membership of other association/groups (80.5%) and level of involvement in group decisions are at varying levels. The level of participation in these associations varies. 23.9% participate at leadership level, and 64.2% participate in high-level roles (as special task officers or committee members). This result shows that the level of participation in various associations and groups is high. Consequently, social capital is found to be high among rural people, suggesting that it has the potential to influence livelihoods. Furthermore, the social capital

Table 2. Dimensions of social capital among the sample respondents

Social capital dimensions	%
i. Groups and networks	
(a) <i>Membership of cooperative</i>	
Yes	50.7
No	49.3
(b) <i>Membership of other Association/Groups</i>	
Yes	80.5
No	19.5
ii. Level of involvement in association/group decisions (%)	
Leadership level	23.9
High-level (committee/special task)	64.2
Low level	10.5
Inactive/ordinary member	1.4
iii. Trust and solidarity	
(a) <i>Existence of trust among villagers</i>	
Strongly agree	6.7
Agree	45.3
Disagree	38.7
Strongly disagree	9.3
(b) <i>Mutual help and solidarity among villagers</i>	
Always	54.7
Rarely	12.0
Sometimes	29.3
Never	4.0
(c) <i>Trust between villagers and strangers/visitors</i>	
Strongly agree	20.7
Agree	61.3
Disagree	14.0
Strongly disagree	4.0

Source: field survey, 2023.

dimension of trust and solidarity among rural people is described in terms of three variables. These are: ‘trust among villagers’, ‘mutual help and solidarity’ and ‘trust among villagers and strangers/visitors’. A relatively

high percentage of respondents (45.3%) agree that villagers trust each other while 6.7% strongly agree that they do, so 52% of rural people confirmed the existence of trust among the villagers. Mutual help and solidarity among villagers appear to be part of the ‘norm’, as a relatively high percentage (54.7%) of people indicated that they ‘always’ engage in mutual help and solidarity. In relation to visitors or strangers, 82.0% of villagers expressed a high level of trust.

Consumption expenditure of the sample respondents

The descriptive statistics of the measure of poverty, which is consumption expenditure among rural households, are presented in Table 3. Approximately 5% of the rural households in the study spend the equivalent of \$43.48 or less (N20, 000.00) on total food consumption per month. The majority of households (56.2%) spend between \$43.48 and \$86.97 (N20,000–N40,000) on the consumption of essential food items every month. Meanwhile, the consumption expenditure of about 25% of the rural households in the sample was between N40,000 and N60,000 (\$86.97 and \$130.43). Given that most of the households have between 4 and 6 members, the distribution of food consumption expenditure remains a concern.

Table 3. Consumption expenditure of the sample respondents

Consumption expenditure (₦) (*)	Frequency	Percentage
Less than or equal to 20,000	7	4.8
20,000–40,000	82	56.2
40,001–60,000	36	24.6
60,001–80,000	16	11
Above 80,000	5	3.4
Mean = ₦35,226.67		
Std. dev. = ₦16775.03		

Official conversion rate as at the time of the study: 1\$ = ₦940.
Source: field survey, 2023.

Analysis of poverty among the sample

The rate of poverty based on per capita expenditure on basic food items differs among the respondents (Table 4). On average, female respondents reported ₦35,896.22 (\$38.19) as the mean expenditure on food

Table 4. Poverty rate, depth and severity based on characteristics of the respondents

Characteristics	Per capita expenditure (₦)*	Incidence of poverty	Depth of poverty	Severity of poverty
Sex				
Female	35,896.22	0.1531	0.1531	0.1531
Male	32,061.67	0.4724	0.1531	0.0687
Age in years				
Less than or equal to 30	28,795.56	0.6047	0.1750	0.0727
31–40	47,314.28	0.2826	0.0790	0.0312
41–50	36,523.71	0.4932	0.1756	0.0806
51–60	40,530.31	0.4688	0.0992	0.0264
Greater than 60	18,321.34	0.7647	0.3202	0.1733
Education				
No formal education	26,857.40	0.6512	0.2442	0.1141
1–6 years of schooling (primary)	35,553.46	0.5455	0.1931	0.0900
9–12 years of schooling (secondary)	40,638.15	0.4900	0.1426	0.0602
14–15 years of schooling Diploma/NCE	36,603.05	0.3818	0.1213	0.0523

1₦ = \$460 at the time of the study.

