DISENTANGLING BARGAINING POWER FROM INDIVIDUAL AND HOUSEHOLD LEVEL TO INSTITUTIONS: EVIDENCE ON WOMEN'S POSITION IN ETHIOPIA

Ramzi Mabsout*
Nijmegen Center for Economics
Radboud University Nijmegen
Postbus 9108
6500 HK Nijmegen
The Netherlands
r.mabsout@fm.ru.nl
Telephone (office) 31 (24) 3615894

Irene van Staveren
Nijmegen Center for Economics
Radboud University Nijmegen
Postbus 9108
6500 HK Nijmegen
The Netherlands

and

International Institute of Social Studies of Erasmus University Rotterdam
Kortenaerkade 12
2518 AX The Hague
The Netherlands

*corresponding author.

SUMMARY

Women's bargaining power is generally analyzed only with individual level and household level variables. We add a third level, namely institutional bargaining power. We define this as bargaining power which one party freely derives from unequal social norms. In the bargaining literature there is a common paradoxical finding, namely that more access to and control over individual resources sometimes decreases rather than increases women's bargaining outcomes. With household survey data from Ethiopia and making use of multi-level modeling and an aggregate model with interaction terms, we suggest that this paradoxical effect can be explained by very unequal gender norms – gendered institutions – at the group level. In our case, we used ethnic groups to show that in groups where gender norms are very unequal, individual and household level bargaining power variables effects are mediated by ethnic gendered institutions. A policy implication of our findings is that gender policy may become more effective with shifting the emphasis from a largely individual approach to an institutional approach to support women's empowerment.

1. INTRODUCTION

A general result from empirical analyses of women's bargaining power in households is that women derive bargaining power from having resources such as income and assets (Agarwal, 1994; Kabeer, 1999; Quisumbing, 2003). Compared to all male property rights, joint property ownership of land and houses improves women's decision making power, their self-confidence, and reduces domestic violence (Panda and Agarwal, 2005; Datta, 2006). Other studies have pointed at the importance of differences in resources between partners, moving from the strictly individual level of bargaining to household level determinants of bargaining power. Although women's earnings have a positive impact on their bargaining position, having a relatively good education compared to their partners appears to have a stronger positive impact (Koolwal, 2005; Orrefice and Bercea, 2007). Also the age difference between partners appears to influence bargaining power (Friedberg and Webb, 2006). In some studies women's absolute level of earnings have no impact on bargaining power at all while a lower gender wage gap in the local labor market does appear to significantly lower women's unpaid work load (MacPhail and Dong, 2007) and reduces domestic violence (Aizer, 2007). Also other extra-household variables appear to affect bargaining power. For example, more gender-aware divorce laws have shown to reduce married women's suicide, domestic violence, and the number of women murdered by their partners (Hoddinott and Adam, 1996; Stevenson and Wolfers, 2006). The implication of these recent empirical findings is that individual access to and control over resources does have an important positive impact on women's position, but household variables and extra-household variables appear to matter too.

There is, however, a more disturbing trend in the literature which indicates that women's work, assets, earnings, or education has no impact at all or sometimes even a negative impact on their decision making power and wellbeing in households. Such paradoxical effects have particularly been found for women's access to credit in South-Asia, where women's loans may be appropriated by men, while women remain responsible for pay-back, so that women lack control over credit and the income earned with it. For some women, credit makes them worse off in terms of net income (Goetz and Gupta, 1996) or domestic violence (Rahman, 1999), while it raises their hours of wage labor at very unfavorable conditions and at cost of their own businesses (Garikipati, 2008). A study based on a household survey in Bangladesh has found a negative impact of having a job on women's decision making power, as

compared to housewives (Hossain, 1998). Other research, mainly from sub-Saharan Africa, has indicated that the higher women's income, the lower men's contribution to household expenditures and the higher the share of income that men spend on personal consumption (Bruce and Dwyer, 1988; Odebode and van Staveren, 2007).

In this paper, we will try to provide an explanation for the sometimes paradoxical effect of women's individual resources on their decision making power in the household. Our hypothesis is that women's individual level bargaining power may be overruled by the influence of culture, and more specifically of gendered institutions in society, or gendered structures of constraint which generally limit women's behavior more than men's and have an advantage for men as a group (Folbre, 1994). Gendered institutions have been defined as the asymmetric social norms, beliefs and practices affecting men's and women's behavior differently, and often unequally (Goetz, 1997; Odebode and van Staveren, 2007). In the household bargaining literature we find that bargaining can be defined well beyond the bargaining power derived from income and exit options – as a threat – that each partner has. Three more dimensions of bargaining have been acknowledged (Sen, 1990; Agarwal, 1997; Kabeer, 1999). First, the objects that are considered to be bargained over. For example, in many societies issues such as whether the husband marries a second wife, or the division of unpaid labor concerning cooking, cleaning and child care are often not up for negotiation. Second, men's and women's preferences are not just exogenously given but affected by beliefs and expectations. Sen (1990) has therefore referred to adaptive preferences, which tend to reduce women's bargaining power by simply limiting what they seek to get out of the bargaining process, an effect comparable to the discouraged worker effect in labor markets. Third, bargaining agency, that is, the ways in which the bargaining is done. Some forms of bargaining may be more effective than others, and these tend to vary by gender. Men, for example, tend to bargain in more aggressive ways than women, who have often been socialized into submissive and indirect modes of communication and negotiation, not demanding explicitly what they want.

We suggest that gendered institutions affect household bargaining in all four ways in which bargaining has been defined in the literature. Hence, we expect that they influence men's and women's exit options; what can legitimately be bargained over; women's and men's preferences; and male and female bargaining agency. Using gendered institutions and the more standard bargaining power variables as independent variables we will test the relative influence of standard sources of bargaining

power and gendered institutions on women's bargaining outcomes. We will do so with household survey data from Ethiopia, a country with very asymmetric institutions, impacting quite differently on women's and men's lives, but with wide variation across the country.

The structure of the paper is as follows. The next section will suggest a bargaining framework which includes the impact of gendered institutions. Section three will briefly discuss recent literature on women's household position in Ethiopia, in relation to the bargaining framework. Sections four and five will present the data and method and will discuss descriptive statistics. Section six will discuss the estimation results and the paper will end with a conclusion on the relevance of distinguishing levels of bargaining power for understanding women's position in households.

2. LEVELS OF BARGAINING POWER

Bina Agarwal (1997) already suggested that gendered social norms form a kind of pre-condition for household bargaining power, whereas she also referred to extra-household power. We suggest that the gendered social norms, beliefs, and practices, which shape gendered institutions, are both a pre-condition of individual and household level bargaining and at the same time a source of extra-household bargaining power for the advantaged partner. Hence, gendered institutions are a kind of 'windfall gain bargaining power' because that power is outside the control of both partners but provides the one with an advantage over the other. Gendered institutions may be formal, such as property rights or divorce laws, or informal, such as the gender division of labor or harmful traditional practices, while in both cases they provide asymmetric bargaining power. As such gendered institutions may neutralize the bargaining power that women derive from individual resources, by affecting their exit options (Heath and Ciscel, 1996), their bargaining agency, for example accepting male authority when they have formally equal rights (Blumberg, 1991; Nikièma, Haddad and Potvin, 2008), their preferences, through adapting these to what is deemed proper for women (Sen, 1990), and their roles in the household, limiting what can and what cannot be bargained over, (see for example Cuesta, 2006, on machismo as a household distribution rule in Chile).

