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The role of social capital on rural food security: the case study of Dowa and Lilongwe Districts in Central Malawi

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This paper explores the contribution of social capital on the rural household food security. Social capital is the ability of community actors to secure benefits by virtue of membership in social networks or other social structures. Consensus has emerged among scholars that social capital can contribute significantly to the alleviation of poverty. Food insecurity is an indicator of poverty. Using the Malawi case study, this paper investigates the role of social capital on the food security in developing countries. Household survey data were used to incorporate different social capital variables into the household welfare model, controlled by human capital, physical capital, household and geographical characteristics. Household food security status was improved by membership to farmers' organizations, household network size and engagement in voluntary activities. When all social capital variables were incorporated into the models the explanatory power of the model improved by 11 and 20% on household income and food security respectively. We conclude that social capital has positive influence on household food security; however, the effects vary depending on the nature of social capital. The results indicate the significance of social networks in improving the socio-economic livelihoods of the people in rural areas in developing countries.

Key words: Social capital, food security, rural areas, Malawi, developing countries.

INTRODUCTION

This paper investigates the role of social capital on rural household food security situations in a developing country context, using Malawi as a case study country. The fight against food insecurity has been a global concern. In September 2000, for example, the international community issued a bold statement pronouncing that eradication of poverty and hunger was the most important development goal for the new millennium and set out to halve severe poverty by 2015 (Black and White, 2004; Abel et al., 2006). The

statement underscores the important connection of food security to poverty. Access to enough food is in fact considered to be a human right (McClain-Nhlapo, 2004). The World Food Summit of 1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences (World Health Organisation, 1996). But
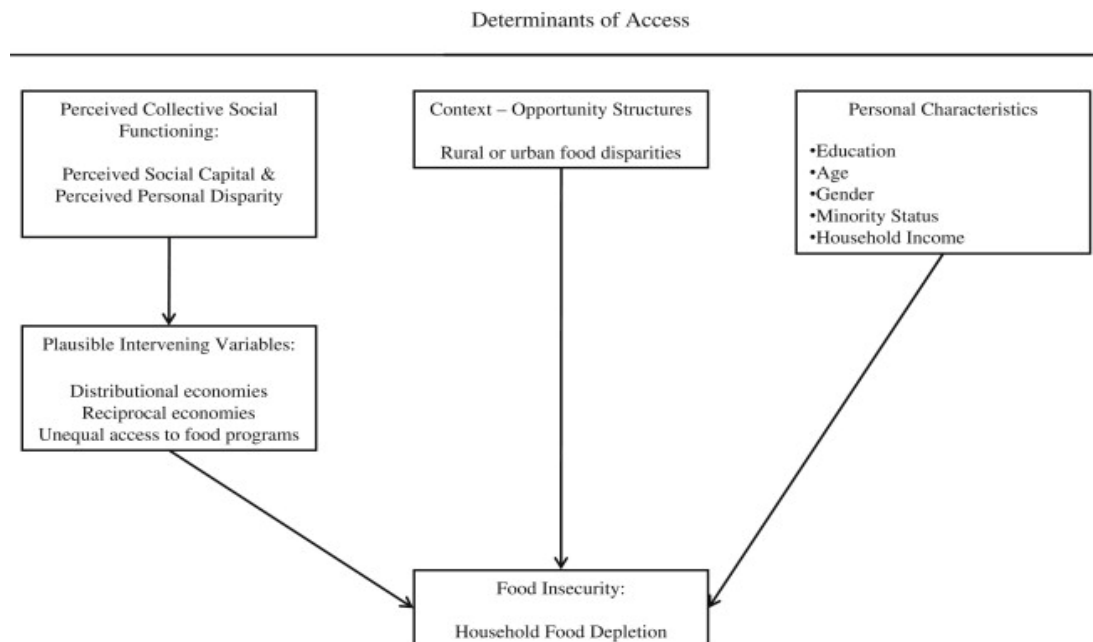
Figure 1. Determinacy of Food Access. Source: Dean and Sharkey (2011).

as Nobel prize winner Sen (1981) points out in his classical Poverty and Famines, availability of enough food in the aggregate is not sufficient for food security. Most of the serious famines documented in his work from the Great Bengal of 1941 to the Sahelian famines of 1970s occurred when sufficient food was available. It follows then that analysis based solely on food availability resulted in policies that worsened the problem.