Source: field survey, 2023.

items while male respondents reported an average of ₦32,061.67. At 47.24%, the incidence of poverty among males is higher than the incidence among females, which is 15.31%. By implication, males are more exposed to poverty. However, the depth of poverty is the same for both genders. Meanwhile, poverty is more severe among females than males. The severity index is lower for males, at 6%, than it is for females, for whom it is 15.3%. Based on the age distribution, the average per capita expenditure on food items per month is higher (\$37.48) among those between 31 and 40 years of age. But the poverty rate is higher among people in the age bracket of 41–50 years. Respectively, the poverty rates are 49.32%, 17.56%, and 8.1% for incidence, depth and severity of poverty. However, these rates are relatively lower among people between 31 and 40 years of age. The results suggests that people with higher per capita expenditure have a relatively lower rate of poverty. The results also suggest the need to protect people aged over 60 years. This category of people has the lowest mean value of per capita consumption expenditure and relatively high rates of poverty depth and severity at 32.02%

and 17.33%, respectively. This might be due to the inability of old people to work and earn a living without remittances and external support. Education plays an important role in poverty reduction among the rural poor. The results show that people with a higher level of education (about 12 years of schooling) have a higher mean capital expenditure on food items and lower incidence, depth and severity of poverty at 49%, 14.3% and 6.02%, respectively.

The estimated effect of social capital on consumption poverty

The effect of social capital on consumption poverty estimated using the Tobit model is presented in Table 5. The log likelihood of the model and the LR chi (10) are significant at the 1% level, implying that the model specification is appropriate. In the first model, which features only socioeconomic characteristics, age, education and household size are significantly associated with the poverty level of the respondents. The parameter of age is positively related to poverty ($\beta = 0.129$, $p < 0.001$), indicating that as people grow older, consumption

Table 5. Estimated effect on consumption poverty

Variables	Socio economic factors		Social capital factors	
	coefficients	t-value	coefficients	t-value
Gender	0.083	0.83	0.057	0.58
Age	0.129	3.53***	0.135	3.37***
Edu	0.132	3.34***	0.114	2.87***
Hhs	0.097	2.08***	0.089	1.97**
acesscredit	−0.106	−1.26	−0.129	−1.54
Coop member			0.074	0.89
Years of membership			0.000	0.07
Participation			0.136	2.13***
Networking			−0.136	−1.64
Trust			0.06	1.33
Log likelihood	−107.776		−102.891	
LR chi	33.36		43.13	
Prob > chi ²	0.0000		0.000***	
Pseudo R ²	0.1340		0.1733	

Source: own elaboration based on field survey, 2023.

expenditure rises. The consumption capability of individuals increases with higher levels of education, thereby making adjustment to conditions of poverty easier. The estimated value of the education parameter in the model is positive ($\beta = 0.132$, $p < 0.001$) and statistically significant at 1%. Similarly, the positive and significant value of the household size variable suggests that an increase in the household size will increase the level of consumption expenditure of a household.

With the inclusion of social capital factors, the results show that participation in social organization activities by individuals has a statistically significant effect (at the 5% level) on their consumption expenditure capacity, and thus has the potential to reduce their poverty level. The parameter estimate for the social capital factor ‘participation in group activities’ is positive and significant ($\beta = 0.136$, $t = 2.13$, $P < 0.05$). This result provides evidence that social capital in the form of involvement in social groups increases the consumption capacity of households. Intuitively, by increasing consumption expenditure, group participation can help

reduce poverty. This study supports earlier research by Olaleye et al. (2020) which shows that social capital and its many components are crucial in mitigating the impact of poverty on households.

However, there are significant effects ($P > 0.05$) of other measures of social capital, such as cooperative membership, trust and networking. These results pose a challenge to the expectation that a mere interest in organizational activities is sufficient to achieve economic goals. Rather, interest indicated by membership and participation are central to achieving social and economic goals.

CONCLUSIONS

The prevalence of poverty necessitates the application of different approaches to improve the overall well-being of the poor. This study examines the role of social capital in shaping the conditions of the poor. The consumption capacity of rural people is considered crucial in determining their poverty status. The findings of the study suggest that social capital exists in various forms: participation in group or association activities, groups and networks such as cooperative organizations and mutual trust among people. The results show that the consumption expenditure of most rural people is relatively low, thereby exposing them to a high incidence, depth and severity of poverty. Most of the respondents in the sample live on an average of less than \$2 equivalent per day. The incidence of poverty is higher among people in the age bracket 41–50 years and among people above 60 years of age. The results therefore suggest that it is necessary to protect people aged above 60. The results demonstrate the significant role of education in poverty reduction among the rural poor. Educated people were found to have a lower incidence, depth and severity of poverty. Social capital exerts a statistically significant effect on poverty through people’s involvement in group and association activities and decision processes. This is consistent with the finding of Olaleye et al. (2020) that social capital can be a poverty-reducing asset for the most vulnerable in a society. This study was limited by its focus on rural areas, as poverty knows no boundaries in modern times and in most developing nations.

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