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Empowering Women: The Effect of Women's Decision-Making Power on Reproductive Health Services Uptake

Evidence from Pakistan

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Abstract

A large body of research has attempted to explore the links between women's autonomy and their uptake of reproductive health services in the South Asia region, but the evidence so far is inconclusive. This study uses the Pakistan Social and Living Standards Measurement Survey to examine the influence of household decision making on women's uptake of reproductive health services. The analysis finds that women's decision-making power has a significant positive correlation with reproductive health services uptake and that influential males' decision-making power has the opposite effect, after controlling for socio-economic indicators and supply-side conditions. The findings suggest that empowering women and increasing their ability to make decisions may increase their uptake of reproductive health services. They also suggest that policies directed toward improving women's utilization of maternity services must target men as well as women in Pakistan.

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- Evidence from Pakistan[1]

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1. Introduction

A large body of research has attempted to explore the links between women's autonomy and their use of reproductive health services in South Asia, but the evidence is inconclusive. Despite the consistent finding that broad socio-demographic characteristics such as education and economic status have a significant impact on reproductive health services uptake, the relationship between women's decision-making power and their use of reproductive health services is unclear. For example, in India there appears to be no relationship between women's freedom of movement and decision-making power and their use of reproductive health services (Bhatia and Cleland 1995; Bloom, Wypij, et al. 2001). Similarly in Nepal, Matsumura and Gubhaju (2001) report that decision-making power has a mixed impact on maternal health services utilization. Survey data from Pakistan also show a weak or no relationship between women's reproductive health services uptake and measures of their autonomy (Sathar and Kazi 1997; Fikree, Khan, et al. 2001; Mumtaz and Salway 2005).

In addition to data source and methodology issues, some inconsistencies in the research findings may be due to lack of consistent measures of "autonomy" (Kabeer 1999), which in some South Asian countries is measured as women's "mobility". Thus, more recent literature urges the need to rethink the concept of women's autonomy as the framework for understanding gender and reproductive health in South Asia and elsewhere (Mumtaz and Salway 2009). Although women are typically the primary points of contact for reproductive health programs, often the decisions that lead them to seek services are outside their own control and may occur in the context of families or households (Becker 1996; Beegle, Frankenberg et al. 2001).

This paper contributes to the literature by applying several constructed indices composed of eight women's decision-making indicators to assess the relationship between women's decision making and their reproductive health services uptake. This paper also considers the influence of male household members (household heads or husbands) on decision making and women's uptake of reproductive health services (Mullany, Becker, et al. 2007; Mumtaz and Salway 2009).

Unlike some earlier findings on Pakistan, this study finds that women's decision-making power has a significant positive correlation with reproductive health services uptake and that influential males' decision-making power has the opposite effect, after controlling for socio-economic indicators and supply-side conditions. This study then suggests that empowering women and increasing their decision making in different dimensions may increase their uptake of reproductive health services. Such intervention is highly possible now in Pakistan given that the government is implementing a national cash transfer program to eligible women (the Benazir Income Support Program). In addition, interventions to increase women's reproductive health services uptake should extend to influential males in the household.

The rest of this paper is structured as follows. Section 2 describes the background of reproductive health service uptake and women's decision making in Pakistan. Section 3 describes the research method, and section 4 presents the results. Section 5 concludes and discusses policy implications.

2. Reproductive Health and Women's Decision Making in Pakistan

2.1. Reproductive health in Pakistan

Although much effort has been put into increasing reproductive health in Pakistan, the uptake of services is far from optimal, even in settings where services are more accessible. The infant and maternal mortality rates in Pakistan are still very high (Rizvi and Nishtar 2008). Several factors are thought to contribute to the high level of maternal mortality in Pakistan. Women in Pakistan marry at a relatively young age, and they tend to have their first child very soon after marriage. Low contraceptive use also contributes to high rates of induced abortion (Rana 1992). A shortage of skilled health professionals, particularly female skilled health professionals (Ashraf 1996) and low rates of tetanus toxoid (TT) vaccination also contribute to the high maternal mortality rate in Pakistan (Rizvi and Nishtar 2008).

In an effort to reduce maternal mortality and improve women's reproductive health generally, the Ministry of Health in Pakistan has proposed strategies to improve reproductive health, such as provision of reproductive health services to pregnant women, to increase the number of nurses, to create women-friendly hospitals, and to provide nutritional supplements to pregnant women. Policies have also been proposed to improve human resources strategies such as recruiting and training Lady Health Workers (LHWs) and improving the working conditions of doctors, nurses, paramedics, and other health workers (Hoope-Bender, Liljestrand et al. 2006; Fauveau, Sherratt et al. 2008). However, despite such efforts at the policy level, implementation has been slow, and prenatal and postnatal utilization have remained relatively constant over the years, particularly among the poor. Figure 1, which depicts the relationship between reproductive health services uptake and per capita expenditure[2], shows that the poor use many fewer reproductive health services than the rich, particularly for prenatal and postnatal services and institutional delivery services.

