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A "Modern Family": Development and Intra-household Decisions in India

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Abstract

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Development organizations have recently paid much attention to women's empowerment as a means to offset gender discrimination and reduce poverty. While women are traditionally given responsibility for the household's welfare in developing countries, they are deprived of adequate resources to maximize that welfare; men instead assume decision-making responsibility for all matters, and this does not always result in optimal household outcomes. Community-based women's organizations, Mahila Mandals, physical development, and increases in education can improve women's bargaining power within the household and affect the locus of decision-making.

Using OLS and logistic regressions, I use the distribution of decision-making power within a household as a proxy for women's empowerment. I examine the effect of three development inputs—Mahila Mandals, physical development, and a wife and husband's levels of education—on the decision-making power of the husband, wife, and senior couple, in rural households in India. Additionally, I look at these development inputs' impact on purdah, the traditional observance of gender segregation in South Asia.

I find that Mahila Mandals shift decision-making responsibility away from the husband to the wife and senior female, raising the possibility of inter-generational conflict between women; physical development empowers men with regard to cooking and purchasing decisions and empowers women in childbirth and childcare decisions; and that in general, increases in education empower the individual with greater education. Surprisingly, a husband whose wife has a basic level of education tends to gain more decision-making power compared to when the wife does not have an education at all. Development also tends to increase the likelihood of purdah observance, a finding consistent with ethnographic studies that report that women who observe purdah consider this more liberating as they are able to inhabit the public sphere as opposed to being confined to the household.

Given these findings, governments and development workers should ensure that males and senior females are not alienated in the process of development. Women's support groups can be formalized to aid women in navigating identity changes induced by development and mitigate any intra-household conflicts. Additionally, Western outsiders should be wary of imposing ethnocentric interpretations of purdah observance.

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Introduction

Much attention in recent years has been placed by development organizations on women's empowerment as a means to offset gender discrimination and reduce poverty ("Gender Equality and Women's Empowerment - Gender Mainstreaming and Development," 2008). While women are traditionally given responsibility for the household's welfare in many developing countries, they are deprived of adequate resources to maximize that welfare; men instead assume decision-making responsibility for all matters, and this does not usually result in optimal household outcomes. Pitt and Khandker, in their analysis of micro-credit programs in Bangladesh, find that annual household consumption expenditure increases by 18% when credit is given to women, as opposed to the 11% increase when men are given credit (Pitt & Khandker, 1998). This 7 percentage point difference may arise from men spending money on gambling, tobacco, prostitution, and entertainment in towns, as reported by micro-credit field workers in Bangladesh (Goetz & Gupta, 1996); men's involvement in these risky activities can have a further detrimental effect on their family members.

Providing women with appropriate education, financial support and health services can increase women's bargaining power within the household and offset such risky male behavior (CARE Organization, 2007). Many evaluation studies have thus looked at overall household outcomes to measure the effectiveness of development programs (Leach & Sitaram, 2002), but while these capture possible effects of empowerment, they do not accurately reflect changes in women's power to make decisions within a household. Additionally, in countries where women are traditionally discriminated against, one might argue that gender mainstreaming is good in itself, regardless of its immediate effect on household outcomes. In light of this, I use the

distribution of decision-making power within a household as a proxy for women's empowerment. I use OLS and logistic regressions to examine the effect of three development inputs—a women's organization (*Mahila Mandal*), physical development, and a wife and husband's levels of education—on the decision-making power of the husband, wife, and senior couple, in rural households in India.

India's rigid social structure has resulted in a legacy of gender discrimination and poverty that many development organizations seek to address through women's empowerment programs. Women traditionally marry into their husband's family and live with their in-laws for the rest of their lives, reducing their levels of autonomy. In the North, women are particularly disempowered due to hypergamy, early arranged marriages, exogamy and the importance of a joint family (Chakraborty & Kim, 2010). The presence of a joint family complicates the decision-making process further, introducing the potential for intergenerational power struggles. Sen et al (2006) states that in joint households, decisions are divided up by generation: in general, the younger husband is the more common locus of decision-making, with the senior husband being the central authority on some decisions. Females usually do not obtain most of the decision-making power; thus to compensate for this, the senior female exerts her authority over the wife, further reducing the wife's sense of empowerment. Development inputs that aim to increase women's empowerment thus may increase a senior female's authority at the expense of the junior female.

In my analysis, I find that the senior male only features prominently in purchasing decisions, and thus I only include an analysis on how his decision-making power is affected for that decision. For the rest of the decisions, I look at the effects of

development on the husband, wife, and senior female, drawing insights about these three family members' interactions with each other from the data. I assume a bargaining decision-making model similar to Browning and Chiappori's (1998) cooperative model as the mechanism for the decision-making process. According to the model, individuals' power is affected by external factors that influence the threat point, the utility gained if a decision is not reached by the couple. When the husband is traditionally the predominant decision-maker, an alteration of the threat point can shift the decision-making power/responsibility towards the wife or senior female.

Women's organizations, physical development and education can alter this threat point. A women's organization, or *Mahila Mandal*, is a women's grassroots organization that increases women's political awareness and provides them with various health, finance, and education services. These organizations are generally established to promote the women's empowerment ideology; however, Das (2000) argues that since *Mahila Mandals* are paternalistic, hierarchical, and caste-based, they pose no challenge to the existing village hierarchy and can in fact reinforce gender norms. According to Das (2000), *Mahila Mandals* are closely linked with the local village government, women leaders are usually wives of the local government, and there is very little low-caste representation. Despite this, these organizations still successfully pursue outcomes that are favorable to women and the village. I argue that in general, a *Mahila Mandal* distributes the decision-making power away from the husband to females in the household because their presence introduces ideas of female empowerment despite not drastically changing village governance structures.

Likewise, the presence of these three development inputs—*Mahila Mandals*, physical development, and education—provide women with education, information and support networks outside the household, giving them more opportunities besides marriage and decreasing the opportunity cost to women of disputing a decision, thus increasing their bargaining power. Additionally, these inputs bring more liberal ideas about gender equality to both men and women in the household, changing their methods of interaction with each other and shifting the decision-making responsibility accordingly. A more educated wife, for example, would be more confident about making the decision to purchase an expensive item because she can read and do math. However, the same educated wife may not gain the same bargaining power in the decision of whom her children should marry if her husband is wealthier and has a wider social network than her.

The extent to which these inputs affect the decision-making power also depends on the types of decisions to be made. In India, household decisions usually include the following: whether to purchase an expensive item, how many children a couple should have, what to do if a child falls sick, what to cook each day, who a couple's children should marry, and whether the wife practices *purdah*, the traditional practice of secluding women from males. Data for the first five decisions indicates which family member has most say: the husband, the wife, or the senior female. This makes it easier to analyze changes in responsibilities and female empowerment. The last decision for whether the wife practices *purdah* only specifies the outcome and adds to the discussion on how development and globalization affects traditional customs.

The decision to practice *purdah*, a traditional sign of modesty, is a household-level decision that depends on factors such as caste, income, religion and external social pressures. The observance of *purdah* manifests itself in two general forms: through veil-wearing and physical separation from males (Andrist, Banerji, & Desai, 2008). Ethnographic studies suggest that in South Asian cultures, wearing the veil is seen by women as a form of liberation as it allows them a greater level of engagement with the outside world as compared to being confined to the home (Feldman & McCarthy, 1983; Papanek, 1973). According to Feldman and McCarthy's (1983) field research in the Comilla area in Bangladesh, the *burqa*, the long veil covering a Muslim woman from head to toe, was introduced in the early 20th century from men who returned from the *Haj* (annual pilgrimage to Mecca). These *burqas* allowed women, who previously had to travel on bullock carts or *palkis* (a wrapped box carried by men), greater ease of travel. The presence of a *Mahila Mandal* would most likely increase women's propensity to travel outside her home and thus increase her likelihood of wearing the veil and observing *purdah*. My results support this hypothesis: *purdah* observance tends to be positively correlated with development, challenging the Western interpretation that veil-wearing is a sign of oppression and gender inequality.

I find that development generally shifts decision-making responsibility towards females, implying an increase in women's empowerment within the household. This effect is most straightforward when the input is a *Mahila Mandal*, which is not surprising since these organizations promote the ideology of women's empowerment and provide services to women and children. The effect tends to be more significant for a wife than a senior female. Physical development and education have slightly more surprising effects.

Roads have a positive or negative effect on women's empowerment, depending on the decision, and the effect is usually greater when a paved road is in place. These results are consistent with the interpretation that roads empower those who travel along the road, usually males, and changes gender views through the transfer of information. Education usually increases the power of the individual who possess the most education, but in some instances a little more education for the wife correlates with an increase a husband's power.

Local governments and *Mahila Mandals* thus should continue to promote education, refine their childcare and childbearing educational services, and formalize the social networks that these development inputs enable women to build. Doing so will enable women to have more support while they navigate their changes in identity. Additionally, these organizations should engage the rest of the community in the process of development to ensure that women's empowerment is not seen as a zero-sum game by men or the older generation. These actions will mitigate the risks of development and maximize the gains of women's empowerment programs.

Data and Methodology

Dataset

For this project, I used data from the 2005 India Human Development Survey, a nationally representative, multi-topic survey of 41,554 households in 1,503 villages and 971 urban neighborhoods across India. The survey was produced by researchers from the University of Maryland in conjunction with the National Council of Applied Economic Research in New Delhi. Researchers used five questionnaires to collect information on the individual, household and village levels, and Table 1 details the five questionnaires available. I utilized data from the Education and Health, Household and Village questionnaires and concentrated on rural households, where the three development inputs of interest are present. Rural households constituted two-thirds of the dataset, the other third being urban households.

