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Abstract:

This paper investigates the interactions between gender, social capital and empowerment in the rural areas of northern Ethiopia. We define empowerment narrowly as the power of households to make important decisions that change their course of life. Depending on the degree of control over decisions, the response of households is classified into passive, active and full control. A multinomial logit model is used to analyze empowerment levels of the rural households, first for the full sample of households and then for male headed and female headed households separately. Findings indicate that social capital, measured by the number of local associations a household is a member of, is an important factor in empowerment, but with significant gender differences. Social capital is significant for male headed households but not for female headed households; for the latter, education and access to credit are the strongest determinants of empowerment.

Keywords – Empowerment, Gender, Social capital, Ethiopia, Africa

1. <u>Introduction</u>

In recent years, there has been a growing realization that development goals cannot be achieved unless the poor are involved in the development process. Given clear rules of the game, access to information and appropriate support, the poor have the capacity to address local problems and change their course of life through time. Development efforts and strategies targeting at poverty alleviation thus need to recognize this capacity and involve the poor in the development process. One such approach to development and to poverty reduction is Community-Driven Development (CDD), which involves working with the poor as partners in development to reduce poverty and improve the fit between development efforts and the needs of the poor. CDD is ultimately about empowerment. It has the objective of achieving empowerment by reversing power relations in a manner that creates agency and voice for poor people, allowing them to have more control over development assistance (Mansuri and Rao, 2004).

The term empowerment has different meanings in different socio-cultural and political contexts. In its broadest sense, empowerment is the expansion of freedom of choices and action. The issue of gaining power and control over decisions and resources that determine the quality of one's life is at the center of empowerment.

Social capital understood as patterns of social organization arguably has the greatest bearing upon power relations in a society and thus on the prospect of empowerment. It is taking a center stage in empowerment efforts. The World Bank considers building of social institutions and social capital as one of the pillars towards directly bringing about empowerment (World Bank, 2001). The institutions, networks and norms that comprise

social capital contribute directly to empowerment at the local level, and indirectly by a number of processes that make state institutions more responsive to the poor.

In analyzing the implication of social capital for empowerment, it is important to have a more complete picture of social capital, especially one that includes attention to gender and hierarchies within social networks and the broader context of gender differences within which social networks are forged. Social capital that exists within a broader context of gender inequality can exacerbate women's disadvantages, as women remain excluded from the more powerful networks of trust and reciprocity that exists among men leading to gender differences in forms and consequences of empowerment and disempowerment.

In this paper, we address two pertinent questions in the interaction of social capital and empowerment. First, does social capital defined by membership in local associations influence the power of rural households to make decisions that change their life? Is the influence different under different levels of trust within and participation by group members? Second, can gender differences in empowerment be attributed to gender differences in the form and use of social capital among rural households?

The paper attempts to find some answers to these questions by reporting on an empirical study of empowerment using panel data of 385 rural households in northern Ethiopia. In addition, this study utilizes inferential statistics to investigate the significance of socio-economic determinants of empowerment. A multinomial logit regression is used to estimate the response probabilities associated with the feeling of rural households to make decisions that change their life. Empowerment takes the form of passive, active or full control over life. Empowerment is estimated for the full sample, while controlling for gender, as well as for

two sub-samples (male and female headed households) in order to capture gender differences in social capital formation and empowerment.

The paper is organized in four sections following the introduction. Section 2 discusses issues in measures of social capital and empowerment and conceptual links between the two. Section 3 describes the methodology and data source. The correlates of empowerment and gender differences in empowerment are discussed in section 4 and section 5 concludes.

2. Social capital and empowerment: Definition, measurement and conceptual link

Social capital and empowerment are two increasingly familiar terms in the development agenda today. Despite their strong presence in the development discourse, there is no consensus among analysts in the definition and conceptual and operational links between the two. The literature on these topics is characterized by a multitude of different, and often conflicting, definitions, which obviously makes it harder to clarify the conceptual relationships between empowerment and social capital (Grootaert, 2003). However, it is important to have a set of definitions that are clear and distinct in order to constructively tackle the task of exploring the relationship between the two concepts

(a) Social capital

Social capital represents one of the most powerful and popular metaphors in current social science research and the most elusive concept as reflected in the fact that its definition differs across studies.[1] While deploring the confusion over the meaning and definition of the term, different scholars have offered their own definition consistent with their subsequent theoretical or empirical analysis of the role of social relations in the economic sphere. Portes (1998) has developed a strong critique of the social capital literature because of this

definitional ambiguity. For our purpose we adopt the following definition. Social capital refers to "the organizations and networks and the underlying norms and values that govern the interactions among people in society" (Grootaert and van Bastelaer 2002).

