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Bargaining Power Within Couples and Use of Prenatal and Delivery Care in Indonesia

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Abstract

This paper examines whether a woman's power relative to her husband's affects decisions about use of prenatal and delivery care in Indonesia. Measures of power that span economic and social domains are considered. Holding household resources constant, control over "economic" resources by a woman affects the couple's decision-making. Relative to a woman with no assets that she perceives as being her own, a woman with some share of household assets influences reproductive health decisions. Evidence suggests these decisions also vary if a woman is better educated than her husband, comes from a higher social status background than her husband, or if her father is better educated than her father-in-law. We conclude that both economic and social dimensions of the distribution of power between spouses influence decision-making and that it is useful to conceptualize power as multi-dimensional in understanding the behavior of couples.

Although reproductive health and family planning programs provide services with potentially numerous benefits for women and their families, uptake of services offered by these programs is far from universal, even in settings where services are widely available at subsidized prices. Recent efforts to understand barriers to service use have recognized that although women are typically the primary point of contact for reproductive health programs, the decisions that lead women to adopt services occur within the context of a marriage, a household, or a family (Becker, 1996). If a woman and her partner differ in the extent to which they value reproductive health services, then use of those services will be the result of a negotiation between the couple, with the outcome reflecting each person's perception of the value of the services relative to their costs and the relative power of individuals in asserting their own preferences in decision-making.

The emphasis of this study is on the association between a series of indicators of the relative power of a man and woman within a couple and the woman's reproductive health behaviors in Indonesia. We focus on the use of prenatal care and choice of location of delivery. These outcomes are of special interest in Indonesia, where maternal mortality rates are relatively high.

Background

Social scientists have a long-standing interest in how a woman's status relative to that of her partner affects behaviors and outcomes related to fertility and mortality (see Mason, 1984, for a review).[1] In recent years a number of papers have focused explicitly on discordance between partners with respect to reproductive goals and the nature of communication between partners with respect to family planning (Mason and Taj, 1987; Ezeh, 1993; Becker, 1996). Some of the studies go on to relate discordance in reproductive goals and patterns of communication about family planning to contraceptive use (Salway, 1994; Blanc et al., 1996; Lasee and Becker, 1997; Bankole and Singh, 1998; Wolff, Blanc, and Ssekamatte-Ssebuliba, 2000). Other studies have considered how a woman's status more generally is related to contraceptive use (Gage, 1995; Hogan, Berhanu, and Hailemariam,1999; Eckhardt, 1999). In an excellent review of this literature, Becker (1996)

[1]The terms power, control, status and autonomy are often used in this literature to refer to a woman's position in the marriage and society more generally. We make no attempt to distinguish among these terms in this paper; they should be viewed as synonymous.

concludes that the research needs both to focus on couples and also to examine these decisions within a conceptual framework that permits heterogeneity in the preferences of each partner. As he puts it, "As one example, women's status in the society at large and in the household are key background variables for predicting their role in such decision-making" (page 302). (See also Greene and Biddlecom, 2000, for another good, recent review.)

The emergence of a line of demographic literature emphasizing the importance for the decision to use services of the relationship between two members of a couple (and the opinions of each of them) has paralleled the development of theoretical models of household decision-making that treat a household as a group of individuals whose preferences may differ rather than treating the household as a single unit with all members sharing one set of preferences. In these new models, the relative power of individuals within the household plays a central role in determining the outcomes that are ultimately negotiated.[2]

A key stumbling block has been turning the theoretical notion of power into an empirically implementable construct. There are two central issues. First, it is not straightforward to identify measures of power that can properly be construed as determining the outcome of interest, such as reproductive health choices. Many studies in this literature are subject to the criticism that both the measure of power used as a predictor and the outcome of interest that is predicted are reflections of some other underlying process. The fact that the two measures are correlated says nothing about the determining force of power in the decisions. From a research point of view, we would like to have an experiment in which some indicator of power is randomly distributed between men and women. In the absence of such an experiment, researchers have turned to "natural experiments" in an effort to identify exogenous power indicators. Lundberg, Pollak and Wales (1997) provide an excellent example. In the late 1970s, the U.K. government changed the way it paid Benefit (public assistance to families with children). Rather than pay Benefit to men (through a tax deduction), an allowance was paid directly to women (through the Post Office). This is arguably an exogenous change in the distribution of resources within the family. Their empirical results suggest there was a concomitant

[2]See work by Manser and Brown, 1980; McElroy and Horney, 1981; Chiappori, 1988, 1992; Browning and Chiappori, 1998. Pollak (1994) provides a thoughtful discussion, and Bergstrom (1997) reviews the theoretical models. Haddad et al. (1997) and Strauss et al. (1998) contain many useful case studies.

shift in family spending -- away from male clothing towards female and child clothing. They conclude this reflects differences in tastes of men and women which emerge because of the change in the distribution of resources within the household. Similarly, Carlin (1991) and Rubalcava and Thomas (1998) use changes in divorce laws and AFDC payments, respectively, as natural experiments to assess the effects on family labor supply and expenditures.

The second issue revolves around the measurement of "power" itself. Guyer (1997) provides an insightful discussion of the many ways in which sources of power vary according to the social, economic and cultural context. See also Lundberg and Pollak (1993) and Pollak (1994).

Much of the recent literature has focused on economic indicators of power. A key innovation of this paper is the fact that alternative indicators of power are explored. In addition to including measures of an individual's perception of control over economic resources in the family, our analyses include measures of power that span different domains of a couple's life histories, backgrounds and positions in society. They include the relative social status of the husband's and wife's families, the relative education of their fathers, and the husband's and wife's own education, relative to one another. By incorporating this fuller set of potential indicators of power in the analysis of reproductive health decision-making, it is possible to provide a more textured evaluation of the influence that power plays in these choices.

In the paper we focus our attention on reproductive health decisions related to care during pregnancy and childbirth in Indonesia. We take up Becker's challenge and adopt a model of decision-making that highlights the differential roles that an individual's status within the household and in the broader society are likely to play, using data that were specially collected for this purpose.

Indonesia is a particularly good study site for this exploration for two reasons. First, over the last two decades, there have been substantial investments in the public health system in Indonesia with an emphasis on increasing the availability of maternal and child health services and encouraging women to obtain adequate health care during pregnancy and delivery. Inadequate access to those services does not seem to fully explain the apparently high rates of maternal mortality. Presumably, demand side factors do play a role and one potential such factor is the process whereby decisions are made within families.

Therein lies the second reason that Indonesia is an especially good context for this study. In many parts of the country, men and women have traditionally played substantially different roles in the household economy and there is considerable heterogeneity in the extent to which women wield power in household decisions. Several ethnographic studies have documented that household decisions are influenced by the power structures within the household (see, for example, Geertz, 1961). More quantitatively-oriented studies indicate that the financial resources under the control of a woman influences investments in children and other family members (Williams, 1990; Eckhardt, 1999; Khemani, 1999; Thomas, Contreras and Frankenberg, 1997).