2.2. Women's decision making

The literature reveals that male dominance and prevailing traditional Islamic and cultural restrictions on women are major factors affecting women's decision-making power in Pakistan. These factors can be divided into two broad categories. The first category, male dominance, includes legal restrictions and inequalities interpreted from the Quran (the holy book of Muslims), Hadith (the sayings of Prophet Muhammad), Sunnah (the acts of Prophet Muhammad), and traditional Shariah laws (laws based on the Quran, Hadith, and Sunnah derived by Muslim jurists). These laws affect inheritance, marriage, divorce, child custody, and women's ability to

[2] Per capita consumption is measured by per adult equivalence consumption.

serve as legal witnesses (Hakim and Aziz, 1998). The second category is associated with the enforcement of *purdah* (the seclusion and hiding of women from men) or the seclusion of women (Amin 1995). All of these restrictions curtail women's decision making about factors that affect their lives: education, employment, and other economic and social activities, as well as medical services.

Efforts to increase women's social status in Pakistan have achieved some success, particularly efforts to provide education for girls (Hou 2010). Most recently, the Benazir Income Support Program (BISP) was established to provide cash transfers to the female heads of the poor families. This program provides Rs. 1,000 ($12) per month to eligible families, and cash is delivered to the doorstep to ensure that women receive it. The main objective of making women the beneficiaries is to empower them.

3. Methods

3.1. Data

The data for this study come from the Pakistan Social and Living Standards Measurement Survey (PSLM) 2005-06, which is a large household survey of more than 15,000 households on a range of social sector issues, including education, health, immunization, pre/postnatal care, family planning, and household consumption. More specifically, a maternal history was recorded for all women between 15 and 49 years old. Details about maternity health care utilization were collected for women who had delivered a child within three years of the date of interview. After excluding cases with missing values, a total sample of 5,061 women (from 4,515 households) is included in this study.

3.2. Dependent variables

Four dependent variables are used for this study: prenatal care, institutional birth, skilled birth attendance, and postnatal care. They are all treated as dichotomous variables indicating the use or non-use of the service. Institutional birth is defined as 1 if birth takes place in a government or private hospital or clinic, and 0 otherwise; skilled birth attendance is defined as 1 if the pregnant woman receives assistance from a midwife, trained Dai, doctor, LHW, nurse, or other health professional, and defined as 0 if assistance is received from a family member, relatives, or neighbors.

3.3. Construction of indices of women's decision-making power

There are eight questions in the PSLM regarding household decision making about education, employment, birth control methods, having more children, and household food, clothing, medical treatment, and recreation expenditures. The answers to these questions can be broadly categorized as "woman decides alone," "household head or husband decides alone," "household

head or husband and woman jointly decide," and "other family members decide,"[3] A woman is considered to have the decision-making power on a particular issue if she jointly or by herself makes the decision (equal to 1), since on at least some issues, such as birth control or number of children, women do not have to have the sole decision-making power. However, we have also done the calculations by assigning "jointly making the decision" a weight of 0.5 or 0, and the results are very similar and available upon request. On the contrary, in the case of the decision-making power of influential male household members (husbands or household heads), only decisions made by the man alone are assigned 1, to indicate males' dominance in decision making on those issues. Table 1 presents the descriptive results.

For decisions on education, 57.6% were made by the household's influential males, while only 12.9% were made at least partially by women themselves. Similar results are found for decisions on women's employment. Women have greater decision-making power about the use of birth control and having more children (71% and 76% respectively); however, about 16% of decisions in both cases are made solely by men. Women make more decisions on clothing expenditures, followed by food, medical, and recreation expenditures. On average, influential male household members have greater decision-making power than women on these aspects of consumption.

Two pairs of indices are constructed to serve as proxies for the decision-making power of women and influential male household members. The first pair is a composite score, constructed with eight raw indicators for women and influential males separately, reflecting the degree of their autonomy. The scale for both scores ranges from 0 to 8, and the summary statistics are appended to the bottom of Table 1. On average, women's decision-making power is at 2.88, whereas influential male household members' decision-making power is at 3.03.