Why would gendered institutions have such a power that they may overrule the bargaining power from individual income, assets, and education? In gender studies the overwhelming influence of gender norms, beliefs, and practices has been explained with the help of the concept of 'doing gender' (West and Zimmerman, 1987). Doing gender refers to the often subtle social activities by men and women in their everyday lives that express their masculinity or femininity, and thereby re-assert their membership of their respective sex-categories: male or female. Doing gender thereby is "a means of legitimating one of the most fundamental divisions of society" (idem, p. 126). West and Zimmerman then argue that "…the institutional arrangements of a society can be seen as responsive to the differences … [so that] doing gender … is a powerful reinforcer and legitimator of hierarchical arrangements" (p. 146). So, gendered institutions and individual behavior seem to mutually reinforce each other. This helps to explain why women who have high earnings, or who are well educated may nevertheless accept male authority over household decisions, do all housework on top of a paid job, or accept domestic violence. In all such cases, they are doing gender by balancing their deviation from social norms such as the male breadwinner or the male household head, by submissive behavior vis-à-vis their male partner, who in his doing gender seeks to compensate his perceived loss of masculinity precisely by exercising power over his partner in other spheres of life. Through this compensation, the bargaining power that women generally derive from individual resources becomes neutralized. A recent example of this is provided by a study by Daniela Grunow, Florian Schulz and Hans Blossfeld (2007), who found in a longitudinal study that German married couples' distribution of unpaid work is not affected by women's control over resources but can be explained largely by reference to social norms about who should do housework. Even in cases where wives earned more than their husbands, unpaid work remained largely the wife's responsibility.

Going back to the household bargaining framework, we can now integrate gendered institutions as a special form of bargaining power which affects all aspects of the bargaining process. This influence occurs because of an internalization of asymmetric norms and beliefs, so that women living in a context of unequal gendered institutions are disabled, as Naila Kabeer formulates it aptly, "to at least imagine the possibility of having chosen differently ... through the emergence of a critical consciousness" (Kabeer, 1999: 441). The starting point for integrating the role of gendered institutions into the household bargaining framework is the recognition that marriage is an incomplete contract, so that the

framework for analyzing household bargaining is non-cooperative bargaining. This framework allows for asymmetric exit options, non-pooled individual resources, individual endogenous and social preferences, heterogeneous agency (for example through differences in risk-aversion or modes of interaction), and barriers to what can be subject to bargaining. To bring some order in this complex social process, we will distinguish three levels of bargaining power: individual, household and institutional bargaining power, which can be measured both through objective and subjective variables (see table 1).

Table 1. *Extended household bargaining framework: examples of sources of bargaining power.*

At the individual level bargaining power variables imply relatively high individual control and include income and assets, but also psychological characteristics such as self-esteem and awareness of one's rights, as well as given characteristics such as age and the level of acquired education when entering marriage. The second level is the household level, where variables are less under individual control, such as joint assets, the age difference between partners, educational differences, as well as characteristics of marriage such as polygamy and who is perceived as the head of the household. The third level is that of institutional bargaining power at which gendered institutions provide asymmetrical bargaining power with one partner having an advantage over the others, while for both partners this level of bargaining power is largely beyond their control. The three levels of bargaining power are not isolated from each other but closely interrelated. Institutions affect individual level bargaining power, for example by limiting women's access to resources, and household level bargaining power, for example leading to a high average age difference at marriage. At the same time, 'doing gender' implies that the institutions may be reinforced by women's and men's individual and household level bargaining behavior. Moreover, as Kaushik Basu (2006) has recently argued, bargaining power and bargaining outcomes affect each other in a two-way relationship, so that household bargaining is a complex endogenous process going well beyond individual bargaining power.

Finally, the household bargaining literature distinguishes between two types of measures for bargaining outcomes: direct measures and indirect measures. Direct measures of bargaining outcomes concern the extent of decision making power that women have vis-à-vis their partners. Variables

include the extent of deciding alone, together or not at all on purchases, and decision making on seeking health care or working for pay (see, for example, Hossain, 1998; Thomas, Contreras and Frankenberg, 2002; Furuta and Salway, 2006; Furr and Das, 2006). Indirect measures concern wellbeing outcomes, such as better health, more self-esteem, or less domestic violence. Variables include women's body-mass index, frequency of being beaten, or the amount of income earned (see, for example, Panda and Agarwal, 2005; Datta, 2006). We have opted for testing the impacts on direct bargaining outcomes only. This is not only because the database provides information on women's decision making power, but more importantly because direct measures provide less biased estimates (in terms of missing variables) than indirect measures, which tend to be influenced by a wider array of variables, such as health policy and proximity of health care services in the case of health outcomes. As is seen in figure 1, we model only the direct effects from the institutional variables (thick arrows, on the right-hand side). It is also possible to model the indirect effects of institutional level bargaining through the individual and household bargaining variables (thin arrows, both on the left-hand side and the right-hand side). However, for space purposes we report mostly direct effects. The letters in the figure represent the variables and coefficients of the aggregate model (see section five). All variables are modeled at three levels. X is the vector of covariates or independent variables, Γ their respective coefficients, and η the decision making power index to be explained by the model or the dependent variable.

Figure 1. *Theoretical relationships of levels of bargaining power and bargaining outcomes*.

3. WOMEN'S HOUSEHOLD POSITION IN ETHIOPIA

The formal institutions regarding women's rights in Ethiopia have changed recently: the new federal constitution grants equal rights to women with men in all spheres of life, including in marriage, property rights, inheritance, and bodily integrity. Female genital mutilation (FGM) has been prohibited, polygamy has been abolished and the minimum marriage age for girls was increased from 15 to 18 years (Vaughan and Tronvoll, 2003; Bevan and Pankhurst, 2007). Informal institutions, however, are still very unequal in the country. 74% of the women have undergone FGM according to the survey data

we use (DHS, 2005), and polygamy still occurs[1] (Bevan and Pankhurst, 2007), while traditional practices and customs dominate marriage practices, in spite of the legal reforms (Fafchamps and Quisumbing, 2002). The federal government has limited capacity to enforce the laws (WHO, 1999), partly because various states have been granted full sovereignty, which allows them to practice earlier laws that discriminate against women (World Bank, 1998). At the same time women's political representation is low and the women's movement is small and weak (Biseswar, 2008), so that pressure on the government to increase efforts for enforcement of the gender equal law reforms remains limited. Underlying the weak representation of women in politics and civil society is, according to Biseswar, the dominance of the Amhara-Tigray culture, which is very hierarchical with "respect for unchallenged authority as its core virtue" (idem: 139). Her observations imply that there is a mutual reinforcement of the gendered informal institutions on the one hand and women 'doing gender' on the other hand: "within this hierarchy, women are relegated to the bottom, where they silently accept their fate, never daring to question male authority" (p. 140). Bevan and Pankhurst add a similar argument on the widespread practice of FGM: "female circumcision is widely supported by males and females throughout rural Ethiopia; uncircumcised girls/women (depending on cultural context) bring shame on their families, cannot get married, and cannot be buried in churchyards" (Bevan and Pankhurst, 2007: 12). The DHS 2005 data show that 31% of women support the continuation of FGM.

Two recent studies on women's position in households in Ethiopia acknowledge the important influence of gendered informal institutions and both find instances of the paradoxical impact of women's resources and awareness of their rights on bargaining outcomes. An evaluation study of a women's development project found that half of the women accept regular wife beating (Legovini, 2006). But the study also revealed that it is particularly women who are *more* aware of their legal rights who are beaten more often[2]. The other study, based on a rural household survey, found that even when Ethiopian women own assets, these assets are controlled by the household head, most often a man (Lim, Winter-Nelson and Arends-Keunning, 2007). Ownership of assets, hence, does not provide women with a suitable exit option. The study also found, however, that where women did control assets this did not reduce their labor input into male cash crops. Only control over assets that women would retain upon divorce did appear to provide them with bargaining power, reducing their labour input to cash crops and increasing their labor input in food crops, which they control. This finding implies that the share of

assets that women control upon divorce is not defined by law but by custom, and is in itself probably dependent on other sources of bargaining power in the household – the endogeneity effect of bargaining power, referred to in section two. Both empirical studies, hence, suggest that women's household position in Ethiopia is at least partly characterized by a paradoxical effect of resources and awareness of rights on bargaining outcomes, as discussed above. But these studies are very general and therefore require more detailed follow-up.