Drawing on data from the second wave of the Indonesia Family Life Survey (IFLS), we explore the relationships several measures of power and reproductive health decisions of married couples. We find that while the measures are themselves correlated with one another, they appear to capture different dimensions of influences over decision-making. There is clear evidence that control over "economic" resources does affect decision-making. Relative to a woman with no assets that she perceives as being her own, a woman with some share of household assets does influence reproductive health decisions. A woman who is better educated than her husband behaves differently from one who is not. The evidence suggests this is also true for a woman from a family of higher status than her husband's family, as well as for a woman whose father is better educated than her father-in-law. We conclude that failure to take account of the multi-dimensionality of power is likely to lead to mis-construing the role that different aspects of one's economic and social position play in family decision-making.

The next section of the paper briefly describes the reproductive health issues that face Indonesia today. We then describe the data and present evidence on the relationships among the measures of power that are adopted. The discussion is placed in the context of the Indonesian environment. The final sections of the paper present evidence on the links between reproductive health and indicators of power in the household and draw out conclusions.

Reproductive health in Indonesia

It is estimated that the maternal mortality ratio in Indonesia is between 390 and 650 deaths per 100,000 live births (Handayani et al., 1997; Mukti, 1996; UNICEF, 2000a; UNICEF, 2000b.) Although it is well known that maternal mortality is very difficult to measure, the ratio is much higher than in any other southeast Asian country, a difference that is unlikely to be explained by measurement difficulties alone. In fact, Indonesia's ratio is on par with rates in India and Bangladesh where income levels are substantially lower. (In 1998, GDP per capita in Indonesia was about 50% higher than in India and almost double the level in Bangladesh.) Yet, in terms of other health indicators, such as infant mortality and life expectancy, Indonesia stands far ahead of both India and Bangladesh.

Several factors are thought to contribute to the high level of maternal mortality in Indonesia. Women in Indonesia marry at relatively young ages, and they tend to have their first child very soon after marriage (Demographic Institute, 1997). Anemia, which can undermine a woman's ability to recover from complications during birth, is also a significant health problem in Indonesia (Suwando and Soemantri, 1995; Priyanto et al., 1997). According to the 1992 National Household Health Survey, almost two-thirds of pregnant women included in the survey were anemic. The Ministry of Health estimates that for all reproductive age women the rate of anemia is 25-30%, suggesting that it would be profitable to target pregnant women for iron supplementation (Ministry of Health, 1995).

In an effort to reduce levels of maternal mortality and improve women's reproductive health more generally, the Ministry of Health in Indonesia has embarked on an ambitious program to increase women's use of prenatal care and encourage use of trained health care providers for assistance during childbirth. The evidence suggests that the effort may well be paying off. For example, in the 1994 Indonesian Demographic Health Survey (IDHS), at least one prenatal care visit was made for about 85% of all pregnancies reported to have occurred between 1989 and 1994 (Central Bureau of Statistics and Macro International, 1995); this rate had increased to about 90% for the period 1992 through 1997, as reported in the 1997 IDHS (Central Bureau of Statistics and Macro International, 1998).

Epidemiological studies tend to show that maternal and neonatal mortality are lower among women who receive prenatal care. These studies also indicate that early timing and greater frequency of prenatal care visits tend to be associated with improved birth outcomes. It is important to note, however, that these conclusions are drawn primarily from observational studies and there is little experimental evidence that speaks to the issue (Villar and Bergsjo, 1997, although see Currie and Gruber, 1996, for quasi-experimental evidence exploiting expansions in the Medicaid program in the United States). Several recent reviews have questioned whether prenatal care regimens that emphasize large numbers of visits (as many as 14 per pregnancy in the United States, Finland and Norway) are effective in terms of improving maternal and child health (Khan-Neelofur et al., 1998). There is, however, considerable agreement that in most low income countries, there are benefits to the mother and child from the prenatal provision of tetanus toxoid, iron and folate, and from prenatal screening for conditions such as hypertension and sexually transmitted diseases (Rooney, 1992; Villar and Bergsjo, 1997; Jowett, 2000). It is not enough simply to receive prenatal care -- the content and timing are also important.

In Indonesia, the Ministry of Health program recommends that during pregnancy women should make a total of four prenatal care visits: one during each of the first two trimesters and two during the third trimester. During these visits women should receive, among other services, tetanus toxoid immunizations and iron tablets. The 1997 IDHS indicates that for 53% of live births the mothers received two or more tetanus toxoid immunizations during pregnancy. For another 18% of births, mothers received one immunization (Central Bureau of Statistics and Macro International, 1998). Many of the women who received only one may well have been fully protected because it is common practice in Indonesia to give women one immunization at the time of marriage, in the expectation that they are likely to become pregnant fairly soon after marriage (Lanasari and Rosenberg, 1989).

Evidence suggests that receipt of tetanus toxoid immunizations and uptake of iron pills during pregnancy is common in Indonesia. The 1995 Follow-up Study of Pregnant Women conducted by the Ministry of Health visited women who had recently been pregnant and tested their blood levels of anti-tetanus titer. This study found that 94% of recently pregnant women were

adequately protected against tetanus (titer levels of .01 IU/ml or greater) (Priyanto et al., 1997). According to the 1997 IDHS, in about three-quarters of pregnancies women took some iron pills, although most of the time they took considerably fewer than the 90 that are recommended. Women receiving care at private hospitals or from private doctors were more likely to take the recommended numbers of pills.

An important set of short term interventions to prevent complications during and after delivery are clean delivery facilities and proper handling of the placenta to prevent postpartum hemorrhage. Most births in Indonesia still take place in the woman's home, often with a traditional birth attendant (*dukun)* in attendance. Three quarters of deliveries in Indonesia between 1991 and 1996 took place in the mother's or someone else's home and 54 percent were attended by a *dukun* (Central Bureau of Statistics and Macro International, 1998). To address this situation, in the early nineties, the Ministry of Health introduced the "Midwife-in-the-Village" (*bidan desa*) program which places graduates of midwifery academies in non-metropolitan communities. These midwives are trained to provide prenatal care, attend deliveries, refer complicated cases to higher levels of care, and provide postnatal care. The program is relatively new, and its level of success is the subject of on-going inquiry (Frankenberg and Thomas, 2001).

Given the current reproductive health care environment in Indonesia, the challenge is to understand the determinants of service utilization. In general, access to services and the availability of resources to pay for the services are important factors influencing the decision to use them. The Government of Indonesia has made great strides in reducing the extent to which services prices and distance to services are barriers to obtaining care. Yet, use of prenatal care is not universal and around one half of births rely exclusively on traditional midwives. It has been argued that an inequitable distribution of power in social relationships remains a key barrier to use of these services and that as women's control over economic resources increases, use of services associated with improved reproductive health will also increase (see for example, Mason, 1996; Demographic Institute, 1997).

That argument lies at the heart of this paper. Specifically, we focus attention on the links between the relative power of a wife and her husband, on the one hand, and use of reproductive

health services on the other. Recognizing that power is multi-dimensional and not necessarily easily summarized in a single indicator, we explore a series of different indicators that span both economic and social domains of power relations. These indicators are discussed in the next section.

Measurement of power

Before discussing measures of power included in the analyses, we briefly describe the data. They were specially collected for this project as part of the second round of IFLS which is an on-going longitudinal survey of individuals, households, families, communities and facilities in Indonesia. The first round, IFLS1, was conducted in 1993-94 and interviewed respondents in 7,200 households in 13 provinces of Indonesia (Frankenberg and Karoly, 1995).[3] These provinces account for about 85% of Indonesia's population and span much of the cultural, social and economic heterogeneity of the archipelago.