The second pair is obtained from the factor analysis. Different from the single indices, factor analysis generates a smaller set of factors to explain a larger number of observed variables. These factors are identified though their accountability of the observed variables' variance, and are allowed to be multifaceted covering different aspects of household decision making (Clarke 1970; Lawley and Maxwell 1971; Harman 1976). In this study, four factors for the eight indicators are identified from an orthogonal rotation of factor analysis using the Maximum Likelihood method. The factor loading matrices are shown in Appendix Table 1. The first factor that accounts for the most variance in the observed eight indicators is a general family planning factor, since it loads most heavily on birth control and having more children; the second and fourth factors load most heavily on consumption expenditures, with the first emphasizing food and clothing expenditures and the second emphasizing medical and recreation expenditures. Finally, the third factor loads most heavily on personal development, with significant coefficients

[3] In the questionnaire, household head was used in the questions regarding women's education and employment, as well as consumption decision; husband was used in birth control and more children decisions. About 58% of household heads are women's husbands.

for education and employment indicators. These results imply that the eight observed indices could be largely reduced to four factors related to decision making: expenditures on food and clothing, expenditures on medical services and recreation; on family planning; and on personal development.

3.4. Other control variables

Other control variables are selected based on frameworks used in the literature (McCarthy and Maine 1992; Fan and Habibov 2009), including women's age, women's age in the last pregnancy, education, employment status in the month before the interview, and dummies for first-time pregnancy and experience with the death of at least one child. Women's age at the interview is used in the regression of women's decision-making power; women's age in the last pregnancy is used in the regression of women's reproductive health services uptake in the last pregnancy. Women's employment status is included because working women are found to be less likely to use reproductive health services due to the competing demand of work (Matsumura and Gubhaju 2001). However, we should be mindful that employment status here refers to the month before the interview rather than during pregnancy. The dummies for first-time pregnancy and experience of death of at least one child are controlled because women carrying their first child or who have an earlier experience with the death of a child may be more cautious and tend to use (more) reproductive health services.

In addition, the regression controls for the gender of household head, age at the interview, education, employment status, household size, per adult equivalent expenditure as a measure of welfare, and rural/urban indicators. In order to capture the supply side of maternity services, we also computed the average utilization rate of prenatal services at the district level. This is in theory an endogenous variable, because the woman examined also contributes to the average of prenatal service utilization at the district level. However, districts are large administrative tiers in Pakistan, and the average number of examined women in each district in the dataset is 120. Thus, whether the woman examined was included in the average calculation or not makes little difference. Provincial fixed effect is also controlled. Table 2 reports summary statistics for these control variables.

4. Results

4.1. Descriptive analysis

The summary statistics show that reproductive health services uptake rate is very low in Pakistan (Table 2). The averages of prenatal care and postnatal care utilization are very low, 50.3% and 21.4% respectively. Though the skilled birth attendance rate is 79.7%, only 31.2% of births take place in institutions. The reproductive health services uptake rate is correlated with welfare status, as measured by the monthly consumption per adult equivalent (Figure 1). The poor use

significantly fewer reproductive health services than the rich, particularly prenatal and postnatal services and institutional delivery. Women's decision-making power is also positively associated with welfare status (Figure 2). Women in poor households have less decision-making power than in non-poor households, and the relationship between women's decision-making power and household welfare status is pretty linear.

4.2. Regression analysis

Estimation results investigating the determinants of decision-making powers and reproductive health services uptake are reported for women and influential male household members separately. Tables 3 and 4 report coefficients for women's decision-making power when the composite score and factor analysis scores are used, respectively. Similarly, Table 5 reports results for influential males' decision-making power when the composite score is used in the regression. The findings using influential males' decision-making power measured by factor analysis scores are very similar; the results are available upon request. All standard errors presented in Tables 3 to 5 are intra-household adjusted.

Women's decision-making power

Column 1 in Table 3 presents the coefficient estimates from the OLS model fitted on the composite score for women's decision-making power. As expected, women who are older, have more education, and employed have greater decision-making power in their households. In addition, women living in more affluent households, female-headed households, or in urban areas have greater decision-making power.

Columns 2 to 5 present the relationship between the four outcome indicators of reproductive services utilization and women's decision-making power measured by the composite score. Logit models are used and the odds ratios are presented. Women's decision-making power has a strong and positive association with prenatal care utilization, skilled birth attendance, and postnatal care; however, the association with institutional delivery is not significant. These results imply that even if women had greater decision-making power, institutional delivery might not increase, probably for reasons related to both financial and physical access. In addition, the quality of institutional delivery might not meet women's expectations.