In our empirical analysis, we try to shed more light on this resource paradox, by identifying three levels of bargaining power as distinguished in section two. Unfortunately, as far as we could see, there does not exist a systematic description of gendered institutions in Ethiopia. But our dataset is representative of the population and covers twenty four different ethnic groups. From other sources, we know that these ethnic groups differ substantially in their social norms and cultural practices, including those related to gender (Bjerén, 1985). We take it therefore that gender differences across the country can at least partly be explained by membership of different ethnic groups. We will therefore use ethnicity as a proxy variable for gendered institutions, so we will look at gendered ethnic institutions. This assumption finds support from a recent paper by Deininger, Ali, Holden, and Zevenbergen (2008) on land certification in Ethiopia, which reports clear differences in social norms and cultural practices between ethnic groups, which affect ownership and control over land by men and women.

4. DATA DESCRIPTIVE STATISTICS

We chose the 2005 Ethiopia Demographic Health Survey (DHS) to test the hypothesis of different levels of bargaining power. The 2005 DHS for Ethiopia samples a total of 14500 households and is representative of the Ethiopian adult women population. For a subset of households, the husband is also interviewed, so that the weighted couples sample size is only 3236 households.[3]

Table 2 lists the descriptive statistics of the dependent variable and covariates. For the dependent variable, we use women's decision making in the household as a direct measure of bargaining outcome. In the 2005 Ethiopia DHS all interviewed women answered questions on who decides over four domains: own health, daily household needs, large household purchases, and visits to family and relatives. Interviewed women answered (i) someone else takes the decision, (ii) the decision

is shared, or (iii) the decision is taken by the respondent alone. A score of 1 is given when someone else takes the decision, 2 when it is shared, and 3 when the decision is taken alone.

Decisions on own health and on family visits have the same patterns in that most Ethiopian women share these decisions with their partners. The distribution of decisions for large household purchases is approximately evenly split with 1466 for someone else and 1449 for shared. Daily needs decisions has a distinctive pattern since women who take these decisions alone are the largest group (50%), which reflects the dominant gender division of labor in which women are largely responsible for meeting household needs on a daily basis. The covariates were selected from the household bargaining power literature (among others, see, Aizer, 2007; Datta, 2006; Friedberg and Webb, 2006; Panda and Agarwal, 2005; Girikipati, 2008) and were included in the theoretical model (see diagram 1). The objective variables hypothesized to affect women's decision making are wife age, age difference between partners, wife years of education, proportion of wife's household expenditure, and urban dwelling. The subjective variables used as covariates are women's attitude towards whether FGM should be continued, husband's attitude concerning the rights he thinks husbands should have over their wives, wife and husband's attitudes towards wife beating justification (reported by both), and the difference between responses to beating justification was included as a measure of polarization in attitudes. The questions asked for subjective attitudes are husband believes husband has right to get angry, refuse financial support, use force for unwanted sex, have sex with other women. Husband and wife respond to questions on wife beating justified if she goes out without telling him, if she neglects the children, if she argues with him, if she refuses to have sex with him, if she burns the food. So, both variables husband rights and wife beating justification measure the extent to which wives and/or husbands agree with dominant gender norms in their ethnic groups. They are conceptually distinct from whether they actually approve of or experience, say, violence in their household. All factors used as covariates are obtained with linear principal components analysis. To control for multi-collinearity we excluded from the analysis births, in-laws in the household, difference in years of education between wife and husband, and husbands' attitudes for wife beating justification.[4]

Table 2. *Descriptive statistics (categorical and continuous variables).*

Intraclass correlations (ICC) gauge the level of homogeneity in groups and provide an empirical criterion for variables that should be modeled at the higher level. The ICC of a variable is its proportion of institutional level variance to total variance. Alternatively, the ICC is the expected correlation between two randomly selected individuals from a group (Hox, 2002: 16). The more similar individuals in ethnic groups are, the larger the ICC. The estimation of ICC is the first step in multilevel modeling (Heck and Thomas, 2008: 81). The multilevel literature has set thresholds for intraclass correlations and design effects (DE) above which variables ought to be modeled at the higher level. For inclusion at the higher level ICC should be above 5% (Heck and Thomas, 2008: 21). The threshold for design effects is above two (Muthén, 1999).

Table 3 shows answers differ between ethnicities. Table 3 reveals quite some variation between ethnic groups on gender norms and women's decision making power. For example, the Somalie ethnic group stands out for the lowest decision making power and the most admissive women's attitude towards wife beating as compared to men's attitude. In contrast, Gamo women express on average the strongest opposition against husband wife beating, whereas Gurarie men have on average the least support for husbands' rights over wives.

Table 3. *Cross tabulations of ethnic means*.

We also computed the intraclass correlations (ICC) and design effects (DE) for all the variables included in the analysis. It is important to note that the larger the ICCs the less additional information is gained with the increment of an individual within ethnic groups (all individuals are similar and an additional case adds no new variance). Groups, in other words, tend to be more homogeneous in certain respects. Unless one controls for group homogeneity using dummies and multilevel models, estimates will be biased (Heck, 2001: 91). As expected (Stapelton, 2006: 356), we found demographic variables have lower, while socio-economic variables and attitudes higher, ICCs. All design effects are above 2, except for age.

With unbalanced group size, the larger clusters will weigh more on the overall mean parameter estimates (Heck and Thomas, 2008: 54-5). But an overall large sample size does not compensate for a small number of groups at the higher level (Cheung and Au, 2005). Our model has 12 groups with

average cluster size of 216. Estimation at the higher level with less than 20 is common (Cheung and Au, 2005: 603-4). However, our higher level estimates are only suggestive given a small group size of 12 ethnicities. The random intercepts model provides accordingly only an indication of the real higher level effects which require more groups to be precisely estimated.

5. METHOD

In disentangling the influence of bargaining variables on women's decision making power index we consider two statistical approaches. The first, the aggregate model, is a logistic regression with Taylor like-series functions to correct bias in standard errors (Stapelton, 2006: 352), with ethnic groups as dummy variables. The second is a multilevel model in which groups are formed along ethnic lines as a proxy for gendered institutions, as argued above. For the multilevel model, we assume individuals are randomly selected from their ethnicities to achieve a representative sample. Multilevel analysis allows for covariates to explain the variance in intercepts across ethnic groups and implies the possibility to distinguish between ethnic groups with lower and ethnic groups with higher decision making power for women, *ceteris paribus*. Both approaches employ sample weights for unequal probability selection and ethnic information for underestimation of standard errors.

Groups with weighted size of less than 50 households are deleted from the initial set of 24 ethnic groups in the database. The two largest groups are the Amara (32%) and the Oromo (36%). The Southern Nations and Nationalities and People's Regions (SSNP) contain more than 45 small ethnic groups. They are aggregated as Southern Minority (4.3%).

The logistic model

Probability regressions, including logistic regressions, are frequently used in models of household decision making (Obermeyer, 1993; Derose and Ezeh, 2009). For modeling the categorical decision making variables y_c, three methods are available. We explain the first two methods in the footnotes and focus here on the third one which involves forming an index of all decision making dimensions.[5]

The index is constructed with structural equations techniques to estimate a factor measurement model. Two assumptions are necessary to validate the factor: The variables should be 1) ordinal and 2) uni-dimensional. Assumption 1 is implied in method 1. For uni-dimensionality, a single unobservable decision making latent variable is required. The advantage of a factor model for the index is the correction of measurement error, highly likely in questions on household decision making (Heck and Thomas, 2008: 101-2, 110). In this paper, due to lack of space, we use method 3 which condenses the most information compared to the first two.

The simple decision making model proposed here implies empowered women take more decisions alone and jointly (with their partner). However, this decision making model also assumed women who take decisions alone are more empowered than women who share decisions. This need not be the case if more empowered women decide to share decisions in the household. Mabsout (2009) for instance found that Ethiopian women who share decision achieved better anemia test results compared to those who took more decisions alone. Still, the current model captures the idea that women who take no decisions in the household are the least empowered of all.