Many analysts treat social capital as the property of collectives where the institutions, networks and norms are confined to those that exist at the level of communities and representatives of powerful institutions such as government and businesses (Putnam, 1993; Wookock and Narayan, 2000; Healy, Hampshire and Ayres, 2004). While the broader conceptualization of social capital is important, in this paper we focus on local level social capital at the individual and household level because of their dominancy as objects of contemporary policy making and debate. We treat social capital much like the other forms of capital - human and physical capital.

Equally complex is the measurement of social capital. There is no widely held consensus on how to measure social capital. One can usually intuitively sense the level/amount of social capital present in a given relationship, but quantitatively measuring it has proven somewhat complicated. This has resulted in different metrics for different functions. In some applications, associational life defined by membership in different groups is considered (see e.g., Maluccio, Haddad and May, 2000; Haddad and Maluccio, 2000) and in others an index of social capital (either additive or multiplicative) comprising membership, heterogeneity of groups, level of participation and sometimes a few other measures are used (see e.g., Narayan and Pritchett, 1997; Grootaert and Narayan, 2001). For our purpose, we use membership in associations as a proxy to measure social capital.

Membership alone, however, may not fully explain the functioning of social capital. Benefits derived from membership in associations could be different among households

depending on the extent of involvement of group members in the group's activities and the level of trust within groups. Thus, for a better understanding of the analysis of the empowerment impact of social capital, it is vital to disaggregate social capital on the basis of participation and trust. Haddad and Maluccio (2000) analyzed the welfare effects of social capital for South Africa by disaggregating group membership along three dimensions – the level of participation by the households in the groups, the main function of the group and the trust level within the group – and found that returns to group membership vary by the type of group, the level of participation in the group and the degree of trust within the group. Disaggregating membership in groups by trust and participation enables us to read the influence of social capital upon empowerment when trust and participation levels are high or low.

(b) Empowerment

Empowerment is one of the key words of development discussions accruing many definitions and connotations. Different authors have defined the concept in different ways. The World Bank defines empowerment as "the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives" (World Bank, 2002:10). Kabeer (1999:437), on the other hand, defines empowerment as "the process by which those who have been denied the ability to make strategic life choices acquire such ability". She focuses on three dimensions that define the capacity to exercise strategic life choices: access to resources, agency and achievement. Others explore empowerment at different levels: personal, involving a sense of self-confidence and capacity; relational, implying ability to negotiate and influence relationship and decisions; and collective (Rowlands, 1997).

Central to all definitions is the capacity to make effective choice. This capacity is primarily influenced by two sets of factors: resources and agency. Resources are treated as 'enabling factors' that can foster an empowerment process, rather than as part of empowerment itself. Agency is at the heart of many conceptualizations of empowerment. It encompasses the ability to formulate strategic choices, and to control resources and decisions that affect important life outcomes (Malhotra, 2003).

Building on the theoretical concepts, we explore the meaning of empowerment in the feeling of households to change their life, defining empowerment as the ability to make decisions that affect everyday activities and may change the course of one's life, in an effort to examine factors that influence the power of households to control their life.

(c) Conceptual link

The link between social capital and empowerment was first highlighted by the World Bank in its World Development Report 2000/2001. It treats empowerment as a broader concept of the two and the building of social capital as one of the pillars in the process of empowerment. Empowerment is anchored to poverty reduction by the Bank and is found at all levels – macro, intermediate and micro levels. Building social capital is to a large extent a micro activity, involving strengthening local organizations and networks and supporting a community based approach to development.

In a similar way, a number of analysts have explained the conceptual link between social capital and empowerment. Esman (2003) explains empowerment of the poor and the weak as the product of a struggle. The ability to successfully bring about change depends on the formation of social capital, usually in the form of organization. Organization enables ordinary men and women to mobilize their collective energies in pursuit of common goals.

