

Effect of Social Capital on Household Welfare and Poverty Reduction in Ogbomosho Agricultural zone, Oyo State, Nigeria

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ABSTRACT

This study examined the effect of social capital on household welfare and poverty reduction in Ogbomosho agricultural zone, Oyo State. Data for the study were collected from 236 farmers randomly selected households. Descriptive and logit regression model was used to analyse the data. The result showed 98.3% of the respondents were male, with the average age of 46.1%, and average household sizes of 4.4. Index of participation at decision making of 7.8% suggested that members of local level institution attended meeting regularly which necessitate their active participation in decision making, 10.7% of heterogeneity suggested that there is low level of diversity among members in their various association which affect level of benefit derived from the association. The result further shows that, other assets and household size make a significant contribution to household poverty, at 10% significant level, though other assets was positive and household size was negative. The social capital index also has a positive and significant at 5%. The major effects of social capital are attributable to heterogeneity index which influence household poverty status and consequently improve its welfare. It is evident from the study that household assets (other assets) can complement social capital in improving household poverty status.

Keywords: Social capital, poverty, heterogeneity, welfare.

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INTRODUCTION

Social capital can have an important impact on poverty reduction and improvement on household welfare, through substitution and enhancement of the existing forms of capitals in communities, where there is scarcity or total depletion of the traditional forms of capital required to generate income. This may also be found with households and villages which have strong ties, for they are likely to share risk, and thereby mitigating the negative effects of exogenous climatic shocks. Furthermore, social capital also has an important influence on the distribution of household incomes and poverty reduction, since it alters the terms and levels of trade which also influence the distribution of incomes derived from trades (Robison *et al.*, 2002). Poverty has been a serious issue in Nigeria. The growing incidence and depth of poverty in the country has been established through the quantitative and qualitative measurements Anyanwu (1977). This situation however, presents a contradiction in terms with the huge.

Traditionally, efforts have been made to lighten poverty with the instrument based on natural capital, physical or produced capital, and human capital (Isham *et al.*, 2012; Yusuf 2008). The combination of these formed the wealth of nations and constitutes the basis of economic prosperity. According to Putnam (1993), social capital is the missing link between the three types of capital and he viewed it as a set of "horizontal association" between people. One of the main characteristics of social capital lied in coordination and cooperation of member of the association for mutual benefit. This influences social and political environment that enable norms to develop and shaped the social structure. Also, social capital can impact development outcomes in terms of growth, equity and poverty reduction. This helps social institutions in providing an informal framework for activities coordination, information sharing and collective decision-making.

In view of its role in managing risks, shocks and opportunities, social capital is considered an element for sustainable development. According to Isham (1999) and North (1990) and Narayan and Prichett (1997), it holds a strong position in tackling poverty and its vulnerability, resolve disputes and share beneficial information that are important to understanding of economic performance. Social capital is also seen to influence reduction in transaction costs to provide contract enforcement (Johnson *et al.*, 2002). According to Besley and Coate (1995) it enables credit constrained households access to funds, fosters adoption of new production technology and more importantly, provides avenues for risk sharing (Isham *et al.*, 2012; Narayan and Prichett 1997; Rosenzweig 1988) Poverty is the link to the inability of individuals and households to give back and support other people to build and use social capital within the community and in wider environment, the part of local level institutions in providing this opportunities to maintain reciprocity is important for the poor to be able to keep a sense of dignity in their live. However, this study examined the effect of social capital on household welfare and poverty reduction in Ogbomoso Agricultural zone, Oyo State, Nigeria.

MATERIALS AND METHODS

The study was carried out in Ogbomoso Agricultural zone of Oyo State. A multi-stage random sampling technique was used to sample the respondents for the study. The first stage involved purposive selection of two of the three agrarian local government areas in the zone. The second stage involves random selection of four cells in each of the selected LGA, while the third stage involves selection of villages in each cell. A total of two hundred and forty-eight respondents were randomly sampled for the study.

Social capital and household welfare: The study benefited from the analytical framework earlier applied by Narayan and Prichett (1997) and Grootaert (2001). Essentially, the customary or conventional model of household economic behavior under constrained utility maximization was used to relate the level of household expenditure (as money- metric indicator of welfare) directly to the exogenous asset, endowment of the household and variables describing the social and economic decision. The model as follows;

Household welfare model

$$\ln E_i = \alpha + \beta SC_i + \gamma HC_i + \text{soc}_i + \gamma X_i + \eta z + u.$$

Where E_i = Household expenditure per capital of household i

SC_i = Household endowment of social capital

HC_i = Household endowment of other assets

SoC_i = Socio-economic characteristics of households heed

X_i = a vector of household characteristics

U_i = error terror.