Consistent with findings from other studies, women's education and economic status both contribute to higher reproductive health services utilization. The literature has suggested that education can improve maternity services utilization by increasing women's awareness, empowering them to take decisions on their own health risks and increasing their ability to communicate with health professionals (Chakrabarti and Chaudhuri 2007). Supply-side factors matter significantly: with a 1% increase in the district level prenatal utilization rate, women are 22.2% more likely to use prenatal services, and 4.1% times more likely to have an institutional delivery. However, even with an explicit control for the district level prenatal utilization rate, the significant negative rural impact persists. The implication is that the rural impact has more

influence on utilization than the limited facility supply and that other factors might be more important as well, such as social and cultural customs that forbid women from consulting with reproductive health professionals.

We also find a significant association between first-time pregnancy and reproductive health services utilization. First-time pregnancy increases the likelihood that women will seek various reproductive health services by 1.5 to 2.1 times. It suggests that women who have previously given birth rely more on experience than on professional care; also, it is likely that such women have fewer resources in the form of time and money to seek formal health care (Chakrabarti and Chaudhuri 2007). The age of the woman at the time of delivery is only marginally and negatively correlated with skilled birth attendance. As women become older, their demand for health services may have declined as their experience and opportunity costs increased. Finally, pregnant women who have experienced a child's death are not significantly more likely to use any of the reproductive health services, except a skilled health professional at the birth.

Table 4 deconstructs the pattern of decision-making power impact on reproductive health services utilization. It first fits the OLS model for the four factors in columns 1–4 and then report odds ratios for reproductive health services utilization in columns 5–8. Women's decision-making power in the general sphere of family planning and personal development is more likely to be associated with reproductive health services uptake.

Decision-making by influential male household members

Although the literature on the relationship between reproductive health services uptake and decision-making power has been focused on women, we also investigate how influential male household members may influence or determine women's reproductive health service uptake. The same analysis in Table 3 is executed with measures of influential males' decision-making power (composite score index), and the results are reported in Table 5.

Influential males' decision-making power, measured by the composite score, is negatively and significantly correlated with all reproductive health services uptake, except institutional birth. This finding implies that males play a critical role in determining women's reproductive health services uptake in Pakistan. Thus the policy directed toward improving the reproductive health services uptake and achieving the Millennium Development Goals (MDGs) on maternal health in Pakistan should not target only women. It should attempt to bring similar awareness and incentives to the influential male household members, who could be household heads or husbands.

5. Conclusions and Policy Implications

This paper examines the determinants of women's reproductive health services uptake, particularly the association between women's decision-making power, household heads' decision-making power, and women's use of reproductive health services. There are two main

findings. First, though women's decision-making power is positively and significantly associated with prenatal and postnatal services and skilled birth attendance, the association with institutional birth is insignificant. Second, we find that influential males in the household significantly influence women's reproductive health services utilization in Pakistan. In households where the males exert decision-making power, women tend to use fewer reproductive health services. This implies that their perception of the importance of reproductive health services uptake is quite low. The results are robust and consistent across different indices developed to measure the decision-making power of women and influential male household members.

The strong association between women's decision-making power and utilization of prenatal and postnatal services and the services of a skilled birth attendant suggests that interventions designed to empower women may increase their utilization of these services. Pakistan has initiated a national cash transfer program — the Benazir Income Support Program — which gives the female heads of the eligible families PK Rs. 1,000 ($12) per month. Experiences from cash transfer and conditional cash transfer programs elsewhere have shown that transferring cash to women in households can increase their decision-making power (Schultz 1990; Thomas 1990; Gitter and Barham 2008). If this is also the case in Pakistan, one impact should be greater utilization of reproductive health services.

However, the insignificant association between women's decision-making power and institutional deliveries implies that there are other factors that also affect services uptake. One of those is access, both financial and physical. Although in theory all Pakistan residents have access to public hospitals for free, in practice, patients must usually make an under-the-table payment to someone to get access. The quality of most public hospitals is also well below international norms, even among developing countries.

Another factor is the shortage of female professionals, particularly in rural areas (Mumtaz, Salway, et al. 2003). Thus, strengthening the public service delivery and training and deployment of professional midwives or Lady Health Workers as primary birth attendants are critical interventions. In addition, incentives should be provided to these professionals working in the rural areas, particularly remote rural areas, as other findings suggest that reproductive health services uptake is much lower in underserved areas (Sultan, Cleland, et al. 2002). However, this is more easily said than done in a country that faces so many challenges. More innovative approaches such as contracting or outsourcing to NGOs and the private sector with public monies might be one possible approach to increasing use of reproductive health services (Loevinsohn and Sayed 2008; Loevinsohn, Haq, et al. 2009).

The findings also suggest that policies directed toward improving women's utilization of maternity services must target influential male household members, whose understanding of the importance of maternity services is crucial to increase the effectiveness of health services

interventions. This is particularly the case in Pakistan, where in most areas women need the permission of a husband or another male to pursue activities outside of their homes.

