Household Decision Making *As* Empowerment:

A Methodological View*

by

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Women's empowerment is the process by which women gain greater control over the circumstances of their lives (Sen and Batliwala 2000). Till recently, variables such as education and employment were commonly used to capture empowerment and other similar concepts such as women's autonomy and status. However, these variables are only proxies for empowerment (Jejeebhoy 2000); the search for more direct measures has focused on capturing 'evidence' of empowerment (Kishor 2000). One widely accepted measure of 'evidence' (or lack thereof) is women's participation in household decision making. This variable is increasingly used as an objective indicator of women's household level empowerment, particularly in demographic and health studies (Schuler and Hashemi, 1994; Balk 1997; Hindin 2000; Kritz et al. 2000).

The wide acceptance of women's participation in household decision making as an indicator of empowerment is largely due to the intuitive equating of decision making with power and control and "there is a nexus of a few key, overlapping terms that are most often included in defining empowerment: options, choice, control and power" (Malhotra et al 2002). Furthermore, decision making appears to have cross-cultural validity as an indicator of empowerment, at least at the conceptual level: a woman who participates in decisions that affect or control her life and environment are everywhere more empowered than women who do not.

While the *concept* of decision making as empowerment is appealing in its universal applicability, translating the concept into indicators that mean the same thing across countries still remains to be fully explored. In particular, how exactly is the act of making decisions to be captured? Is it enough that women 'participate' in decision making or must it be that *they alone have the final say* in the decision? Further, how is participation in different decisions to be effectively summarized? Are all decisions equally important in their relationship to empowerment? If not, how do we weight different decisions as we combine the information?

This paper does not argue with the concept of decision making as empowerment; instead, it explores the methodological issues in defining a quantifiable summary indicator of decision making. In particular, it explores effective ways of combining information on participation in different types of decisions and whether all types of participation is equally meaningful as empowerment. Finally, it uses two sets of separate summary indicators to examine their comparative relevance for explaining women's contraceptive use.

BACKGROUND AND DATA

About five years ago, the Demographic and Health Surveys (DHS) program, one of the most influential demographic and health data sources for the developing world, introduced questions on women's participation in household decision making into its questionnaires. These surveys are conducted in the developing world and typically collect nationally representative data on demographic and health indicators for women in the reproductive age group 15-49 years, as well as on their own characteristics and those of the households they live in. The inclusion of direct measures of women's empowerment

in the DHS has meant that for the first time comparable data on women's decision making is available for a large number of countries along with information on a plethora of demographic and health outcomes for women and their children.

The inclusion of questions about decision making in the DHS derived directly from the argument that women's participation in decisions that affect their daily lives is one of the few cross-culturally applicable aspects of household gender relations and women's empowerment with relevance to demographic and health outcomes. The specific questions included were:

Who in your family usually has the final say on the following decisions:[1]
a) Your own health care?
b) Making large household purchases?
c) Making household purchases for daily needs?
d) Visits to family or relatives?

Possible answers included: *respondent only, respondent and husband jointly, husband only, respondent jointly with someone else, and someone else.*

The choice of specific types of decisions was guided by the need to make included decision areas relevant to all women irrespective of their marital status and parity, while also covering varied aspects of household and individual functioning that are cross-culturally relevant. Decisions about the two different kinds of purchases (large purchases and purchases for daily needs) were meant to tap into economic decision making in the household while allowing for variation in participation according to the relative amount of money to be expended and according to whether the decisions are routine or not (purchases for daily needs being more routine than large purchases). Participation in decisions about visits to friends and family was expected to be most culture specific: this type of decision making is less likely to involve women in cultures where women's freedom of movement is restricted and where their interaction with birth-family members is closely monitored by husbands and in-laws. Finally, decisions about own health care were thought to be most fundamental to women's self interest and of direct relevance for bringing about demographic and health related change. All of these decisions are relevant to women in all countries and cultures.

These data have most commonly been analyzed by looking at women's participation in one or more decisions (where participation is defined as taking decisions alone or jointly with husbands or someone else) or by creating an index which is a simple count of the number of decisions (sometimes weighted with arbitrary weights) in which a woman participates (see various DHS country reports since about 2000, Hindin 2003, Kritz et al. 2000). While this approach commends itself on the basis of simplicity and ease of calculation, it begs several important questions. From a women's empowerment

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[1]Also included in this list was 'What food should be cooked each day?' However in this paper we do not examine this decision, since the variability in responses is low and because conceptually it is the atypical woman who would be the one *not* making the decision, rather than the one making it. This is because most cultures ascribe domestic roles, such as cooking and cleaning, to women.

perspective, do women who take decisions alone differ from those who take them jointly with someone else? In other words, in studying women's empowerment should women who take decisions alone be analyzed together with those who take them jointly? And if no, what is more reflective of empowerment? There is also the question of the relevance and equivalence of the different types of decisions in which women participate. How is women's participation in one type of decision related to their participation in other types of decisions? And perhaps most importantly, is empowerment to be represented by cumulating the number of decisions that women participate in (implying that the more the types of decisions participated in, the higher is empowerment) or is empowerment a common unifying construct that is to be captured through women's responses to all of these questions taken together?

These are all important methodological questions which we attempt to answer in this paper using DHS data on decision making for five countries namely Benin and Kenya in sub-Saharan Africa, Jordan in the Middle East, Cambodia in Asia, and Peru in Latin America. These countries were selected because they all have similar information on household decision making and because of their geographical and cultural spread. Further, they also present a range of contraceptive prevalence rates from very low (Benin) to relatively high (Peru), the demographic outcome variable against which different decision making empowerment indicators will be 'tested'.

We choose to 'test' the alternative indicators of decision making on women's contraceptive use since there is theoretical as well as some empirical evidence for a positive association between various proxies of empowerment and modern contraceptive use both at the individual and societal level. Hermalin (1983) in his model of contraceptive use identified the motivation to control childbearing and the costs of fertility regulation as the two main proximate determinants of contraceptive use. In this model, the motivation to control childbearing is seen as a function of the interaction between the supply of children for the individual woman (number of surviving children) and the demand for children (number of children desired). The costs of regulation are defined so as to include social and psychic as well as economic costs entailed in violating traditional norms and experimenting with something new.

While in this model, the characteristics of the women themselves, their empowerment and their ability to control their own lives, are not discussed, it is clear that both the demand and supply of children, are in part a function of women's empowerment. Women who are in control of their lives and in a position to act on their desires would be more likely to demand fewer children and be in a better position to have only those that they demand. In addition, the ability to overcome social and psychic costs is also likely to be positively associated with women's empowerment almost by definition. Women's knowledge that fertility can be controlled and of effective means of doing so, underlie women's ability to control fertility (Birdsall and Chester 1987). Empirical research shows that higher status of women increases women's adoption of contraceptive methods and contributes to a reduction in fertility and contraceptive use (Balk 1994, Kritz et al. 2000, Gage 1995, Hogan, Berhanu, and Hailemariam 1999).