The focus of this paper is on the linkage between social capital and food security in a rural developing country setting of Sub-Saharan Africa. Sub-Saharan Africa is one of the regions in the world currently facing both widespread chronic food insecurity and threats of famine (Liu et al., 2008).

Social capital can be defined as the "norms of reciprocity and networks of civil engagement" which are created by participation in civil organizations" (Putman, 1993: 167) The basic idea of social capital is that one's family, friends, and associates constitute an important asset, one that can be called upon in a crisis, enjoyed for its own sake, and/or leveraged for material gain (Putnam, 1995). The potential of social capital theory lies in its recognition of social networks and associational life as *resources* for fueling development from the bottom up. According to Putnam (2000), social capital includes bonding capital and bridging capital. Bonding occurs when you are socializing with people who are like you; same age, same race, same religion and so on. Bonding is what you do when you make friends with people who are not like you. Some segments of society who cannot directly engage in production activities rely on transfers for their basic means of survival. Eventually, assets and resources may transfer to people with poor well being

from either relatively well-off counterpart members, from government or NGOs. The absence of such transfers could mean some poor segments of society socially excluded. Øyen (2002) therefore argues that social capital diminishes social exclusion, a feature of poverty.

It has been argued that local institutions functioning at community level and social capital have their role in maintaining food security at individual and household levels (Degefa, 2009). Institutions are the rules of games in a society that can enhance or constrain peoples' livelihood activities and survival strategies. Embedded within society, social capital constitutes one of the five forms of livelihood assets (along with natural, physical, financial, and human capitals) which directly affect the level of food security at individual and household levels.

The relationship between social capital and food security has been explained in the conceptual model proposed by Dean and Sharky (2011). The model outlines the determinants of food access. It provides a framework for understanding what factors account for variations in availability and accessibility to resources such as food. The model shows food insecurity as the outcome of a variety of factors that determine food accessibility, including residential setting; perceived collective social functioning, which accounts for plausible causal links between perceptions of collective social functioning; and food insecurity such as individual experiences with communally-based means of food redistribution, and a range of personal characteristics (Figure 1).

Many studies have been carried out on social capital around the world, but Stone (2001), argues that many of the current attempts to empirically measure social capital

fail to recognize and account for its multi-dimensional nature. Furthermore the linkage between social capital and food security has not been extensively studied in the Sub-Saharan Region, although the region faces food security challenges. This paper therefore uses several dimensions of social capital to explore its in predicting rural household food security in a development country context using Malawi as a case study.   Against this background, the central hypothesis is as follows: rural households with higher levels of social capital will tend to have increased odds of being food secure.

MATERIALS AND METHODS

Data

A household survey of small holder farmers was conducted in the central region of Malawi in 2007. The survey focused on rural farmers whose economic livelihoods were mostly subsistence agriculture. Both male and female-headed households were randomly selected for the study. A total of 478 households were surveyed, comprising 255 households from Dowa District and 223 households from Lilongwe District in the central region of the country. The two districts were purposively selected due to the fact that they are among the major growing districts for the country's staple food (maize) and to ensure variability among the research subjects. The districts have different poverty levels. The poverty head count for Dowa rural area is estimated at 49.8%, compared to 76.7% for Lilongwe rural area (Malawi Government, 2005). A structured questionnaire was used to collect the data. The households were selected using a simple random sampling technique and information sought was on social networks, economic livelihoods, food security and socio-demographics.

Empirical analysis

In this study, household food security was defined as a dummy variable representing the food security status of each household. Food insecurity remains one of the major challenges of Malawi where thirty six percent of the population is chronically food insecure (Cromwell and Kyegombe, 2005). Food security is thus a credible welfare factor for Malawi. Fofack et al. (2001) points out that if one accepts the notion that adequate nutrition is a prerequisite for a decent level of well-being, then one could just look at the quantity of calories consumed per person. Calorific consumption was therefore used as a measure of food security in this research. The World Food Program (2006) reports that the reasonable calorific minimum level for an adult human being is 2,100 calories per day. Anyone consuming less than this minimum would be considered food insecure.