Model Specification

Considering the general equation

$$Y_i = f(X_1, X_2, \dots, X_{k1}),$$

Where the dependent variable (Y_i) represents the poverty level of the household and X_s are the various household level socio economic and demographic indicators that influence the household poverty determinants. Let's suppose that the response variable y captures a true status of the household either as poor or non poor so we can estimate the regression equation as follows.

$$y_i = \beta_0 + \beta_1 X_{ij} + \epsilon_i$$

y^* is not observable and is a latent variable. We can observe y as a dummy variable that takes the value 1 if $y^* > 0$ and takes the value 0 otherwise. The β is the vector of parameters and error terms are denoted with ϵ . The error terms entail the common assumption of zero mean but the underlying distribution is different. Let P_1 denotes the probability that the 1th household is below the poverty line. We assume that the P_1 is a Bernoulli variable and its distribution depends on the vector of predictors x , so

$$P_1 = \frac{e^{\beta \cdot X}}{1 + e^{\beta \cdot X}}$$

Where β is a row vector. The logit function to be estimated is written as

$$\ln \frac{P_j}{1 - P_j} = \beta_j X_j$$

$\ln \frac{P_j}{1 - P_j}$ is the natural log of the odds in favor of household falling below poverty line whereas β_j is the measure of change in the logarithm of the odds ratio of the chance of the poor to non poor household and can also be written as

$$\beta_j = \frac{\log(\text{odds ratio})}{X_j}$$

The marginal effects are also computed that show the change in the probability when there is a unit change in the independent variable. The marginal effects are computed as follows

$$\frac{\partial P_j}{\partial X_j} = \frac{P_j(1 - P_j)^2}{1 - 2P_j + P_j^2} \beta_j$$

Where $z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots$

RESULTS

The result presented in Table 1 shows that, 53.4% of the respondents are within the age range of 41-50 years, while 2.5% of the respondents are within the ages was below 30 years. The table also revealed that, 98.3% of the respondents were male and 1.7% of the respondents were females. Most of the respondents had formal education; this is evident from the table which showed that 71.2% of the respondents had primary school education, 16.9% had secondary school education, 7.6% had tertiary school education, and only 3.4% had no formal education with 0.8% of the respondents having adult education. The result further revealed that 89.8% of the respondents were married and only 10.2% of the respondents were single. About 47% of the respondents have a household size between 1-3 members, 33.9% have a household size of between 7-9 members, 15.3% have between 4 and 6 members, 3.4% have between 10 and 12 members and 0.8% of the respondents have more than 12 household members.

Table 1: Socioeconomic characteristics of the respondents

Variables	Frequency	Percentage
<i>Age</i>		
≤30	6	2.5
31-40	60	25.4
41-50	126	53.4
51-60	30	12.7
Above 60	14	5.9
Total	236	100.0
<i>Marital status</i>		
Single	24	10.2
Married	212	89.8
Total	236	100.0
<i>Sex</i>		
Male	221	
Female	15	
Total	236	100.0
<i>Education status</i>		
No formal education	8	3.4
Primary education	168	71.2
Secondary education	40	16.9
Tertiary education	18	7.6
Adult education	2	0.8
Total	236	100.0
<i>Household size</i>		
1-3	110	46.6
4-6	36	15.3
7-9	80	33.9
10-12	8	3.4
Above 12	2	0.8
Total	236	100.0

Source: Field Survey, 2016

Involvement and participation in local level institutions by respondents: The result also presents each members of household that is involved in local level institutions. Among the identified associations include; community based association, gender association, religious, social service, occupational, cooperative societies, cultural environmental protection group, etc these were classified by household head, spouses and other members of household. The result indicated that most of the households' members are in one or two social institution.