In addition to the household survey, IFLS contains an integrated and linked community and facility survey which was conducted in each of the 321 enumeration areas in which IFLS households resided. This component of the survey contains detailed interviews with up to five community-level informants along with visits to schools and health facilities in the vicinity.

IFLS2 was conducted in 1997-98. The goal was to reinterview all IFLS1 households. Teams of interviewers started out at the place each household resided in 1993 and attempted to find the members. If they had moved, attempts were made to contact them as long as they had not moved out of Indonesia or to one of the outlying provinces not included in the IFLS sampling frame (Frankenberg and Thomas, 2000). Interviews were completed with 94.5% of the IFLS1 households (after dropping those known to have died during the hiatus between the survey rounds). In terms of attrition, this easily places IFLS2 in the same league as the best surveys in the world, including the United States; see Thomas, Frankenberg and Smith (2001) for a detailed discussion. In addition to recontacting the original household, attempts were made to track those individual respondents in IFLS1 who had moved out of the household since 1993 and formed their own household or joined a

[3]The provinces include all five on Java, four on Sumatra, Bali, West Nusa Tenggara, and one each on Kalimantan and Sulawesi.

new household. About 800 "split-off" households were located and interviewed and thus the number of households in IFLS2 exceeds the number in IFLS1. In all, IFLS2 contains information on over 7,500 households and over 30,000 individuals.[4]

IFLS2 also contains extensive data collected at the community and facility level. Of special interest in our context is the inclusion, in 1997, of a special module administered to a local expert on community laws and traditions, *adat*. The *adat* expert provided a broad array of information on customs in the local community revolving around how individuals relate to each other with respect to matters of marriage, divorce and living arrangements; inheritance and inter-generational transfers; land rights and ownership of assets.

In this study, we focus on married women age 15 through 49 in 1997 and their husbands; 3,991 such couples were interviewed in IFLS2. Some basic socio-economic and demographic characteristics of these couples are reported in the first column of Table 1. Slightly over 40% of the couples had at least one pregnancy during the 5 years prior to the survey and it is these couples who were eligible to receive prenatal care during this period and to make choices regarding location and attendant at delivery. They are the respondents used in the analyses below and so we refer to them as our analytic sample. Characteristics of the analytic sample are reported in the second column of Table 1.

Relative to all couples, the analytic sample respondents are younger and better educated, are less likely to head the household and have, on average, accumulated fewer assets at this point in their life course. The geographic distribution of couples are very similar in both samples: slightly less than half are urban, one-third live in rural Java or Bali and the rest live in rural areas on the other islands covered by IFLS. Focussing on the analytic sample in column 2, the average husband is about 5 years older than his wife and he has completed about three-quarters of a year more education. The average household reports a little over Rp13 million in assets (approximately equal to US$4,000) of which the husband owns about Rp4 million, the wife owns about Rp3.4 million and the rest is owned by other household members. Assets are described in more detail below.

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[4]The design of IFLS1 was to interview the head and spouse in each household and a random sample of other members. IFLS2 interviewed all household members but only followed movers from IFLS1 households if the member had been an individual respondent in 1993.

It is important to recognize that our tests of models of decision-making by husbands and wives are predicated on the fact that the couple is currently married and experienced a pregnancy during 1993 through 1997; we do not attempt to also model pregnancy, the decision to marry or the choice of partner at marriage. Building those choices into the analysis would substantially increase the level of complication and would involving modelling three endogenous choices simultaneously. In the absence of good exogenous variation to explain these choices, we would have to rely on unverifiable assumptions about the structure of unobservables; we prefer, instead, to condition our analyses on the group at risk of using reproductive health care and assess whether the distribution of power between the husband and wife affects these decisions.

IFLS is a multi-purpose survey that covers a broad array of social, economic and demographic topics, including economic status (expenditures and labor and non-labor income), histories of schooling, marriage, migration, labor force participation, pregnancy, and contraceptive use, and use of health care services and health status. In addition, IFLS2 contains several modules that were specially designed to address the question of how power within the household affects individual and family well-being.[5]

Shares of assets owned by husbands and wives

First, detailed information was collected on assets owned by individuals within each household. This is not standard practice in broad purpose socio-economic surveys but was implemented in an attempt to measure the relative asset positions of husbands and wives. Not only does the ethnographic literature from Indonesia suggest that a woman's power in household decision-making is closely linked to the value of her assets, relative to that of her husband, but evidence from focus groups conducted during the design phase of IFLS2 confirms that insight. Focus group

[5]Several of these modules were new in IFLS2. As input into the development of the innovations in the survey instrument, we felt it important to listen to Indonesian men and women discuss the topics that we were interested in eliciting information about. We had two goals. First, we felt a need to gauge the sensitivity of the issue of within marriage dynamics. Second, we sought to listen to the language used in discussions and identify topics that seemed amenable to being addressed in a broad purpose survey. Four focus groups were conducted -- two in Jakarta and two in a rural area outside Jakarta -- with each pair consisting of a focus group discussion among women and one among men. There were about twelve participants in each focus group and each lasted between 90 and 120 minutes. The focus groups were followed up by a series of pilot interviews with individual respondents to test specific questions and hone the instrument to a manageable size for a large scale survey. See Frankenberg and Thomas (2000) for more discussion.

participants generally agreed that control over economic resources plays a key role in decision-making in their lives.

Specifically, IFLS collects information from husbands and wives about the value of all the assets owned by any member of the household and about who, within the household, owns the asset. For assets for which some portion was owned by the husband or wife (or both), the respondent was asked to report the percentage owned by the husband, and the percentage owned by the wife. In every household, each wife and husband identifies the value of specific assets and the shares that they and their spouse own.

In this study, we focus on the five most commonly held assets: the house occupied by the couple, vehicles, household appliances, jewelry, and household furniture and utensils. A central assumption in the analysis is that attribution of asset ownership is an indicator of power over decision-making. However, a man or woman who has titular ownership of assets may not have any *de facto* control over them. An understanding of the cultural context plays an important role in this regard. In the ethnographic literature, a number of studies have documented that resources brought to a marriage by a woman tend to be held under her control; gold and jewellery are commonly cited as examples of such assets. They typically remain with her in the event the marriage dissolves and revert back to her family if she dies and leaves no heirs. Work by Hart (1978) and also by Wolf (1991) conclude that assets acquired by Javanese women through their own employment also remain under their own control; Wolf notes this is particularly true of assets held in gold or livestock.

Further evidence that Indonesian women do have control over their own assets is provided by the special module in the IFLS2 community survey conducted with an *adat* expert. The vast majority of adat experts report that both under traditional law and current common practice, a woman is allowed to own land or a field by herself after marriage. Women are also allowed to own their own businesses. If divorce occurs, the experts report that typically the husband and wife leave the marriage with those assets they owned prior to the marriage. Assets acquired after marriage, are either split evenly or divided based on who "owned" (had obtained) the assets.

The question of whether reported ownership of assets reflects control over resources and decision-making is fundamentally an empirical issue. Finding that relative asset positions of

husbands and wives has no effect on prenatal and delivery care would be consistent with two diametrically opposed interpretations. First, it may be that (economic) power plays no role in determining these decisions. A second interpretation may be that the measures of assets used simply do not capture that power. However, the finding that relative asset positions do in fact matter, after controlling household resources, is a very powerful result because it provides compelling evidence that the distribution of economic resources within the couple does affect decisions regarding prenatal and delivery care.