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Education and employment are other important factors that have been found to correlate with women's empowerment, as well as with contraceptive use. For example, in a study of 25 developing countries, Rutenberg et. al.(1991) find that women who have primary education are more likely than women who have no education to practice contraception. Differences in contraceptive use were also found between women with secondary or higher level of education and women with primary education, although not as substantial as the difference between primary and no education. Education and employment improve women's ability to acquire knowledge and can potentially provide access to psychic and financial resources which can translate into greater influence over reproductive and other decision-making and access to effective contraception. At the same time, paid work increases women's options, but in doing so, competes with child-bearing and rearing. This incompatibility would likely increase the desire for women to control their fertility, and their ability to do so, since paid work increases the economic resources at their command. Finally, women's life cycle stage captured in terms of both age and parity influences their use of contraceptives. Compared to the older age groups, younger women and women with fewer children are less likely to practice contraception since they are in the early stages of family formation.

The analysis in this paper is restricted to currently married women[2] because a) they are a relatively homogenous group in terms of cross-cultural gender-role expectations and the other persons in their lives that could potentially be involved in household decision making, and b) they are the group most relevant for demographic analysis since, in a majority of cultures, they are the main contributor to fertility and contraceptive use. Accordingly, the relevant sample sizes of currently married women for the analysis are 4,587 in Benin, 2,302 in Cambodia, 5,727 in Jordan, 4,876 in Kenya and 16,518 in Peru.

Table 1 provides information on key factors relevant to an analysis of women's empowerment for all five countries. Age and number of children capture women's life-cycle stage. Empowerment of women can be expected to vary over the life cycle since the rights and responsibilities of women vary with age and the parity (Rugh 1984; Jejeebhoy 2000). All else being the same, older women and women with children are likely to have greater status, rights and responsibilities than younger women or women with no children. A woman's level of education, her employment status, particularly employment for cash, and media exposure are expected to be positively related to empowerment (Mason 1986; Kishor 2000). Women who are educated, employed, and exposed to the media are likely to be better equipped with the information and the means needed to function effectively in the modern world. Together these factors are expected to influence women's inherent abilities as well as their attitudes towards gender roles. In addition, employment helps to provide alternative sources of social identity, financial independence, and exposure to and integration into power structures independent of kin networks (Dixon-Mueller 1993). Regular media exposure is measured here in terms of exposure at least once a week to one or more of the following types of media: newspapers/magazines, radio or television.

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[2] This includes all women who either say they are currently married or say they are currently cohabiting with a partner.

Some have argued that women's empowerment is more an attribute of their specific cultural environments than of the women themselves (Mason, Smith, and Morgan 1998; Smith 1989). This is in part because the cultural context can define not just gender roles, but also the norms of acceptable behavior, rights, and duties associated with these roles. In addition, the characteristics of the place of residence as well as the socioeconomic status of the household define the actual opportunities available to women. Hence, other factors examined here include women's urban-rural residence, nuclear family status and household wealth. Women are said to be residing in a nuclear family if they live alone or live with a husband/partner, with or without children (including grandchildren) but no other adult. Current co-residence of the husband/partner in the household is used as a control variable since women are much less likely to take a decision jointly with their husband/partner if he is away for a long time.

While most other variables used in this analysis are self-explanatory, the indicator of wealth needs some explanation. The indicator is constructed using household asset and amenities data and principle components analysis. Each asset is assigned a weight (factor score) generated through principle components analysis, and the resulting asset scores are standardized in relation to a standard normal distribution with a mean of zero and a standard deviation of one. Each household is then assigned a score for each asset, and the scores are summed by household. The sample is then divided into population quintiles; each quintile is designated a rank, from one (poorest) to five (wealthiest), and individuals are ranked according to the total score of the household in which they resided.

From Table 1, it is evident that women are least educated in Benin and most educated in Jordan followed by Peru. Regular exposure to the media is highest in Jordan, and lowest in Benin and Cambodia, although, the majority of women are regularly exposed to media in all five countries. The proportion employed for cash is highest in Benin at 89 percent and lowest in Jordan at 11 percent. In the other three countries, less than half of the women are employed for cash. Only about one-third of women live in nuclear families, except in Jordan where this proportion is much lower. As expected the majority of women are co-residing with their husbands except in Kenya and Benin, where only four out of five women do so.

Use of modern contraceptives also varies from a low of 7 percent in Benin, to 18 percent in Cambodia, 31 percent in Kenya, 39 percent in Jordan, and 49 percent in Peru.

METHODS AND ANALYSIS

The methodological approach in this paper uses the following steps: First we compare the patterns of decision making by decision across the five DHS countries and discuss the correlations between women's type of participation in each decision within country. This will provide an understanding of whether different decisions have substantively different meanings within and across countries. Then we construct two sets of summary indicators of women's decision-making patterns: a) indices that are based on the number of decisions women participate in by type of participation (alone or jointly, only alone, only

jointly) and b) summary indicators in the form of factors extracted through factor analysis of the decision making information. This is followed by a comparison of these indicators in two ways: a) by examining their correlates, and then b) by examining whether they have a similar relationship with women's contraceptive use, a demographic outcome that is hypothesized to be positively associated with women's empowerment. Bivariate analysis techniques as well as ordinary least squares (OLS) and binary logit will be used to analyze the data and make comparisons. Data analysis has been conducted using SPSS 13.0.

1. <u>Comparison of the patterns of decision making across countries and correlations</u>

Table 2 shows the pattern of decision making for the four types of decisions: decisions about own health care, making large household purchases, making household purchases for daily needs, and going to visit family or friends. As expected, the patterns of decision making differ greatly across countries. In Benin and Kenya, the decision women are most likely to make alone is the decision about making purchases for daily needs; even so, there is no decision at all that a majority of women take on their own. In fact, in these countries, most decisions are made by the husband/partner. By contrast, in Jordan and Peru, over half the women make decisions about their own health care alone, and in Cambodia over half the women take decisions about small household purchases alone. Further, in these countries most decisions are much more likely to be made jointly by the woman and her husband/partner than by the latter alone. What is common across all countries is that decisions are largely made by either one or both members of the couple. In no country do the categories of 'someone else' and 'jointly with someone else' each exceed 4 percent. Consequently, in subsequent analyses, the category of 'someone else' is combined with 'husband/partner alone' and the category 'jointly with someone else' is combined with 'jointly with husband/partner' and persons with missing information on decision making are dropped from the analysis.