Table 1.
Summary of Questionnaires Available

Questionnaire	Respondent	Variable level
Education and health	Female head of household	Household/individual
Household	Head of household (either male or female)	Household
Village	Key village members	Village
Medical facilities	Staff at medical facility	Medical facility
Primary school	Staff at primary school	Primary school

Empirical Model

I used the following model to investigate the different decision-making powers family members possessed:

$$Empowerment_{h,\,v,\,s} = \beta X_v + \beta X_h + \beta Z_v + \beta Z_h + \theta_s + \sum_{h,\,v,\,s}$$

Where *Empowerment* is the dummy variable for who has the most say in a particular type of decision and whether the respondent observes *purdah* (Table 5), βX_v

and βX_h are village and household-level development variables, βZ_v and βZ_h are village and household-level control variables, and θ_s are state-level fixed effects.

Data

Table 2 presents summary statistics of 15,875 household-level observations, which was the balanced panel of data that was available for my research. Since not all variables were used in each regression, the number of observations in the regressions varied from this figure.

The summary statistics still give a good sense of the data and reveal the heterogeneity of observations, which is reflective of India's diversity even in rural areas. The column titled "Dataset Mean" presents the means of the entire IHDS dataset, including urban households, enabling one to compare the households used in my research to a national average.

Table 1.
Summary Statistics of Household-level Demographic Variables

Variable	Dataset Mean	Rural sub-sample Mean	Std. Dev.	Min	Max
Number of households in village	9.2155	9.9306	6.3943	1	52
Number of household members	5.3184	5.8762	2.5438	2	38
Age	46.6063	44.3924	12.0490	18	95
Children: age 0-14 years	1.6980	2.1317	1.6237	0	17
Teenagers: age 15-21 years	0.7543	0.8072	1.0004	0	8
Adults: age >21 years	2.8658	2.9369	1.4177	0	14
Number of married female in the household	1.2820	1.4031	0.7086	1	8
Number of married men in the household	1.2623	1.3665	0.6778	1	8
Assets scale	12.3391	10.0943	5.1904	0	29
Total income	553.0894	4.2649	6.4066	-10.833	214.9
Highest level of education: adult	7.7241	6.5973	4.7837	0	15
Highest level of education: adult female	4.7524	3.4164	4.2945	0	15
Highest level of education: adult male	7.2184	6.1555	4.8093	0	15
Observations	37598	15875			

The average number of children and teenagers is lower in absolute terms but higher than the national average. According to the economics of fertility, the price of child quality relative to child quantity decreases with higher levels of income, increasing parents' incentive to invest more resources in fewer children (Becker, 1981). This is the most likely explanation for the higher than average number of children and teenagers. Villages are more likely to engaged in the initially stages of development than urban areas and households thus have a lower absolute number of children compared to less developed countries; however, this number is still higher than that of urban areas due to the villages' stage of development.

Empowerment Variables

I chose to measure female empowerment using the outcomes of the household decision-making process as this reflects the extent to which females have control or power over their socially defined domain. The dependent variables for my regressions came from the Education and Health questionnaire, which the female head of the household answered (see Table 1). In the original dataset, the respondent was asked questions such as "who has the most say in what to cook on a daily basis?" and her responses were coded into nominal variables accordingly. I transformed these variables into dummy variables that included the family member with the most say. Thus, for the question of "what to cook on a daily basis", the three possible categories of "wife", "husband" and "senior female" were split into three dummy variables: "wife has most say in cooking decisions", "husband has most say in cooking decisions" and "senior female

has most say in cooking decisions". The final category of questions, "do you practice

purdah?" was answered by the respondent.

Table 3.
Summary Statistics of Dependent Variables (all dummy variables)

Question	Family member with most say	Obs	Mean	Std. Dev.	Min	Max
What to cook on a daily basis	Wife	15875	0.7266	0.4457	0	1
	Husband	15875	0.1262	0.3321	0	1
	Senior Female	15875	0.1180	0.3227	0	1
	Senior Male	15875	0.0185	0.13505	0	1
Whether to buy an expensive item such as a TV or fridge	Wife	15875	0.0724	0.2591	0	1
	Husband	15875	0.7739	0.4183	0	1
	Senior Female	15875	0.0229	0.1495	0	1
	Senior Male	15875	0.1232	0.32869	0	1
How many children couple has	Wife	15875	0.1553	0.3622	0	1
	Husband	15875	0.7909	0.4067	0	1
	Senior Female	15875	0.0335	0.1800	0	1
	Senior Male	15875	0.0190	0.13639	0	1
What to do if a child falls sick	Wife	15875	0.2445	0.4298	0	1
	Husband	15875	0.6508	0.4767	0	1
	Senior Female	15875	0.0384	0.1922	0	1
	Senior Male	15875	0.0625	0.24216	0	1
To whom couple's children should marry	Wife	15875	0.0716	0.2579	0	1
	Husband	15875	0.7277	0.4451	0	1
	Senior Female	15875	0.0316	0.1748	0	1
	Senior Male	15875	0.1523	0.35933	0	1
If respondent practices *purdah*		15875	0.5871	0.4924	0	1

While the "Empowerment" variables are the best gauge of empowerment within a

household available in the dataset, there are some drawbacks. Since Indian society is

extremely patriarchic, the respondent could be pressured to give a socially acceptable

answer (i.e. that the male has the most say) even if it is not true. In this case, any

articulated change in norm would be an even stronger signal of women's empowerment.

Additionally, we would still be capturing the social pressure to give a socially acceptable

answer, which one could consider an indication of women's empowerment. For example,

if a household had a more liberal attitude towards women, the wife would not feel as

much pressure to say that the husband has the most say when he does not.

Additionally, respondents' interpretation of who has "most say" can differ across households, depending on the weights they place on the tasks that need to be executed prior to making the decision. For example, when making a decision such as whether to buy an expensive item, one family member may conduct research on the cost of such an item, another may calculate whether the household can afford the item, and another may physically buy the item. When respondents indicate which family member possesses the most say, they could be unconsciously putting weights on which task is most important in this decision, and these weights might vary across respondents.

The summary statistics from the decision-making variables confirm the traditional Indian view that the husband makes most of the decisions. For most of the decision-making categories—purchasing, number of children, what to do if the couple's child falls sick, and whom their children should marry—at least 64% of respondents replied that the husband possessed most say. The percentage of respondents who indicated that they had the most say in these decisions was 7-24%, and the senior female's proportion of the decision was around 2-3%.

The exception to this was the responses to "what to cook on a daily basis" and "do you practice wearing the veil?" Traditionally, the wife is given the greatest responsibility in preparing each day's meals. This does not necessarily mean that she does all the work, but the final say for what the household eats lies with her. It is no surprise, then, that 72% of respondents indicated they held the most say with cooking decisions. On the other hand, the question "do you practice wearing the veil" yielded surprising results. Veil-wearing is a sign of modesty in Indian society, and one would expect that most women

living in a village, which is regarded as more conservative, would wear a veil. However, only 60% of respondents indicated that they did so.

Development Variables

Table 4.
Summary Statistics of Development Variables

	Obs	Mean	Std. Dev.	Min	Max
Village-level					
Mahila Mandal (Women's community group)	15875	0.4719	0.4992	0	1
Dirt road	15875	0.2900	0.4538	0	1
Paved road	15875	0.6486	0.4774	0	1
Number of years paved road has been in existence	15875	13.7722	18.0096	0	95
Household-level					
Relative education of husband and wife	15875	2.3678	3.8793	-15	15
Wife's education: 0 years	15875	0.6443	0.4787	0	1
Wife's education: 1-9 years	15238	0.3023	0.4592	0	1
Wife's education: 10-20 years	15238	0.0263	0.1602	0	1
Husband's education: 0 years	15875	0.3711	0.4831	0	1
Husband's education: 1-9 years	14401	0.4894	0.4999	0	1
Husband's education: 10-20 years	14401	0.1014	0.3019	0	1

The development variables were divided into three types, two at the village level (*Mahila Mandals* and physical development) and one on the household level (relative or absolute levels of the husband and wife's education). These inputs are commonly implemented in a community either by development organizations or the government, and are good indicators of the level of development. In examining the effects of these variables, I seek to answer the question of their effectiveness and raise further issues that governments or development organizations should think about when implementing them.

Around half the villages surveyed had a *Mahila Mandal*. *Mahila Mandals* are traditional rural women's community groups first organized in the 19th century by the earliest women professionals. Now, they have become an important means of participatory development and can be registered under the India's Women and Child

Development Department to obtain funding and assistance. The manner in which *Mahila Mandals* are formed varies across villages: they may arise organically through the initiative of women in the village, or with some external impetus from a non-profit or the local government. Regardless of their means of formation, *Mahila Mandals* act as a forum for women in the village to discuss their concerns and promote activities such as nutrition education, family welfare, food storage, infant immunizations, and savings accounts. This mobilization and education of women inevitably translates to political participation, and Das (2000) reports that *Mahila Mandals* usually work closely with the local village government, the *panchayat*. This involvement trains women to take seats in the *panchayat*. Successful *Mahila Mandals* thus utilize their political connections and broad participation base to effectively tackle village problems (Chinmaya Organisation for Rural Development, 2007; "Promotion and Strengthening of Mahila Mandals - Schemes," 2007).

The success of a *Mahila Mandal* can shift gender relations in a village, but this effect is not always clear-cut. One example of this occurred in the 1970s in the village of Andad, a predominantly non-tribal village in Thane, Maharashtra, struggled with a history of male alcohol abuse. Led by a local schoolteacher, Pitale Guruji, the local *Mahila Mandal* identified this problem and worked "militantly" against it, eventually succeeding in closing alcohol shops in the village and preventing drunk men from entering the village (Das, 2000). Since *Mahila Mandals* give women more influence in their community, it may increase their sense of control over their lives and households, translating to greater say in household decisions. At the same time, *Mahila Mandals* do not operate in isolation; they often collaborate with the male-dominated structures of the

village and this may serve to reinforce existing gender structures. Pitale Guruji was a man who spearheaded much of the development in Andad and saw that mobilizing women was the best strategy for tackling the alcoholism in the village. Additionally, the female leadership of the *Mahila Mandal* were wives of office bearers of the village government, which ensured that the *Mahila Mandal*'s structure was fairly conservative.