In addition to measurement issues, there are complexities associated with the effects of unobserved heterogeneity in these models. Several studies that have examined the impact of economic resources of husbands and wives on a range of family decisions have relied on individual labor income as an indicator of control over resources (Blumberg, 1988; Bourguignon et al., 1994). Labor income is intuitively appealing since one might assume that one has some control over how the money one earns is spent. If, however, time allocation choices (including allocation of time to work) is part of a negotiation between husbands and wives, it is reasonable to suppose that the subsequent distribution of earnings will also be part of that negotiation. It is not obvious that treating labor earnings as predetermined in these models is appropriate; if the assumption is violated then estimates of the effect of individual income on household decisions will be subject to simultaneity bias. (See Thomas and Chen, 1994, for an attempt to treat labor earnings as jointly determined with household resource allocations.) *A fortiori*, related studies that proxy labor income with a woman's employment status are prone to a similar concern (Gage, 1995; Mason, 1996; Miles-Doan and Brewster, 1998).

Recognizing this concern, studies have assumed that control over economic resources is reflected in individual non-labor income (McElroy and Horney, 1981; Schultz, 1990; Thomas, 1990), ownership of assets (Duraisamy and Malathy, 1991; Duraisamy, 1992) or the value of assets owned at the time of marriage (Quisumbing, 1994; Thomas, Contreras and Frankenberg, 1997). None of these measures is perfect, for there is no guarantee that the distribution of these resources is not correlated with other unobserved characteristics of husbands and wives that affect household decisions.

The analyses below rely on the distribution of household assets as perceived by the wife as an indicator of economic power. The underlying model predicts that it is relative power of the husband and wife that should affect decision-making. It is, therefore, important to fully control the value of total household assets in the analyses and focus attention on the share of assets that are said to belong to the wife relative to the share that belongs to the husband. Thus, while it is obvious that assets are not randomly assigned to individuals and households and their accumulation may be correlated with characteristics that are unrelated to power, our test relies on differences in the levels of accumulation by wives, relative to their husbands. If the household may be treated as if it behaved as a "unitary" group, there would be no reason for the husband and wife to accumulate assets differently; they would simply transfer resources from one to the other to balance any changes in their portfolio. As noted above, however, in many parts of Indonesia, there is a tradition for men and women to keep assets they bring to the marriage separate and to maintain that separation during the marriage.

Moreover, using data from IFLS1, Thomas, Contreras and Frankenberg (1997) report that the assets brought to marriage by husbands and wives do not have the same influence on the incidence of morbidities of sons relative to daughters; Khemani (1999) reports that the distribution of assets between husbands and wives affects transfers to their origin families and Chen (1998) finds that children spend more time in school if the assets owned by the mother rises, relative to those of the father. This empirical evidence based on IFLS1, in conjunction with the ethnographic studies, our own focus groups and the *adat* respondents certainly suggest that within the Indonesian context, asset ownership is a plausible candidate for an indicator of power within a marriage.

Panel A of Table 2 provides information on the distribution of assets between husbands and wives.[6] The first column is all married couples in IFLS2; the second column is based on the analytical sample used in the regressions below. Overall, the differences between the columns are

[6]Recall that men and women are asked about assets owned by household members. It turns out that, in aggregate, there is not a significant difference in the values of household assets reported by husbands and wives although there are differences in the distribution of the assets among asset types. Since we will only use the total value of assets owned, that difference is of second order importance in this study and so is ignored. Moreover, the share of assets that a husband claims his wife owns is not significantly different from the share that his wife reports. Therefore, in the analyses reported below, we rely on the woman's report of assets.

not large indicating that in terms of this measure of power, couples included in our analytic sample do not deviate dramatically from all couples. On average, women in our sample own about one-third of household assets, their husbands own about 40% and other household members own the rest. Nearly 90% of respondents own some assets and very few (<2%) own all the assets in their household. Around one in five women report that they and their husbands have joint ownership of all assets and they are each assigned a 50% share. Among those who own any assets, 60% of wives and 55% of husbands own less than half the household assets whereas 19% of wives and 23% of husbands own more than half. Thus, on average, husbands tend to own a bigger share of household assets than their wives, although around 20% of women report their assets are worth more than that of their husbands. The continuous nature of the distribution of shares is an important advantage of this indicator of power as it provides an opportunity to examine the effects of relatively subtle changes in power structures on behavioral choices. The availability of this sort of information is unusual in socio-demographic surveys as it is requires knowledge about the value of assets owned by husbands and wives in a household.

Relative education of husbands and wives

In contrast with the value of assets owned by individuals within a household, which are seldom collected in household surveys, almost every socio-demographic survey records the level of education of respondents. A large literature has documented that female education tends to be associated with reductions in fertility and infant mortality as well as elevated probabilities of using contraception and prenatal care. (See, for example, Cochrane, 1979; Bledsoe, et al, 1999.)

There is some controversy about how to interpret these correlations. The standard interpretation is that they reflect a causal mechanism whereby increases in schooling in a population will result in reduced fertility and increased use of family planning. That interpretation ignores the possibility that higher levels of educational attainment reflects a choice on the part of those individuals to stay in school longer and that those people may also have tastes or aspirations which differ from their peers who do not stay in school. To the extent that those tastes are manifest in lower fertility, interpretations of the education-fertility and education-reproductive health correlations

as causal will be wrong. (See Thomas, 1999, and Thomas and Maluccio, 1996, for empirical evidence and discussion.)

There is also substantial (but not universal) evidence that the magnitude of the correlations between this array of reproductive health outcomes and female education are bigger than the correlations with male education. This empirical result has been the basis for an argument that education is a measure of power and that more powerful women assert preferences for reduced fertility, increased use of contraceptives and prenatal care.[7] Since pregnancy, delivery, and early child care are primarily the domain of women, it is also the case that women benefit more directly from these investments than their husbands. This suggests a competing explanation for the observation that female education has a stronger correlation than male education with reduced fertility, increased use of contraception and increased use of prenatal care.

Rather than assign one interpretation to differences in the magnitudes of the correlations between education and reproductive health, we take an alternative strategy and focus attention on a particular non-linearity in the relationship. Specifically, we examine whether women who are better educated than their husbands are more likely to use prenatal care than women whose education is the same or less than their husbands, holding all other observable characteristics constant. Following Thomas (1993), if there is a difference in behavior between these groups of women, we interpret it as a reflection of differences in power to assert one's preferences. There are several reasons why being better educated than one's spouse may be a source of power. Education is correlated with earnings and women who are better educated than their husbands have better opportunities in the labor market. Education is also a means of developing "modern skills" and a woman who has acquired more such skills may use them to argue for adopting more modern behaviors in daily life.

It is important that these comparisons between women who are better educated than their husbands and women who are not are made after controlling the education of the husband and wife (along with the value of household resources and other demographic characteristics). It is also

[7]Wolff et al. (2000) find that in Uganda, rising levels of formal education serve to increase both female respondents' and male respondents' sense of entitlement with respect to involvement in decisions about fertility outcomes. This suggests that education of the wife relative to her husband may serve as an indicator of power. We exploit this insight below.

important that levels of education be controlled in a very flexible manner to capture any non-linear effects of male or female education on reproductive health choices, so as not to contaminate the interpretation of an indicator variable for a woman who is better educated than her husband. A semi-parametric specification for education of each spouse is adopted in the empirical model; it amounts to including an indicator variable for every year of education. In the analytical sample, the average women has completed slightly under seven years of schooling; on average, her husband has completed almost an additional year (Table 1). Underlying these averages is tremendous heterogeneity with slightly over 20% of married women being better educated than their husbands; the vast majority of these women have completed either one, two or three grades more than their husbands.