While Table 2 suggests that women vary greatly in terms of their relative participation in each of the four decisions listed, the extent to which women answer similarly across decisions is not entirely evident. For example the extent to which women who take one decision alone are also likely to take others alone is unclear. Table 3 provides insight into this question. It shows the ranges in the correlation coefficients between different decisions by type participation. In all countries, the correlations between decisions is highest if we consider whether women participate (that is make the decision alone or jointly) rather than whether we consider making decisions alone only or only jointly. The highest correlation coefficients are between participation in decisions about large household purchases and purchases for daily needs (data not shown). Correlations are also marginally higher between decisions if we consider whether they are being made jointly or not compared with whether they are being made alone. However, what is notable is that all correlation coefficients are relatively low, irrespective of the type of participation being considered. In Jordan, where participation of any kind in a decision is least correlated with participation in any other decision, the correlation ranges are as low as 0.1 to 0.3. In fact, no correlation coefficient exceeds 0.61 in any country and for any kind of participation, with most correlation coefficients being

less than 0.5. Thus, clearly, women are not participating in the same way in different decisions. This suggests that the decisions are substantively different and unique, and participation in them may have different implications for empowerment.

2. Summarizing the decision-making data

Two different approaches to summarizing the data are explored in this paper:

a. The first is a sum of the number of decisions the respondent participates in. This summary indicator recommends itself for its apparent simplicity and intuitive appeal: if decision making is an indicator of empowerment, then the more decisions you participate in, the more empowered you should be. Another advantage of this approach is that it replaces four potential indicators (one each for each of the four decisions) with one indicator. However, before this approach can be adopted, a decision needs to be made on whether it is the number of decisions a woman participates in alone or jointly that is the relevant indicator, or whether we should be looking at the number of decisions she takes alone, or the number she takes jointly. Confounding this issue further is the possibility that whether a decision taken alone is more an indicator of empowerment than one taken jointly may depend on the type of decision. In that case, the indicator should be one in which some of the decisions being summed should be taken alone and some jointly. Further, even if this is settled, the methodology assumes that all decisions are equally important for empowerment, that is they can be assumed to have equal weight; an unproven assumption.

b. Keeping the disadvantages of the simple index approach (as discussed in point (a)) in mind, the second method explored here is one which depends on factor analysis to define the indicator(s). Factor analysis starts with all the variables assumed to be measuring different dimensions of a given concept and reduces them to a smaller number of variables that are correlated to the original variables, but are themselves orthogonal to each other. In arriving at a solution, factor analysis uses only the variance a variable shares with other variables, and divides this common variance into factors (Halli and Rao1992). Thus the factors obtained focus only on what is common to all variables. In order to analyze these factors, factor score coefficients are calculated using the regression method (Norussis/SPSS Inc. 1993). These factor-score coefficients are then used to estimate factor scores for each individual respondent as a linear combination of the product of the standardized values for the respondent on each of the original variables and the corresponding factor-score coefficient as shown in the equation:

$$Fjk \ = \ \sum_{i=1}^{p} WjiXik$$

where F_{jk} is the jth factor score for the kth respondent, W_{ji} is the factor-score coefficient for the jth factor and the ith variable and X_{ik} is the standardized value of the ith variable for the kth respondent.

2a. Exploring the index approach: Table 4 shows the distribution of currently married women in all countries according to three different ways of summing women's decision making: INDEXPART is the number of decisions that women participate in with no regard to whether this participation is in the form of making the decision alone or jointly with the husband/partner or someone else. INDEXALONE is the sum of decisions that women make alone; INDEXJOINT is the number of decisions women make jointly with their husband/partner or someone else.

The range of each of these indices is 0 to 4. The table also gives the Cronbach-α coefficient which is a measure of the reliability of an index and reflects how well the different items that comprise the index cohere together. The higher this coefficient is for an index the better the internal cohesion of the items of which it is constructed. The table shows that the Cronbach-α coefficient for each index, in all the countries except Jordan, is a respectable 0.6 or higher suggesting that despite low correlations between decisions when combined in an index the different decisions have sufficient cohesion. In Jordan, however, only the INDEXPART has a coefficient that is above 0.5, suggesting that the low correlations between decisions noted in Table 3 for Jordan yield indices that do not cohere well together.

Overall, Table 4 shows that only small proportions of women take all four decisions alone or even jointly; however 79 percent of women in Cambodia, 63 percent in Peru, and 40 percent in Jordan do participate in all four decisions. Participation in all four decisions is very low in Benin (19 percent) and Kenya (26 percent) and as many as one-fourth of women in Benin and one-fifth in Kenya do not participate at all in any of the four decisions.

2b. Exploring the factor analysis approach: The main objective of conducting a factor analysis was to extract a minimum number of meaningful indicators could be obtained if we allowed this method to look for commonalities between women's answers to the different decision making questions. To do this we created separate variables for each of the three answer possibilities (alone, jointly with husband/partner or other, and other only) for each decision. Excluding the 'other only' answer for each decision we ran the factor analysis on the remaining eight variables. Appendix Table 1 shows the number of factors (unrotated) obtained that had eigenvalues greater than 1 for each of the five countries and the variance explained by each factor. Although the total number of factors with eigenvalues greater than 1 was four for three of the countries and three for two, we took only the first two factors in each country. In Benin, Jordan, and Kenya the first two factors together explain about 50 percent of the variance, whereas the variance explained by the two factors in Cambodia and Peru is 62 percent and 57 percent respectively.

Table 5 shows how the original variables load on each of the two factors so that they can be meaningfully interpreted. Joint decision making loads strongly and positively on Factor 1 whereas making decisions alone loads negatively in every country. Clearly Factor 1 is capturing a pattern of decision making that emphasizes joint decision making only and precludes all other forms altogether. With no flexibility at all in how decisions are being made, the commonality being captured by Factor 1 does not appear to reflect empowerment but a form of participation that we label "Dependent Participation." By

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contrast, Factor 2 emphasizes flexibility according to decision type. In particular, taking decisions about own health care alone loads positively and strongly on Factor 2 in all countries except Cambodia, along with joint economic-decision making and/or decisions about mobility (i.e., decisions about visiting friends and family). This factor appears to provide a more realistic picture of how an 'empowered' married woman would be taking decisions: decisions that primarily involve her (for example, her own health) she has the final say on; decisions that are about things that are more shared in nature (e.g. large household purchases) are made jointly with the partner. Hence, we label Factor 2 "Empowering Participation" to capture participation, but according to need.

3. <u>Comparison of the two sets of alternative indicators</u>

The two sets of summary indicators, namely the three indices and the two factors, are compared in two different ways: the first method compares them on the basis of how well they are each explained by other known correlates of empowerment, namely life cycle characteristics (current age in years) and number of children ever born); individual characteristics (education in years, regular media exposure (dummy variable), and employment for cash (dummy variable); and context characteristics (urban residence (dummy variable), non-nuclear household (dummy variable), and wealth status of household (categorical variable) controlling for the structure of the household (dummy variable) and whether the husband usually lives in the household (dummy variable). This analysis uses Ordinary Least Squares to assess the importance of different explanatory factors. The second method compares the relative importance of these alternative indicators in explaining women's contraceptive use. The purpose of this latter exercise is to not only see how effective each is, but also whether they each relate in similar or different ways to contraceptive use within country and across countries.