Calorific quantities were computed from the proportion of harvested maize consumed by the households since food security in Malawi was mainly defined in relation to the availability of maize (Simtowe and Zeller, 2006). Maize is the staple food in Malawi and from the 1970s; maize has contributed more to caloric intake per capita in Malawi than anywhere else in the world (Kidane et al., 2006; World Bank, 2008). Simtowe and Zeller (2006) indicate that efforts to diversify away from maize into other food crops have failed largely because maize produces more calories per unit of land area than all other food crops grown in Malawi. It is therefore likely that Malawi will continue to rely on maize as a major food crop. Besides, though Malawians grow other crops such as cassava, millet and sorghum, the data for this research were collected from the central region where maize is by far the major source of calories. Adult equivalents[1], which standardize the data according to the demographic characteristics of the family were used to express a household's energy intake. This value was then compared with the recommended allowance of that "standardized" household member. The households were then labeled as *food secure* or *insecure* on the basis of this analysis and a food security binary variable was therefore created. In this case the dependent variable took the value of 1 if the household was food secure and 0 if a household was insecure. Logistic regression models were then run to determine the effects of social capital on food security.

   Dayton (1989) indicates that the model for logistic regression analysis (LRA) assumes that the outcome variable, Y, is categorical (e.g., dichotomous), but LRA does not model this outcome variable directly. Rather, LRA is based on probabilities associated with the values of Y. For simplicity, and because it is the case most commonly encountered in practice, we assume that Y is dichotomous, taking on values of 1 (that is, the positive outcome, or success) and 0 (that is, the negative outcome, or failure). In theory, the hypothetical, population proportion of cases for which Y = 1 is defined as $\pi = P(Y = 1)$. Then, the theoretical proportion of cases for which Y = 0 is $1 - \pi = P(Y = 0)$. In the absence of other information, we would estimate π by the sample proportion of cases for which Y = 1. However, in the regression context, it is assumed that there is a set of predictor variables, X1,..., Xp, that are related to Y and, therefore, provide additional information for predicting Y. In this case one such predictor variables is social capital.

   For theoretical, mathematical reasons, LRA is based on a linear model for the natural logarithm of the odds (that is, the log-odds) in favour of Y = 1 (Equation 1).

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[1]Adult equivalents were calculated using conversion factors recommended in Storck et al. (1991)

$$Log_e\left[\frac{P(Y=1|X_1,\ldots,X_p)}{1-P(Y=1|X_1,\ldots,X_p)}\right]=Log_e\left[\frac{\pi}{1-\pi}\right]=$$

$$=\alpha+\beta_1X_1+\ldots+\beta_pX_p=\alpha+\sum_{j=1}^{p}\beta_jX_j \qquad (1)$$

It is worth noting that in the LRA model, p is a conditional probability of the form P(Y=1| X1,...,Xp). That is, it is assumed that "*success*" is more or less likely depending on combinations of values of the predictor variables.

The LRA model in Equation 1 is identical to the MRA model except that the log-odds in favor of Y = 1 replaces the expected value of Y. Dayton (1999) asserts that there are two basic reasons underlying the development of the model. First, probabilities and odds obey multiplicative, rather than additive, rules. However, taking the logarithm of the odds allows for the simpler, additive model since logarithms convert multiplication into addition. And secondly, there is a (relatively) simple exponential transformation for converting log-odds back to probability. In particular, the inverse transformation is the logistic function of the form:

$$P(Y=1|X_1,\ldots,X_p)=\frac{e^{\alpha+\sum_{j=1}^{p}\beta_jX_j}}{1+e^{\alpha+\sum_{j=1}^{p}\beta_jX_j}} \qquad (2)$$

Due to the mathematical relationship, $e^a/(1+e^a) = 1/(1+e^{-a})$, the logistic function for LRA is sometimes presented in the form:

$$P(Y=1|X_1,\ldots,X_p)=\frac{1}{1+e^{-\alpha-\sum_{j=1}^{p}\beta_jX_j}} \qquad (3)$$

Due to the mathematical relation, $1- e^a/(1+e^a) = 1/(1+e^a)$, the probability for a 0 response is:

$$P(Y=0|X_1,\ldots,X_p)=1-P(Y=1|X_1,\ldots,X_p)=\frac{1}{1+e^{\alpha+\sum_{j=1}^{p}\beta_jX_j}} \qquad (4)$$

Control variables in the model

The independent control variables affecting household food security were age of respondents, literacy and gender representing the stock of human capital. Physical capital stock was represented by the value of household assets, numbers of poultry and domestic animals (e.g. cattle, goats and the like) and amount of arable land. Geographical location was represented by a household estimated distance to the nearest paved road and produce market. A dummy variable, '*Location*' represented location of the respondents by district (Dowa=1 and Lilongwe=0). Marital status and ownership of an income generating activity were also included in the models. Descriptions of these variables are in the appendix.