Thus, ethnographically, development in the form of a *Mahila Mandal* has ambiguous effects on gender relations. I argue that despite this, a *Mahila Mandal* distributes the decision-making power away from the husband to females in the household because their presence introduces ideas of female empowerment despite not drastically changing village governance structures. Taking into consideration statistical principles, the inclusion of the *Mahila Mandal* variable brings up questions of endogeneity. A woman's decision to participate in a *Mahila Mandal* may be correlated with levels of women empowerment in the household, and so to avoid the possibility of intra-household reverse causality, I used a village-level variable instead of a household-level variable. While this still poses issues of endogeneity between a *Mahila Mandal's* presence and village-level characteristics, this issue is not as crucial since the variables of concern are on a household level. Additionally, both the wife and the senior female may be affected by the presence of a *Mahila Mandal* in a village, and in my analysis, I look at the effect on both family members' decision-making power.

Another factor that may affect women's empowerment is physical development. The presence of better roads allows for greater information transfer through mail delivery, newspapers and human interaction from more liberal centers to the village. This can increase women's ability to gather information and change both genders' ideas of

their roles in society. I thus include information on whether the village possessed a dirt road or a paved road, as well as the length of time a paved road has been in existence. 64% of villages possessed a paved road, while 29% possessed a dirt road, and the average paved road had been in existence for nearly 14 years. Quantifying the effect of a type of road on women's empowerment can help local governments decide how to best allocate funds toward physical development.

Likewise, governments and development organizations spend a considerable amount of money on education as a means of poverty alleviation, but the privilege of education is often biased in favor of males. An increase in a woman's level of education can thus increase her confidence by a large amount and lead to her commanding greater bargaining power within the household since her potential earnings as a proportion of household income are higher. Increasing a man's level of education would have a smaller effect in the same direction. For both parties, this increase in a sense of empowerment may have a nonlinear effect, and to account for this, I include dummy variables for absolute education levels from 0 years (omitted in the regressions), 1-9 years (basic education) and 10-20 (higher education) years in my regressions.

A husband and wife's relative education also affects their bargaining power in the direction of the individual with more education, and for some decisions, this may be more important than the absolute level of education. The relative education variable was constructed:

Relative education=husband's education – wife's education

Since this variable is easier to interpret than the absolute education variable, I used relative education unless results contradicted the above hypothesis.

Control Variables

Table 5.
Summary Statistics of Control Variables

Variables	Obs	Mean	Std. Dev.	Min	Max
Village-level					
Development group or NGO	15875	0.1315	0.3379	0	1
National Maternity Benefit Scheme	15875	0.6168	0.4862	0	1
Other women's welfare organization	15875	0.4082	0.4915	0	1
Percentage of households with electricity	15875	0.6860	0.3355	0	1
Population (in 3 categories)	15875	1.9322	0.6560	1	3
Total households	15875	619.7654	835.0576	4	7827
Household-level					
Assets scale	15875	10.0943	5.1903	0	29
Total income	15875	4.2648	6.4065	-10.83278	214.8557
Number of children under 14 years	15875	2.1316	1.6237	0	17
Number of girls under 14 years	15875	0.9538	1.0741	0	10
Number of boys under 14 years	15875	1.0313	1.0320	0	10

Mahila Mandals are only one of the many development-related organizations present in a village. Other organizations and schemes promote women's empowerment as well, such as a development group or NGO, the National Maternity Benefit Scheme, and the presence of other women's welfare organizations. In fact, most households that had a *Mahila Mandal* in their village also had another women's welfare organization as well. To isolate the effect of the *Mahila Mandal*, I included these other variables in the regression.

Three other village-level variables controlled for other forms of physical development and the village size. The percentage of households with electricity is likely to be correlated with the level of exposure a village has to the rest of the world, as electricity allows for telecommunication. I included this variable to ensure that the "dirt road" and "paved road" coefficients were not positively biased.

Having a larger village may have an effect on whether a *Mahila Mandal* or a similar organization is formed, and may also affect household decisions since the presence of more people allows for more easy access to information. The signs of the coefficients of these variables are thus difficult to predict, and in my regressions I include them under "village and household-level controls". The "population" variable is an ordinal variable with 1=less than 1000, 2=1001-5000 and 3=more than 5000. I also included the "total households" variable, a continuous variable, to provide additional information on the village size.

Other demographic characteristics such as income level, number of children, caste/religion, and state also affect which family member possesses the most say in a particular decision. In my regressions, I used a variety of measures for each of these items, depending on which variable produced the most easily interpretable results.

The assets scale and total income variable controlled for wealth of the household. The assets scale was constructed by the researchers from a series of questions about goods the household owns and the quality of the housing. According to the IHDS researchers, the assets scale is a reliable reflection of the long-term economic level of a household. I included the income variable to account for short-term income flows.

An Indian household's emphasis on children, particularly males, also affects levels of women's empowerment. A wife who gives birth to more children thus might have more say in decisions. Additionally, the husband and wife may claim more ownership over decisions regarding their children if they have more children of their gender. I included the total number of children as a variable in all regressions except the

childbearing and marriage decisions, where I divided the variable into the number of male and female children.

Religious and caste ideology also play a large part in gender relations. The colonial British government solidified the traditional Indian caste system's place in India's social structure, dividing Indian society into four castes—the Brahmins, Kshatriyas, Vaishyas and Shudras—and those outside the caste system, the Dalits. Upon India's independence, the definition of caste expanded to include "Socially and Educationally Backward Classes", also the target of affirmative action in the public sector (De Zwart, 2000). Additionally, indigenous Indians that live in rural areas, the Adivasi, are a separate caste. Like many other societies, Indians of a higher caste (i.e. non-Dalits or OBC) usually have higher education levels and thus be less inclined to hold rigid views regarding gender roles. Indians who follow religions such as Christianity, Islam, Sikhism and Jainism now consider that religion their caste, and since these individuals do not wholly subscribe to traditional Hindu ideology, they may be more likely to hold liberal views towards women as well.

Table 6 compares the caste and religion of households in the sample to urban households (excluding those in urban slums). The distribution of households by caste in the sample is roughly equal to that of all rural households in the dataset; thus it is convenient to compare rural and urban distributions. The majority of households, both in rural and urban areas, are classified as part of the Other Backward Classes (OBC) caste/religion category. A greater proportion of OBCs, Dalits and Adivasis reside in rural areas, while Indians of higher castes and different religions are more prominent in the urban areas, reflecting both greater social privilege and religious diversity in urban areas.

Table 6.

Distribution of Caste/Religion by Household

Caste/religion	Freq.	Urban Freq.	Percent	Urban Percent.	Cum.	Urban Cum.
Brahmin	655	1,192	4.13	9.55	4.13	9.55
High caste	2,345	2,883	14.77	23.11	18.9	32.66
Other Backward Castes	5,765	3,753	36.31	30.08	55.21	62.74
Dalit	3,638	1,886	22.92	15.12	78.13	77.86
Adivasi	1,590	397	10.02	3.18	88.14	81.04
Muslim	1,503	1,823	9.47	14.61	97.61	95.66
Sikh, Jain	253	276	1.59	2.21	99.21	97.87
Christian	126	266	0.79	2.13	100	100
Total	15,875	12,476	100	100		

Finally, I included state-level controls, as levels of women's empowerment may vary by state. Table 7 lists the geographical distribution of households in the sample. The states with the largest number of households, Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh, and Uttar Pradesh, are the largest states in India and lie adjacent to each other.

Table 7.
Household Geographical Distribution

State	Freq.	Percent	Cum.
Jammu & Kashmir	219	1.38	1.38
Himachal Pradesh	643	4.05	5.43
Punjab	711	4.48	9.91
Uttaranchal	162	1.02	10.93
Haryana	919	5.79	16.72
Delhi	73	0.46	17.18
Rajasthan	975	6.14	23.32
Uttar Pradesh	1,481	9.33	32.65
Bihar	618	3.89	36.54
Sikkim	39	0.25	36.79
Arunachal Pradesh	75	0.47	37.26
Nagaland	36	0.23	37.49
Manipur	26	0.16	37.65
Mizoram	23	0.14	37.8
Tripura	82	0.52	38.31
Meghalaya	44	0.28	38.59
Assam	431	2.71	41.3
West Bengal	827	5.21	46.51
Jharkland	320	2.02	48.53
Orissa	884	5.57	54.1
Chhatishgarh	462	2.91	57.01
Madhya Pradesh	1,256	7.91	64.92
Gujarat	731	4.6	69.52
Daman & Diu	37	0.23	69.76
Dadra & Nagar Haveli	52	0.33	70.09
Maharashtra	1,203	7.58	77.66

Andhra Pradesh	1,081	6.81	84.47
Karnataka	1,675	10.55	95.02
Goa	60	0.38	95.4
Kerala	285	1.8	97.2
Tamil Nadu	405	2.55	99.75
Pondicherry	40	0.25	100
Total	15,875	100	

Results and Discussion

I conducted OLS and logistic regressions on each of the six decisions and compared the effect of a *Mahila Mandal*, physical development, and education. The full regression results for each decision are presented in Appendix 1. I included Tables 9-18, which compare the effect of each development variable on the six regressions, in the Results section.

Mahila Mandals

The presence of a *Mahila Mandal* generally empowers women in the household to have the most say in decisions, distributing the decision-making power away from the husband and senior male to either the respondent or the senior female, or both. This effect is most prominent in simple intra-household bargaining decisions such as how many children a couple should have or what to do if a child falls sick, and least prominent in decisions that involve external forces such as another family, as is the case when determining whom a couple's children should marry (Table 9).