Equation (1) below is the decision making power index. When a (continuous) covariate x changes by one unit, the logit (log odds) changes by β units and the odds by $\exp^{\beta}$ units. Equation (1) defines the aggregate logit regression at the individual level.

$$y_{ijkl}^{*} = \alpha + \beta x_{ijkl} + \varepsilon_{ijkl} \tag{1}$$

Where

y^{*} is the latent outcome decision making variable for individual i = (male, female), household j, ethnic group k and indicator l

α intercept coefficient

β slope coefficient

x covariate for individual i = (male, female), household j, ethnic group k, and indicator l

ε residual error term with mean zero and constant logistic variance.

The Multiple Indicators Multiple Causes model

A MIMIC (Multiple Indicators Multiple Causes) models the decision making power index and its covariates using factor analysis.[6] The decision making index shown in figure 2 is constructed using decisions related to wife health, household large purchases, and family visits. This index is then regressed on x_i, the covariates. e is the logistic random residuals from the regressions of decision making variables on the factor whereas d is the random residual from the single multivariate regression of the factor on the covariates. Following convention, a coefficient in the diagram is fixed to one to identify the index. The diagram in figure 2 reflects these assumptions.[7]

Figure 2. *The MIMIC (Multiple Indicators Multiple Causes model).*

The details underlying the multilevel model are left for the footnotes.[8] Covariates will be regressed as individual level, household level, and institutional level bargaining variables. Covariates at the institutional level are used to explain variance in intercepts across groups. Table 4 lists all variable modeling levels.[9]

Table 4. *Bargaining power variable levels.*

Equations are estimated by Maximum Likelihood Robust (MLR). This allows for non-normality and non-independence of observations by correcting standard errors (Heck and Thomas, 2008: 64) to which we add the MPLUS limited information Weighted Least Square (WLS) estimator to access additional model diagnostics.

6. ESTIMATION RESULTS

The dependent variable is an index covering three areas of decision making, as explained earlier. Decisions over daily needs were excluded because they follow a pattern different from the other three.

We test the robustness of using a single decision making index with confirmatory categorical factor analysis (CCFA). The coefficients of the decision making index have the expected signs and are statistically significant (p<5%). The standardized coefficients for health, large household purchases, visits to family relatives are 0.67, 0.56, and 0.65, respectively.[10] The standardized coefficient can be interpreted as follows: for a standard deviation increase in the decision making index, the probability of a wife deciding on large purchases alone or with partner increases by 0.56 standard deviations. Furthermore, for the unstandardized coefficients, given a unit increase in the decision making index, a 0.75 increase in logit units for the wife final say on large household purchases obtains. In terms of the odds ratio, a unit increase in the decision making index raises the odds of the decision being taken alone by 2.1 ($\exp^{0.75}$).

Since the intraclass correlations and design effects reflect substantial variance between ethnic groups, the next step is to test a multilevel CCFA with random intercepts (Hox, 2002). Thus, we estimated a random intercepts decision making power index with equalized coefficients.[11] The strategy of equalizing coefficients allows us to estimate a model which accounts for higher level institutional level variance. Accordingly, in the equalized coefficients random intercepts measurement model, variables at lower and higher level have the same sign, magnitudes, and significance levels. Compared to the aggregate index, the fit statistics of the two level decision making index in table 9 show a marked improvement with an overall chi-square p-value of 85%. A non-significant p-value means the difference between the model predicted values and the actual data is indistinguishable from zero at the 1% level. The remainder of the diagnostics passes all thresholds for model acceptance. Our results here suggest isomorphism between levels. van de Vijver, Hermert and Poortinga (2008: 9) define isomorphic relationships through a monotonic function describing the two levels. One method to confirm or disconfirm these relationships is hypothesis testing using multilevel confirmatory factor analysis as we did. Hence, even though the lower and upper levels have different patterns of significance when freely estimated, equalizing the coefficients between levels has not lead to a significant loss in terms of model fit.[12] When isomorphism obtains, variables modeled at both levels can be equivalently interpreted (i.e., they have the same meaning). However, variables may also have different meanings at the group level and the individual level when none-isomorphism obtains.

In the aggregate model of table 6 we add covariates to explain the level one decision making index. This model meshes ethnic group variance in decision making with within group variance. The ethnic base category for the dummies is the Oromo. The dummy group base category was selected using group size and scores for attitude variables (relative to others groups). Figure 3 shows that, compared to other groups, Oromo couples answer relatively close to zero (the mean) and their answers on both attitude questions are quite similar.

Figure 3. *Mean scores on husband rights reported by men (FHR) and wife beating justification reported by women (FWBJ).*

For robustness, we also estimate the model with CCFAs for wife beating justification and husband rights instead of linear principal component analysis. Our principal component analysis results replicate the full CCFA.[13] The difference in wife beating justification index was constructed with four possible cases in mind (see table 5). When a wife thinks wife beating is unjustified whereas her husband considers it is justified case 4 obtains and the score is negative [(-w_bj) − (+h_bj)]. A positive coefficient combined with a negative score on the variable means that wife's decision making power is weaker in such households compared to that of wives who do not challenge their husbands' attitude to wife beating.

In the aggregate level one analysis, the overall r-square of the regression is 0.25 (table 6). The individual level age (0.34) and education (0.07) coefficients are positive and statistically significant at the high 10% level. For household level covariates, the coefficient for age difference (0.03), and the provision of more than half to household expenditures by the wife (1.36) are positive and statistically significant at the usual levels. The dummy zero category for household wealth is the poorest group. Only the two richest groups have positive and statistically significant coefficients. Thus, compared to the poorest households, women in the wealthiest households take more joint and individual decisions. The difference in beating justification index has a positive and statistically significant coefficient equal to 0.14 which means women's decision making power increases by 0.14 units when women are more likely than their husbands to support wife beating. This implies standing up against one's husbands' support for a gender unequal norm such as wife beating does not raise but actually lowers women's

decision making power. Apparently, women's awareness of their rights and self-esteem in relation to wife beating yet further curtails their position in the household, probably due to a more assertive agency in bargaining which is not appreciated by their husbands, and therefore curtailing their decision making power.

Table 5. *Difference in beating justification index.*

At the institutional level, living in an urban area shifts the index upward, increasing women's decision making power by 0.58 points. Women's attitude toward the continuation of FGM has a very low coefficient and is not statistically significant. This suggests that whether women support or reject this gender norms seems of no relevance for their decision making power. This is a complex issue which deserves more attention than can be given in this paper. However, women who respond predominantly that wife beating is justified score 0.39 units less on the decision making index. In other words, women who challenge the gendered institution of wife beating have more decision making power, but when their husbands supports wife beating, the positive effect of women's rejection of the social norm is limited by the negative effect of the fact that she challenges her husband's support for the group norm (by 0.14 as discussed above). Husbands beliefs with respect to husbands rights over wives are also negatively related to the decision making index of the wife. Thus, in households where husbands claim men have more rights, women tend to take fewer decisions in Ethiopia. All dummy coefficients are statistically significant. The positive ones (compared to the Oromo) include Amara and Keffa. All the other ethnic groups have negative and statistically significant coefficients. This diversity among ethnic groups signals, as expected, that in some of them women take more decisions in the household, everything else equal. For Somalie women, for example, their decision making power is reduced 1.61 units compared to the Oromo base category. This gap widens to more than two units when Somalie women decision making is compared to that of Amhara women.

The major limitation of the aggregate model is that we do not know to what extent gendered institutions like FGM and wife beating are determined at the individual level or the group level. In order to shed light in this question, we now move to multilevel analysis.