Social capital variables

The major challenge in empirical studies on social capital is its measurement (Durlauf, 2002). Social capital studies have been criticised for relying on one-dimensional measures of the concept; often with scant empirical or conceptual regard to the relationship between that dimension and other key elements, nor to the 'representativeness' of a given dimension of social capital of the concept as a whole (Stone, 2006). To explore the relationship between indicators of welfare and social capital, five different measures of social capital were used in this study, including trust and participation, household social capital size, social anchorage, and membership to voluntary groups.

Household social capital size

The size of household social capital was approximated following the measure suggested by Borgatti and Foster (2003). This measure takes into account the number of reliable friends and relatives from whom the respondents sought or could potentially seek help in times of emergency. Social capital size was also proxied by the number of voluntary organizations in which household members had membership. Participation in groups is a commonly used indicator of social capital (Putnam, 1995). Group membership extends the social networks of individuals and this allows for information and resource sharing which eventually improves economic welfare. The alternative formulation of the variable on group membership concerned the specific participation of the research subjects in farmers' organizations, such as farmers' associations, cooperatives and clubs. These groups are important in the agrarian rural areas as they serve as channels through which the members accessed farm inputs and agricultural extension services.

Social anchorage

The longer a person lives in a community, the more socially rooted they become as they develop stronger social ties and trust (Stone and Hughes, 2002).

Table 1. Questions about different dimensions of social capital asked to householders.

Dimensions	Questions
Trust in external institutions	How often have you or any member of your family contacted any government official in past 12 months for any community problems
	How best can you trust the parliament to act in your best interest?
	How best can you trust traditional leaders to act in your best interest?
Trust among community members	To what extent do you agree that people in this neighborhood can be trusted
	To what extent do you agree that people around here are willing to help neighbours
Participation in development projects	To what extent do you participate in the community's development projects?

Table 2. Results of principal component analysis.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.591	26.523	26.523	1.591	26.523	26.523	1.527	25.455	25.455
2	1.079	17.991	44.514	1.079	17.991	44.514	1.104	18.393	43.849
3	1.013	16.875	61.389	1.013	16.875	61.389	1.052	17.540	61.389
4	.837	13.944	75.333						
5	.753	12.556	87.889						
6	.727	12.111	100.000						

Extraction Method: Principal Component Analysis.

Measuring aspects of social anchorage could therefore represent the level of social capital stock that an individual has. The number of years that research subjects had lived in their communities was therefore used as a measure of social anchorage.

Social capital index

A composite index of social capital was constructed based on norms of trust and participation in socio-economic activities. Trust and participatory activities are dimensions of social capital (Field, 2003; Knack, 2002; Onyx and Bullen, 2000). A range of different aspects therefore need to be included to adequately reflect social capital. To reflect these elements, heads of households were asked a range of questions about three aspects of social capital: *institutional trust, community trust, and economic participation* (Table 1). The first three questions reflect the trust householders have in external institutions. Questions 4 and 5 reflect the trust householders have in their community and the last question reflects the extent to which they participate in community development projects.

The social capital variable was then formulated as a composite index through factor analysis of the six indicators. The composite social capital index was developed from a six-item Likert scale. The questions had five response categories, measured from 1 to 5, where 1 and 5 represented two quantitative negative and positive extremes of *never* and *always* respectively. The responses from the questions were then subjected to a principle component analysis (PCA) in order to formulate a composite social capital index. Table 2 shows the results of the PCA. A mean score was then computed using the proportion of variation accounted for by each component as a weighting factor. It was this composite score that constituted the social capital index.

The Kaiser-Meyer-Olkin measure of sampling adequacy in Table is a statistic that indicates the proportion of variance in the variables that might be caused by underlying factors (Anderson et al., 2001). High values (close to 1.0) generally indicate that a factor analysis may be useful with the data. If the value is less than 0.50, the results of the factor analysis probably would not be very useful. The statistic value of 0.616 in this analysis shows that factor analysis is useful.

Table 3. KMO and Bartlett's test.