Relative background of husbands and wives

Thus far, we have focused on the distribution of the ownership of assets within a household and relative education of a husband and wife. Both are likely to reflect economic aspects of power relationships. Power likely has multiple origins. In the context of a bargaining model of household behavior in which the threat point is marital dissolution, one's power depends on the options one would have in the event of dissolution. The assets one would take from the marriage and earnings potential are key determinants of that power. Resources that might be forthcoming from one's family would also be an important source of support and assistance. Thus, social domains of power are potentially important and family background may play a role in moderating power within the household. From a more general standpoint, power relations are likely to be formed early in a marriage and one's family background at that time is likely to be an important influence on the dynamics between a husband and wife.

Evidence from focus groups conducted as part of the preparation for IFLS2 support this intuition. There was general agreement among the respondents that one's power in a marriage is influenced by the status of one's family relative to that of one's spouse. In fact, several of the participants indicated that they thought very large differences in socio-economic status of parents could cause problems because one spouse would look down on or try to dominate the other.

To capture the effect of relative background of the husband and wife, we draw on two questions in the survey. First, respondents were asked whether, at the time of marriage, their own family was of "higher social status" than that of their spouse. As shown in Panel C of Table 2, 13% of women in the analytic sample report themselves as being in this category. The measure likely captures some information on the assets that husbands and wives brought into the marriage. It also captures potentially important dimensions of status such as lineage.

The second question is less subjective and asks each woman whether her father was better educated than her father-in-law. 12% of women in the analytic sample answer this question in the affirmative (Table 2).[8] Apparently paternal education and social status are not the same: only one third of women whose father is better educated than the father-in-law report they come from a higher social status family than their spouse.

This issue is explored further in Table 3 which summarizes the relationships among the four indicators of power used in the analyses below. Since we do not need to restrict ourselves to those couples who were at risk for using prenatal care in the previous five years, the regressions are based on the fuller sample including all couples in IFLS2. Each column of the table presents coefficient estimates from a multivariate regression of a particular indicator of power. In addition to the other three power indicators, each regression includes controls for the age and education of each spouse,

[8]Husbands were asked the same questions. 10% of men report their wives are from higher class families and 9% report that their wife's father is better educated than their own father. Of those men who report their wives are from a higher social class, 50% of the women provide the same answer and 45% say they are from the same social class and 5% say their husbands are from a higher social class. The level of agreement is slightly higher for the question about paternal education. In the regressions reported below, we use the wife's response to these questions and interpret the answers as her perception of her status relative to her husband's. We have explored several alternative specifications. First, the regressions have all been re-estimated with both the wife's and the husband's response to each question. Conditional on his wife's response, the husband's response provides information about his perception of his status relative to his wife's. If the husband's response provides information about relative bargaining power, over and above the wife's, his response should affect the outcome. It does not. In all cases, the husband's response has no relationship with prenatal care of delivery choices and the relationship with the wife's report regarding relative status is little changed. Second, it may be that responses of both the husband and wife are noisy and that it is when they both agree that there is signal in the responses. We have therefore re-estimated all the regressions with indicator variables that are unity when the husband and wife agree for each question. The results are very similar to those based on the wife's reports and all inferences regarding the significance of any covariates are unchanged. Third, we have explored whether the wife's perceptions of relative status matter, after controlling instances in which she and her husband agree. We find they do not. We conclude therefore that, at least for these decisions, conditional on the signal provided by the wife's response, the husband's response can be treated as if it is noise.

total household assets and location of residence. The coefficient estimates in Table 3 are, therefore, partial correlation coefficients.

There is a significant association between relative social status and each of the other three indicators of power: a woman who reports she is from a family of higher social status is more likely to have a father who is better educated than her father-in-law, is more likely to be better educated than her husband, and is more likely to own a bigger share of household assets. However, those measures, together with the other covariates, only explain 11% of the variation in relative social status, indicating that a good deal of heterogeneity in that indicator remains unexplained. No significant associations emerge among the other three indicators of power either individually or taken together (as shown in the second F test at the foot of the table). There are two potential conclusions. First, it may be that relative social status is a good proxy for power and captures dimensions of power that are also reflected in the other measures. Or, alternatively, one might conclude there is *prima facie* evidence that a single measure of power is unlikely to capture the array of dimensions that contribute to the relative negotiating position of a husband and wife in a marriage. An examination of the links between these measures of power and reproductive health behaviors will help distinguish between these hypotheses.

Reproductive health and power within the household

In addition to the indicators of power, IFLS contains extensive questions on use of health services during pregnancy and delivery by married women under the age of 50. Women who have given birth in the five years prior to the survey are asked, among other things, about the number of prenatal care visits made during each trimester of the latest pregnancy, as well as the facility and type of assistant used for the delivery if the pregnancy came to term.

As shown in Table 4, 89% of women who were pregnant in the previous 5 years obtained at least one pre-natal checkup; this estimate is very close to the estimate for the same period reported by the IDHS. The average woman had almost 8 check-ups during the course of her pregnancy. Timing of prenatal care is thought to be critical: 80% of women had a checkup during the first

trimester of the pregnancy. 84% of women had a checkup during the second trimester and a similar fraction had a checkup during the third trimester.

Among those women who gave birth, close to 60% of the deliveries were at home. Two-thirds of those women relied exclusively on a traditional birth attendant, a *dukun*. The rest of the women who had home births relied on a trained midwife. The latter group are significantly more likely to have had some prenatal care (the gap is 10 percentage points overall) and while they are more likely to have had a checkup in each trimester, those gaps are not significant.

Among births that are delivered away from home, roughly one-third are performed in hospitals or doctors' offices; the remainder are performed at the practice of a midwife or in a public health center. Relative to women who give birth at home, those who give birth away from home are significantly more likely to have received prenatal care, particularly during the first and second trimesters. For example, a woman who gives birth away from home is 25% more likely to have had a prenatal check-up during the first trimester of the pregnancy; this difference is significant even after controlling levels of household resources, background and service availability.

The relationships between use of prenatal care and indicators of power are reported in Table 5. Table 6 presents evidence with respect to location of delivery. All regressions include controls for age of the wife and age of the husband, location of residence, year of pregnancy (in Table 5) and year of birth (in Table 6) and the value of household assets (included as a spline with knots at each quartile to permit flexibility in the role of household resources). All test statistics are based on variance-covariance estimates which are robust to heteroskedasticity and take into account spatial clustering of households (Huber, 1973).

Relative power and prenatal care

The natural starting point is to examine the link between relative power and whether a woman received any prenatal care during her most recent pregnancy. Those results are reported in the first column of Table 5; the coefficient estimates are from a logistic regression. The second column examines whether the number of prenatal care visits is influenced by relative power.[9] The

[9]The fact that number of visits takes on a discrete number of values is taken into account in the estimation. It is commonplace to estimate these sorts of models assuming a Poisson distribution for the unobservables. The restriction that model imposes -- equality of the first and second moments -- is rejected and so we prefer the negative binomial

timing of prenatal visits during the pregnancy is thought to be key: we distinguish the probability a woman had her first check-up in each trimester and estimate logistic models in each case. (Models of the number of visits in each trimester yield substantively the same results from the point of view of the influence of the indicators of power.)