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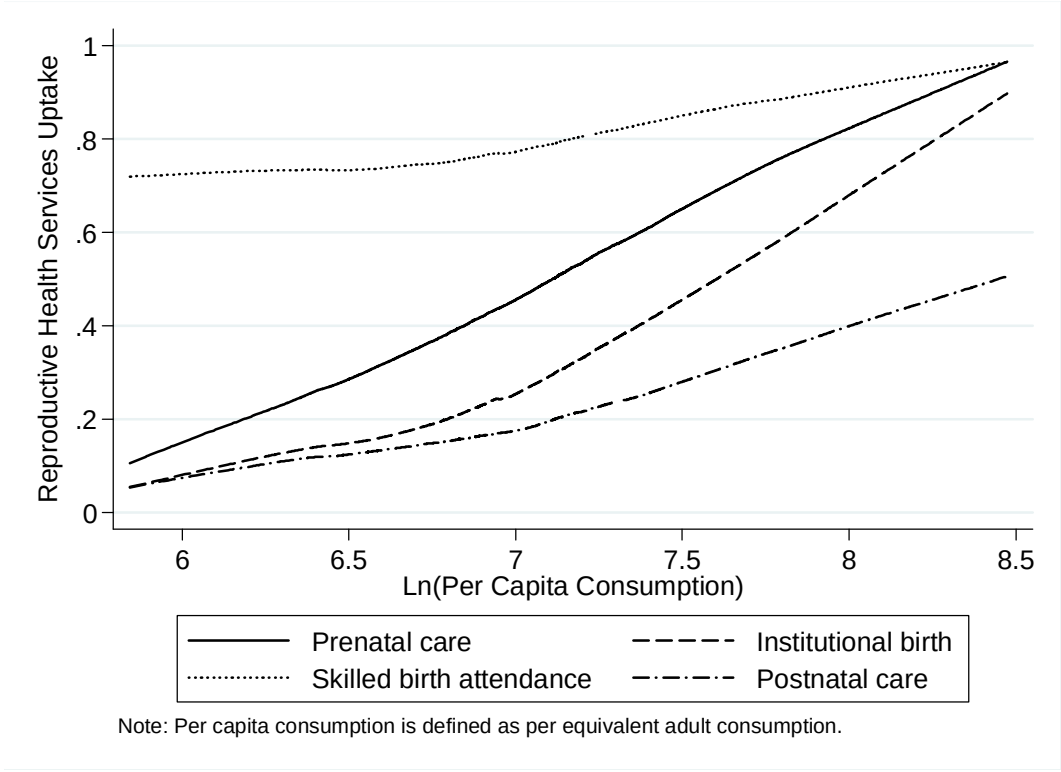
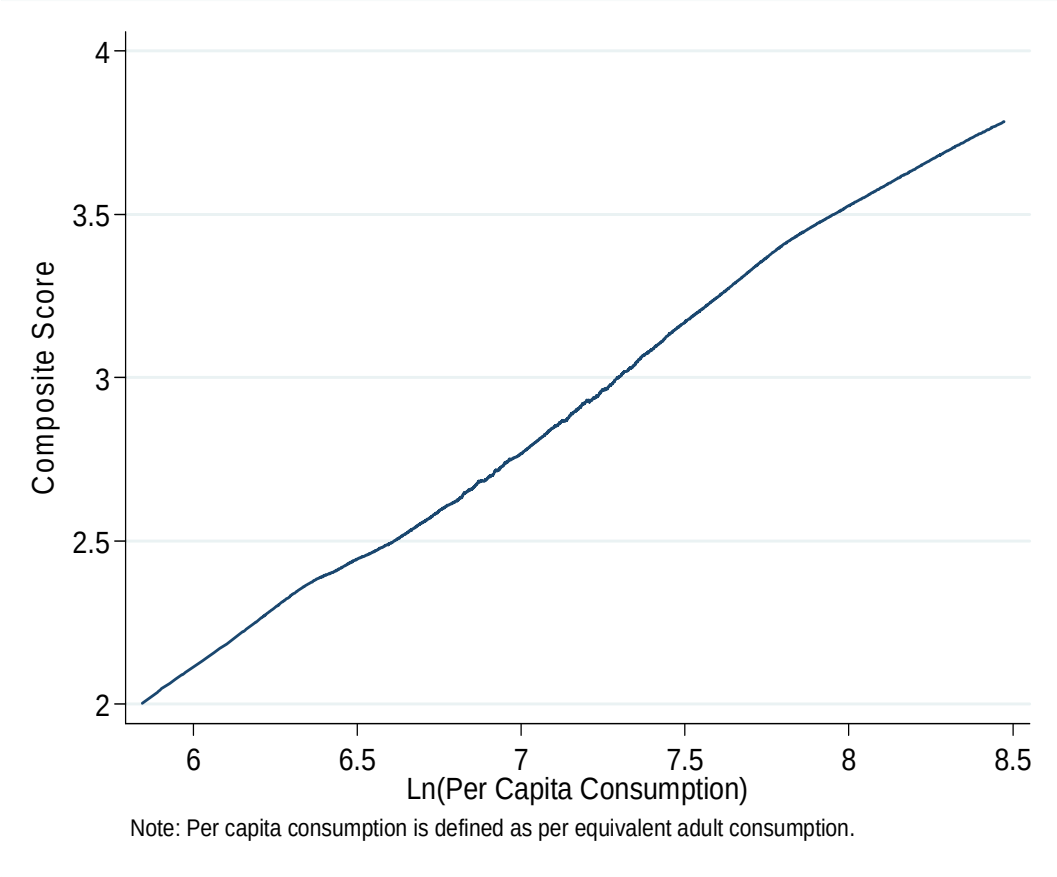
Figure 1. Women's Reproductive Health Services Uptake and Per Capita Consumption