Test		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.616
Bartlett's Test of Sphericity	Approx. Chi-Square	107.819
	Df	15
	Sig.	0.000

Table 4. Variables and their descriptive characteristics.

Variable	Whole Sample(n=478)		Dowa (n =255)		Lilongwe (n=223)	
	Mean	**Std D**	**Mean**	**Std D.**	**Mean**	**Std D.**
Sex (% of male headed households)	84%	-	84%	-	87%	-
Education (years)	4.83	8.11	4.44	3.05	3.96	3.21
Household size	5.16	2.32	5.51	2.52	4.77	2.00
Age (years)	43.16	15.56	43.52	15.52	42.76	15.63
Literacy (%)	68%	-	91%	-	42%	-
Asset value (MK)	143,720	314,509	152,220	261,670	133,999	366,082
Land size (ha)	2.12	4.38	1.69	1.94	1.38	2.38
Expenditure per capita (MK)	4629.75	6845.94	5209.12	7726.65	3967.24	5618.50
Chemical fertilizers (%)	71%	-	70%	-	74%	-
Land for maize (ha)	0.73	0.60	0.78	0.72	0.66	0.44
Maize Yield (kg/ha)	1612.54	1576.84	1804.82	1919.22	1468.41	1150.12
Food security status %)	43%	-	44%	-	42%	-

Exchange rate: 1British Pound = MK296.00. Source: survey results (2007).

The Bartlett's test of sphericity (Table 3) tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for structure detection (Anderson et al., 2001). Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data being used. This implies that our three indicators are strongly correlated. In this case the significance level is far much less that 0.05, indicating that the variables are related, thus confirming the usefulness of factor analysis.

RESULTS

Table 4 shows a number of variables and their descriptive characteristics. It is notable that the majority of the sampled households were male headed (84%). For most of the variable, Dowa District appears to be better than Lilongwe. For example, Dowa had 91% of households heads that were literate while Lilongwe had 42%. In terms of value of household physical assets, Dowa had a mean of MK152,220 while Lilongwe had a mean of MK133,999.00. In terms of land endowment,

Dowa had a mean lad holding size of 1.69 ha while Lilogwe had 1.38 ha.

The basic food security model (without social capital)

Logistic regression estimates for the basic food security model are shown in column 1 of Table 5 in the annex. The estimates are in the form of odds ratios and the specified explanatory variables predicted 13% of the variation of the dependent variable (R-squared = 0.13). Estimates for gender and labour were significant at 1% level and all physical capital variables (that is, value of household assets, size of arable land, possession of poultry birds and other domesticated animals) were as expected also positively significant (1% level). Access to agricultural credit was positively significant in the food security model, increasing the odds of a household being food secure by 70%.

Social capital and food security

When social capital variables were included in the model, the logistic regressions showed that *membership to*

Table 5. Logistic Regression estimates with food security status as dependent variable (n=478).