Grootaert (2003) treats the two concepts as interconnected. Building social capital facilitates empowerment. Viewing social capital and empowerment as multilevel concepts facilitates the link to poverty reduction strategies.

Building on this literature, we show the link between social capital and empowerment by treating the former as one form of capital like physical and human capital, and empowerment as the ability of households to make decisions to change their life. Poor households' ability to make decisions that change their life is extremely limited both by their lack of assets and by their weak power to negotiate better terms for themselves in their everyday life. Social capital, the norms and networks that enable collective action, increases access to economic and social assets. Improved access to assets and an enabling environment can enhance the ability of households and individuals to control over their lives. The influence of social capital on empowerment increases with a rise in trust and participation by group members. Active participation at high trust levels may result in additional direct empowerment benefit due to improved information sharing, lower barriers to exchange and improved collective action.

3. Data and methodology

(a) Data collection

The data considered in this paper have been collected in three consecutive years – 2004, 2005 and 2006 – in four study tabias[2] in northern Ethiopia. A two stage sampling design was made in the study. The primary sampling units were tabias. Sample tabias were selected on the basis of secondary information collected from all Woredas[3]. In selecting the sample tabias, factors that affect socio-economic conditions such as nearness to market, geographical

location, the availability of both rain-fed agriculture and irrigation and size of tabias based on population, were considered so as to make the sampled tabias representative. In this category, a total of four tabias namely Ruba Feleg, Tsenkaniet, Arato and Siye were selected for the survey. The tabias selected are representative of the three agro-ecological zones of the region identified on the basis of altitude. Areas with altitude ranging from 1500-2300 m.a.s.l. are locally termed as *woina douga*, i.e., midland areas; areas above 2300 m.a.s.l. are locally known as *douga*, i.e., highland areas; areas with altitude less than 1500 m.a.s.l. are termed as *kola*, i.e., lowland. Two of the tabias are in *woina douga*, one is in *douga* and the fourth in *kola*.

A qualitative survey was conducted in each of the four study tabias. Among other things, an inventory of local level associations was made for each village. Following the qualitative survey, a multi-purpose questionnaire that includes an inventory of the local institutions was used to gather information on household income, expenditure, off-farm income, household assets and social capital alongside a host of other questions related to production and sales. The survey questionnaire was initially administered to 100 households randomly selected from each tabia with a total of 400 households. Nine households were lost in the second round and six more in the third round. Hence, data was obtained for a total of 385 households for three years. However, the information on social capital extracted in the first round was mainly limited to membership. Detailed information about social capital and empowerment were only available from the second round onwards. As a result, this study uses the data from the last two surveys - 2005 and 2006.

(b) Description of the variables

(i) Dependent variable

The dependent variable is the power of households to make decisions that change their course of life. The emphasis is on empowerment among male and female headed households and the relationship with social capital. Respondents were asked if they feel that they have the power to make important decisions that change the course of their life on a 1 to 5 scale, where 1 is totally unable to change, 2 is mostly unable to change, 3 is neither able nor unable to change, 4 is mostly able to change and 5 is totally able to change. We tested if some of the outcomes can be combined. Two outcomes, say m and n, are said to be indistinguishable if none of the variables significantly affects the odds of outcome m versus outcome n. If two outcomes are indistinguishable with respect to the variables in the model, one can obtain more efficient estimates by combining them (Long and Freeze, 2006). The Wald test in STATA[4] indicates that the first three outcomes can be combined. We thus regrouped the 5-scale category into 3 by combining responses 1, 2 and 3 into one. Hence, we have a three scale (1 – 3) response variable. For purposes of analysis, we classify this as:

- *Passive control* refers to households who do not have control over their life and includes households who responded totally unable to change their life, mostly unable to change their life and neither able nor unable to change their life.

- *Active control* is the second group mostly able to make decisions that change their life.

- *Full control* refers to households with full control over their life and includes households who respond 'totally able' to make decisions that change their life.