Table 9
Effect of Mahila Mandal

Regression type Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
What to cook on a daily basis	0.0112	-0.0194***	0.0143*	--	1.0596
	(0.008)	(0.006)	(0.006)	--	(0.045)
Whether to buy an expensive item	0.0088*	-0.0212**	0.0032	0.0109*	0.0088*
	(0.004)	(0.008)	(0.003)	(0.006)	(0.004)
How many children the couple has	0.0244***	-0.0318***	0.0094*	--	1.2417***
	(0.007)	(0.008)	(0.004)	--	(0.077)
What to do if a child falls sick	0.0224**	-0.0300***	0.0075*	--	1.1477**
	(0.008)	(0.008)	(0.003)	--	(0.054)
Whom couple's children should marry	0.0040	0.0076	0.0020	-0.0071	1.0824
	(0.004)	(0.008)	(0.003)	(0.006)	(0.084)
Whether respondent practices *purdah*	0.0420***	--	--	--	1.3787***
	(0.006)	--	--	--	(0.069)

Robust standard errors in parentheses; *** $p<0.001$, ** $p<0.01$, * $p<0.1$

In decisions regarding childcare and childbearing, the likelihood that the husband has most say decreases by 3.18 and 3.00 percentage points respectively while the likelihood that the respondent has most say increases by 2.44 and 2.24 percentage points respectively. These effects are significant at the 5% level. The chances that the senior female has most say increases, by 0.94 and 0.75 percentage points (for number of children and what to do if a child falls sick respectively), less than the case of the respondent's, but this effect is still significant at the 10% level. That the *Mahila Mandal* affects the wife and senior female in the positive direction raises the possibility of conflicts between them during the decision-making process.

In absolute terms, these changes differ slightly since the proportion of family members that have most say in both decisions varies by around 10 percentage points (see Table 5): for the childbearing decision, the husband has the most say 79% of the time, the wife has most say 15% of the time, and the senior female has most say 3% of the time. For the childcare decision, the proportions are 65%, 24% and 3% respectively. The fact that the women's organization has such a similar effect on these two decisions despite the difference in distribution of decision-making power for both decisions points to a singular causal mechanism for the empowering effect of the *Mahila Mandal*. It is most probable that the *Mahila Mandal*'s provision of health and education services empowers a woman to make child and health-related decisions, regardless of whether she is the parent or grandparent of a child.

The strong effect of the *Mahila Mandal* is surprising given the importance of children in the household. India's patrilineal system gives the husband's parents an interest in the number of children a couple has, and the burden of care usually falls on the

wife. Children are also a source of income and labor, and male children in particular increase the wealth of the household due to the dowry system. Thus all members in the household have a stake in the decision of how many children to have and what to do if the child falls sick. One would expect development inputs to have little effect on this decision since all members of the household place so much importance on this decision. That a *Mahila Mandal* is able to substantially empower women to care for their children points to an optimistic view of development and women's empowerment on future generations.

Unlike decisions concerning children, a generational difference is present in the cooking decision. A *Mahila Mandal* shifts the responsibility for cooking decisions from the husband to the senior female, not to the respondent. The likelihood that the husband has most say in this decision decreases by 1.94 percentage points (significant at 1%), while the likelihood that the senior female has most say increases by 1.43 percentage points (significant at 10%). The likelihood that the respondent has most say increases, but this effect is not significant. The difference in the *Mahila Mandal*'s effect may be due to the two generations' views towards the task of cooking.

Cooking decisions are traditionally female dominated with the wife being given the greatest responsibility in preparing the day's meals. This sort of decision is important to the household, particularly when the household entertains guests. However, in terms of economic and social gain, it is considered less significant than the other household decisions I looked at. Increased levels of women's empowerment may either cause women in the household to turn their attention away from cooking decisions to more economically and socially significant decisions such as childcare and childbearing, or

cause more of them to focus on the realm in which they already have decision-making power, cooking, and use this to influence other decisions in the household. Senior females are more likely to hold the traditional view that cooking should be a woman's domain and view taking more responsibility of this task as an assertion of their power, while wives of a later generation would be more ambivalent towards the task.

This ambivalence is not present in the decision of whether to buy an expensive item, however. The responsibility for making this decision is usually correlated with the power to determine household spending and levels of education. Additionally, the family member who can gather the most information about what brand of television or fridge to buy would have some say in the process, since many people rely on word-of-mouth recommendations when deciding to purchase an item.

I find that for purchasing decisions, a *Mahila Mandal* distributes the decision-making responsibility away from the husband and senior male to the respondent, increasing the likelihood of the respondent having most say by 0.88 percentage points (significant at 10%), decreasing the likelihood of the husband having most say by 2.12 percentage points (significant at 5%), and decreasing the likelihood of the senior male having most say by 2.18 percentage points (significant at 10%). The *Mahila Mandal* can empower women to engage more actively in this decision-making process by increasing her basic literacy and mathematics abilities as well as providing her with a network of women through whom she can obtain recommendations about items she intends to purchase. The women's organization does not have a significant effect on the senior female's decision-making power in this case, however, and this is probably because

individuals' learning efficiency decreases with age, making it more difficult for older individuals to acquire and apply new skills.

Unlike purchasing decisions, the older generation is actively involved in the decision of whom one's children should marry. In India, marriage is a culturally entrenched and bilateral decision that involves the entire family, particularly those on the husband's side. The child's parents typically play a prominent role in finding his or her marriage partner, scouring their social networks for an ideal match, and one can reasonably assume that due to the patrilineal system, the husband would have most say. The decision-making process is also complicated by the fact that this decision involves two or more families, depending on how many marriage candidates there are, and different family members would have closer ties to particular marriage candidates' families, also influencing the decision-making process.

Development would thus have little effect on such a culturally embedded process and any mechanics of the effect would be difficult to distinguish. This explains the insignificant effect of a *Mahila Mandal* on the marriage decision: all coefficients are smaller than they are for other decisions and none of them are significant. This does not necessarily imply that women are not empowered in this decision, but since the process of choosing a suitable marriage partner is correlated with multiple family's characteristics and networks, isolating a women's empowerment indicator is more difficult than other decisions.

Similar to marriage, the decision to observe *purdah* in South Asia is a culturally embedded phenomenon. As noted previously, *purdah* observance is more likely to increase with development. My results support this hypothesis: the presence of a *Mahila*

Mandal is statistically significant at the 1% level and increases *purdah* observance by 4.20 percentage points. This prompts one to challenge the assumption, usually made by Western outsiders, that the veil is as a sign of women's oppression. If *Mahila Mandals* do empower women, as the results have shown, an increase in *purdah* observance by women can instead be seen as a sign of empowerment. This possible shift in the veil's meaning implies a form of cultural reinterpretation, where a culture redefines a traditional symbol's meaning in light of changing societal norms.

Physical Development

Physical development in the form of roads increases women's empowerment by providing women with greater social networks to gain information. The presence of roads also increases accessibility to other employment options, increasing a woman's threat point in the bargaining process. I find that this effect is again most pronounced on decisions related to childcare and childbearing, implying that women's sense of empowerment is most easily asserted through decisions relating to children. Physical development can also have a positive effect on male empowerment by increasing a man's ability to travel to different places and purchase goods. Finally, a paved road generally has a greater effect than a dirt road, and the length of time the paved road has been in existence does not substantially affect the decision-making process. Tables 10 - 12 display the effects of a dirt road, a paved road, and the effect of time a paved road has existed on the six decisions.

Table 10
Effect of Dirt Road

Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
Regression type	OLS	OLS	OLS	OLS	Logistic
What to cook on a daily basis	0.0100	0.0268*	-0.0313*	--	1.0506
	(0.015)	(0.011)	(0.012)	--	(0.088)
Whether to buy an expensive item	0.0116	0.0329*	0.0015	-0.0431***	0.0116
	(0.008)	(0.015)	(0.006)	(0.012)	(0.008)
How many children the couple has	0.0258*	-0.0485***	0.0139*	--	1.2702*
	(0.012)	(0.014)	(0.006)	--	(0.143)
What to do if a child falls sick	0.0498***	-0.0620***	0.0210***	--	1.4270***
	(0.013)	(0.015)	(0.005)	--	(0.137)
Whom couple's children should marry	0.0216**	0.0181	-0.0051	-0.0394**	1.5341*
	(0.007)	(0.016)	(0.007)	(0.013)	(0.263)
Whether respondent practices *purdah*	0.0766***	--	--	--	1.7362***
	(0.013)	--	--	--	(0.160)

Robust standard errors in parentheses
*** $p<0.001$, ** $p<0.01$, * $p<0.1$

Table 11
Effect of Paved Road

Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
Regression type	OLS	OLS	OLS	OLS	Logistic
What to cook on a daily basis	0.0027	0.0340**	-0.0376**	--	1.0135
	(0.016)	(0.011)	(0.013)	--	(0.086)
Whether to buy an expensive item	0.0059	0.0443**	-0.0041	-0.0419***	0.0058
	(0.008)	(0.015)	(0.006)	(0.013)	(0.008)
How many children the couple has	0.0095	-0.0180	0.0097	--	1.1079
	(0.013)	(0.014)	(0.007)	--	(0.129)
What to do if a child falls sick	0.0584***	-0.0842***	0.0189**	--	1.5134***
	(0.013)	(0.016)	(0.006)	--	(0.149)
Whom couple's children should marry	0.0175*	0.0191	-0.0048	-0.0339*	1.4480*
	(0.008)	(0.016)	(0.007)	(0.014)	(0.254)
Whether respondent practices *purdah*	0.0469***	--	--	--	1.4261***
	(0.013)	--	--	--	(0.136)

Robust standard errors in parentheses
*** $p<0.001$, ** $p<0.01$, * $p<0.1$

Table 12
Effect of Time Paved Road Has Existed

Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
Regression type	OLS	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Senior Male	Respondent
What to cook on a daily basis	-0.0001	-0.0003	0.0003	--	0.9996
	(0.000)	(0.000)	(0.000)	--	(0.001)
Whether to buy an expensive item	0.0003*	-0.0004*	-0.0001	0.0003	0.0003*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
How many children the couple has	-0.0001	0.0001	-0.0001	--	0.9990
	(0.000)	(0.000)	(0.000)	--	(0.002)
What to do if a child falls sick	-0.0002	0.0001	0.0000	--	0.9988
	(0.000)	(0.000)	(0.000)	--	(0.001)
Whom couple's children should marry	0.0002	-0.0001	-0.0001	-0.0001	1.0033
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Whether respondent practices *purdah*	0.0001	--	--	--	1.0005
	(0.000)	--	--	--	(0.002)

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1

Given the emphasis on childcare and childbirth usually placed on a women's role in conservative households, it is not surprising that women's empowerment takes its most obvious form in decisions relating to these two themes. Unlike cooking, children are an important aspect of the household that empowered women decide to invest more of their time in. The presence of a dirt road has a similar effect of a *Mahila Mandal*: it shifts the decision-making power from the husband (decreasing his likelihood of having most say by 4.85 and -6.20 percentage points for childbearing and childcare decisions respectively; statistically significant at 1%) to both the wife and senior female, with the wife gaining more of the decision-making responsibility. The wife's likelihood of having most say increases by 2.58 and 4.98 percentage points for childbearing and childcare decisions respectively, while the senior female's likelihood increase by 1.39 and 2.10 percentage points respectively. The effect of a dirt road on the wife and senior female on childcare decisions is more statistically significant (at the 1% level) than the effect on childbirth (significant at the 10% level).