Note: Per capita consumption is defined as per equivalent adult consumption.

Figure2: Women's Decision-Making Power and Per Capita Consumption



Note: Per capita consumption is defined as per equivalent adult consumption.

Table 1. Summary Statistics for Decision-making

Indexes	Woman	Household Influential Male Member
Women's Personal development		
Education	12.93%	57.62%
Employment	12.35%	54.57%
Family planning		
Birth control	70.98%	16.83%
More children	76.40%	16.72%
Consumption expenditure		
Food expenditure	27.99%	38.15%
Clothing expenditure	34.78%	32.55%
Medical expenditure	26.04%	31.01%
Recreation expenditure	22.88%	33.98%
Composite score [mean(sd)]	2.88 (2)	3.03 (2.6)

Table 2. Summary Statistics of Other Control Variables

Variables	Mean (sd)
Outcome variables	
Prenatal care (%)	50.31%
Institutional birth (%)	31.15%
Skilled birth attendance (%)	79.67%
Postnatal care (%)	21.44%
Explanatory variables	
First time giving birth (%)	18.74%
Age of mother at delivery	27.92 (6.4)
Age	28.85 (6.5)
Mother has experienced death of a child (%)	23.17%
Education	
Never attended school or Less than Class 1 (%)	71.13%
Class 1-5 (%)	10.88%
Class 6-8 (%)	4.55%
Class 9-10 (%)	7.26%
Class 11 & beyond (%)	6.18%
Employed (%)	19.53%
Head female (%)	4.80%
Head's education	
Head never attended school or Less than Class 1 (%)	49.02%
Head Class 1-5 (%)	16.81%
Head Class 6-8 (%)	9.48%
Head Class 9-10 (%)	12.75%
Head Class 11 & beyond (%)	11.95%
Head employed (%)	83.07%
Household size	9.43 (5.1)
Consumption per adult equivalent (P.E.A)	1407.94 (1083.4)
District prenatal care utilization rate	.48 (.2)
Rural (%)	65.21%
Province	
Punjab (%)	36.21%
Sindh (%)	25.98%
N.W.F.P. (%)	23.91%
Balochistan (%)	13.89%

Table 3 Determinants of Women's Decision-making Power and Reproductive Health Services Uptake—Composite Score

	OLS	Logit			
	Decision-making power	Prenatal care	Institutional birth	Skilled birth attendance	Postnatal care
	(1)	(2)	(3)	(4)	(5)
Class 1-5	0.26***	1.66***	1.55***	2.02***	1.78***
	[3.1]	[4.6]	[4.0]	[4.1]	[4.9]
Class 6-8	0.36***	2.44***	1.53***	1.31	1.51***
	[3.0]	[5.6]	[2.9]	[1.2]	[2.6]
Class 9-10	0.78***	3.94***	2.06***	1.76***	2.37***
	[6.8]	[8.2]	[5.5]	[2.8]	[6.2]
Class 11 & beyond	0.77***	8.21***	3.94***	2.67***	2.42***
	[6.1]	[8.3]	[8.4]	[3.7]	[5.8]
Employed	0.18**	0.84*	0.79**	1.11	1.08
	[2.4]	[1.8]	[2.3]	[0.8]	[0.6]
Age	0.005				
	[1.2]				
Head female	1.01***	1.2	1.28	1.19	1.13
	[6.5]	[1.0]	[1.3]	[0.7]	[0.6]
Household size	-0.003	0.99	1.01	1	1.07***
	[0.5]	[1.6]	[1.3]	[0.0]	[6.6]
Ln(P.E.A. consumption)	0.05	2.08***	2.46***	1.27**	1.77***
	[0.6]	[7.4]	[8.8]	[2.1]	[5.6]
Rural	-0.24***	0.65***	0.62***	0.68***	0.73***
	[3.8]	[5.3]	[6.0]	[3.7]	[3.3]
Women's decision-making power (Composite score)		**1.10*** [4.5]**	**1.01 [0.5]**	**1.07** [2.5]**	**1.04* [1.7]**
First time giving birth		1.83***	2.09***	1.69***	1.46***
		[6.4]	[7.8]	[4.5]	[3.8]
Age at birth delivery		1	1	0.99**	0.99
		[0.4]	[0.7]	[2.0]	[1.3]
Mother has experienced death of a child		0.97	1.04	1.23**	1.03
		[0.4]	[0.4]	[2.1]	[0.3]
District prenatal care utilization rate		22.16***	4.07***	5.57***	7.53***
		[13.4]	[6.2]	[6.0]	[7.6]
Observations	5061	5061	4986	5052	5061
R-squared	0.3				