3a. <u>Correlates of each of the five different indices</u>: Table 6 shows the OLS regression coefficients predicting INDEXPART, INDEXALONE, INDEXJOINT, Factor 1: Dependent Participation, and Factor 2: Empowered Participation. Notably, the R-sq values for all of the regression equations are low suggesting that unexplained variation in decision making remains high. Nonetheless, it is notable that in most countries, the R-sq value is lowest for INDEXJOINT with INDEXALONE being better explained. Further, in Cambodia and Kenya, the R-sq for the regression of Factor 2 is much higher than for the other regressions, and in Benin it is amongst the highest.

Lifestyle factors: In all countries, age is positively and significantly associated with INDEXPART so that the higher the age the more the number of decisions women participate in. However, most of this is explained by women's increasing participation 'alone' with age and not jointly. Interestingly, Factor 1 is mostly negatively associated with age, suggesting that dependent participation declines with age; whereas, factor 2 is either unrelated to age (Cambodia, Jordan and Peru) or positively related (Benin and Kenya). In most countries, the number of children a woman has appears to be either negatively associated or not significantly related with all of the different summary measures of decision making.

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Individual characteristics: As education increases INDEXPART increases in all countries and INDEXALONE and INDEXJOINT also increase in four out of five countries. In most countries the coefficient for INDEXPART is greater than for either of the other two indices. In almost all countries, the positive education coefficient is stronger for INDEXJOINT than for INDEXALONE. Factor 1 increases with years of education but in only three out of the five countries; whereas the association of Factor 2 with years of education is significant and positive in four out of the five countries. No pattern emerges with regard to decision making and media exposure; however, employment for cash are positively associated with INDEXPART and INDEXALONE in most countries; however it bears no consistent relationship with INDEXJOINT. Factor 1 is not positively associated with cash employment in any country, whereas Factor 2 is positively associated with cash employment in three of the five countries

Context variables: Residence in urban areas is inconsistently related to decision making and does not vary consistently across countries by indicator. None of the indicators of decision making are associated with urban residence in Cambodia and Kenya; whereas, in Jordan and Peru urban living is associated with higher scores on INDEXPART and INDEXALONE but lower scores on INDEXJOINT. Factor 2 is lower in urban areas on average in Benin and Jordan but higher in Peru, whereas Factor 1 is lower in urban areas in Jordan and Peru and not associated with urban living in the remaining countries. Where significant wealth has either a positive linear or non-linear association with the different decision making indicators. In Jordan alone, wealth is strongly and negatively associated with INDEXALONE but positively so with INDEXJOINT and Factor 1, suggesting that wealthier women are more likely to be practicing 'dependent participation' while 'empowering participation' is unrelated to wealth. In Peru, by contrast, Factor 1 is negatively associated with wealth and Factor 2 positively so.

This comparison suggests several things: a) the variation in INDEXALONE is better explained by the explanatory factors considered here than INDEXJOINT in all countries; b) INDEXPART masks the differences between women who take decisions alone and those who take them jointly; c) Factor 2 appears to be more consistently positively associated with empowering individual characteristics (such as education and employment for cash as well as age) than Factor 1; and d) while Factor 1 is closer to INDEXJOINT and Factor 2 is closer to INDEXALONE in terms of how each relates to individual and background characteristics, there are sufficient differences to see them all as distinct.

3b. Comparing the association of alternative decision making indicators with modern contraceptive use: Binary logit analysis is used to examine the predictors of women's modern contraceptive use. Women who are currently using a modern method of contraception are coded 1 and the others 0 to define the dependent variable. Each of the summary indicators of decision making are grouped into three categories to represent low, medium and high levels of empowerment. For the three indices this is done as follows: women with an index value of 0 are assigned to the 'low' category; those with index values 1 or 2 are assigned to the 'medium' category and those with index values 3 or 4 are assigned to the 'high' category. For the factors the categorization is done by

sorting individuals by factor scores; the factor score which is the highest for the lowest one third of respondents is the upper end of the 'low' category and the factor score which is the highest for the next one third of respondents is the upper end of the 'medium' category. Since the factor scores are based on only eight variables their distribution is not smooth; thus, it should be noted that each group does not contain exactly one third of women.

Using these categorical indicators several different logit equations are estimated to examine the relationship between contraceptive use and decision making. All equations control for factors known to be associated with contraceptive use, namely, age, number of living children, education, media exposure, women's employment, urban residence and wealth. The odds ratios for these control variables in the base model are given in Appendix Table 2.

Table 7 shows the odds ratios for seven different models: Models 1, 2, and 3 each include only one of the three indices and Models 5 and 6 each include one of the two factors; Model 4 includes both INDEXALONE and INDEXJOINT; and finally Model 7 includes both of the factors.

In Benin (where only 7 percent of women use contraception) and Jordan (where modern contraceptive use is more common, at 39 percent) women's participation in decision making is unrelated to their contraceptive use *irrespective* of how decision making is being represented. In Cambodia INDEXALONE is positively associated with contraceptive use but the association is significant only if women are making 1-2 decisions alone. In Model 4, which includes both INDEXALONE and INDEXJOINT, the coefficient for INDEXALONE strengthens so that the odds of a woman using contraception if she alone takes 1-2 decisions are higher by 53 percent compared with women that take no decisions alone. A medium score on Factor 2 in Model 6 also leads to higher odds of a woman using contraception; but this effect is wiped out in Model 7.

In Kenya and Peru INDEXALONE (and consequently INDEXPART) and Factor 2 are consistently and positively associated with contraceptive use. In Peru, the effect is progressive, so that the more the number of decisions or the higher the factor score, the higher are the odds of women using contraception. Notably too, in Peru women with higher scores on Factor 2 are less likely to be using contraception than women with lower scores. In Kenya, the odds of using contraception are higher if women take decisions alone than if they do not or have medium or high scores on Factor 2 than low scores; but the odds do not differ much between the medium and high categories. Further, the effects of INDEXALONE and Factor 2 persist even if the other summary indicator is included as in Models 4 and 7.

CONCLUSIONS

The focus of this paper was on determining how best to combine an array of information on decision-making to yield a meaningful indicator of empowerment. One impetus for conducting this analysis was that the Demographic and Health Surveys program which

covers more than 70 developing countries worldwide now routinely collects information on decision making in order to provide measures of gender relations and empowerment at the household level. The availability of this data for a very large number of countries requires that we understand better how to interpret this information in the context of empowerment.

The specific methodological questions that were addressed in this paper were: what type of 'participation' is most in line with an understanding of empowerment and does the relevant type of participation vary by type of decision? How best can the different decisions be weighted to provide an effective summary of decision making information given that information is often available on several different types of decisions. The approach taken was to construct alternative summary indicators of the different decision making questions which involved four different types of decisions and three different ways of participation (alone, jointly, or not at all) and compare them across five countries that represent different cultures.