Table 2 Distribution of respondents according to association and institution

Association/institution	Household head	Spouses	Other members of household
Community based association	96 (81.4)	17 (14.4)	0 (0)
Gender association	47 (39.8)	11 (9.3)	4 (3.4)
Religious group	78 (66.1)	69 (58.5)	1 (0.8)
Social service group	50 (47.5)	19 (16.1)	3 (2.5)
Occupational group	80 (67.8)	37 (31.4)	1 (0.8)
Environ. protection/natural resources group	39 (33.1)	0 (0)	0 (0)
Cooperatives societies	115 (97.5)	68 (57.6)	0 (0)
Cultural groups	20 (16.9)	15 (12.7)	0 (0)
Non –governmental organizations	40 (33.9)	1 (0.8)	0 (0)

Source: Field Survey, 2016.

Summary statistics of the social capital dimensions: Table 3 revealed the summary statistics for each of these dimensions. An average household with about 67 individuals in 10 households belong to at least 8 associations and has moderately high value of 7.822 percent index of participation at decision making which suggest that members of local level institutions attend meeting regularly which necessitate their active participation in decision making. In addition, there is a moderately low level of heterogeneity in the associations to which households belong at 10.74 percent which suggests that there is low level of diversity among members in their various associations which can potentially affect the level of benefit derived from the association. Meeting attendance of 170.45 represents more than half of the maximum attendance recorded for the households. Surprisingly, there seems to be low value for cash contribution with a mean score of 60.56 man-day of the maximum 98.00 man-day recorded. The result also revealed the mean aggregate social capital index value of 1189.78 percent which suggests that there is a moderate (high) level of social capital in terms of membership in association, membership diversity in association, decision making in association, attending meetings and contributions both in cash and kind among the sampled respondent in the study area.

Table 3: Summary Statistics of Social Capital Dimension

Social capital dimension	Mean	Standard Dev.	Minimum	Maximum
Membership density	7.82	2.537	0.00	13.00
Heterogeneity index	10.74	3.99	0.00	25.20
Decision making index	7.822	2.537	0.00	13.00
Meeting attendance (%)	170.45	50.15	29.13	442.11
Cash contribution (₦)	698.38	2916.20	2100.00	23200.00
Labour contribution(man-day)	60.56	23.62	12.00	98.00
Social capital index	1189.78	730.85	0.00	2908.80

Source: Field Survey, 2016

Social Capital and Household Welfare: This section presents the impacts of social capital on welfare within the context of the methodology proposed in the analytical framework. Table 4 presents the effect of social capital on household welfare. The table shows that about 72.5 percent of the variations in per capital expenditure of households are explained by specific human capital and demographic factors.

Table 4: Social capital and household welfare

Variables	Basic model	With multiplicative Social capital index	With additive social capital variables
Intercept (constant)	11.40 (9.752)***	11.023 (10.408)***	11.168 (9.113)***
Sex	0.445 (1.768)*	0.690 (2.967)***	0.621 (2.576)**
Age	-0.058 (1.364)	-0.062 (1.625)	-0.091 (1.931)*
Squared of age	0.01 (1.153)	0.001 (1.310)	0.001 (1.726)*
Years spent in school	-0.053 (3.655)***	-0.043 (3.241)***	-0.040 (2.942)***
Household size	-0.201 (12.619)***	-0.201 (13.940)***	-0.199 (12.874)***
Other assets	6.346Σ6 (9.042)***	5.695Σ6 (8.801)***	5.654Σ6 (8.503)***
Social capital index	-	0.001 (5.087)***	-
Meeting attendance index	-	-	0.001 (0.362)
Cash contribution index	-	-	6.856Σ6 (0.646)
Labour contribution index	-	-	0.001 (1.103)
Decision making index	-	-	0.044 (2.924)***
Heterogeneity index	-	-	0.021 (1.864)**
Numbers of observation	118	118	118
R ²	0.725	0.775	0.766
F – Statistics	52.403***	58.682***	35.837***

Source: Field Survey, 2016

Table 5 shows the basic reduced form of model which captures household behavior. The OLS estimation results revealed that household size and other assets make a significant contribution to household poverty. In particular, other assets has a positive and significant ($p < 0.10$) relationship with household poverty because the more the asset of an household the less the household poverty level, but different pattern was observed in the case of household size, household size has a negative and significant ($p < 0.10$) relationship with poverty because the more the household size the more the household poverty level. Also the value of chi-square (127.102) is also significant at 10% level.