Table one about here

Table 1 summarizes the response of households' level of empowerment by sex. The table indicates that most households had the feeling that they have active control over their life

followed by passive and full controls respectively in 2005. The proportion showed some changes in 2006. There is an increase in the percentage of households with passive control and full control, but still constituting the smallest proportion. The same trend is observed when the data is disaggregated by gender. However, the proportion of female headed households with passive control is higher and increased relatively more than for male headed households.

(ii) Independent variables

Using a multinomial logit model, we will estimate the above outcome on a number of explanatory variables shown in table 2. We include household size, gender and age of household head, number of children under five and number of adults to analyze the effect of demographic variables on households' feeling to make decisions that change their life.

Table two about here

Social capital facilitates access to resources and has a bearing on empowerment. It allows poor people to increase their access to resources and economic opportunities, obtain basic services, and participate in local governance (World Bank, 2001). To capture the effect of social capital on empowerment, we include social capital interacted with trust among and participation by group members.

We measure social capital by group membership at household level. This measure is constructed by treating membership of one or more household members in the same group as a single group membership for the household as a whole. Average membership in each tabia regrouping associations on the basis of their functional use is indicated in table 3. The table indicates that community wide organizations, which include Farmer's Association, Women's Association, Youth Association and Cooperatives, is the dominant form accounting for

41.3% of total membership, followed by religious groups like *tsebel* and *idir*[5] accounting for 18.5% of the total, the natural resource management group locally called soil and water conservation accounts for 18.1%, the finance group (13.4%), the neighborhood group (4.8%) and finally other forms of associations such as social service groups like education and health, membership in political parties etc. account for 3.8% of the average total.

Table three about here

Next, we construct a participation measure from the question on the number of days a household attends meetings or involves in group work. Respondents were asked to identify two most important groups from the local groups to which they belong and the number of times a household member participated in group activities by attending meetings or doing group work for these two most important groups. An average of the level of participation of each household in the two groups is calculated and the median of the average is taken as a cut-off point to classify high or low level of participation. A household is said to have a high level of participation if its average participation score is above the median value, otherwise it is low.

Trust is an abstract concept that is difficult to measure, because it may mean different things to different people. In most surveys, the level of trust is measured by asking a direct question "Generally speaking would you say that most people can be trusted or that you cannot be too careful in dealing with people?" In the survey data, the same question is asked to respondents. However, we prefer to use a more indirect question believed to be a better indicator of trust: "In this village/neighborhood, one has to be alert or someone is likely to take advantage of you" on a 1 to 5 scale where 1 is agree strongly, 2 is agree somewhat, 3 is neither agree nor disagree, 4 is disagree somewhat and 5 is disagree strongly. The smaller

values indicate lack of trust and higher values indicate higher level of trust. On the basis of the above points, we developed an indicator of trust at the individual level. For the individual trust indicator, a dummy with 1 for high level of trust and 0 for low level of trust is used. Households who disagree somewhat and disagree strongly are believed to have a high level of trust and all others a low level of trust.

The amount and type of assets owned is expected to influence the capacity to make decisions that change one's course of life. We include the most important assets in rural settings – per capita land owned, number of animals owned, human capital proxied by level of education of household head and value of agricultural tools owned.

Credit plays an important role in rural areas. It helps to expand new investments and adopt new technologies. Increased access to credit enables households to make investments in activities that could raise the households' income and hence improve living conditions. Similarly, access to irrigation is expected to play a significant role in the living condition of rural households. Farming in the area is subsistence and heavily dependent on natural rain. Households with access to irrigation are not only able to produce more but also to produce for the market. This gives them more leverage to control their life. To capture these effects, we include two dummy variables – one for access to irrigation and another for access to credit from formal and informal sources.

In many developing countries, rural households live in an economic environment highly uncertain and susceptible to various shocks – natural disasters, policy and idiosyncratic shocks to mention a few. In such a risky environment, households always show a strong preference to smooth consumption rather than allow it to fluctuate. Diversification of income sources has been put forward as one of the strategies households employ to minimize

household income variability and to ensure a minimum level of income (Alderman and Paxson, 1992). Diversification, however, is not only driven by the struggle for survival of the poor. While some diversify because they have little choice, better-off households may diversify because they have a lot of choices (Barret, Buzineh, Clay and Reardon, 2005). Thus depending on the reason for diversification, households' ability to make decisions that change the life of the household is affected differently. To capture this effect, we include diversification into non-farm self employment given by the ratio of non-farm self employment income to total income and diversification into non-farm wage employment given by the ratio of non-farm wage income to total income. Other variables included are village dummies to capture location effects and remoteness proxied by distance to market.