The analysis expands our understanding of the differing meanings of decision making across countries and provides insight into effective means of summarizing the information. First we learned that the pattern of participation in decision making varies greatly across countries and within country, across decisions. In most countries, the decisions most commonly made alone are about health care and small household purchases. Even though only currently married women were included in the analysis, joint decision making is not the norm and is most common for decision making about visits to friends and family. Women in Benin and Kenya are the ones who are most likely to not participate in any decision at all. This is particularly surprising given the much higher rates of employment for cash in these countries. The variance in participation is also not explained by other characteristics such as education. In fact, when a simple count of women's participation is regressed on hypothesized correlates of empowerment such as education and working for cash, the R-sq never exceeds 0.18 in any country and tends to be highest for the regression explaining women's number of decisions taken alone.

Two sets of different summary indicators were defined: the first set was a simple count of the number of decisions taken alone (INDEXALONE), taken jointly (INDEXJOINT) and taken alone or jointly (INDEXPART). INDEXPART is used most often to represent the decision making information in DHS publications. However, an examination of these three indices suggests that participating alone in decisions is substantively different from participating jointly and affects demographic outcomes (contraceptive use in the case of this analysis) differently. Thus the use of INDEXPART by implicitly treating the two as equivalent, masks these differences and hence may lead to invalid conclusions about women's decision making and demographic outcomes.

The second set of the summary indicators calculated using factor analysis provided further insights into the difference between the different types of participation. First it became evident that the information on decision making cannot in fact be summarized by only one factor. Even two factors explain only 50-62 percent of the variance. The factor with the highest eigenvalue in all five countries appeared on the face

of it, to be capturing joint decisionmaking. However a closer look showed that it encompassed joint decision making to the exclusion of other types of decisionmaking on all decisions. This factor was explained more poorly by characteristics such as education and cash earnings and did not have a significant relationship with contraceptive use in any country except Peru where a higher score on this factor was associated with lower odds of using contraception. All of this suggested that participation in decision making that is joint, irrespective of the type of decision, may not in fact be empowering; hence we called this factor 'Dependent Participation'.

By contrast the second factor highlighted flexibility in decision making according to the type of decision: decision making alone, particularly on issues of own health and, in some countries, on small household purchases, in combination with joint decision making on other more 'communal' decisions such as decisions about visits to friends and family and large household purchases. This factor we called 'Empowering Participation' because it appeared to be closer to the underlying concept of empowerment where women exercise control according to need. Whether you need health care should, for example, be a decision on which you as the affected party, should have final say; other decisions such as those about large household purchases should be decisions arrived at through consultations with the partner, given this sample of currently married women. In the regression explaining factor 2 the R-sq values were particularly high in three out of the five countries and contraceptive use was positively related to it in three of the five countries.

In conclusion this paper highlights the nuanced nature of decision making as empowerment: the nature of participation, as well as the decision matter to whether a indicator of decision making is to be used as an indicator of empowerment.

<u>References</u>

Balk, D. 1997. "Defying gender norms in rural Bangladesh: A social demographic analysis." *Population Studies* 51:153-172.

-- .1994. "Individual and community aspects of women's status and fertility in rural Bangladesh." *Population Studies* 48 (1): 21-45.

Birdsall, N. and L.A. Chester. 1987. "Contraception and the status of women: What is the link?" *Family Planning Perspectives* 19(1): 14-18.

Dixon-Mueller, Ruth B. 1993. *Population Policy and Women=s Rights: Transforming Reproductive Choice*. Connecticut: Praeger.

Gage, A.J. 1995. "Women's socioeconomic position and contraceptive behavior in Togo." *Studies in Family Planning* 26(5): 264-277.

Halli, S. S. and K.V. Rao. 1992. *Advanced techniques in population analysis*. New York: Plenum Press.

Hermalin, A. (1983) ᴀFertility regulation and its costs: A critical essay.@ In *Determinants of Fertility in Developing Countries* ed. R.A. Bulatao and R.D. Lee. New York: Academic Press.

Hindin, M. J. 2003. "Understanding women's attitude towards wife-beating in Zimbabwe." *Bulletin of the World Health Organization* 2003, 81 (7)

-- 2000. "Women's power and anthropometric status in Zimbabwe." *Soc.Sci.Med,* 51:1517-1528.

Hogan, D.P., B. Berhanu, and A. Hailemariam. 1999. "Household organization, women's autonomy, and contraceptive behavior in Southern Ethiopia." *Studies in Family Planning*, 30(4): 302-314.

Jejeebhoy S. J. 2000 "Women's autonomy in rural India: Its dimensions, determinants and the influence of context" in *Women's empowerment and demographic processes*, Harriet B. and Gita Sen Presser. New York: Oxford University Press.

Kishor, S. 2000. "Empowerment of women in Egypt and links to the survival and health of their infants" in *Women's empowerment and demographic processes*, Harriet B. and Gita Sen Presser. New York: Oxford University Press.

Kritz, M. M., P. Makinwa-Adebusoye, and D.T. Gurak. 2000, "The role of gender context in shaping reproductive behaviour in Nigeria" in *Women's empowerment and*

demographic processes, Harriet B. and Gita Sen Presser. New York: Oxford University Press.

Malhotra, Anju, Sidney Ruth Schuler, and Carol Boender. 2002. "Measuring women's empowerment as a variable in international development." Unpublished paper prepared for the World Bank.

Mason, K.O., H.L. Smith, S. Philip Morgan 1997. ΑMuslim women in the non-Islamic countries of Asia: Do they have less autonomy than their non-Muslim neighbors?℮ Paper prepared for presentation at the 1998 meeting of the American Sociological Association, San Francisco.

Mason, K.O 1986. "The status of women: conceptual and methodological issues in demographic studies" *Sociological Forum* 1(2):284-300.

--. 1984. *The status of women: a review of its relationships to fertility and mortality*. New York: Rockefeller Foundation.

Norusis, M.J./SPSS Inc. 1993. *SPSS for Windows Professional Statistics*. Chicago: SPSS, Inc.

Rugh, A. 1984. *Family in contemporary Egypt*. Syracuse, New York: Syracuse University Press

Rutenberg, Naomi, Mohamed Ayad, Luis Hernando Ocho, and Marilyn Wilkinson. 1991. *Knowledge and use of contraception. Demographic and Health Surveys Comparative Studies No. 6.* Columbia, MD: Institute for Resource Development.

Schuler S.R. and S.M. Hashemi. 1994. "Credit programs, women's empowerment, and contraceptive use in rural Bangladesh" in *Studies in Family Planning* 25(2):65-76.

Sen, S. and S. Batliwala. 2000. "Empowering women for reproductive rights" in *Women's empowerment and demographic processes*, Harriet B. and Gita Sen Presser. New York: Oxford University Press.