Table 6. *Aggregate CCFA model with covariates and ethnic dummies.*

The random intercepts measurement model with covariates is estimated in table 7. It is comparable to the multilevel decision making index. Given the small number of ethnic groups we include each of the four institutional levels covariates one at a time (they are, ethnic mean for urban, for FGM should be continued, for factor husband: husband rights, and for factor wife: wife beating justification). The results for the model with the highest r-square at the institutional level is reported. The variable which explained the largest proportion of ethnic intercept variance in decision making is whether FGM should continue (R-square=0.6). The unstandardized (-3.5) and standardized coefficients (-0.77) are statistically significant. Therefore, women in ethnic groups where most say FGM should be continued have lower decision making intercepts.

The multilevel model indicates then that gendered institutions, through ethnic groups, have a significant impact on women's decision making in the household. The results in table 7 suggest that ethnic groups which strongly oppose the continuation of FGM, women's decision making power is higher compared to ethnic groups in which women widely support that norm. In the other specifications of the model where the other institutional variables were included (results not shown) the ethnic mean for wife attitudes concerning wife beating justification was also statistically significant but negative (standardized coefficient -0.75) implying women in groups where many women think beating is justified have lower decision making power. Ethnic mean for husband rights also gives a negative (standardized coefficient -0.21) statistically significant result. Women in groups where partners' think wives have fewer rights achieve lower decision making scores on the index.

The individual and household level models include the same variables as before. However, individual level variables now explain within group variation. Both individual level variables – age and education standardized coefficient 0.08 and 0.12, respectively – are positive and statistically significant. Household level variables age difference (standardized coefficient 0.09), proportion of household expenditure less than half (standardized coefficient 0.05) and more than half (standardized coefficient 0.12), are statistically significant and positive, with a much stronger effect for women who contribute more than half to household expenditures. Interestingly, women whose contribution to household expenditures is moderate experience no significant effect on their decision making power. Hence, the

impact of women's contribution to household expenditures – as a proxy of female earnings relative to male earnings – on their decision making power is ambiguous. Finally, compared to women in the poorest households, women in the richest households have more decision making power within ethnic groups (standardized coefficient 0.1).

Table 7. *Random intercepts MIMIC.*[14]

To run the MIMIC with interaction terms, we first construct a new index with the un-weighted average for gendered ethnic institutions using three attitude variables. Husband rights over wife reported by husband, wife beating justification reported by wife, and whether FGM should be continued answered by wife. The correlation of the three variables with the un-weighted average is positive and significant for all. Groups scoring above the mean have worse institutions for women and are coded one. Groups whose mean is under the sample mean of the index are coded zero.

The new dummy is interacted in an expanded aggregate model with five bargaining variables – age, education, wife beating justification reported by wife, shares of wife household expenditures, and whether FGM should be continued. The new interaction variables are added as covariates with the original ethnic dummies. Models with interactions for FGM should be continued and whether wife has undergone FGM were not statistically significant and were excluded.

Table 8 is quite similar to the estimates in table 6 so we focus on the newly added interactions terms. Three of them are statistically significant, education (standardized coefficient -0.05), expenditure more than half (standardized coefficient 0.07), and whether FGM should be continued (standardized coefficient -0.1). The positive sign on women's contribution to more than half of the household budget means in ethnicities where gender norms are relatively unfavorable to women, those who contribute substantially to household expenditure take more decisions. The interaction terms for education implies that in ethnic groups with unequal gender norms more educated women take less compared to not educated women. Apparently, education does not improve women's decision making power when women belong to ethnic groups with unequal gender norms. The sign on whether FGM is consistent with the earlier multilevel result where it was argued this gender norms explained large shifts in

intercepts of the decision making index. The addition here is that over and above the shift in intercepts, there is also some slope variation between ethnic groups.

Finally, we separately estimated all the indirect effects, from institutions through individual and household variables to decision making. We have, on one hand, the results for urban and norms and, on the other, the indirect effects of the ethnic dummies. The first three variables (urban, husband rights, and wife beating justification reported by wife) have a positive statistically significant indirect effect on decision making through education and difference in beating justification. Urban has an indirect effect through age. Urban and husband rights also have an indirect positive effect through more than half contribution to household budget. Most dummies have a statistically significant effect through age and education. But the sign is not always positive. Older Keffa women for example have less, and older women from Gurarie have more, decision making power compared to Oromo women. For education, similarly, more educated Somalie women have less, while more educated Sidamo women have more, decision making power compared to Oromo women. The sign of other variables is also ethnicity dependent. We give signed examples for difference in wife beating justification (Gedeo +, Sidamo-), age difference (Welaita +, Tigraway -), and the wealth categories poorer (Hadiya +, Southern minorities -) and richer (Gamo +, Somalie -).

Compared to the first two models in tables 6 and 7, the model with interactions and the estimation of indirect effects provide additional evidence on the importance of ethnic group level variation in women's decision making power. For women living in ethnic groups with unequal gender norms this implies improving their bargaining outcomes does not so much depend on their access to and control over resources or awareness of their rights, but on the strength of the gendered institutions in the communities they live in. This has an important policy implication, namely that policies to support women's empowerment should not automatically prioritize women's access to and control over resources and awareness raising about their rights. The effectiveness of such policies seems to depend on the institutional context of women's daily realities. Only when gendered institutions are not very unequal, such individual-oriented policies are likely to be effective.

Table 8. *Aggregate CCFA model with covariates, ethnic dummies, and interactions.*

7. CONCLUSION

The analysis above points at the importance of distinguishing between levels of bargaining determinants for the explanation of women's household bargaining power. In our case we only used a direct measure of bargaining power, decision making power, so its use for indirect measures of bargaining outcomes still needs to be demonstrated. Our models show that a multi-level analysis seems adequate for the empirical analysis of different levels of bargaining power.

The first aggregate model showed, as expected, moderate and (near) statistically significant effects for individual and household level bargaining power variables on women's decision making power. These include age, education, the difference in age between wife and husband, and the case when women contribute equally to household expenditures (which is used as a proxy for women's earnings relative to men's). Ethnic group dummies indicate that some ethnic groups have a significant negative impact on women's decision making power. Going into the gendered institutions, the model finds that whether women support or reject the ethnic group norm of FGM has no significant impact on their decision making power. This result needs to be interpreted keeping in mind that three quarters of the women in the sample have undergone FGM, which reflects the fact that the institution is widely supported. However, when women reject the gendered institution of wife beating, it does improve their decision making power. But this effect is clearly reduced when husbands strongly support wife beating: in that case, women who stand up against their husband's attitude have less decision making power compared to women who go along with their husband's views.

The paradoxical result from the aggregate model, which is also found in the household bargaining literature more generally, led us to estimate next a multilevel model in which we separated individual/household level bargaining power from institutional level bargaining power. That model shows that the institutional level explains a large part of the variation in women's decision making power. For the gendered institution of FGM, for example, ethnic groups that do not widely support this show much higher decision making power for women. The multi-level model, hence, helps to explain the paradox: when most of the bargaining outcome is determined at the institutional level rather than at

the individual or household level, it is likely that improving individual/household level bargaining power is not very effective in increasing women's bargaining outcomes.

Our final model adds interaction effects to the aggregate model by defining a new ethnic group dummy variable distinguishing ethnic groups with very unequal gender norms from those with less unequal gender norms. This expanded aggregate model only marginally improves on the first aggregate model but does provide additional insights due to the interaction variables. The coefficient for the interaction term for age, for example, shows that in ethnic groups with very unequal gender norms, being older actually decreases women's decision making power, whereas in such unequal ethnic groups women's contribution to household expenditures shows an contradictory effect between the categories of no contribution, less than half and equal contribution to household expenditures. In short, the results from the interaction effects indicate that women living in ethnic groups with very unequal gender norms do not experience an increase in their decision making power when they get older, have more education, or contribute equally to household expenditures.