Food Security Status	Model 1 Odds Ratios: Basic Model	Model 2 Odds Ratios: group membership	Model 3 Odds Ratios: Number of groups	Model 4 Odds Ratios: social anchorage	Model 5 Odds Ratios: (Social Index) Capital	Model 6 Odds Ratios: Social network size	Model 7 All SC variables
Human Capital							
Gender	1.78 (0.27)***	1.82(0.28)***	0.85(0.22)*	1.82(0.28)***	1.79(0.27)***	1.78(0.27)***	1.79(0.28)***
Literacy	1.01(0.12)	0.99(0.12)	1.23(0.21)	1.04(0.12)	1.004(0.12)	1.0(0.12)	1.09(0.13)
Labour Equivalent	1.29(0.05)***	1.29(0.05)***	0.67(0.19)	1.29(0.05)***	1.28(0.05)***	1.30(0.05)***	1.29(0.05)***
Physical capital							
Logpoultry	1.26(0.05)***	1.25(0.05)***	1.25(0.05)***	1.24(0.05)***	1.25(0.06)***	1.25 (0.05)***	1.20(0.05)***
Loglvstock	1.80(0.12)***	1.78(0.12)***	1.56(0.19)***	1.78(0.12)***	1.79(0.12)***	1.77(0.12)***	1.82(0.12)***
Logasset	1.19(0.03)***	1.15(0.03)***	1.16(0.03)***	1.16 (0.03)***	1.19(0.03)***	1.16 (0.03)***	1.14(0.03)***
Logland	1.35(0.08)***	1.66(0.13)***	1.68(0.13)***	1.68(0.13)***	1.34(.08)***	1.67(0.13)***	1.69(0.13)***
Household Characteristics							
Size of household	0.96(0.03)	0.95(0.03)*	0.52(0.04)***	0.95(0.03)	0.95(0.03)	0.94(0.03)**	0.94(0.03)**
AGE of house head	1.04(0.02)*	1.03(0.02)	1.03(0.02)	1.03(0.02)	1.04(0.02)*	1.03(0.02)	1.04(0.02)**
Age squared	0.99(0.0002)*	0.99 (0.0002)	1.0 (0.0002)	0.99(0.0002)	0.99 (0.0002)**	0.99(0.0002)	99(0.0002)**
Marital status	1.12(0.14)	1.18(0.14)	1.12(0.14)	1.13(0.14)	1.11(0.14)	1.11(0.13)	1.14(0.14)
Geographical location							
Location (0=Dowa; 2=Lilongwe)	0.55(0.06)***	0.58(.07)***	0.6(0.07)***	0.58(0.07)***	0.55(0.06)***	0.61(0.07)***	0.65(0.07)***
LogDistanceMrkt	1.17 (0.03)***	1.13(0.05)**	1.15(0.06)***	1.14 (0.05)**	1.17 (0.03)***	1.15(0.06)***	1.15(0.06)***
Logroad	1.04 (0.03)	1.04(0.03)	1.06(0.03)*	1.06 (0.03)*	1.05 (0.03)	1.04(0.03)	1.09 (0.03)**
Other variables							
Having an income generating activity (IGA)	0.95(0.09)	0.93(0.09)	0.93(0.09)	0.92(0.09)	0.94(0.09)	0.96 (0.09)	0.86(0.08)
Access to credit	1.70 (0.07)***	1.70(0.07)***	0.69(0.07)***	1.69(0.07)***	1.69(0.07)***	1.68 (0.07)***	1.73 (0.07)**
Social Capital							
Social capital Index					1.00(5.10e-14)		1.0(5.11e-14)
Social Network Size						1.36(0.08)***	1.76(0.85)**
Membership		1.65(0.21)***					1.61(0.21)***
Number of groups			0.9(0.07)***				0.43(0.09)***
Social Anchorage				0.96(0.04)			0.95(0.04)
LR chi2	428.7	450.07	424.69	425.84	432.45	440.24	493.07
Prob > chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R^2	0.1289	0.1323	0.1277	0.1280	0.1300	0.1353	0.1547

farmers' organizations, *total number of voluntary groups* and the *size of social network size* had positive influence on food security at 1% level. Membership into farmers organizations was associated with 65% odds that a household would be food secure. A unit number of reliable friends or relatives was associated with 36% increase in the odds of being food secure. In fact maize production figures for the research subjects showed that volunteering participants had 25% more yield in kg per ha than the mean yield of the whole sample.

Inclusion of all the social capital variables into the model improved the explanatory power of the model by 15%.

Table 6. Description of control variables.

Variable	Description of the Variable
Age	Age of household head
Age Squared	Square of age of household head. This was included to model the relatively linear food security rate during a subject's prime years, followed by a rapidly increasing failure rate as the subject reaches "old age"
Gender	Sex of household head (categorical variable)
Marital Status	Whether household head is married or not (categorical variable)
Literacy	Whether the household head knows how to read and write (categorical variable)
Labour Equivalent	Estimated available household labour , computed using FAO task conversion factors
Poultry	Log of number of poultry birds
Livestock	Log of number of livestock (e.g. goats, cattle etc)
Land	Log of quantity of land owned by the household
Assets	Log of quantity of land owned by the household
Distance to market	Log of distance to the nearest market
Distance to nearest road	Log of distance to the nearest all-weather road
Income generating activity	Whether household runs a small business or not (Categorical variable)
Access to credit	Whether the household ever accessed agricultural loans or not (Categorical variable)

All physical capital variables, such as value of household assets, size of arable land, possession of poultry birds and other domesticated animals were significant in all the models at 1% level. Access to agricultural credit was also positively significant in the food security models at 1% level.