Table 5: Effect of social capital on Household poverty

	Basic model	With multiplicative Social capital index	With additive social capital variables
Intercept (constant)	1.586 (0.988)	-2.143 (0.987)	-24.968 (0.961)
Sex	-1.316 (0.990)	-1.886 (0.988)	-2.865 (0.995)
Age	-0.252 (0.674)	-0.150 (0.822)	0.114 (0.897)
Squared of age	0.003 (0.625)	0.002 (0.752)	0.001 (0.953)
Years spent in school	0.163 (0.578)	0.232 (0.521)	0.639 (0.127)
Household size	-1.810 (0.000)***	-1.782 (0.000)***	-1.480 (0.001)***
Other assets	0.001 (0.000)***	0.001 (0.002)***	0.001(0.003)***
Social capital index	-	0.001 (0.052)**	-
Density of member	-	-	-0.632 (0.104)
Cash contribution index	-	-	0.001 (0.884)
Labour contribution index	-	-	0.009 (0.700)
Heterogeneity index	-	-	0.454 (0.098)*
Meeting attendance index	-	-	0.022 (0.195)
Chi-square value	127.102 (0.000)***	127.243 (0.000)***	135.641 (0.000)***

Source: Field Survey, 2016

DISCUSSION

The result showed that the mean age of the respondents is 46.10 years, which implies that average household heads in the study area are still active and they are in their productive age. The result also showed that male headed households were more than female headed households in the study area. This research work considered six dimensions of social capital, these includes; membership density of the household activities in the local level institution, heterogeneity index (diversity of membership in association), decision making index, meeting attendance, cash contribution (₦) and labour contribution (mans' day).

Both multiplicative and additive social capital indices are used to determine the impact of social capital on welfare proxies by per capita expenditure of households. The use of both multiplicative and additive social capital is hinged on the fact that to date, literature on conceptual and theoretical underpinnings of social capital has not proved the superiority of one over the other. Yusuf (2008); Narayan and Prichett (1997); Grootaert (2001); Olawuyi (2014); Grootaert and Bastellear (2002); Okunmadewa, *et al.*, (2005) used both approaches and concluded that additive and multiplicative variables are valid approaches for introducing social capital in the household behavioral model.

When multiplicative social capital variables were introduced to the model a slight improvement in the adjusted R^2 was noticed. Along with the demographic variables, aggregate social capital index significantly influences the welfare status of households. At mean social capital of 28.09, the coefficient of the variables shows that a one unit increase in social capital (i.e 5.087 percent) would increase household per capita expenditure by 0.001 percent. And the inclusion of five additive social capital variables which include meeting attendance index, cash contribution index, labour contribution index, decision making index and heterogeneity index. The heterogeneity of associations can be source of information for improved welfare status as well as being a source of conflict between members of the associations. This new model has a better explanatory power as reflected in the adjusted R^2 of 0.766. This disaggregation shows that the effects of social capital on welfare are traceable to membership of households in associations and active participation in decision making.

Following similar pattern in the second model (effect of social capital on household poverty), a multiplicative social capital variable was introduced and the result was presented. This index is arrived at through the contribution of number of households' membership of association (membership density), heterogeneity index, cash contribution index, labour contribution index and meeting attendance index. This resulted in slightly increase in chi-square value with the same significant level, social capital index has significant ($p < 0.05$) effect on household poverty status. Also the similar pattern of as we have in the first column was for the specified household socio-economic and demographic characteristics in terms of signs and magnitudes; now with the introduction of social capital index, the results suggest that accumulating social capital (getting involved in the affairs of their social groups) will improve their household poverty status.

Similar result was observed for the specified household socio-economic and demographic characteristics in terms of sign and magnitudes; and now with the introduction social capital dimension, the additive social capital variables include in the model which literature affirms are; membership density, heterogeneity index, cash contribution index, labour contribution index, and meeting attendance index. The new model improves the chi-square value from 127.102 to 135.641 with the same level of significance.

The resultant of the major effects of social capital on household poverty is attributable to heterogeneity index. From the table, in a unit increase in membership diversity, heterogeneity index will induce a moderate (0.454) but significant improvement in household poverty status.

CONCLUSION

The study provides empirical evidence that social capital and its dimension have effect on household poverty status. The disaggregation of social capital into six dimensions revealed that only heterogeneity index (level of diversity among members of local level of institution) can influence household poverty status and consequently improve its welfare. It is evident from the study that household assets (other assets) can complement social capital in improving household poverty status. However, the study concludes that social capital has positive influence on welfare and is an important factor in improving the standard of living of members of local level institutions.

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