Although our analysis was constrained by a relatively low number of ethnic groups and the availability of only a direct bargaining outcome measure, our analysis does seem to have some policy implications. First, the results of our three models suggest that policies to support gender equality and women's empowerment need to become more context-specific, in particular in relation to gendered institutions. One-size-fits-all policies are not likely to be very effective, simply because the binding constraint for women's bargaining outcomes may not always be at the individual level but may be located at the institutional level. Second, our findings suggest that for women living in a context of very unequal gendered institutions, policies may be advised to prioritize social change at the group level, rather than prioritize women's individual level bargaining power. This finding seems to confirm the recent successes booked in sub-Sahara Africa with community-based empowerment approaches to eradicate gendered institutions. An example is the community-based empowerment approach that led village women in Senegal themselves to address the negative impacts of FGM and to get support from local religious leaders and eventually whole villages (UNICEF, 2005). Such a group-level approach has led to whole villages in Senegal and other countries to publicly announce that they will end FGM in their communities (Mhórdha, 2007). Moreover, the approach has also shown to undermine other gendered institutions such as early marriage and keeping girls from school (UNICEF, 2005).[15] Other

group-level policies may be relevant as well, for example through interventions in religious groups or ethnic groups, as Quisumbing and Maluccio (2000) have suggested for Ethiopia. They argue, for example, "that having a written marriage contract, which is typical of some ethnic groups but not others, increases the share [of assets] going to the woman" (p. 56). And that "legal reforms … might have a larger potential impact on intrahousehold allocation than redistributing resources among men and women within the group" (p. 55). Focus group interviews with women in Yemen, carried out by one of us in 1997 also indicated that the marriage contract can be an institution that strengthens women's position in marriage, for example by including the right for the wife to continue her education, to work for an income outside the house, or to decide on particular issues.

In conclusion, we have argued for a shift in emphasis in the analysis of household bargaining power as well as for policy initiatives away from the exclusively individual level of women's empowerment towards including the institutional level, in particular in contexts where group norms are very unequal. Such an expansion of the household bargaining approach not only helps to solve the paradox of the negative impact of individual resources on bargaining outcomes, but it also is likely to make gender policies more effective in supporting women's empowerment.

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Table 1. *Extended household bargaining framework: examples of sources of bargaining power.*

	Individual bargaining power	Household bargaining power	Institutional bargaining power
Objective/formal	Income, assets, age, education	Age difference, educational difference, household wealth	Gender unequal laws and regulations
Subjective/informal	Awareness of rights, attitude towards violence against women	Difference in attitude towards violence against women	Gender unequal social norms, cultural beliefs, traditional practices

Table 2. *Descriptive statistics (categorical and continuous variables).*

	N	Mean	Median	Standard deviation	Skewness	Kurtosis	Min	Max	Descriptive
Wife age	3126	29.97	29.00	8.32	0.39	-0.72	15	49	Years
Wife education	3126	1.00	0.00	2.48	3.14	10.61	0	18	Years of schooling
Should female genital mutilation (FGM) continue?	2679	0.41	0.00	0.49	0.35	-1.88	0	1	1=Yes, 0=no
Age difference	3126	-7.39	-6.00	5.16	-0.99	1.88	-31	16	Wife(age) - Husband(age)
Wife proportion of household expenditure	3126	0.12	0.00	0.45	4.51	22.27	0	3	0=none; 1=less than half; 2=half; 3=more than half
Household wealth	3126	2.94	3.00	1.36	0.06	-1.20	1	5	Household assets and utility services
Urban	3126	0.08	0.00	0.27	3.06	7.34	0	1	1=urban, 0=rural
Factor husband: Husband rights to[a]	2967	0.03	-0.56	1.02	1.95	3.29	-0.56	3.90	1=yes, 0=no
Factor husband: Wife beating justification[a]	2969	0.03	-0.32	1.00	0.79	-0.82	-0.83	2.01	1=yes, 0=no
Factor wife: Wife beating justification[a]	3056	0.16	0.55	0.97	-0.65	-0.94	-1.60	1.13	1=yes, 0=no
Difference beating justification[a]	2900	0.16	0.28	1.29	-0.42	-0.39	-3.61	1.96	wbj – hbj
Wife final say health	3125	1.77	2.00	0.64	0.26	-0.70	1	3	1=someone else; 2=shared; 3=alone
Wife final say large household purchases	3125	1.65	2.00	0.65	0.50	-0.70	1	3	1=someone else; 2=shared; 3=alone
Wife final say household daily needs	3124	2.34	2.45	0.73	-0.64	-0.91	1	3	1=someone else; 2=shared; 3=alone
Wife final say visits family relatives	3125	1.88	2.00	0.51	-0.20	0.57	1	3	1=someone else; 2=shared; 3=alone

Notes: Weighted sample size. [a]Factors calculated using linear principal component analysis and the regression method in which the scores that are produced have a mean of 0 and a standard deviation of 1.
Source: Demographic Health Surveys Ethiopia 2005.

Table 3. *Cross tabulations of ethnic means.*

Ethnicity	Difference in wife beating justification	Factor husband: Husband rights	Wife final say health	Wife final say large household purchases	Wife final say household daily needs	Wife final say visits family relatives
Amara	0.31	0.02	1.93	1.73 *Max*	2.33	1.94
Southern minorities	0.20	-0.20	1.67	1.58	2.37	1.75
Gedeo	0.40	0.02	1.63	1.71	2.31	1.87
Gurarie	0.30	-0.33 *Min*	1.75	1.68	2.60	2.05 *Max*
Hadiya	0.43	-0.13	1.37 *Min*	1.72	2.55	1.70
Keffa	-0.17	-0.20	2.04 *Max*	1.64	2.52	1.94
Oromo	-0.03	0.19 *Max*	1.74	1.68	2.31	1.86
Sidama	0.07	-0.23	1.50	1.40	2.72 *Max*	1.92
Somalie	0.49 *Max*	0.10	1.60	1.37 *Min*	1.92 *Min*	1.47 *Min*
Tigraway	0.12	-0.10	1.61	1.59	2.13	1.92
Welaita	0.46	-0.06	1.69	1.37 *Min*	2.56	1.63
Gamo	-0.29 *Min*	-0.05	1.69	1.44	2.38	1.91
Total	0.16	0.03	1.77	1.65	2.34	1.88

Source: Demographic Health Surveys Ethiopia 2005.

Table 4. *Bargaining power variable levels*.

Individual level	Household level	Institutional level
Age	Age difference	Urban /rural
Education	Proportion of household expenditure	Husband: husband has right to
	Difference in beating justification	Husband: wife beating justification when
	Household wealth	Wife: wife beating justification when

Table 5. *Difference in beating justification index*.

	Wife score	Husband score	Difference (wbj – hbj)
Case 1	(+)wbj	(+)hbj	Ambiguous: wife and husband state beating justified
Case 2	(-)wbj	(-)hbj	Ambiguous: wife and husband state beating not justified
Case 3	(+)wbj	(-)hbj	Positive: wife states beating justified, husband states beating not justified
Case 4	(-)wbj	(+)hbj	Negative: wife states beating not justified and husband states beating justified

Table 6. *Aggregate CCFA model with covariates and ethnic dummies*.

Decision making factor Ordered logit			
	Coefficients	Standardized coefficients	Significance level[b]
Wife final say health[a]	1	0.66	***
Wife final say large household purchases	0.85	0.60	***
Wife final say visits family relatives	0.98	0.65	***

Dependent decision making Regression			
	Coefficients	Standardized coefficients	Significance level[b]
Individual level			
Age	0.34	0.06	*
Education	0.07	0.04	*
Household level			
Age difference	0.03	0.09	***
Difference in wife beating justification	0.14	0.12	***
Proportion of household expenditure: < 1/2	0.13	0.02	
Proportion of household expenditure: ≈1/2	0.01	0.00	
Proportion of household expenditure : >1/2	1.36	0.10	***
Poorer	-0.02	-0.01	
Middle	0.22	0.06	
Richer	0.30	0.08	*
Richest	0.18	0.04	**
Institutional level			
Should FGM be continued?	-0.04	-0.01	
Urban	0.58	0.11	***
Husband norms: husband rights	-0.11	-0.07	**
Wife norms: wife beating justification	-0.39	-0.23	***
Amara	0.46	0.13	***
Southern minorities	-0.09	-0.01	***
Gedeo	-0.51	-0.04	***
Gurarie	-0.20	-0.02	**
Hadiya	-1.06	-0.11	***
Keffa	0.69	0.06	***
Sidama	-0.65	-0.10	***
Somalie	-1.61	-0.19	***
Tigraway	-0.49	-0.07	***
Welaita	-0.92	-0.10	***
Gamo	-0.67	-0.06	***
R-square		0.25	

Notes: [a]Fixed to one to identify factor metric. [b]Statistical significance of standardized coefficients at 1% marked ***; 5% **; 10%*.
Un-weighted sample size N = 2059. The ethnic base category is Oromo.
Source: Demographic Health Surveys Ethiopia 2005.