(c) Methodology

Multinomial logit is used to estimate the response probabilities associated with each outcome of empowerment outlined above: passive control (j=1), active control (j=2), and full control, (j=3). Let y be a random variable taking on the values {1,2,3} denoting the power of households to make decisions to change their own course of life given a set of conditioning variables x (household and community characteristics, household assets owned as well as the size of social capital). Changes in elements of x affect the probabilities that a household has response j, Pr (Y_i=j | X_i), j = 1,2,3.

A multinomial model is a conceptual extension of the standard univariate model to a system of equations with latent dependent variables. It is expressed as

$$(1)\ \pi_{ij} = \Pr(Y_i = j \mid X_i) = \frac{e^{X_i \beta_j}}{\sum_{j=1}^{J} e^{X_i \beta_j}}$$

The logit model pairs each response category with an arbitrary baseline category. In our analysis the response has three states (J=3). For identifiability, active control (j=2) is set as the reference category so that $\beta_2 = 0$. The multinomial logit model then has the form

(2) $\log(\dfrac{\pi_{ij}}{\pi 2}) = X_i'\ \beta_j$

where j=1, 3. This has a latent variable interpretation where we define the utility of choosing a particular response, for example the power to make decisions that change one's course of life, by the random variables U_{ij} (j=1,...,J), with the function

(3) $U_{ij} = X_i\beta_j + e_{ij}$

consisting of an observable component and random elements e_{ij} that arise from an independent extreme value distribution.

Endogeniety is expected when one is quantitatively analyzing the relationship between empowerment and social capital. The relationship may not be strictly one way – social capital influencing empowerment. Empowerment can also influence social capital. It is possible, for example, that more empowered communities appreciate the gains of collective action and can work together in a productive and mutually beneficial way, which in turn is likely to add to their stock of social capital. Appreciating the problem, though, the effect of endogeniety may not be so serious here, for empowerment is defined more narrowly as the feeling of individuals or households to make decisions to change their life. This feeling is less likely to influence one's social network rather than being influenced by the existing social network and relationship with people, the notion that is picked up by social capital, at least in the short run.

4. <u>Estimation results</u>

After combining the first three outcomes in the empowerment question, table 4 reveals that the model performs reasonably well in terms of predicting the capacity of households to make decisions that change their life.

Table four about here

A Chow test was used to determine the validity of estimating two sub-samples versus using the pooled data. The null hypothesis of equal coefficients in the two groups defined by gender is rejected (chi-square of 125.56 with Prob > chi^2 = 0.0000), justifying the statistical validity of inferences done by sub-groups versus those for the full sample.

Marginal effects of factors that influence the empowerment level of male headed and female headed households are computed at the mean values and are presented in Table 5. The model was estimated first using the whole sample, while controlling for gender of the household head, and then using sub-samples defined by gender. In each case, the chi-square value is significant at the 1 percent level, implying that the explanatory variables taken together influence the empowerment decision. We present our results first for the full sample and then for the two sub-samples.

Table five about here

In column 1 of table 5, we observe that age of the household head, family size, access to irrigation, number of livestock owned, and social capital and its interaction with trust and participation emerged as significant predictors of households' passive control over decisions that change the life of the household. Since the head is the bread winner in the rural areas, chances that the household has passive control over decisions that change the life of the household are higher the older the household head. Access to irrigation and number of

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animals owned are negative and significantly different from zero (with marginal effects of -0.067 and -0.003 respectively), implying that supplementing rain-fed agriculture with irrigation and number of animals possessed reduces the chance of having passive control over decisions that change life of the rural households. Family size is significant and inversely correlated with disempowerment. Households with large family size have a lower chance of having passive control over life. A possible explanation for this is that households with large family size gain status and possibly grow into positions of relative power and influence.