Table 4 Determinants of Women's Decision-making Power and Reproductive Health Services Uptake--Factor Analysis Scores

	OLS				Logit			
	Family planning factor	Medical & Recreational expenditure factor	Personal development factor	Food & Clothing expenditure factor	Prenatal care	Institutional birth	Skilled birth attendance	Postnatal care
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Class 1-5	0.06	0	0	0.20***	1.66***	1.56***	2.02***	1.77***
	[1.4]	[0.1]	[0.1]	[4.2]	[4.7]	[4.1]	[4.1]	[4.9]
Class 6-8	0.11**	-0.11*	0.12	0.29***	2.45***	1.55***	1.28	1.49**
	[2.2]	[1.8]	[1.6]	[4.1]	[5.6]	[2.9]	[1.1]	[2.5]
Class 9-10	0.13***	0.04	0.25***	0.34***	3.99***	2.08***	1.73***	2.36***
	[2.9]	[0.6]	[3.4]	[5.6]	[8.3]	[5.6]	[2.7]	[6.1]
Class 11 & beyond	0.27***	-0.02	0.38***	0.20***	8.14***	3.92***	2.54***	2.39***
	[6.0]	[0.3]	[4.5]	[2.9]	[8.2]	[8.4]	[3.5]	[5.7]
Employed	0.04	-0.06	0.18***	0.06*	0.83*	0.79**	1.08	1.08
	[1.1]	[1.6]	[4.0]	[1.7]	[1.8]	[2.3]	[0.6]	[0.7]
Age	-0.001	0.001	-0.001	0.003				
	[0.4]	[0.5]	[0.3]	[1.3]				
Head female	-0.17**	0.51***	0.18*	0.30***	1.28	1.3	1.27	1.16
	[2.5]	[5.9]	[1.9]	[4.0]	[1.3]	[1.4]	[1.0]	[0.7]
Household size	-0.001	0.01*	-0.01*	-0.001	0.99	1.01	1	1.07***
	[0.3]	[1.7]	[1.7]	[0.4]	[1.6]	[1.3]	[0.0]	[6.5]
Ln(P.E.A.)	0.003	-0.05	0.01	0.08**	2.08***	2.47***	1.26**	1.77***
	[0.1]	[1.4]	[0.2]	[2.0]	[7.4]	[8.8]	[2.0]	[5.6]
Rural	-0.05*	0.005	-0.05	-0.18***	0.65***	0.61***	0.69***	0.74***
	[1.8]	[0.1]	[1.4]	[5.2]	[5.3]	[6.0]	[3.5]	[3.2]
Women's decision-making power					1.15***	1.02	1.27***	1.15**
(Predicted factor score on family planning)					[3.3]	[0.4]	[4.7]	[2.4]
Women's decision-making power					1.07	1.01	0.96	1.05
(Predicted factor score on medical & recreational expenditure)					[1.6]	[0.2]	[0.8]	[1.1]
Women's decision-making power					1.08**	1.03	1.11**	0.99
(Predicted factor score on personal development)					[2.1]	[0.9]	[2.0]	[0.2]
Women's decision-making power					1.06	0.96	1.03	1.05
(Predicted factor score on food & clothing expenditure)					[1.5]	[1.0]	[0.5]	[1.0]
First time giving birth					1.83***	2.09***	1.70***	1.47***
					[6.4]	[7.8]	[4.5]	[3.8]
Mother has experienced death of child					0.96	1.04	1.23**	1.03
					[0.4]	[0.4]	[2.2]	[0.3]
District prenatal care utilization rate					22.81***	4.17***	5.88***	7.74***
					[13.4]	[6.2]	[6.1]	[7.6]
Observations	5061	5061	5061	5061	5061	4986	5052	5061
R-squared	0.3	0.1	0	0.2				