The presence of a paved road has an additional empowering effect on women only with respect to childcare decisions, but this effect is only significantly different from a dirt road's effect with regards to the husband's decision-making power. The direction of the paved road effect is the same as the dirt road's, but for the wife and husband, the magnitude of this effect increases by 0.86 and 2.22 percentage points respectively. The t-test values for the coefficients on the dirt road and the paved road are 0.95 and 5.06 respectively, with the t-test for the husband's decision significant at the 5% level. The magnitude of this effect on the senior female's likelihood of having most say decreases by 0.21 percentage points compared to the dirt road, but the t-test for this difference is not significant. The length of time a paved road has been in existence does not have any additional effect on either decision.

Paved roads can also empower women by expanding their social networks, but the magnitude of this effect is again smaller than a dirt road's. A dirt road increases the likelihood of a respondent having most say in the marriage decision by 2.16 percentage points (significant at 5%), while a paved road increases this likelihood by 1.75 percentage points (significant at 10%). There is no additional effect from the length of time the road has been in existence. In this case, roads increase a woman's social networks, a huge advantage when seeking a marriage partner for her child. That this effect is unique to women can be explained by women's tendency to enjoy socializing more than men, and thus their increased propensity to take advantage of an extended social network. To find a suitable marriage partner, however, one needs reliable information, and individuals tend to trust those in closer physical proximity to them. A paved road in the village may be

correlated with greater isolation from other villages, thus decreasing the information reliability. This would give a wife less decision-making power.

Physical development has a different effect on the two decisions related to purchasing: what to cook on a daily basis and whether to buy an expensive item. In both cases, the presence of both a dirt and paved road increases the husband's sense of empowerment, but the additional effect of a paved road is not significant. In the cooking decision, the husband's likelihood to have most say increases by 2.68 percentage points (significant at 10%) when a dirt road is present and 3.40 percentage points (significant at 5%) when a paved road is present. When deciding whether to buy an expensive item, a dirt road increases the husband's chances of having most say by 3.29 percentage points (significant at 10%) and a paved road increases this by 4.43 percentage points (significant at 5%). T-tests showed that the coefficients on the dirt and paved road for each decision were not significantly different from zero. This increase is most probably because it is more acceptable for men to travel outside a village than women when there is an opportunity to do so. A road would thus allow men to travel to different stores, compare items and finally purchase the item. This increased autonomy translates to greater empowerment for the husband.

This empowering effect does not apply to the senior male, however: the presence of a katcha and pucca road negatively affects a senior male's decision-making power in purchasing decisions, decreasing his likelihood to have most say by 4.31 and 4.19 percentage points respectively (significant at 1%). Likewise the presence of a dirt and paved road decreases the senior female's likelihood of having most say in the cooking decision by 3.13 (significant at 10%) and 3.76 (significant at 5%) percentage points

respectively, distributing the effect to the husband (increasing his likelihood by 2.68 and 3.40 percentage points, significant at the 10% and 5% levels, respectively). This is probably because older individuals, being less mobile, are least likely to take advantage of a road.

The longer a paved road has been in existence, the greater the likelihood that the respondent will have most say in purchasing decisions. The additional effect of an average paved road (that has been in existence for 13.7 years) increases a respondent's likelihood to have most say by 0.41 percentage points and decreases the husband's likelihood of having most say by 0.54 percentage points. Both effects are significant at the 10% level. While this effect is very small, it still indicates a rebalancing of the initial advantage husbands gain from the presence of a road; the longer a road exists, the more likely a wife will travel on it, allowing her to claim more of the decision-making power.

The more likely a wife travels outside, the higher her propensity to observe *purdah*. As stated previously, *purdah* observation can then also be a symbol of empowerment, an indication that a woman can travel outside her home. A dirt road in the village increases the likelihood of wearing the veil by 7.66 percentage points, more than the presence of a paved road, which increases the likelihood by 4.69. Past the threshold of a dirt road, additional development may increase a village population's interactions with the rest of the world, changing social norms. The coefficient for the effect of a paved or dirt road is with respect to having no road at all; thus a smaller increase in *purdah* observance when a paved road is present compared to a dirt road indicates a decrease in *purdah* observance when a dirt road is changed to a paved road. At this point, the symbol of women's empowerment can change from the presence of a veil to the absence of one.

These results point to the possibility that there is a threshold for the effect of physical development on women's empowerment. Empowerment is maximized when a village is developed enough to have a dirt road, but when levels of development increase past that, the pace at which new ideas are introduced to the village creates an inconsistent expression of gender norms. This awareness should be accounted for when governments or organizations plan development initiatives.

Education

I analysed the effect of education using either relative (husband's education – wife's education) or absolute education independent variables, depending on which gave a more significant effect, and found that education empowers the individual who possesses that education and distributes the decision-making power towards them. In particular, decisions regarding the number of children usually involved contraceptive use, which is highly correlated to a woman's education. I thus included a contraceptives use variable in that regression and found that this effect was larger and more significant than the wife's education on the number of children a couple has. The endogeneity of contraception, education, and various development indicators make my results slightly difficult to interpret; however, including the variable was more important than omitting a potentially significant factor affecting childbirth. A basic level of education (1-9 years) was enough to increase a wife's likelihood of using contraception; any education after that level decreased contraceptive use.

Table 13
Effect of Relative Education

Regression type Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
What to cook on a daily basis	-0.0025**	0.0016*	--	--	0.9874**
	(0.001)	(0.001)	--	--	(0.005)
Whether to buy an expensive item	-0.0009*	--	--	--	-0.0009*
	(0.000)	--	--	--	(0.000)
What to do if a child falls sick	--	0.0018*	--	--	--
	--	(0.001)	--	--	--
Whom couple's children should marry	-0.0010*	--	--	--	0.9787*
	(0.000)	--	--	--	(0.009)
Whether respondent practices *purdah*	-0.0019**	--	--	--	1.0156**
	(0.001)	--	--	--	(0.006)

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1

Table 14
Effect of Wife's Education (1-9 years)

Regression type Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
What to cook on a daily basis	--	--	-0.0572***	--	--
	--	--	(0.006)	--	--
Whether to buy an expensive item	--	0.0600***	-0.0014	-0.0679***	--
	--	(0.008)	(0.003)	(0.006)	--
How many children the couple has	0.0143*	0.0078	-0.0117**	--	1.1312*
	(0.007)	(0.008)	(0.004)	--	(0.072)
What to do if a child falls sick	0.0241**	--	-0.0130***	--	1.1584**
	(0.009)	--	(0.004)	--	(0.059)
Whom couple's children should marry	--	0.0427***	-0.0098**	-0.0394***	--
	--	(0.009)	(0.003)	(0.007)	--

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1

Table 15
Effect of Wife's Education (10-20 years)

	(1)	(2)	(3)	(4)	(5)
Regression type	OLS	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Senior Male	Respondent
What to cook on a daily basis	--	--	-0.0858***	--	--
	--	--	(0.011)	--	--
Whether to buy an expensive item	--	-0.0875***	-0.0104*	0.0672***	--
	--	(0.016)	(0.005)	(0.015)	--
How many children the couple has	0.0276*	-0.0157	-0.0251***	--	1.2615*
	(0.013)	(0.015)	(0.005)	--	(0.132)
What to do if a child falls sick	0.0408**	--	-0.0205**	--	1.2805**
	(0.015)	--	(0.007)	--	(0.108)
Whom couple's children should marry	--	-0.1155***	-0.0099	0.0848***	--
	--	(0.017)	(0.006)	(0.015)	--

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1

Table 16
Effect of Husband's Education (1-9 years)

	(1)	(2)	(3)	(4)	(5)
Regression type	OLS	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Senior Male	Respondent
What to cook on a daily basis	--	--	-0.0171**	--	--
	--	--	(0.006)	--	--
Whether to buy an expensive item	--	0.0451***	-0.0050*	-0.0352***	--
	--	(0.008)	(0.003)	(0.006)	--
How many children the couple has	0.0068	0.0029	-0.0064*	--	1.0626
	(0.006)	(0.007)	(0.004)	--	(0.063)
What to do if a child falls sick	-0.0010	--	-0.0103**	--	0.9890
	(0.007)	--	(0.004)	--	(0.046)
Whom couple's children should marry	--	0.0344***	0.0035	-0.0359***	--
	--	(0.008)	(0.003)	(0.006)	--

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1

Table 17
Effect of Husband's Education (10-20 years)

Regression type Variables/Family member with most say	(1) OLS Respondent	(2) OLS Husband	(3) OLS Senior Female	(4) OLS Senior Male	(5) Logistic Respondent
What to cook on a daily basis	--	--	-0.0388***	--	--
	--	--	(0.011)	--	--
Whether to buy an expensive item	--	0.1267***	-0.0098*	-0.1156***	--
	--	(0.014)	(0.005)	(0.011)	--
How many children the couple has	0.0028	0.0238*	-0.0199***	--	1.0212
	(0.012)	(0.014)	(0.005)	--	(0.105)
What to do if a child falls sick	-0.0010	--	-0.0157*	--	0.9898
	(0.014)	--	(0.007)	--	(0.085)
Whom couple's children should marry	--	0.0905***	0.0133*	-0.1020***	--
	--	(0.015)	(0.007)	(0.012)	--

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1

For a wife, relative education is more important for most decisions, and this underscores the importance of reducing the education gender gap. A husband with more education than his wife decreases the wife's likelihood to have most say regarding cooking, purchasing and marriage decisions by 0.25, 0.09 and 0.10 percentage points (significant at the 10% level). A more educated husband also decreases the likelihood that the respondent wears the veil by 0.19 percentage points (significant at 5%), implying that this decision also involves negotiation between the couple and a more educated husband can influence his wife to abandon traditional norms.