Panel A of Table 5 presents the relationships between indicators of power and prenatal care.

Prenatal care is influenced by the share of assets owned by the wife. If a woman reports that she owns none of the household assets, she is less likely to use any prenatal care, she is likely to have fewer visits if she uses prenatal care and she is less likely to have her first prenatal care visit in each trimester of the pregnancy. Owning some assets raises the likelihood of any prenatal care until the woman owns at least 25% of the assets; thereafter, having a bigger share of the pie has no further impact on this choice. The model reported in Table 5 includes a spline in the share of assets owned by the wife with knots at 25% and 75% shares. Thus, a woman who owns 50% of the household's assets is as likely to get prenatal care as a woman who owns 25% -- but they are both more likely to get care than a woman who owns, say, 5% of the assets. The same shape emerges for the link between the wife's share of assets and the number of prenatal care visits as well as the probability she receives prenatal care in each trimester. The tests for joint significance of the asset share covariates are in the first row of the final panel of the table: control over economic resources as measured here is an important predictor of all five prenatal care outcomes.

Substantively the same results are obtained if dummy variables replace the splines in share ownership. However, the dummy variable specification misses the fact that reproductive care choices are influenced by even small increments in assets among women who have only a small share of the household pie. We conclude that whether a woman has control over economic resources in a household does influence decision-making. If a woman has a small share of household assets,

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specification which does not impose this restriction. From a substantive point of view, the estimates of these models and an OLS model are very similar and so the assumption about the distribution of the unobservables is of second order importance.

additional assets are associated with greater power but when her share reaches 25%, additional assets yield little advantage in terms of shaping family decisions about prenatal care.[10]

Relative to other women, those from higher social status families tend to obtain more prenatal care and they are about 5% more likely to get care in the third trimester.[11] Whether the woman's father is better educated than her father-in-law has no independent effect on prenatal care choices.

In the final row of Panel A, we see that, conditional on the level of education of each spouse, a woman who is better educated than her husband is more likely to use prenatal care and this effect is significant both overall (at 6%) and during the first trimester (at 2% size of test). A woman who is better educated than her husband is 9% more likely than other women to receive prenatal care in the first trimester. It is, of course, critical that the models allow the effects of each spouse's education to be very flexible to ensure that the estimated effect of a woman being better educated than her husband is not simply reflecting non-linearities in those effects. The models in Panel A include indicator variables for each year of education of women and men; this "semi-parametric" specification places no restrictions on the shape of the education-prenatal care relationship.

To provide a summary of the effect of education on prenatal care, all the models have been re-estimated replacing the semi-parametric specification for education with each spouse's years of education included in a linear form. The results are reported in Panel B. For all outcomes considered, a woman's education is positively and significantly associated with use of prenatal care. The effect of her husband's education is also positive, but significant in only one case (the number of visits) and in all but that case is smaller than the effect of the woman's own education. The difference between his and her education is, however, never significant (as shown in the fifth row of Panel C of the table).

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[10]Experiments with specifications that include a control identifying women who have a bigger share of household assets than their husbands indicate that it has no effect on decision making. Moreover, equality of ownership does not appear to be the key behind elevated levels of reproductive health care since a covariate that identifies those couples who each own 50% of the household assets has no independent influence on prenatal care choices after controlling the share owned by the wife.

[11]The effect is significant at a 5.5% size of test.

The fourth row of Panel C indicates that, taken together, the indicators of power are significant predictors of all the prenatal care choices. That fact is driven primarily by the wife's share of household assets and, in particular, increases in her share from 0 through 25%. Conditional on asset ownership and education of both spouses, women who are better educated than their husbands are more likely to use prenatal care and to obtain that care earlier in the pregnancy. Relative to other women, those from higher social status families have more prenatal care visits and they are more likely to get care during the third trimester.

Relative power and type of delivery

Table 6 presents results from a multinomial logit model of the choice of location of delivery. All estimates in the table should be interpreted as relative to the reference group, births delivered at home with a traditional midwife in attendance.

Women who own some of the household assets are more likely to give birth in a hospital or private doctor's office and, if the birth is at home, to have a trained midwife in attendance. The shape of the relationships parallels those for prenatal care: increases in the share of assets owned by the woman are only important among those who own less than a quarter of the household's assets.

With respect to influencing the choice of location of delivery, asset ownership does not dominate the indicators of relative power that are based on social relationships. This contrasts with our results for prenatal care. To be specific, relative to delivering at home with a traditional midwife, if a woman's father is better educated than her father-in-law she is more likely to deliver in a modern facility (a hospital, doctor's or midwife's office or a health center).[12] Moreover, a woman is more likely to deliver in a midwife's office or health center if she is from a higher social status family than her husband (at a 6% size of test). Taking relative social status and education of the father relative to the father-in-law together, they are significant (at 1% size of test, as shown in row 2 of Panel C) and suggest that these measures of family background influence choice of delivery

[12]The effect on delivery in a hospital or private doctor's office is significant at 6% and at 8% in a midwife's office or public health center.

location.[13] Women who are better educated than their husbands do not appear to choose to deliver in locations that differ from other women.

Better educated women are most likely to give birth in a hospital or private doctor's office and least likely to give birth at home with a *dukun*. If the husband is better educated, the woman is more likely to deliver away from home. As with prenatal care, a woman's education has a bigger influence on these decisions than her husband's. However, the only instance in which a woman's education has a significantly bigger effect than her husband's is in the choice between using a *dukun* and a trained midwife if the birth is at home.

Discussion

In sum, the distribution of economic power within a household significantly influences all dimensions of prenatal care and delivery that we have examined. Specifically, as the share of household assets owned by the wife increases so does the probability she will use prenatal care, the amount and the timing of that care. Taking into account the metric of each outcome, the estimated effects are remarkably similar across the models. A higher share of assets is also associated with an elevated probability a woman will deliver in a hospital, private doctor's office, or, if she delivers at home, the probability she has a midwife in attendance. In all cases, these effects are limited to those women who own less than one-quarter of household assets, which accounts for slightly less than half our sample. Within the other half of our sample, there is no evidence that greater control over economic resources within the household influences prenatal care and delivery choices.

These results are important for two reasons. First, it has been argued that ownership of assets does not carry with it power unless those assets can be sold by the woman. This argument implies that ownership of assets would have no effect on reproductive health decisions; it is very difficult to explain the empirical evidence presented here with that argument. More generally, if ownership and control are not the same, then reported ownership will be a noisy proxy for control

[13]If the indicator variable for the woman's father being better educated is excluded from the regression, the coefficient on the effect of the woman coming from a higher social status family on the probability of using a midwife office of health center increases slightly to 0.544 and the t statistic is 2.5. Conversely, dropping the social status variable, the coefficient on the relative education of the woman's father increases for the same outcome to 0.644 and the t statistic is 2.3.

over economic resources; if the gap between ownership and control is randomly distributed, the estimated effects of economic resources will be biased downward and economic resources would matter more than the estimates suggest. Since there are no obvious reasons to expect that bias to be greater among women who own a bigger share of the household pie, the relative importance of asset ownership over the distribution of shares is likely to be reasonably robust. This insight underlies the second important implication of our results: women who have no stake in household assets are at a disadvantage in terms of decision-making and small increases in their asset positions have the potential to significantly affect reproductive health outcomes.