Shapiro, David and B. Oleko Tambashe. 1994. "The impact of women's employment and education on contraceptive use and abortion in Kinshasa, Zaire." *Studies in Family Planning* 25, 2: 96-110.

Smith, Herbert L. 1989. ΑIntegrating theory and research on the institutional determinants of fertility.℮ *Demography* 26: 171-184.

Table 1: Percent distribution of currently married women by background characteristics.

Respondent characteristics	Benin	Cambodia	Jordan	Kenya	Peru
Age					
15-19	6.3	5.4	2.7	6.8	4.4
20-29	42.4	28.5	33.1	41.2	31.9
30-39	32.6	40.2	41.1	32.1	37.2
40-49	18.6	25.9	23.1	19.8	26.5
Number of children ever born					
None	7.4	7.4	8.2	6.1	4.6
1 or 2	30.4	26.7	22.7	32.8	38.9
3 or 4	24.2	29.2	28.4	28.5	29.1
5+	38.0	36.7	40.8	32.6	27.3
Education level					
No education	72.9	34.5	8.3	19.4	8.7
Primary	18.9	54.0	12.8	53.1	41.5
Secondary or higher	8.2	11.5	79.0	27.5	49.8
Regular exposure to media					
No	34.1	40.2	8.8	24.4	26.0
Yes	65.9	59.8	91.2	75.6	74.0
Employment					
Does not work for cash	14.3	64.9	88.8	51.6	54.8
Works for cash	85.7	35.0	11.2	48.4	45.2
Residence					
Rural	67.5	84.5	30.2	70.5	44.9
Urban	32.5	15.5	69.8	29.5	55.1
Wealth quintile					
First (lowest)	21.5	22.3	25.5	20.1	24.5
Second	20.8	21.6	24.5	17.2	24.2
Third	20.3	19.8	20.3	17.2	22.0
Fourth	20.3	17.9	17.1	18.2	17.5
Fifth (highest)	17.1	18.4	12.7	27.3	11.8
Household structure					
Nuclear	63.4	65.8	83.2	64.8	66.4
Extended	36.6	34.2	16.8	35.2	33.6
Husband lives in house					
Stays elsewhere	17.8	4.7	4.7	20.6	4.8
Lives with respondent	82.2	95.3	95.3	79.4	95.2
Currently using (modern) contraceptives					
No	93.0	81.7	61.3	68.6	50.8
Yes	7.0	18.3	38.7	31.4	49.2
Sample Size	4587	2302	5727	4876	16518

Note: Work variable in Jordan is dummy for whether respondent works or not.

Table 2. Percent distribution of currently married women according to who in the household usually takes specific decisions.

Country/Decisions	Respondent alone	Respondent and husband/ partner	Respondent and other	Husband/ partner alone	Someone else	Missing	Total	Number of currently married women
Benin								
Own health care	18.9	14.0	1.4	61.3	4.1	0.3	100.0	4587
Making large household purchases	15.0	16.0	2.7	62.2	3.9	0.3	100.0	4587
Making household purchases for daily needs	41.8	18.4	3.7	32.2	3.7	0.2	100.0	4587
Going to visit family or friends	17.1	31.6	2.6	44.3	3.8	0.6	100.0	4587
Cambodia								
Own health care	33.9	54.7	1.1	8.5	1.0	0.8	100.0	2322
Making large household purchases	25.1	58.3	1.5	11.6	2.8	0.7	100.0	2322
Making household purchases for daily needs	69.4	23.1	1.4	2.8	2.6	0.8	100.0	2322
Going to visit family or friends	14.8	78.0	1.3	2.8	1.1	2.1	100.0	2322
Jordan								
Own health care	61.0	25.6	0.6	12.2	0.6	0.0	100.0	5727
Making large household purchases	9.6	52.6	0.4	35.2	2.1	0.1	100.0	5727
Making household purchases for daily needs	35.4	26.5	0.7	34.0	3.4	0.0	100.0	5727
Going to visit family or friends	14.9	65.6	0.6	18.0	0.8	0.1	100.0	5727
Kenya								
Own health care	37.8	14.5	0.3	44.9	2.2	0.3	100.0	4876
Making large household purchases	11.8	24.4	0.3	60.7	2.5	0.2	100.0	4876
Making household purchases for daily needs	40.3	18.8	0.5	37.8	2.3	0.3	100.0	4876
Going to visit family or friends	23.7	34.5	0.4	39.2	1.7	0.4	100.0	4876
Peru								
Own health care	53.9	26.7	0.5	17.2	1.5	0.2	100.0	16518
Making large household purchases	17.3	56.2	1.0	22.2	2.9	0.4	100.0	16518
Making household purchases for daily needs	49.2	33.8	1.5	11.8	3.1	0.5	100.0	16518
Going to visit family or friends	24.5	58.8	1.0	13.4	1.3	1.0	100.0	16518

Note: The missing category includes decision not made or not applicable responses. Some rows may not add to 100.0 due to rounding.

Table 3: Ranges in the correlation coefficients between type of decision according to women's type of decisionmaking (alone or jointly, alone only, jointly only).

Country	Type of participation		
	Alone or jointly	Alone	Jointly
Benin	.32 to .61	.22 to .48	.28 to .49
Cambodia	.25 to .42	.17 to .34	.20 to .37
Jordan	.13 to .33	.10 to .31	.10 to .29
Kenya	.38 to .50	.26 to .36	.32 to .48
Peru	.34 to .57	.24 to .38	.28 to .48

Table 4. Percent distribution of currently married women according to the number of decisions (0 to 4) they take alone or jointly (participate in:INDEXPART), take alone (INDEXALONE), or take jointly with their husband/partner or someone else (INDEXJOINT).

Country/Index	Index value					Total	Cronbach Alpha
	0	1	2	3	4		
Benin							
INDEXPART	25.8	18.7	21.0	15.5	19.1	100.0	0.75
INDEXALONE	46.3	32.1	10.4	5.2	6.1	100.0	0.66
INDEXJOINT	52.2	21.5	14.1	7.6	4.6	100.0	0.67
Cambodia							
INDEXPART	1.0	2.0	4.7	13.9	78.4	100.0	0.62
INDEXALONE	25.4	30.0	25.7	13.1	5.7	100.0	0.60
INDEXJOINT	10.1	20.1	26.0	24.3	19.5	100.0	0.63
Jordan							
INDEXPART	2.6	10.2	18.3	28.7	40.2	100.0	0.54
INDEXALONE	25.5	42.3	21.4	7.4	3.4	100.0	0.45
INDEXJOINT	17.6	26.2	29.3	19.4	7.4	100.0	0.50
Kenya							
INDEXPART	21.2	17.6	18.7	17.0	25.5	100.0	0.75
INDEXALONE	38.1	30.8	16.5	8.5	6.2	100.0	0.62
INDEXJOINT	51.4	22.5	12.1	8.6	5.3	100.0	0.70
Peru							
INDEXPART	4.8	6.5	9.3	16.3	63.1	100.0	0.75
INDEXALONE	26.6	30.8	21.8	12.2	8.7	100.0	0.62
INDEXJOINT	25.0	18.9	20.4	21.8	13.9	100.0	0.70

Note: Rows may not add to 100.0 due to rounding.