Coming to social capital, the coefficients of the variable for social capital and its interaction with participation are negative and significantly different from zero, suggesting that households who belong to local associations have a better chance to achieve some measures of control over their lives.

We now turn to estimates for full control. Age and education of household head, number of animals owned, diversification into non-farm self employment, and social capital and its interaction with trust and participation are the most important predictors of full control of a household over decisions that change its course of life. Age of the household head is negatively correlated with a household's full control over its life with a marginal value of -0.002. The older the household head the lower the chance of the household to have full control over its life. Education, as expected, positively influences empowerment. Household heads with at least primary level complete have higher control over their lives with a marginal effect of 0.078. Similarly, households who own animals and diversify more to non-farm self employment activities such as petty trade have a better chance of control over decisions that change their lives with marginal effects of 0.001 and 0.189 respectively.

Looking at social capital, the coefficient of social capital and its interaction with trust and participation have entered with a positive sign and all are statistically significant, implying that membership in local associations enhances the power of households to control life. The effect is stronger when trust level within groups is high.

Columns 2 and 3 in table 5 indicate the marginal effects of the same determinants on empowerment for men and women sub groups separately. Significant differences are reflected on the correlates of empowerment for the two groups. The coefficient of age of the household head enters with a positive sign for passive control and with a negative sign for full control for both sub-samples, implying that age of the household head is inversely related to empowerment for both sub-samples. However, it is statistically significant only for the full control for the men sub-sample and for the passive control in the case of the women sub-sample. This implies that old age is a significant factor for disempowerment of women supporting the general understanding that ageing is debilitating and disempowering. However, for male headed households, old age is significant only to limit their capacity to have a full control over life.

Family size also has different effects for the two sub-samples. A large family size has a negative and significant marginal effect on passive control for male headed households but it has a positive and significant effect on full control for female headed households. Female headed households with large family size have a better chance of having full control over life. In a gender unequal society, it is true that women do not enjoy the same opportunities, outcomes, rights and obligations as men, but the discrimination becomes severe with women without a family than women with a family. The status of women without a family is highly

undermined that, as Afshar and Alikhan (2002) noted, it might be difficult if not impossible to live well for women who do not have a family.

Remoteness seems to have a significant effect on female headed households increasing their chance of having a passive control over life. Other factors influencing women's empowerment, but not significant for men, are education of household head and access to credit. Female headed households with at least primary level complete have a better chance of having full control over decisions that change their life with a marginal value of 0.046. This supports the general understanding that education is one of the most important means of empowering women with the knowledge, skills and self-confidence necessary to participate fully in the development process (UNFPA, 1994). Female headed households with access to credit also have a better chance of having full control over life. This is consistent with the view that women's participation in micro-credit programs helps to increase women's empowerment.

The gender issue is clearly reflected on social capital. While social capital and its interaction with trust and participation enhance empowerment for male headed households, none of these factors are significant for female headed households. This partly reflects the inequality in the existing social system and the local institutions that operate within the system. Membership in associations with high trust and low participation is positively correlated with disempowerment of women. This could be due to the fact that if trust level is high, women accept and depend on decisions made by local associations. Given low level of participation by members, decisions are made by group leaders. Since local institutions operate within the wider context of gender inequality, decisions are highly expected to be made in a customary way – favoring men over women, hence disempowering women.

5. Conclusions

Using a panel data of 385 rural households, we have analyzed the correlates of empowerment, defined as the ability of households to make decisions that change their course of life, for female and male headed households separately. For purpose of analysis, the level of empowerment is grouped into three forms of empowerment – passive control, active control and full control. The analysis asserts the idea that social capital influences empowerment. Social capital, defined by number of local associations a household is a member of, has positive and significant effect on a household's empowerment over decisions that change the course of life of the household. The effect is higher with a higher degree of trust among group members.

Analysis of empowerment for male and female headed households separately reveals gender differences in empowerment. The proportion of households with passive control is larger among female headed households than men headed households. There are also differences in the correlates of empowerment for the two groups. For male headed households, diversification, and social capital and its interaction with trust and participation enhance empowerment. Education and access to credit are the two strong factors that empower female headed households and none of the social capital variables are significant for empowerment of female headed households, implying gender inequality in the existing norms and networks that affect access to economic and social assets.