The evidence that social domains of relative power influence decisions about reproductive health is more mixed. Relative to other women, those who are better educated than their husbands are more likely to obtain prenatal care, particularly during the first trimester. Women from higher social status families tend to obtain more prenatal care visits and they are more likely to deliver in a midwife's office or health center. This latter effect appears to be associated with the relative backgrounds of the husband and wife as indicated by both social status of their respective families and paternal education. The latter is also associated with a higher probability of giving birth in a hospital or private doctor's office.

Recall from the previous section that relative status of a woman's family is correlated with all three other indicators of power but the correlation within those three is small. If power is unidimensional, then the relative status of the woman's family should do a good job of summarizing power in the models of reproductive health decisions. The empirical evidence indicates it does not. There is, in fact, a surprising degree of independence in the effects of the indicators of power on reproductive health choices. It turns out that, apart from the sole exception for delivery choice noted above, all the inferences drawn from the regression results are true both in the models we have presented that include multiple indicators of power simultaneously, and also in models that examine the impact of each power indicator, one by one. We interpret the empirical results as suggesting that "power" is multi-faceted with each of the indicators of power capturing a different dimension of the complex interaction that takes place between husband and wife as they negotiate investments in reproductive health.

Conclusions

This paper examines the choices a woman and her husband make regarding use of reproductive health services in Indonesia. These services include use of, number and timing of visits for prenatal care, and the site for delivery of the baby. The association between these choices and indicators of a woman's "power" relative to that of her spouse are highlighted. Recognizing that couples are made up of individuals who may not share the same preferences, reproductive health care decisions are modelled as the outcome of a negotiation process between husbands and wives which depends on each person's ability to assert his or her own preferences. According to the model, after controlling household resources and background, the distribution of power within a couple in the household will have an independent effect on decision-making. This prediction stands in contract so the prediction of the standard model of the family in demographic research which treats the couple as a single unit, a "unitary" couple; in the "unitary" model, the distribution of power between the spouses plays no role in decision-making. The extent to which power does matter is, fundamentally, an empirical issue.

A key stumbling block in this literature has been the development of empirically implementable measures of power. Using data that were specially collected for this purpose in Indonesia, four potential indicators of power are considered simultaneously; they are intended to span both economic and social domains of power.

First, we have examined the effect on reproductive decisions of changes in the share of the couple's assets that are owned by the wife, after controlling total household resources. In the "unitary" model, shifts in the distribution of assets between husbands and wives should have no impact on decisions about reproductive health care. In a more general model, changes in the share of assets owned by a wife are likely to be associated with changes in her control over family decisions. Separate ownership of assets is an important aspect of the life of many Indonesians and is embedded in the cultural norms of many ethnic groups in the country. Asset shares are consistently a powerful predictor of whether or not a woman uses modern reproductive health services. Women who own no assets are systematically less likely to use those services than women who own some

assets. The effect is not linear: if a woman owns more than 25% of the household pie, additional assets provide no further benefit in terms of this set of decisions.

It is well known that education has an important influence on many reproductive behaviors. To focus attention on the role of power in these decisions, we have highlighted those woman who are better educated than their husbands. We show that, relative to other women, they are more likely to use prenatal care, particularly in the first trimester. We interpret this finding as indicating that being better educated than one's husband enables a woman to wield power in family decision-making.

Finally, we explore the impact of two indicators of power that are grounded in social relations. Specifically, we find that women who report themselves as coming from higher social status families than their husbands use more prenatal care and these women along with those whose father is better educated than their father-in-law are more likely to deliver at a midwife's office or health center.

We conclude that a woman's power relative to her husband does affect reproductive health decisions and the "unitary" model of the household is rejected by the data. Moreover, the evidence presented here suggests that "bargaining power" is not adequately summarized by a single indicator but spans multiple dimensions of a couple's life including both economic and social relations. The four indicators used here each have an independent effect on reproductive health decisions. Focussing attention on a single indicator of power -- be it economic or social -- will likely miss an important part of the household decision-making picture.

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Table 1: Socio-economic and demographic characteristics of married couples and couples who had a pregnancy in the last 5 years

	All couples (Wife aged 15-49) (1)	Couples with ≥ 1 pregnancy during previous 5 years (2)
Background characteristics of couple		
Age (in years) of wife	33.9	29.3
	[0.13]	[0.16]
husband	39.6	34.4
	[0.16]	[0.19]
Education (in years) of wife	6.0	6.8
	[0.06]	[0.10]
husband	6.9	7.5
	[0.07]	[0.11]
% HHs in which husband is head	86.3	77.0
Mean value of assets (in Rp 000) owned by		
Household	14,394	13,219
	[571]	[873]
Wife	4,426	3,428
	[222]	[286]
Husband	6,057	4,179
	[303]	[315]
Location of residence: % HHs living in		
urban areas	43.1	43.1
rural Java or Bali	33.6	31.9
rural Sumatra, Kalimantan, Sulawesi or West Nusa Tenggara	23.2	25.0
Number of couples	3,991	1,679

Notes: Means reported above standard errors in parentheses.

Table 2: Indicators of power
Shares of assets, relative education of spouses, family background

	All couples (Wife age 15-49) (1)	Couples with ≥ 1 pregnancy during previous 5 years (2)
A. Share of assets owned by husband and wife		
Share of HH assets owned by wife	35.9	32.4
	[0.41]	[0.65]
% HHs in which wife owns		
no assets	8	9
1-24% of HH assets	28	34
25-49% of HH assets	26	20
50% of HH assets	18	19
51-74% of HH assets	14	12
75-99% of HH assets	5	5
all HH assets	1	1
Share of HH assets owned by husband	41.9	37.7
	[0.45]	[0.73]
% HHs in which husband owns		
no assets	10	14
1-24% of HH assets	19	23
25-49% of HH assets	31	25
50% of HH assets	17	18
51-74% of HH assets	9	7
75-99% of HH assets	12	11
all HH assets	2	2
B. Education of wife relative to husband		
% HHs wife better educated than husband	21.6	23.3
	[0.65]	[1.03]
C. Family background		
% HHs in which wife from higher social status family	12.0	13.2
	[0.51]	[0.83]
% HHs in which wife's father better educated than father-in-law	10.2	12.0
	[0.48]	[0.79]
Number of couples	3,991	1,679

Notes: Means and percentages reported above standard errors in parentheses.

Table 3: Relationships among different indicators of power
Partial correlations based on multivariate OLS regressions

Covariates	Dependent variable: Wife from higher social status family (1)	Wife's father better educated than father-in-law (2)	Wife better educated than husband (3)	Wife's share of HH assets (4)
Wife from higher social status family	.	0.246 [10.6]	0.029 [1.9]	2.551 [2.1]
Wife's father better educated than father-in-law	0.283 [10.7]	.	-0.006 [0.4]	1.329 [1.0]
Wife better educated than husband	0.033 [1.9]	-0.006 [0.4]	.	-1.515 [1.1]
Wife's share of HH assets	0.0004 [2.1]	0.0002 [1.0]	-0.0002 [1.1]	.
R^2	0.11	0.11	0.51	0.14
F tests for joint significance				
1. All indicators of power	40.48 [0.00]	38.08 [0.00]	1.54 [0.21]	2.62 [0.05]
2. -"- except social status of wife's family	40.48 [0.00]	0.64 [0.53]	0.68 [0.51]	1.26 [0.29]

Notes: Each column represents an OLS regression which includes the covariates (listed in the first column) along with age of each spouse, education of each spouse, value of household assets and location of residence. Sample size is 3,991 couples. Aymptotic t statistics below coefficient estimates and p values below F test statistics; test statistics based on variance-covariance estimates which are robust to heteroskedasticity and take into account clustering of households.