Table 5: First two decision making factors with the variables that are most correlated (factor loadings of 0.25 or higher).

Country	Factor 1		Factor 2	
	Original variable	Factor loading	Original variable	Factor loading
Benin	joint - small purchases	0.66	alone - own health care	0.59
	joint - large purchases	0.58	joint - large purchases	0.57
	joint - own health care	0.51	alone - large purchases	0.50
	joint - mobility	0.48	joint - own health care	0.45
	alone - large purchases	-0.63	joint - small purchases	0.38
	alone - mobility	-0.57	alone - mobility	0.38
	alone - small purchases	-0.54	joint - mobility	0.35
	alone - own health care	-0.47	alone - small purchases	0.33
Cambodia	joint - own health care	0.72	joint - mobility	0.63
	joint - small purchases	0.69	alone - small purchases	0.55
	joint - mobility	0.63	alone - large purchases	0.25
	joint - large purchases	0.60	alone - mobility	-0.64
	alone - own health care	-0.68	joint - small purchases	-0.53
	alone - small purchases	-0.65	joint - large purchases	-0.27
	alone - mobility	-0.63		
	alone - large purchases	-0.61		
Jordan	joint - mobility	0.62	alone - own health care	0.82
	joint - small purchases	0.58	joint - mobility	0.31
	joint - large purchases	0.50	joint - own health care	-0.80
	joint - own health care	0.49	alone - mobility	-0.28
	alone - mobility	-0.63		
	alone - large purchases	-0.56		
	alone - small purchases	-0.53		
	alone - own health care	-0.45		
Kenya	joint - small purchases	0.67	joint - large purchases	0.56
	joint - mobility	0.60	alone - own health care	0.56
	joint - large purchases	0.59	alone - small purchases	0.50
	joint - own health care	0.58	alone - large purchases	0.43
	alone - mobility	-0.56	alone - mobility	0.40
	alone - large purchases	-0.54	joint - mobility	0.38
	alone - small purchases	-0.51	joint - small purchases	0.31
	alone - own health care	-0.40	joint - own health care	0.29
Peru	joint - small purchases	0.73	alone - own health care	0.78
	joint - mobility	0.68	joint - small purchases	0.26
	joint - large purchases	0.66	joint - own health care	-0.68
	joint - own health care	0.58		
	alone - mobility	-0.65		
	alone - large purchases	-0.65		
	alone - small purchases	-0.63		
	alone - own health care	-0.50		

Table 6: OLS regression coefficients predicting score on INDEXPART, INDEXALONE, INDEXJOINT, Factor 1 and Factor 2.

	Benin					Cambodia				
Explanatory variables	INDEX-PART	INDEX-ALONE	INDEX-JOINT	Factor 1	Factor 2	INDEX-PART	INDEX-ALONE	INDEX-JOINT	Factor 1	Factor 2
Age in years	0.05 ***	0.03 ***	0.02 ***	-0.01 *	0.04 ***	0.01 ***	0.02 ***	0.00	-0.01 *	0.00
# of children ever born	-0.04 **	0.00	-0.04 ***	-0.02 *	-0.02 **	0.00	0.01	-0.01	0.00	0.03 **
Years of education	0.02 +	0.00	0.02 **	0.01 *	0.01 *	0.01 *	0.02 *	-0.01	-0.01	0.01
Exposed to media	0.03	-0.04	0.07 +	0.06 *	0.03	0.00	0.08	-0.08	-0.07	0.06
Works for cash	0.85 ***	0.39 ***	0.46 ***	0.06	0.54 ***	0.02	0.17 **	-0.16 ***	-0.15 **	-0.09 +
Urban residence	-0.15 **	-0.01	-0.13 **	-0.06	-0.09 *	-0.05	-0.01	-0.04	-0.01	-0.02
Wealth quintile										
First (lowest)										
Second	0.09	0.04	0.05	0.00	0.06	0.07	-0.04	0.11	0.06	-0.05
Third	0.06	-0.03	0.09 +	0.06	0.04	0.15 **	0.00	0.16 +	0.07	0.05
Fourth	0.14 *	0.04	0.10 +	0.01	0.08 +	-0.02	-0.05	0.03	0.03	-0.10
Fifth (highest)	0.25 **	0.10	0.15 *	0.01	0.13 *	0.05	0.03	0.03	0.00	0.09
Non-nuclear household	-0.06	0.01	-0.06 +	-0.04	-0.03	-0.18 ***	-0.12 *	-0.06	0.03 ***	-0.06
Husband lives in house	-0.47 ***	-0.81 ***	0.34 ***	0.64 ***	-0.37 ***	0.16 *	-0.86 ***	1.02 ***	0.83	0.40 ***
Constant	-0.09	0.27	-0.26	-0.35	-1.24	3.01	1.63	1.38	-0.45	-0.38
R-Sq	0.16	0.16	0.05	0.07	0.15	0.05	0.05	0.04	0.05	0.14
Sample Size	4513					2254				

	Jordan					Kenya				
Explanatory variables	INDEX-PART	INDEX-ALONE	INDEX-JOINT	Factor 1	Factor 2	INDEX-PART	INDEX-ALONE	INDEX-JOINT	Factor 1	Factor 2
Age in years	0.02 ***	0.02 ***	0.00	-0.01 ***	0.00	0.05 ***	0.04 ***	0.01 ***	-0.01 ***	0.03 ***
# of children ever born	0.00	0.03 ***	-0.02 **	-0.02 ***	0.01	-0.02 *	-0.04 ***	0.02	0.03 ***	-0.02 *
Years of education	0.05 ***	0.01 **	0.04 ***	0.01 ***	0.01 **	0.05 ***	0.01 *	0.04 ***	0.02 ***	0.03 ***
Exposed to media	0.11 *	0.07	0.04	-0.01	0.00	-0.11 *	-0.03	-0.07	-0.03	-0.07 *
Works for cash	0.08 +	0.06	0.02	-0.04	-0.01	0.50 ***	0.29 ***	0.21 ***	-0.01	0.34 ***
Urban residence	0.07 *	0.16 ***	-0.09 **	-0.14 ***	-0.06 +	0.01	0.05	-0.04	-0.06	0.02
Wealth quintile										
First (lowest)										
Second	0.08 *	-0.08 *	0.16 ***	0.13 **	0.02	-0.02	-0.01	-0.01	0.00	-0.02
Third	0.06	-0.11 **	0.17 ***	0.15 ***	0.01	0.10	0.14 *	-0.04	-0.08 +	0.08 +
Fourth	0.00	-0.14 **	0.14 **	0.15 ***	0.06	0.20 **	0.14 *	0.07	-0.02	0.13 **
Fifth (highest)	0.08	-0.15 **	0.23 ***	0.20 ***	0.04	0.41 ***	0.21 **	0.20 *	0.03	0.27 ***
Non-nuclear household	-0.14 ***	-0.11 **	-0.02	0.05	-0.03	-0.09 *	-0.07 *	-0.02	0.02	-0.06 *
Husband lives in house	-0.17 *	-0.70 ***	0.53 ***	0.70 ***	0.20 **	-0.47 ***	-0.84 ***	0.37 ***	0.60 ***	-0.38 ***
Constant	1.71	1.00	0.71	-0.43	-0.39	0.44	0.58	-0.14	-0.38	-1.07
R-Sq	0.07	0.06	0.05	0.05	0.01	0.18	0.17	0.07	0.07	0.19
Sample Size	5715					4820				