The positive relationship between empowerment and social capital and the stronger this relationship at higher levels of trust implies the need to engage and work with local institutions, and maintain and foster trust among members to empower the local poor. It also

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helps gain acceptance by the local community. Programs that have tried to build on local traditions have found a more ready acceptance from local people (Pratt and Earle, 2004). While engaging with local associations, maintaining certain minimum standards particularly with regard to gender is vital. Men and women are not equally empowered especially when the effect of social capital is considered. None of the social capital variables, as stated above, are important for empowerment of female headed households, acknowledging the fact that unless women's participation in local institutions is enhanced; working with local institutions will often mean engagement largely with groups of men. This exacerbates gender differences in empowerment.

Considering the general context of women's low social status, there is a considerable need for specific support to women. Given the positive effect of education on women's empowerment shown in the analysis and their general lower levels of schooling, women's empowerment to change their life can be enhanced by upgrading their basic education. As Pratt and Earle (2004) argued, this type of capacity will need to be built up over an extended period, given the workload pressures and other burdens faced by many Ethiopian women. Specific support to women through provision of credit is also required to build their material base so as to enhance their ability to change life. Given the gender bias in the local institutions, however, credit provision has to be supported by women's increased participation in local institutions and building their network for an effective empowerment.

NOTES

1. For a review of definitional problem of social capital, see Duralef (2002)

2. Tabia is the smallest unit of local government in rural communities in present day Tigray: each of the studied Tabias consists of four villages. Hence the survey is conducted in 16 villages.

3. Woreda is the second administrative unit above Tabia

4. Wald test for combining alternatives can be invoked in STATA using *mlogtest, comb*

5. Tsebel is a religious society which meets monthly on a particular Saint's day. Each member takes a turn to host the group, providing food and drink. Idir is a society for mutual aid and burial

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Table 1. Empowerment among rural households to make decisions to change their own life, by gender of household head

| Empowerment to make decisions to change one's life | Percentage of households | | | | | |
| | 2005 | | | 2006 | | |
	Total sample (N=385)	Male headed households (N=296)	Female headed households (N=89)	Total sample (N=385)	Male headed households (N=292)	Female headed households (N=93)
Passive control	21.82	17.91	34.83	28.05	22.60	45.16
Active control	69.35	71.62	57.30	56.88	59.25	45.16
Full control	8.83	10.47	7.87	15.06	18.15	9.68

Table 2. Mean and standard deviation of variables used for multinomial regression

Variables	Mean	Standard deviation
Gender (1=female)	0.24	0.425
Age of household head	50.27	15.210
Number of adult household members	2.62	1.388
Family size	5.62	2.378
Number of children under five	0.88	0.902
Education of household head	0.19	0.390
Land per capita owned	0.96	1.029
Number of livestock owned	11.10	13.816
Value of agricultural equipment owned	203.63	396.390
Membership in local association	4.89	2.279
Trust among group member	0.42	0.493
Participation by group members	0.50	0.500
Diversification into non-farm self employment	0.04	0.122
Diversification into non-farm wage employment	0.33	0.242
Access to irrigation	0.17	0.375
Access to credit	0.39	0.488
Market distance (km)	11.76	7.359
Arato village	0.24	0.427
Rubafeleg village	0.25	0.433
Siye village	0.25	0.434
Tsenkaniet village	0.26	0.439

Table 3. Membership in local institutions by Tabia (Functional classification)

	Arato		Rubafeleg		Siye		Tsenkaniet		Total	
	No.	*Percent*	*No.*	*Percent*	*No.*	*Percent*	*No.*	*Percent*	No.	percent
Community wide organizations	182	36.4	173	44.0	180	42.5	203	43.4	738	41.3
Neibourhood Committee	21	4.2	19	4.8	20	4.7	26	5.6	86	4.8
Natural Resource Management group	89	17.8	79	20.1	73	17.2	82	17.5	323	18.1
Finance group	105	21.0	40	10.2	50	11.8	44	9.4	239	13.4
Religious Group	91	18.2	70	17.8	80	18.9	90	19.2	331	18.5
Other	12	2.4	12	3.1	21	5.0	23	4.9	68	3.8
Total	500	100.0	393	100.0	424	100.0	468	100.0	1785	100