The exceptions to the importance of relative education are decisions regarding childbearing and childcare, which are dependent on absolute levels of education. This is probably because childbearing and childcare require more specialized types of knowledge; thus in this case education cannot merely boost a woman's confidence to increase her involvement in the decision-making process. The woman's ability to use and

articulate information specific to childbirth and childcare enables her to gain the decision-making power.

On the other hand, absolute levels of education distribute decision-making power towards a husband more often; relative education matters only with cooking and childcare decisions. Cooking and childcare, being less important to a husband, are decisions he would take charge of only if he had more education than his wife. A husband with a higher level of education (10-20 years) has a higher likelihood of gaining most say in purchasing, number of children, and marriage decisions than a husband with less or no education. The effect of a husband having a higher level of education for purchasing, childbearing and marriage decisions is 12.67, 2.38 and 9.05 percentage points (significant at 1%, 10% and 1% levels respectively). These effects are larger and more significant than that of a husband having a basic level of education (4.51 at 1%, 0.0029—not significant, and 3.44 at 1% respectively).

Generally, the more education a couple has, the lower the likelihood a senior couple has most say in a decision. The only two exceptions to this is the effect of a highly educated husband and highly education wife. A highly educated husband is correlated with both the husband and senior female's propensity to gain most say; this likelihood increases by 9.05 and 1.33 percentage points, significant at 1% and 10%, respectively. A possible explanation for this is that a highly educated husband is likely to have a highly educated mother with extensive social networks; thus the senior female's role in seeking out an equally qualified spouse for her grandchildren is increased. A senior male with a highly educated daughter-in-law is 6.72 and 8.48 percentage points more likely to have most say in purchasing and marriage decisions respectively (both significant at 1%).

A wife with basic education has a lower likelihood of having the most say regarding purchasing, childbearing and marriage decisions. Compared to a wife with no education, the likelihood of the husband having the most say in those decisions increases by 6.00, 0.78, and 4.27 percentage points respectively; the effect on purchasing and marriage decisions are significant at 1% while the effect on childbearing is not significant. These results are rather counterintuitive, since wives with more education should feel more confident to make decisions. If this is not the case, the basic level of education women receive may not be applicable to their daily lives, and educators should compare the teaching methods and concepts at basic levels of education with those at a higher level to investigate this further.

Women's education is highly correlated with contraceptive use; thus to control for the effect of contraceptives, I included a contraceptives variable and analyzed its effect on childbearing decisions (Tables 18 and 19). The use of contraceptives has the largest and most significant effect on the wife's empowerment in childbearing decisions. Using contraceptives increased the wife's likelihood to have most say in the decision by 3.13 percentage points (significant at 1%), compared to the effect of a *Mahila Mandal*, which was 2.44 percentage points (significant at 1%), the presence of a dirt road at 2.58 percentage points (significant at 10%) and the effect of a wife's gaining 10-20 years of education (2.76 percentage points; significant at 10%). However, when I regressed the use of contraceptives against determinants of its use, I found that the presence of a *Mahila Mandal* and a high level of education decreased the likelihood of contraceptive use. This is unusual given common assumptions that women's organizations, women's education, and contraceptive use are positively related. The high level of endogeneity

between these variables, may have biased the coefficients. However, if these results are consistent, the presence of *Mahila Mandals* and women's education may offset gains from contraceptive use, cancelling out any net gains in empowerment.

Table 18.
OLS Regression Model: How many children the couple has

	(1)	(2)	(3)	(4)
Regression Type	*OLS*	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Respondent
Use of contraceptives	0.0313***	-0.0093	-0.0084*	1.3251***
	(0.006)	(0.007)	(0.004)	(0.076)
Mahila Mandal in village	0.0244***	-0.0318***	0.0094*	1.2417***
	(0.007)	(0.008)	(0.004)	(0.077)
Presence of dirt road	0.0258*	-0.0485***	0.0139*	1.2702*
	(0.012)	(0.014)	(0.006)	(0.143)
Presence of paved road	0.0095	-0.0180	0.0097	1.1079
	(0.013)	(0.014)	(0.007)	(0.129)
Years paved road has existed	-0.0001	0.0001	-0.0001	0.9990
	(0.000)	(0.000)	(0.000)	(0.002)
Wife's education 1-9 years	0.0143*	0.0078	-0.0117**	1.1312*
	(0.007)	(0.008)	(0.004)	(0.072)
Wife's education 10-20 years	0.0276*	-0.0157	-0.0251***	1.2615*
	(0.013)	(0.015)	(0.005)	(0.132)
Husband's education 1-9 years	0.0068	0.0029	-0.0064*	1.0626
	(0.006)	(0.007)	(0.004)	(0.063)
Husband's education 10-20 years	0.0028	0.0238*	-0.0199***	1.0212
	(0.012)	(0.014)	(0.005)	(0.105)
NGO in village	0.0119	-0.0191*	0.0045	1.1263
	(0.009)	(0.011)	(0.005)	(0.090)
National Maternity Benefit Scheme	-0.0091	0.0230**	-0.0081*	0.9150
	(0.007)	(0.008)	(0.004)	(0.055)
Women's Welfare Organization	0.0125*	0.0042	-0.0112***	1.1117*
	(0.007)	(0.008)	(0.003)	(0.068)
Household assets	0.0003	-0.0039***	0.0019***	1.0025
	(0.001)	(0.001)	(0.000)	(0.007)
Number of children under 14	-0.0075***	-0.0013	0.0068***	0.9319***
	(0.002)	(0.002)	(0.001)	(0.015)
Brahmin	-0.0131	0.0230	-0.0007	0.8925
	(0.018)	(0.019)	(0.009)	(0.129)
High caste	-0.0048	-0.0007	0.0008	0.9693
	(0.009)	(0.011)	(0.005)	(0.082)
Dalit	0.0055	-0.0111	0.0056	1.0552
	(0.008)	(0.009)	(0.004)	(0.073)
Adivasi	-0.0035	0.0049	0.0001	0.9773
	(0.010)	(0.012)	(0.005)	(0.094)
Muslim	-0.0149	0.0318**	-0.0206***	0.8833
	(0.011)	(0.012)	(0.005)	(0.090)
Sikh/Jain	0.0122	0.0201	-0.0260	1.1462
	(0.027)	(0.031)	(0.016)	(0.288)
Christian	-0.0712*	0.0718*	-0.0047	0.5463*
	-0.037	(0.040)	(0.012)	(0.178)
Village and household-level controls?	Yes	Yes	Yes	Yes
State Controls?	Yes	Yes	Yes	Yes
Constant	0.0184	0.9285***	0.0081	0.0523***

	(0.021)	(0.024)	(0.011)	(0.010)
Observations	14,500	14,500	14,500	14,460
R-squared	0.0927	0.0901	0.0350	--
Adj. R-squared	0.0893	0.0867	0.0314	0.0965[1]
Log Likelihood	--	--	--	-5445.0895
Degrees of Freedom	--	--	--	53.0000
Chi-squared	--	--	--	1040.6687

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.1

[1] Pseudo R-squared

Table 19.
OLS Regression Model: Factors affecting use of contraceptives

Variables/Regression Type	(1) OLS	(2) Logistic
Mahila Mandal in village	-0.0389***	0.8279***
	(0.009)	(0.036)
NGO in village	-0.0060	0.9696
	(0.012)	(0.058)
National Maternity Benefit Scheme	0.0099	1.0544
	(0.009)	(0.046)
Women's Welfare Organization	-0.0470***	0.7843***
	(0.009)	(0.034)
Presence of dirt road	0.0216	1.1173
	(0.016)	(0.090)
Presence of paved road	0.0053	1.0331
	(0.017)	(0.086)
Years paved road has existed	0.0004	1.0020
	(0.000)	(0.001)
Household assets	0.0094***	1.0477***
	(0.001)	(0.005)
Wife's education 1-9 years	0.0170*	1.0870*
	(0.010)	(0.052)
Wife's education 10-20 years	-0.0294*	0.8680*
	(0.017)	(0.071)
Husband's education 1-9 years	-0.0009	0.9978
	(0.009)	(0.042)
Husband's education 10-20 years	-0.0075	0.9641
	(0.016)	(0.077)
Number of children under 14	0.0169***	1.0867***
	(0.002)	(0.013)
Brahmin	0.0360	1.1958
	(0.022)	(0.134)
High caste	0.0689***	1.4115***
	(0.012)	(0.089)
Dalit	-0.0120	0.9436
	(0.010)	(0.047)
Adivasi	-0.0411**	0.8340**
	(0.014)	(0.055)
Muslim	-0.1289***	0.5110***
	(0.014)	(0.038)
Sikh/Jain	0.0501	1.2129
	(0.040)	(0.210)
Christian	0.0147	1.0694
	(0.054)	(0.255)
Village and household-level controls?	Yes	Yes
State Controls?	Yes	Yes
Constant	0.6261***	1.6544***
	(0.027)	(0.223)
Observations	14,853	14,808
R-squared	0.1805	--

Adj. R-squared	0.1776	0.1371[1]
Log Likelihood	--	-8806.6752
Degrees of Freedom	--	52.0000
Chi-squared	--	2310.7169

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1
[1] Pseudo R-squared

Conclusion

This paper gives the reader an overview of how *Mahila Mandals*, physical development and education affect six common types of decisions within India. The results show that development has significant effects on intra-household bargaining decisions and that any sort of development focused on households should be sensitive to this fact. Development workers should be careful not to alienate men in the process of empowering women, particularly in such a traditionally patriarchic society. In order for actual gender mainstreaming to occur, men need to understand the importance women can play in wider society and both parties should work towards collaborating with each other.