Table 7. *Random intercepts MIMIC.*

Individual/household level decision making factor Ordered logit			
	Coefficients	Standardized coefficients	Significance level[b]
Wife final say health[a]	1	0.62	***
Wife final say large household purchases	0.88	0.57	***
Wife final say visits family relatives	1.05	0.64	***

Dependent decision making _ Individual\Household Regression			
	Coefficients	Standardized coefficients	Significance level[b]
Individual level			
Age	0.39	0.08	*
Education	0.19	0.12	***
Household level			
Age difference	0.02	0.09	***
Difference in wife beating justification	0.02	0.02	
Proportion of household expenditure: < 1/2	0.29	0.05	**
Proportion of household expenditure: ≈1/2	0.23	0.02	
Proportion of household expenditure : >1/2	1.48	0.12	***
Poorer	-0.08	-0.02	
Middle	0.06	0.02	
Richer	0.24	0.07	
Richest	0.39	0.10	***
R-square		0.1	

Institutional level decision making factor Regression			
	Coefficients	Standardized coefficients	Significance level[b]
Wife final say health*	1	0.62	***
Wife final say large household purchases	0.88	0.57	***
Wife final say visits family relatives	1.05	0.64	***

Dependent decision making _Institutional Regression			
	Coefficients	Standardized coefficients	Significance level[b]
Ethnic mean should FGM be continued?	-3.46	-0.77	***
R-square		0.6	

Notes: [a]Fixed to one to identify factor metric. [b]Statistical significance of standardized coefficients at 1% marked ***; 5% **; 10% *.
Unweighted sample size N =2428.
Source: Demographic Health Surveys Ethiopia 2005.

Table 8. *Aggregate CCFA model with covariates, ethnic dummies, and interactions*.

	Decision making factor Ordered logit		
	Coefficients	Standardized coefficients	Significance level[b]
Wife final say health[a]	1.00	0.67	***
Wife final say large household purchases	0.83	0.60	***
Wife final say visits family relatives	0.95	0.65	***

	Dependent decision making Regression		
	Coefficients	Standardized coefficients	Significance level[b]
Individual level			
Age	0.32	0.05	
Education	0.12	0.07	***
Household level			
Age difference	0.03	0.09	***
Difference in wife beating justification	0.11	0.09	*
Proportion of household expenditure: < 1/2	-0.03	-0.01	
Proportion of household expenditure: ≈1/2	0.04	0.00	
Proportion of household expenditure : >1/2	0.97	0.07	**
Poorer	-0.02	-0.01	
Middle	0.24	0.06	
Richer	0.31	0.08	*
Richest	0.17	0.04	*
Institutional level			
Should FGM be continued?	0.10	0.03	
Urban	0.61	0.11	***
Factor husband: husband rights	-0.13	-0.08	*
Factor wife: wife beating justification	-0.37	-0.22	***
Amara	0.47	0.14	***
Southern minorities	-0.07	-0.01	*
Gedeo	-0.47	-0.04	***
Gurarie	-1.12	-0.11	***
Hadiya	0.73	0.06	***
Keffa	-0.21	-0.02	**
Sidama	-0.65	-0.10	***
Somalie	-1.64	-0.19	***
Tigraway	-0.50	-0.07	***
Welaita	-0.92	-0.09	***
Gamo	-0.67	-0.06	***
Interactions			
Interaction age	0.06	0.06	
Interaction education	-0.21	-0.05	*
Interaction expenditure less than half	0.50	0.04	
Interaction expenditure about half	-0.74	-0.02	
Interaction expenditure more than half	2.03	0.07	***
Interaction wife beating justification	0.06	0.03	
Interaction FGM should continue?	-0.35	-0.10	*
R-square		0.25	

Notes: [a]Fixed to one to identify factor metric. [b]Statistical significance of standardized coefficients at 1% marked ***; 5% **; 10%*.
Unweighted sample size N = 2059. The dummy base category is Oromo.
Source: Demographic Health Surveys Ethiopia 2005.

Figure 1. *Theoretical relationships of levels of bargaining power and bargaining outcomes.*

Individual bargaining power: share in household expenditures, age, education, awareness of rights, attitude to wife beating and to female circumcision
X_i

Household bargaining power: household wealth, differences in age, education, attitude to women's rights and wife beating
X_j

Institutional bargaining power: group norms about rights, wife beating, and female circumcision
X_k

$\Gamma_{Individual}$

$\Gamma_{Household}$

$\Gamma_{Institutional}$

Bargaining outcome: decision making power
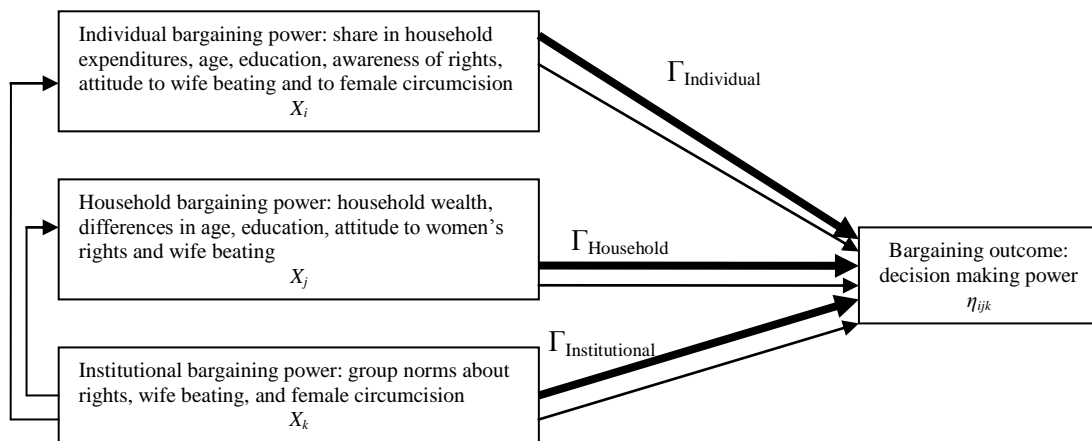η_{ijk}