Table 4. Accuracy of the model's predictions

Empowerment	Pooled sample		Male sub-sample		Women sub-sample	
	Observed	*% correctly predicted*	*Observed*	*% correctly predicted*	*Observed*	*% correctly predicted*
Passive control	192	20.90	119	15.78	73	42.68
Active control	478	70.21	385	74.18	93	56.61
Full control	100	8.89	84	10.04	16	0.71
Total	770	50.00	588	53.23	182	46.70

Table 5. Marginal effects of multinomial estimates of empowerment of households to make decisions to change their course of life in northern Ethiopia

Variables	Full sample (1)		Male headed households (2)		Female headed households (3)	
	Passive control	Full control	Passive control	Full control	Passive control	Full control
Gender (1=female)	.071	.025				
	(.043)	(.034)				
Age of household head	.004***	-.002**	.002	-.002**	.008**	-.0001
	(.001)	(.001)	(.001)	(.001)	(.003)	(.0002)
Number of adult members	.015	-.012	.022	-.005	-.043	-.006
	(.018)	(.012)	(.018)	(.014)	(.057)	(.007)
Family size	-.031**	.012	-.026*	.005	.006	.005*
	(.012)	(.008)	(.013)	(.010)	(.042)	(.005)
Number of children under five	.004	-.002	-.001	.004	-.088	-.006
	(.024)	(.014)	(.024)	(.017)	(.084)	(.007)
Education of household head (1= at least primary complete)	-.049	.078**	-.046	.022	-.030	.475***
	(.040)	(.035)	(.035)	(.033)	(.241)	(.284)
Land per capita owned (tsimad[a])	-.010	.021	.009	.014	-.071	.004
	(.018)	(.014)	(.020)	(.020)	(.048)	(.006)
Number of livestock owned	-.003*	.001**	-.002	.001	-.012	.001
	(.002)	(.001)	(.002)	(.001)	(.010)	(.001)
Value of equipment owned	.00002	.00006	.00001	.00002	3.54e-08	.00003
	(.00004)	(.00002)	(.00003)	(.00003)	(.0005)	(.00003)
Diversification into non-farm self-employment	.042	.189***	.034	.285**	.220	-.001
	(.136)	(.074)	(.184)	(.114)	(.279)	(.016)
Diversification into non-farm wage employment	.021	-.021	.063	-.052	-.265	.0106
	(.070)	(.052)	(.073)	(.066)	(.190)	(.015)
Access to irrigation (1 = having access to irrigation)	-.067*	.006	-.065*	.001	.082	-.004
	(.039)	(.029)	(.035)	(.034)	(.152)	(.006)
Access to credit (1 = having access to credit)	.013	.006	.024	-.021	-.028	.046**

Variables	Full sample (1)		Male headed households (2)		Female headed households (3)	
	Passive control	Full control	Passive control	Full control	Passive control	Full control
	(.034)	(.021)	(.033)	(.024)	(.096)	(.037)
Distance to market (km)	.003	.001	.001	.002	.017**	-.001
	(.003)	(.002)	(.003)	(.002)	(.009)	(.001)
Membership in association*trust	-.015	.032***	-.025**	.038***	.075**	.002
	(.011)	(.006)	(.011)	(.008)	(.038)	(.003)
Membership*participation	-.025**	.018***	-.029***	.019**	.011	.001
	(.010)	(.006)	(.010)	(.008)	(.033)	(.002)
Membership*trust*participation	-.044***	.025***	-.047***	.028***	.009	.002
	(.011)	(.006)	(.012)	(.008)	(.034)	(.003)
Membership	-.042***	.016**	-.050***	.021**	.024	-.001
	(.011)	(.007)	(.011)	(.008)	(.032)	(.002)

Notes: The marginal effects show the effect of one unit change in the explanatory variable on the probability of the empowerment alternative, where each alternative indicated in the column is compared with *active control* alternative. Included but not reported are village dummies. Numbers in parenthesis are standard errors. * significant at 10%; ** significant at 5%; *** significant at 1%
[a] tsimad is an area of land that can be plowed by a pair of oxen and is approximately equal to one-fourth of a hectare.