The process of gender mainstreaming thus involves both ensuring that women are equipped to contribute meaningfully to society as well as strengthening women's networks and their sense of identity. *Mahila Mandals*, local governments, and development workers can aid this process by engaging the rest of the community with programs that underscore the specific skills and experiences women add to society. For example, they can highlight the success particular women have had in microcredit programs, local politics or education, focusing on how these successes eventually benefit the rest of the community. Women participants seem to benefit the most from *Mahila Mandal*s' childcare and childbearing services; thus executive boards should continue to add to and refine these programs, incorporating past participants' feedback.

Local governments should continue to encourage women to gain more education, since this generally increases levels of empowerment. In particular, they should focus on closing the education gender gap, particularly since educated husbands are likely to empower their wives. The government should also examine if the education system is

equipping women adequately for their lives, particularly if most women have a basic level of education of one to nine years and this level of education decreases women's propensity to have most say in the decision-making process. I would recommend comparing the content and style of basic and higher-level education to determine factors affecting the disparity in results between the two types of education, then work to incorporate these factors into the basic level of education. For example, if the basic level of education administered to women emphasizes patriarchy, this could offset any gains in empowerment.

Changes in intra-household negotiations that arise as a result of empowered women complicate the process of development; any sense of male or senior female resentment at a wife's increased bargaining power could negatively affect the wife's position in the household as well as the overall stability of the household. Local governments and *Mahila Mandals* can mitigate such risks by capitalizing on the social networks that women naturally build when roads and *Mahila Mandals* are present. These networks can be formalized to organize cross-village exchanges on topics of interest. This can increase women's sense of identity and allow them to discuss how they can cope with the identity changes they are experiencing and express them constructively when negotiating with their family members.

More research can be done to build on the work of this paper. The empowerment variables used in this paper indicated which family member had the most say in each decision. These changes are fairly drastic and this marginal effect does not fully capture the changes in intra-household bargaining that may arise as a result of development. If development inputs cause a respondent to be more involved in the decision but not to

have most say in the decision, the effect is not captured by the empowerment variables. Analyzing the effect of development variables on empowerment variables that indicate which family members have any say in the decision at all would supplement the research on this topic. Additionally, to ensure the most robust results, an estimation method that takes into account endogeneity between village characteristics and development inputs can be used.

One puzzling finding raised by this paper is why *Mahila Mandals* and higher levels of education decrease contraceptive use. Most important determinants of contraceptive use were included in the regression, but the possibility of omitted variable bias is always possible; a better form of estimation that takes into account the endogeneity of contraceptive use with other development variables should be used to investigate this finding. Contraceptive use is generally considered to be an important factor in increasing women's empowerment and improving overall household outcomes. If other development inputs such as *Mahila Mandals* and women's education impede contraceptive use, governments and development organizations need to be more careful about how they administer these forms of development, particularly since they tend to go hand-in-hand.

A final avenue of further research is the effect of development on cultural practices such as *purdah* observance. My results suggest that outsiders should be sensitive to the changes in identity that result from women's empowerment and thus should be careful not to impose rigid interpretations on traditional symbols. As the effect of having a paved road and the decision to observe *purdah* shows, cultural reinterpretation occurs frequently in rapidly changing societies. Passing too quick a

judgment on these symbols could alienate women and destabilize larger social systems such as the household and the village. Empirical research can be done on the effect of development on other cultural practices such as religion and the arts to ascertain how development workers can empower individuals in a community in the most constructive manner.

Development is a complicated matter; it requires governments, development organizations, and the community to have a collaborative approach towards understanding the risks and advantages of development inputs in a culturally sensitive manner. At the same time, a quantitative understanding of development effects and the importance of economic gain should be taken into account. Women's empowerment is a useful development goal and steps should be taken to close the gender gap, but it is only one aspect of development and should not be overly emphasized lest it alienates other members of the community. It also runs the risk of being yet another temporary development fad if its results are unsustainable. To mitigate this risk, women's organizations should work to engage the entire household. This will ensure that the benefits of empowering women are spread and communicated to the rest of the community, ultimately increasing the village's ability to decrease poverty.

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Appendix 1: OLS & Logistic Regression—What To Cook on a Daily Basis

	(1)	(2)	(3)	(4)
Regression type	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Respondent
Mahila Mandal in village	0.0112	-0.0194***	0.0143*	1.0596
	(0.008)	(0.006)	(0.006)	(0.045)
Presence of dirt road	0.0100	0.0268*	-0.0313*	1.0506
	(0.015)	(0.011)	(0.012)	(0.088)
Presence of paved road	0.0027	0.0340**	-0.0376**	1.0135
	(0.016)	(0.011)	(0.013)	(0.086)
Years paved road has existed	-0.0001	-0.0003	0.0003	0.9996
	(0.000)	(0.000)	(0.000)	(0.001)
Relative education of wife and husband	-0.0025**	0.0016*	--	0.9874**
	(0.001)	(0.001)	--	(0.005)
Wife's education 1-9 years	--	--	-0.0572***	--
	--	--	(0.006)	--
Wife's education 10-20 years	--	--	-0.0858***	--
	--	--	(0.011)	--
Husband's education 1-9 years	--	--	-0.0171**	--
	--	--	(0.006)	--
Husband's education 10-20 years	--	--	-0.0388***	--
	--	--	(0.011)	--
NGO in village	-0.0013	0.0035	0.0062	0.9913
	(0.011)	(0.008)	(0.008)	(0.058)
National Maternity Benefit Scheme	-0.0358***	0.0221***	0.0093	0.8295***
	(0.008)	(0.006)	(0.006)	(0.036)
Women's Welfare Organization	0.0130*	0.0093	-0.0194***	1.0746*
	(0.008)	(0.006)	(0.006)	(0.045)
Household assets	-0.0113***	-0.0014*	0.0141***	0.9430***
	(0.001)	(0.001)	(0.001)	(0.004)
Number of children under 14	-0.0199***	-0.0031*	0.0194***	0.9048***
	(0.002)	(0.002)	(0.002)	(0.010)
Brahmin	0.0401*	-0.0440***	0.0314*	1.2307*
	(0.019)	(0.013)	(0.018)	(0.112)
High caste	0.0271*	-0.0189*	0.0032	1.1573*
	(0.011)	(0.008)	(0.009)	(0.066)
Dalit	-0.0032	0.0162*	-0.0078	0.9806
	(0.009)	(0.007)	(0.007)	(0.048)
Adivasi	0.0086	-0.0186*	-0.0018	1.0585
	(0.012)	(0.009)	(0.009)	(0.077)
Muslim	0.0046	0.0023	-0.0080	1.0189
	(0.014)	(0.011)	(0.010)	(0.070)
Sikh/Jain	0.0858**	-0.0736***	-0.0263	1.5150**
	(0.033)	(0.018)	(0.029)	(0.236)
Christian	0.0590	0.0100	-0.0488*	1.3486
	(0.040)	(0.032)	(0.029)	(0.311)
Village and household-level controls?	Yes	Yes	Yes	Yes
State controls?	Yes	Yes	Yes	Yes
Constant	0.9477***	0.0443*	0.0335*	9.0008***
	(0.024)	(0.018)	(0.019)	(1.232)
Observations	17,650	17,650	16,209	17,610

R-squared	0.0789	0.0482	0.0598	--
Adj. R-squared	0.0763	0.0455	0.0567	0.0671[1]
Log Likelihood	--	--	--	-9725.9419
Degrees of freedom	--	--	--	50.0000
Chi-squared	--	--	--	1241.7928

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1
[1] Pseudo R-squared

Appendix 2: OLS & Logistic Regressions—Whether to Buy an Expensive Item

	(1)	(2)	(3)	(4)	(5)
Regression type	OLS	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Senior Male	Respondent
Mahila Mandal in village	0.0088*	-0.0212**	0.0032	0.0109*	1.1487*
	(0.004)	(0.008)	(0.003)	(0.006)	(0.085)
Presence of dirt road	0.0116	0.0329*	0.0015	-0.0431***	1.2292
	(0.008)	(0.015)	(0.006)	(0.012)	(0.186)
Presence of paved road	0.0059	0.0443**	-0.0041	-0.0419***	1.1350
	(0.008)	(0.015)	(0.006)	(0.013)	(0.175)
Years paved road has existed	0.0003*	-0.0004*	-0.0001	0.0003	1.0047*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Relative education of wife and husband	-0.0009*	--	--	--	0.9839*
	(0.000)	--	--	--	(0.009)
Wife's education 1-9 years	--	0.0600***	-0.0014	-0.0679***	--
	--	(0.008)	(0.003)	(0.006)	--
Wife's education 10-20 years	--	-0.0875***	-0.0104*	0.0672***	--
	--	(0.016)	(0.005)	(0.015)	--
Husband's education 1-9 years	--	0.0451***	-0.0050*	-0.0352***	--
	--	(0.008)	(0.003)	(0.006)	--
Husband's education 10-20 years	--	0.1267***	-0.0098*	-0.1156***	--
	--	(0.014)	(0.005)	(0.011)	--
NGO in village	0.0129*	-0.0161	0.0063	0.0020	1.2111*
	(0.007)	(0.011)	(0.004)	(0.008)	(0.116)
National Maternity Benefit Scheme	0.0029	-0.0157*	-0.0022	0.0161*	1.0510
	(0.004)	(0.008)	(0.003)	(0.006)	(0.083)
Women's Welfare Organization	-0.0038	0.0278***	-0.0034	-0.0136*	0.9456
	(0.004)	(0.008)	(0.003)	(0.006)	(0.070)
Household assets	-0.0021***	-0.0176***	0.0022***	0.0175***	0.9633***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.008)
Number of children under 14	-0.0041***	-0.0178***	0.0022*	0.0194***	0.9209***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.020)
Brahmin	0.0043	-0.0516*	0.0199*	0.0269	1.0501
	(0.010)	(0.022)	(0.010)	(0.018)	(0.196)
High caste	-0.0068	0.0047	-0.0010	0.0036	0.8506
	(0.005)	(0.011)	(0.004)	(0.010)	(0.097)
Dalit	0.0063	0.0117	-0.0059*	-0.0106	1.0938
	(0.005)	(0.009)	(0.003)	(0.007)	(0.092)
Adivasi	-0.0193**	0.0306**	-0.0030	-0.0039	0.7215*
	(0.007)	(0.012)	(0.004)	(0.009)	(0.092)
Muslim	-0.0120*	0.0377**	-0.0034	-0.0157	0.8150*
	(0.007)	(0.013)	(0.005)	(0.010)	(0.098)
Sikh/Jain	0.0292	-0.0250	-0.0162*	0.0186	1.6550
	(0.018)	(0.036)	(0.010)	(0.032)	(0.508)
Christian	0.0316	0.0798*	-0.0165***	-0.0833**	1.7128*
	(0.024)	(0.041)	(0.004)	(0.031)	(0.540)
Village and household-level controls?	Yes	Yes	Yes	Yes	Yes
State Controls?	Yes	Yes	Yes	Yes	Yes
Constant	0.0617***	0.9155***	-0.0015	0.0204	0.0655***
	(0.013)	(0.024)	(0.009)	(0.019)	(0.015)
Observations	17,643	16,197	16,197	16,197	17,528