DISCUSSION

Social capital and food security

The general picture provided by the results is that *group memberships, informal networks* and *the social capital index* improved the food security of households. This is an important result in Malawi where chronic food insecurity and chronic poverty are closely related (Harrigan, 2008). One important observation is that both formulations for group membership variable emerged significant on the food security models. Group networks such as farmers associations, cooperatives and clubs are channels through which the government and NGOs

provide the much needed agricultural inputs to the rural communities in the form of loans or sometimes for free as a safety net.

Participation in some development projects had direct influence on the food security of some households because the participating households received benefits in form of food. For example, the Food for Work Programmes initiated by the Government of Malawi meant that those households that took their time to participate received food (Chirwa et al., 2002). Some of these projects require the spirit of volunteering to hold, for example, feeding the sick.

The linkage of social capital with food security is very important for developing countries, especially in the Sub-Saharan countries where national food security is not yet achieved. Malawi, for example, has not yet achieved her national food sufficiency (Chilowa, 1998), as such, food security is a very important welfare indicator, especially for the rural poor who rely on subsistence farming activities. A significant proportion of the Malawian rural people have perennial food insecurity due to a number of reasons, ranging from frequent droughts, low farm
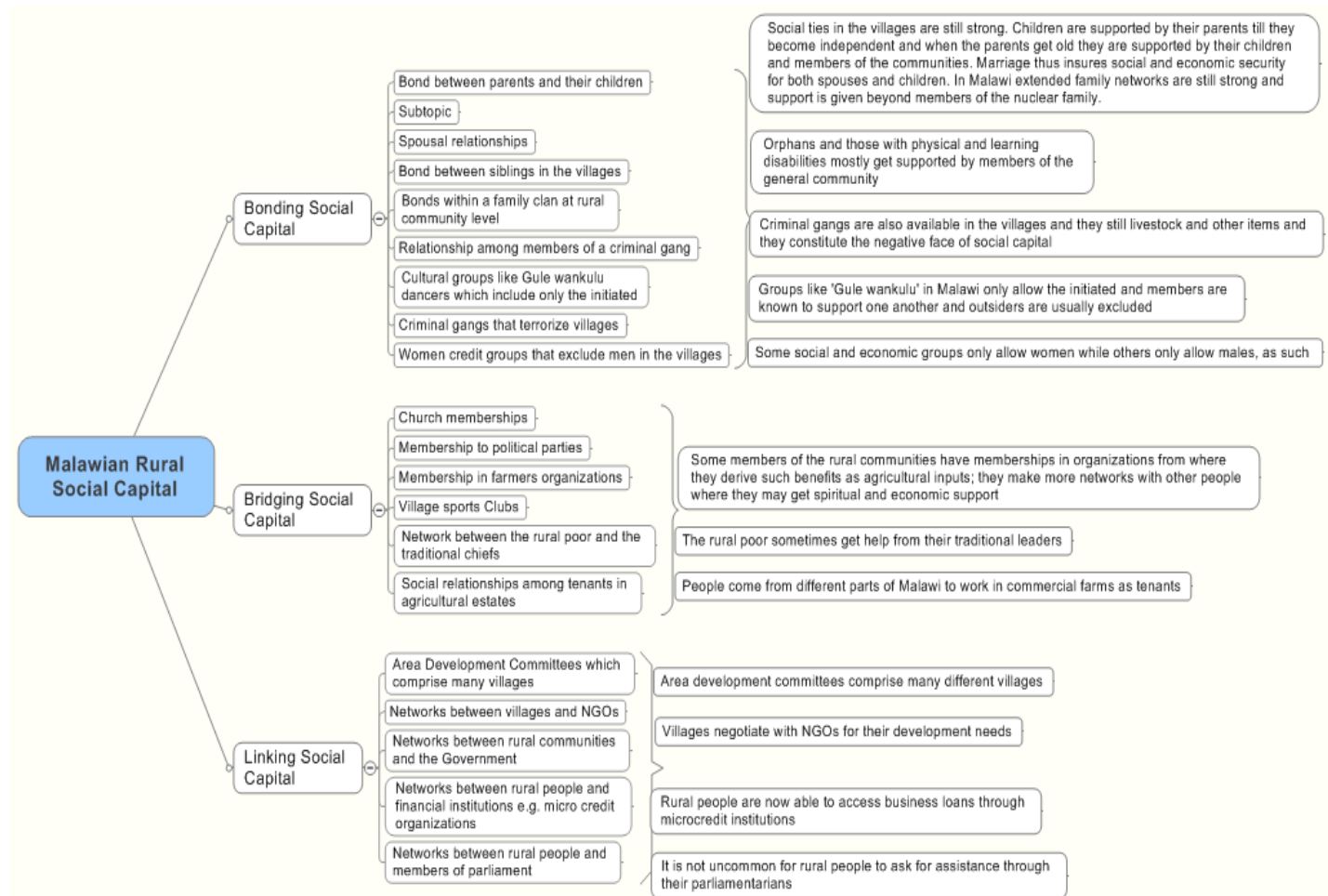
Figure 2. Social capital map for rural Malawi (Source: Study finding).