Note: 1. Robust t statistics in brackets of columns 1–4, and robust z statistics in brackets of columns 5–8. 2. * significant at 10%; ** significant at 5%; *** significant at 1%. 3. Default category for education is "Never attended school or less than Class 1". 4. Other variables controlled but not reported include head's education level, employment status, and province fixed effects, age at birth delivery and constant term. 5. "P.E.A. consumption" stands for per equivalent adult consumption.

Table 5 Determinants of Influential Male Household Members' Decision-making Power and Reproductive Health Services Uptake—Composite Score

	OLS	Logit			
	Decision-making power	Prenatal Care	Institutional birth	Skilled birth attendance	Postnatal care
	(1)	(2)	(3)	(4)	(5)
Class 1-5	-0.45***	1.62***	1.53***	1.95***	1.77***
	[4.2]	[4.4]	[3.8]	[3.8]	[4.8]
Class 6-8	-0.58***	2.28***	1.54***	1.23	1.47**
	[4.0]	[5.0]	[2.8]	[0.9]	[2.3]
Class 9-10	-1.04***	3.88***	2.15***	1.83***	2.33***
	[8.0]	[7.9]	[5.7]	[2.8]	[5.9]
Class 11 & beyond	-1.30***	8.20***	3.94***	2.67***	2.35***
	[9.5]	[8.0]	[8.3]	[3.6]	[5.5]
Employed	-0.37***	0.82*	0.77**	1.06	1.07
	[3.7]	[1.9]	[2.5]	[0.5]	[0.6]
Age	0.01				
	[1.1]				
Head female	-2.02***	1.55	1.41	0.87	1.36
	[11.6]	[1.3]	[1.1]	[0.3]	[0.9]
Household size	-0.01	0.99*	1	1	1.07***
	[0.8]	[1.7]	[0.6]	[0.4]	[6.3]
Ln(P.E.A. consumption)	0.08	2.04***	2.36***	1.22*	1.73***
	[0.9]	[7.0]	[8.3]	[1.7]	[5.2]
Rural	0.51***	0.64***	0.62***	0.71***	0.75***
	[6.2]	[5.5]	[5.8]	[3.2]	[2.9]
Influential Male Household Members' decision-making power (Composite score)		0.93***	0.98	0.92***	0.92***
		[4.7]	[1.0]	[4.1]	[3.9]
First time giving birth		1.81***	2.08***	1.73***	1.45***
		[6.1]	[7.5]	[4.5]	[3.6]
Age at birth delivery		1	1.01	0.99*	0.99
		[0.5]	[0.9]	[1.9]	[1.1]
Mother has experienced death of a child		0.95	1.05	1.25**	0.99
		[0.6]	[0.5]	[2.2]	[0.1]
District prenatal care utilization rate		22.26***	4.26***	6.22***	8.04***
		[13.1]	[6.2]	[6.2]	[7.6]
Observations	4881	4881	4808	4874	4881
R-squared	0.3				

Note: 1. Robust t statistics in brackets of column 1, and robust z statistics in brackets of columns 2–5. 2. * significant at 10%; ** significant at 5%; *** significant at 1%. 3. Default category for education is "Never attended school or less than Class 1". 4. Other variables controlled but not reported include household head's education level, employment status, and province fixed effects, and constant term. 5. "P.E.A. consumption" stands for per equivalent adult consumption.

Appendix

Table A1 Factor Loading Matrices

	Woman Alone				Head Alone			
Index	Factor 1	Factor 2	Factor 3	Factor 4	Factor 1	Factor 2	Factor 3	Factor 4
Personal development								
Education	0.057	0.17	0.658	0.15	0.139	0.177	0.872	0.129
Employment	0.039	0.095	0.989	0.102	0.147	0.155	0.867	0.168
Family planning								
Birth control	0.949	0.085	0.035	0.083	0.963	0.179	0.125	0.102
More children	0.927	0.09	0.039	0.07	0.885	0.185	0.131	0.098
Consumption expenditure								
Food expenditure	0.021	0.128	0.139	0.569	0.099	0.217	0.143	0.96
Clothing expenditure	0.115	0.168	0.119	0.972	0.176	0.419	0.209	0.647
Medical expenditure	0.105	0.874	0.111	0.204	0.212	0.94	0.153	0.22
Recreation expenditure	0.095	0.887	0.106	0.089	0.207	0.792	0.195	0.261