Note: Work variable in Jordan is dummy for whether respondent works or not.

*** p < .001. ** p < .01, * p < .05, + P < .10

Table 6 *contd.* : OLS regression coefficients predicting score on INDEXPART, INDEXALONE, INDEXJOINT, Factor 1, and Factor 2.

Explanatory variables	Peru				
	INDEX-PART	INDEX-ALONE	INDEX-JOINT	Factor 1	Factor 2
Age in years	0.02 ***	0.01 ***	0.01 **	0.00 *	0.00
# of children ever born	-0.02 ***	0.00	-0.02 ***	-0.01 *	0.00
Years of education	0.03 ***	0.02 ***	0.02 ***	0.00	0.02 ***
Exposed to media	0.00	0.08 **	-0.08 **	-0.06 **	0.04 +
Works for cash	0.11 ***	0.21 ***	-0.10 ***	-0.13 ***	0.04 *
Urban residence	0.12 ***	0.41 ***	-0.30 ***	-0.30 ***	0.05 *
Wealth quintile					
First (lowest)					
Second	0.27 ***	0.20 ***	0.07 *	-0.05 *	-0.03
Third	0.40 ***	0.33 ***	0.07	-0.10 **	0.01
Fourth	0.39 ***	0.32 ***	0.07	-0.10 **	0.06
Fifth (highest)	0.35 ***	0.30 ***	0.05	-0.09 *	0.16 ***
Non-nuclear household	-0.13 ***	0.01	-0.14 ***	-0.06 ***	0.01
Husband lives in house	0.01	-0.89 ***	0.90 ***	0.77 ***	-0.01
Constant	2.218	1.22	1.00	-0.27	-0.25
R-Sq	0.10	0.15	0.03	0.08	0.02
Sample Size	16214				

Note: Work variable in Jordan is dummy for whether respondent works or not.

*** p < .001. ** p < .01, * p < .05, + P < .10

Table 7: Odds ratios for alternative formulations of the decisionmaking variables predicting current use of modern contraceptives.

Alternative formulations of the decisionmaking variable	Benin	Cambodia	Jordan	Kenya	Peru
(1) INDEXPART					
0					
1 TO 2	0.87	1.16	0.96	1.29 *	1.30 **
3 TO 4	0.90	1.65	1.06	1.50 ***	1.34 ***
(2) INDEXALONE					
0	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 TO 2	0.91	1.41 *	1.02	1.23 **	1.25 ***
3 TO 4	0.82	1.22	0.86	1.21 +	1.27 ***
(3) INDEXJOINT					
0	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 TO 2	1.00	1.03	1.01	1.20 *	1.05
3 TO 4	1.21	1.05	1.03	1.17	0.98
(4) Both indices					
INDEXALONE					
0	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 TO 2	0.93	1.53 **	1.02	1.22 *	1.26 ***
3 TO 4	0.85	1.41	0.84	1.30 *	1.32 ***
INDEXJOINT					
0	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 TO 2	1.00	0.98	0.96	1.20 *	1.06
3 TO 4	1.16	1.16	0.96	1.23 +	1.07
(5) Factor 1: Dependent participation					
Low	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Medium	1.17	1.15	1.03	0.92	0.94
High	1.21	0.81	1.04	1.07	0.93 +
(6) Factor 2: Empowering particiaption					
Low	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Medium	0.86	1.28 +	0.94	1.29 **	1.09 *
High	0.85	1.21	1.00	1.26 *	1.20 ***
(7) Both factors					
Factor 1: Dependent participation					
Low	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Medium	0.93	1.12	1.01	0.95	0.90 *
High	1.21	0.82	1.02	1.05	0.91 *
Factor 2:Empowering participation					
Low	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Medium	0.75	1.07	0.94	1.28 **	1.03
High	0.71	1.02	1.01	1.21 *	1.21 ***
Sample Size	4514	2264	5715	4822	16518

Note: All models include the control variables shown in Appendix Table 2.
*** $p < .001$. ** $p < .01$, * $p < .05$, + $P < .10$

Appendix Table 2: Odds ratios predicting current use of modern contraceptives for the base model.

	Benin	Cambodia	Jordan	Kenya	Peru
Age					
15-19	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
20-29	1.27	1.01	0.63 +	1.39 +	0.95
30-39	0.83	1.08	0.49 *	1.82 **	0.72 ***
40-49	0.92	0.51 +	0.35 ***	1.85 **	0.35 ***
Number of living children					
0 or 1	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
2 or 3	1.72 **	2.87 ***	9.82 ***	2.28 ***	2.28 ***
4+	3.15 ***	4.23 ***	19.04 ***	2.31 ***	2.77 ***
Education level					
No education	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Primary	1.46 *	1.30 *	1.11	3.71 ***	1.36 ***
Secondary or higher	3.13 ***	1.49 *	1.59 ***	6.78 ***	1.88 ***
Regular media exposure					
No	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Yes	1.40 *	1.08	1.18	1.55 ***	1.30 ***
Employment					
Does not work for cash	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Works for cash	1.06	1.20	0.89	1.33 ***	1.06 +
Residence					
Rural	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Urban	0.88	1.28	1.21 **	0.72 **	1.34 ***
Wealth quintile					
First (lowest)	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Second	0.79 *	1.10	1.30 **	1.96 ***	1.20 **
Third	1.58 **	1.45 *	1.26 **	2.97 ***	1.36 ***
Fourth	1.90 ***	1.63 *	1.60 ***	3.70 ***	1.41 ***
Fifth (highest)	2.97 ***	1.77 **	1.84 ***	4.75 ***	1.58 ***
Sample Size	4514	2254	5715	4822	16214

Note: Work variable in Jordan is dummy for whether respondent works or not.
Number of living children variable differes for Cambodia and Jordan (0 or1; 2; 3 or 4; 5+).
*** p < .001. ** p < .01, * p < .05, + p < .10
Reference categories are in italics