Table 4: Prenatal check-ups and location of delivery
Most recent pregnancy (conditional on any pregnancy in last 5 years)

	Summary statistics (1)	# couples (2)
A. Prenatal check-ups		
% women have any check up	89.2	1,679
	[0.8]	
Average number of check-ups	7.7	
	[0.1]	
% women have prenatal check-up during		
First trimester	79.6	1,679
	[1.0]	
Second trimester	83.6	1,622
	[1.0]	
Third trimester	84.7	1,568
	[1.0]	
B. Delivery care		
% of women who deliver in		1,415
Hospital/Doctor's office	15.3	
Midwife's office/Public Health Center	26.1	
At home with midwife	15.6	
At home with traditional birth attendant	43.0	

Notes: Standard errors reported in parentheses below means and percentages.

Table 5: Relationship between prenatal care and distribution of power between husband and wife Regression estimates

Dependent variable:	Any prenatal care	Number of prenatal care visits	Prenatal care visit during: first trimester	second trimester	third trimester
Estimation method:	Logit	Neg. binomial	Logit	Logit	Logit
Covariates	(1)	(2)	(3)	(4)	(5)
Panel A					
Wife's share of HH assets (spline)					
0-25%	0.035	0.005	0.026	0.022	0.032
	[2.7]	[2.4]	[2.7]	[2.1]	[2.6]
26-75%	0.004	0.0003	0.001	0.008	0.006
	[0.5]	[0.2]	[0.2]	[1.1]	[0.6]
76-100%	-0.028	0.001	0.002	-0.014	-0.027
	[1.2]	[0.2]	[0.1]	[0.7]	[1.2]
Wife from higher social status family	0.251	0.087	0.118	0.391	0.626
	[0.8]	[2.0]	[0.5]	[1.4]	[1.9]
Wife's father better educated than father-in-law	0.159	0.029	0.009	-0.329	0.030
	[0.5]	[0.6]	[0.1]	[1.4]	[0.1]
Wife better educated than husband	0.652	0.054	0.631	0.353	0.285
	[1.9]	[1.0]	[2.4]	[1.2]	[1.0]
Panel B					
Years of education: Wife	0.132	0.019	0.073	0.103	0.135
	[2.8]	[2.8]	[2.0]	[2.8]	[3.3]
Husband	0.071	0.020	0.060	0.072	0.037
	[1.6]	[2.6]	[1.8]	[1.9]	[0.9]
Panel C: Joint tests of significance (χ^2)					
1. Wife's share of assets	11.83	11.54	12.47	12.00	13.57
	[0.01]	[0.01]	[0.01]	[0.01]	[0.00]
2. Wife higher social status & father	1.02	5.42	0.29	3.14	3.84
better educated than f-in-law	[0.60]	[0.07]	[0.86]	[0.21]	[0.15]
3. --"-- & wife better educated	4.63	6.34	6.16	4.59	4.73
than husband	[0.20]	[0.09]	[0.10]	[0.20]	[0.19]
4. All power indicators	16.56	16.93	18.20	16.65	18.59
	[0.01]	[0.01]	[0.01]	[0.01]	[0.00]
5. Wife education=husband education	0.57	0.01	0.04	0.21	1.73
	[0.45]	[0.93]	[0.84]	[0.65]	[0.19]
Number of couples	1679	1564	1679	1622	1568

Notes: Each panel represents a regression which includes the covariates (listed in the left hand column) along with age of wife and husband, value of household assets (entered as a spline), location of residence and year of pregnancy. Regression in Panel A also includes education of wife and husband in a semi-parametric form whereby an indicator variable is included for every year of education reported by respondents; this places no restriction on the shape of the relationship between education and the outcome in each regression. To summarize the effect of spousal education on each outcome, Panel B reports the results from including all covariates in Panel A, the additional controls listed above and education specified in a linear form. Aymptotic t statistics below coefficient estimates and p values below F test statistics; test statistics based on variance-covariance estimates which are robust to heteroskedasticity and take into account clustering of households.

Table 6: Relationship between type of delivery and distribution of power between husband and wife
Multinomial logit regression estimates
Reference category: Delivery at home with traditional birth midwife

Type of delivery: Covariates	Hospital or Private Doctor (1)	Midwife office Health Center (2)	At home with midwife (3)
Panel A			
Wife's share of HH assets (spline)			
0-25%	0.041	0.0002	0.027
	[2.9]	[0.1]	[2.0]
26-75%	-0.017	-0.001	-0.012
	[1.6]	[0.1]	[1.4]
76-100%	-0.017	-0.007	-0.025
	[0.6]	[0.3]	[1.0]
Wife from higher social status family	0.043	0.424	0.051
	[0.1]	[1.9]	[0.2]
Wife's father better educated than father-in-law	0.675	0.511	0.440
	[1.9]	[1.8]	[1.6]
Wife better educated than husband	-0.011	0.118	-0.196
	[0.1]	[0.4]	[0.7]
Panel B			
Years of education: Wife	0.287	0.155	0.192
	[6.0]	[4.4]	[4.9]
Husband	0.145	0.144	0.044
	[2.9]	[4.2]	[1.2]

Panel C: Joint tests of significance (χ^2)

	All outcomes	Hosp/Pvt Dr	Midwife/Hlth Ctr	At home
1. Wife's share of assets	17.83	10.62	0.29	6.75
	[0.04]	[0.01]	[0.96]	[0.08]
2. Wife higher social status & father	10.69	3.67	8.98	2.90
better educated than f-in-law	[0.09]	[0.16]	[0.01]	[0.23]
3. --"-- & wife better educated	11.60	3.67	9.20	3.06
than husband	[0.24]	[0.30]	[0.03]	[0.38]
4. All power indicators	30.62	14.18	9.57	9.70
	[0.03]	[0.03]	[0.14]	[0.13]
5. Wife education=husband education	7.17	2.51	0.03	4.47
	[0.07]	[0.11]	[0.86]	[0.03]

Notes: Each panel represents the effect of each covariate on the choice listed at the top of the table, relative to the reference category which is delivery at home with a traditional birth attendant. The regression includes the covariates (listed in the left hand column) along with age of wife and husband, value of household assets (entered as a spline), location of residence and year of pregnancy. Regression in Panel A also includes education of wife and husband in a semi-parametric form whereby an indicator variable is included for every year of education reported by respondents; this places no restriction on the shape of the relationship between education and each outcome in the regression. To summarize the effect of spousal education on each outcome, Panel B reports the results from including all covariates in Panel A, the additional controls listed above and education specified in a linear form. 1,415 deliveries included in sample. Aymptotic t statistics below coefficient estimates and p values below F test statistics; test statistics based on variance-covariance estimates which are robust to heteroskedasticity and take into account clustering of households.