productivity and diminishing land holding sizes.

The value of informal social networks in Malawi

It was found that rural informal social networks were an important aspect of rural economic livelihood. Informal networks that the rural people had with their relatives and friends reflected all the different types of social capital (that is *bonding social capital, bridging and linking social capital)* and they served as a very good source of help in times of hardships and this improved their economic welfare (Figure 2). The results compare very well with the observations of other researchers in other countries (Ameen and Sulaiman, 2006; Nee, 1998). The traditional social fabric in rural Malawi is still strong as neighbours believe that '*one head cannot carry a roof*. This is a common aphorism in the Malawian society. It is thus an accepted norm for households to help one another in times of distress. Whiteside (1999) observes that helping one another in times of economic distress constitutes one

of the social safety nets that the rural poor survive on in Malawi. In the rural areas under study an average household spent MK1,953 (US$13.95) annually to help others out of their financial problems and also received an average of MK1,398 (US10.00) as remittances from friends and relatives. In rural subsistence communities little sums of monetary exchanges like these make a big difference in times of financial distress and reflect direct financial benefits of social capital.

Social capital in rural Malawi

Social capital at Malawian rural household level reflects what is known as bonding social capital. Malawian rural people live in closely knit family ties where parents and their children live together. The children get the social-economic support from their parents and/ or guardians till they grow up to adulthood or economic independence. As the parents grow older, the direction of support changes as the children now take the responsibility of caring for

their parents – providing them with the basic needs of life (e.g. food, shelter and even money). Children working in the cities send remittances to their parents in the villages (Rempel and Lobdell, 1978) and those living within the villages make sure that their parents and close relatives are provided for. Studies in Malawi have shown that excluding business and cash crop income, mean remittances were worth 43% of the average total income of receiving households (Davies et al., 2006). Including business income, median remittance income was equal to 40% of median total income, making this estimate of the income share of remittances fairly robust. They are thus an important source of income for these households.

Within the rural communities, inter household relationships are common, norms of exchange and reciprocity between neighbouring households are practiced. There are unwritten codes of conduct which guide the behavior of individuals in times of need. It is not uncommon for people to receive help in cash and kind from neighbours and relatives in times of social or economic crises and this is a reflection of social capital at work. For example, when one gets sick and thus not able to help themselves, neighbours take their time and other resources to help the sick person or their family. In the study of rural central region it was found that 45% of respondents took their time to help the sick. There were then many community based organizations (CBOs) in the rural areas that dealt with various social problems, including distribution of food to the vulnerable members of the communities. Many CBOs had been established by volunteering members of the communities to look into the welfare of village orphans (Chirwa, 2002).

Conclusion

One reason behind development practitioners' interest in social capital as an asset for the poor is the perception that it is relatively costless to acquire, unlike other assets such as land (Portes, 1998). The study agrees with the observation by Iyer et al. (2005), the focus on only three types of capital (that is *natural, physical and human capital*) often overlooks a critical aspect in the process of economic growth in that they do not explain how economic actors interact. The food security analysis has demonstrated that some forms of social capital are associated with enhanced food security while other forms do not have any influence at all. It has been demonstrated that the inclusion of the social capital variables improved mostly improved the explanatory power of the basic welfare model, thus underscoring that social capital could indeed be a missing link in the economic development process.

It should also be noted that some studies have also identified some negative consequences of social capital. The same strong ties that bring benefits to members of a group commonly enable it to bar others from access and

can also lead to public "*bads*" like in the case of the Mafia (Portes, 1998). Although the analysis in this paper has demonstrated the positive side of social capital, future research could explore how different dimensions of social capital affects different socio-economic groupings of people in the rural areas as well as the urban areas.

ACKNOWLEDGEMENTS

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