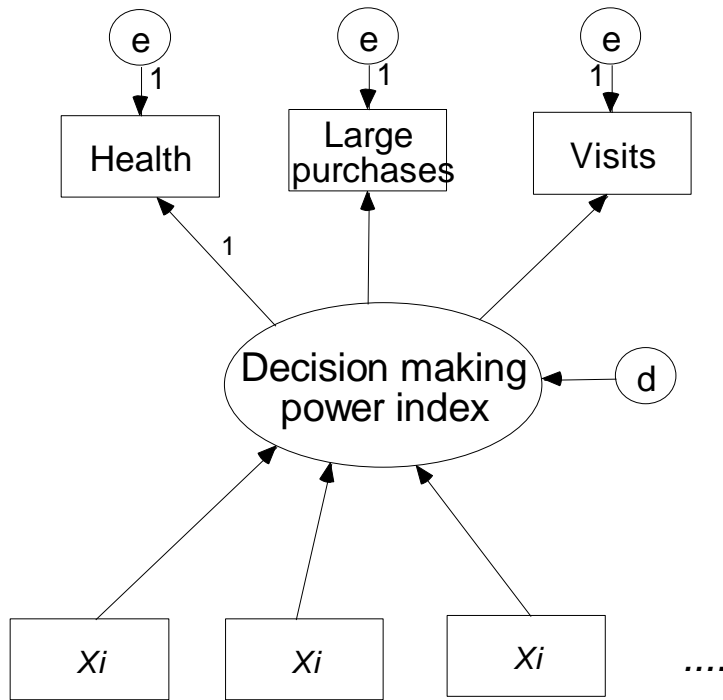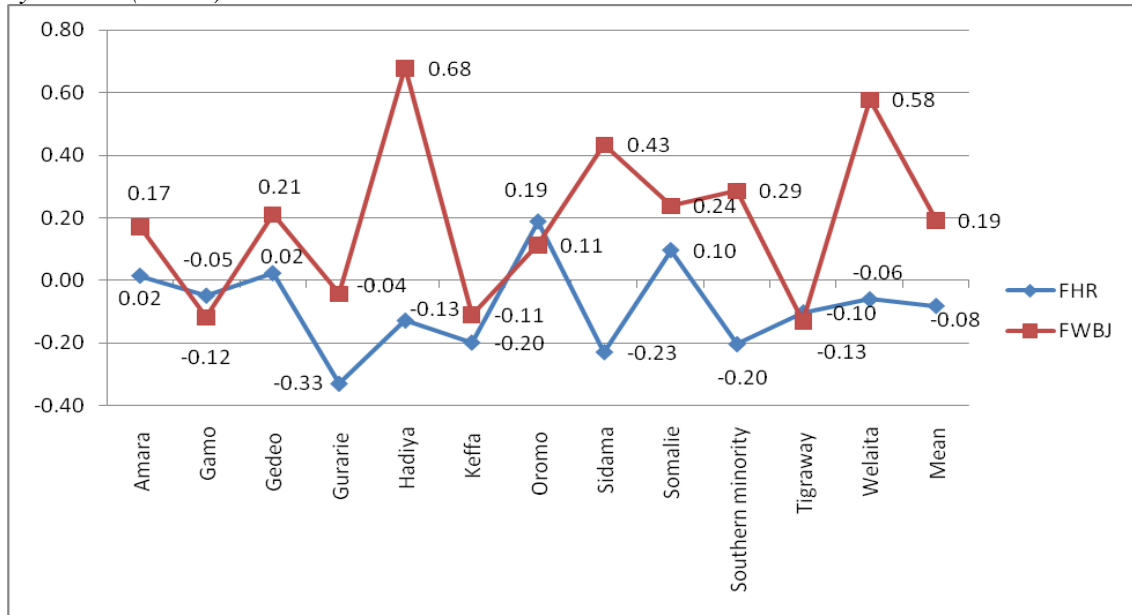Figure 2. *The MIMIC (Multiple Indicators Multiple Causes model).*

Figure 3. *Mean scores on husband rights reported by men (FHR) and wife beating justification reported by women (FWBJ).*

Source: Demographic Health Surveys Ethiopia 2005.

Endnotes

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[1] Contrary to what is assumed in free marriage market theories (see, for example, Becker, 1991), polygamy does not increase women's bargaining power by making them relatively scarce. First, in societies with polygamy, there is often a high age difference between men and women at marriage, and a high population growth. Hence, men marry women of larger age cohorts. Second, polygamy occurs generally in societies in which family law does not grant equal rights to men and women and where social norms limit women's freedoms (Bergmann, 1995).

[2] If this was only because of more awareness of rights would lead to a higher rate of reporting abuse, there would, of course, not be any paradox. The study does not give information of such a possible effect.

[3] The dataset and all information concerning it can be accessed from the DHS website www.measuredhs.com.

[4] Multi-collinearity is a serious issue for structural equation modeling. Given the high correlation between total children born and wife age (0.76) we included only the latter. Education and education difference are also correlated albeit to a lesser extent (0.5). Low correlation however does not imply independence. Husband wife beating justification was excluded because it led to convergence problems caused, we presume, by dependence with the husband rights factor.

[5] First, in method 1, autonomy is defined as low probability for someone else taking the decision. Hence, we assume a latent continuous variable generating the observable y_c. The unobservable y^* varies from more to less autonomy with thresholds $\tau_m = (m=1,...,J)$ (Long, 1997: 116). The outcome variable in method 1 is accordingly ordered ordinal. This approach is also known as the proportional odds model. Second, in method 2, there is no underlying continuity of y_c from less to more autonomy assumed, because we cannot rule out a priori the possibility that a woman who shares decisions with her husband is more autonomous than a woman taking decisions alone. A shared decision can be taken out of mutual respect whereas a decision taken alone may reflect conflict and separate spheres, or dependent husband because of illness. The outcome variable in method 2 is accordingly nominal (Heck and Thomas, 2008: 208, 213). Hence, every response would be modeled as a dichotomous variable. The third method is explained in the main body of the paper. All methods were used. The results for the first two can be obtained from the authors on request. Further technical details are given in Muthén and Muthén (2007) and Muthén (2004: 2-5).

[6] For an introduction to MIMIC and structural equation modeling Kaplan (2000) provides good coverage.

[7] More formally, the logistic aggregate measurement model is estimated with equation (2): $y^*_{ijkl} = v + \Lambda \eta_{ijkl} + e_{ijkl}$. Equation (2) includes four logistic equations estimated simultaneously with v (=2x4) intercepts and Λ (=3)

coefficients. Index scores η are then regressed on the covariates x with linear regression coefficients Γ and α intercepts such that (3) $\eta_{ijkl} = \alpha + \Gamma x_{ijkl} + d_{ijkl}$. Logistic regression is only used to calculate the index variable and therefore equation (3) is linear.

[8] Equations (4), (5), and (6) describe the multilevel model with random intercepts for the institutional level of bargaining power.

$$y^{*}_{ijkl} = \alpha_k + \beta x'_{ijkl} + \varepsilon'_{ijkl} \tag{4}$$

$$\alpha_k = \pi + \gamma \overline{X} + \omega_k \tag{5}$$

$$y^{*}_{ijkl} = \pi + \gamma \overline{X} + \beta x'_{ijkl} + \omega_k + \varepsilon'_{ijkl} \tag{6}$$

Equation (4) is estimated for each ethnic group. Variance between groups in intercepts is used to estimate γ in (5) where ethnic group intercepts are the dependent variable to be explained by group mean covariates. In (4) the intercepts are random α_k and $\overline{X}$, the higher level variables, excluded from x'_{ijkl} in (4). In equation (5), π is the fixed mean intercept; γ is the fixed coefficient of the predictors under $\overline{X}$; and ω_k the higher level random residual component also with a mean of zero, constant variance and independence of ε'_{ijkl}, the individual level error term. Equation (6) is obtained by substituting (5) in (4).

[9] A random slopes model is not estimated in this paper. Preliminary analysis has shown that there is insufficient variance for a random intercepts-random slopes model. The overall small number of ethnic groups in the sample is a possible cause.

[10] The structural equation diagnostics are chi-square p-value > 5%. Other guidelines for overall model fit include a comparative fit index CFI>0.95, the root mean square error of approximation RMSEA<0.06 and the weighted root mean square residual WRMR<0.9; see Muthén (2004: 21-24) and Kaplan (2000).

[11] Although positive, some higher level coefficients when were freely estimated were not statistically significant. The results are unchanged for the individual/household level. The results are unchanged for the individual/household level.

[12] The difference in model fit was tested using the scaled loglikelihood chi-square difference test (Muthén and Muthén, 2008).

[13] Results provided upon request from the authors. The full factor model was estimated with the WLS estimator.

[14] Since there was no significant difference between no centering and grand mean centering the former was kept. Some differences arise when group mean centering is used but this is expected because the interpretation of the variables changes (Hofman and Gavin, 1998).

[15] The community-based empowerment approach to ban FGM is also applied in Ethiopia, but only recently at a large scale (Shetty, 2007).