R-squared	0.1329	0.0801	0.0184	0.0919	--
Adj. R-squared	0.1304	0.0770	0.0151	0.0889	0.1192[1]
Log Likelihood	--	--	--	--	-3961.2495
Degrees of Freedom	--	--	--	--	49.0000
Chi-squared	--	--	--	--	936.3072

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.1

[1] Pseudo R-squared

Appendix 3: OLS & Logistic Regression—How Many Children a Couple Has

	(1)	(2)	(3)	(4)
Regression Type	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Respondent
Mahila Mandal in village	0.0244***	-0.0318***	0.0094*	1.2417***
	(0.007)	(0.008)	(0.004)	(0.077)
Presence of dirt road	0.0258*	-0.0485***	0.0139*	1.2702*
	(0.012)	(0.014)	(0.006)	(0.143)
Presence of paved road	0.0095	-0.0180	0.0097	1.1079
	(0.013)	(0.014)	(0.007)	(0.129)
Years paved road has existed	-0.0001	0.0001	-0.0001	0.9990
	(0.000)	(0.000)	(0.000)	(0.002)
Use of contraceptives	0.0313***	-0.0093	-0.0084*	1.3251***
	(0.006)	(0.007)	(0.004)	(0.076)
Wife's education 1-9 years	0.0143*	0.0078	-0.0117**	1.1312*
	(0.007)	(0.008)	(0.004)	(0.072)
Wife's education 10-20 years	0.0276*	-0.0157	-0.0251***	1.2615*
	(0.013)	(0.015)	(0.005)	(0.132)
Husband's education 1-9 years	0.0068	0.0029	-0.0064*	1.0626
	(0.006)	(0.007)	(0.004)	(0.063)
Husband's education 10-20 years	0.0028	0.0238*	-0.0199***	1.0212
	(0.012)	(0.014)	(0.005)	(0.105)
NGO in village	0.0119	-0.0191*	0.0045	1.1263
	(0.009)	(0.011)	(0.005)	(0.090)
National Maternity Benefit Scheme	-0.0091	0.0230**	-0.0081*	0.9150
	(0.007)	(0.008)	(0.004)	(0.055)
Women's Welfare Organization	0.0125*	0.0042	-0.0112***	1.1117*
	(0.007)	(0.008)	(0.003)	(0.068)
Household assets	0.0003	-0.0039***	0.0019***	1.0025
	(0.001)	(0.001)	(0.000)	(0.007)
Number of children under 14	-0.0075***	-0.0013	0.0068***	0.9319***
	(0.002)	(0.002)	(0.001)	(0.015)
Brahmin	-0.0131	0.0230	-0.0007	0.8925
	(0.018)	(0.019)	(0.009)	(0.129)
High caste	-0.0048	-0.0007	0.0008	0.9693
	(0.009)	(0.011)	(0.005)	(0.082)
Dalit	0.0055	-0.0111	0.0056	1.0552
	(0.008)	(0.009)	(0.004)	(0.073)
Adivasi	-0.0035	0.0049	0.0001	0.9773
	(0.010)	(0.012)	(0.005)	(0.094)
Muslim	-0.0149	0.0318**	-0.0206***	0.8833
	(0.011)	(0.012)	(0.005)	(0.090)
Sikh/Jain	0.0122	0.0201	-0.0260	1.1462
	(0.027)	(0.031)	(0.016)	(0.288)
Christian	-0.0712*	0.0718*	-0.0047	0.5463*
	(0.037)	(0.040)	(0.012)	(0.178)
Village and household-level controls?	Yes	Yes	Yes	Yes
State Controls?	Yes	Yes	Yes	Yes
Constant	0.0184	0.9285***	0.0081	0.0523***
	(0.021)	(0.024)	(0.011)	(0.010)
Observations	14,500	14,500	14,500	14,460

R-squared	0.0927	0.0901	0.0350	--
Adj. R-squared	0.0893	0.0867	0.0314	0.0965[1]
Log Likelihood	--	--	--	-5445.0895
Degrees of Freedom	--	--	--	53.0000
Chi-squared	--	--	--	1040.6687

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.1

[1] Pseudo R-squared

Appendix 4: OLS & Logistic Regressions—What to Do When a Child Falls Sick

Regression Type	(1) OLS	(2) OLS	(3) OLS	(4) Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Respondent
Mahila Mandal in village	0.0224**	-0.0300***	0.0075*	1.1477**
	(0.008)	(0.008)	(0.003)	(0.054)
Presence of dirt road	0.0498***	-0.0620***	0.0210***	1.4270***
	(0.013)	(0.015)	(0.005)	(0.137)
Presence of paved road	0.0584***	-0.0842***	0.0189**	1.5134***
	(0.013)	(0.016)	(0.006)	(0.149)
Years paved road has existed	-0.0002	0.0001	0.0000	0.9988
	(0.000)	(0.000)	(0.000)	(0.001)
Relative education of wife and husband	--	0.0018*	--	--
	--	(0.001)	--	--
Wife's education 1-9 years	0.0241**	--	-0.0130***	1.1584**
	(0.009)	--	(0.004)	(0.059)
Wife's education 10-20 years	0.0408**	--	-0.0205**	1.2805**
	(0.015)	--	(0.007)	(0.108)
Husband's education 1-9 years	-0.0010	--	-0.0103**	0.9890
	(0.007)	--	(0.004)	(0.046)
Husband's education 10-20 years	-0.0010	--	-0.0157*	0.9898
	(0.014)	--	(0.007)	(0.085)
NGO in village	0.0168	-0.0171	-0.0025	1.1029
	(0.011)	(0.011)	(0.005)	(0.068)
National Maternity Benefit Scheme	0.0105	-0.0016	-0.0134***	1.0626
	(0.008)	(0.009)	(0.004)	(0.052)
Women's Welfare Organization	0.0053	0.0030	0.0033	1.0384
	(0.008)	(0.008)	(0.003)	(0.049)
Household assets	-0.0030**	-0.0064***	0.0028***	0.9823**
	(0.001)	(0.001)	(0.000)	(0.005)
Number of girls under 14 years	-0.0039	-0.0109**	0.0061***	0.9741
	(0.003)	(0.003)	(0.002)	(0.019)
Number of boys under 14 years	-0.0108***	-0.0088*	0.0050**	0.9309***
	(0.003)	(0.004)	(0.002)	(0.019)
Brahmin	0.0026	-0.0377*	0.0194*	1.0058
	(0.019)	(0.020)	(0.012)	(0.128)
High caste	0.0052	0.0029	-0.0002	1.0393
	(0.011)	(0.012)	(0.005)	(0.068)
Dalit	0.0124	0.0039	-0.0109**	1.0859
	(0.009)	(0.010)	(0.004)	(0.060)
Adivasi	0.0122	-0.0146	-0.0005	1.0915
	(0.011)	(0.013)	(0.005)	(0.086)
Muslim	0.0091	0.0070	-0.0022	1.0668
	(0.012)	(0.014)	(0.007)	(0.083)
Sikh/Jain	0.0383	-0.0444	-0.0059	1.1989
	(0.038)	(0.035)	(0.022)	(0.198)
Christian	0.0878*	0.0251	-0.0176	1.5428*
	(0.050)	(0.043)	(0.012)	(0.361)
Village and household-level controls?	Yes	Yes	Yes	Yes
State Controls?	Yes	Yes	Yes	Yes
Constant	0.0483*	0.9800***	-0.0235*	0.0887***
	(0.022)	(0.024)	(0.010)	(0.014)

Observations	15,740	17,182	15,740	15,706
R-squared	0.1184	0.0961	0.0312	--
Adj. R-squared	0.1153	0.0933	0.0278	0.1013^{1}
Log Likelihood	--	--	--	-7769.6853
Degrees of Freedom	--	--	--	54.0000
Chi-squared	--	--	--	1419.0489

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.1

[1] Pseudo R-squared

Appendix 5: OLS & Logistic Regressions—Whom Couple's Children Should Marry

	(1)	(2)	(3)	(4)	(5)
Regression Type	*OLS*	OLS	OLS	OLS	Logistic
Variables/Family member with most say	Respondent	Husband	Senior Female	Senior Male	Respondent
Mahila Mandal in village	0.0040	0.0076	0.0020	-0.0071	1.0824
	(0.004)	(0.008)	(0.003)	(0.006)	(0.084)
Presence of dirt road	0.0216**	0.0181	-0.0051	-0.0394**	1.5341*
	(0.007)	(0.016)	(0.007)	(0.013)	(0.263)
Presence of paved road	0.0175*	0.0191	-0.0048	-0.0339*	1.4480*
	(0.008)	(0.016)	(0.007)	(0.014)	(0.254)
Years paved road has existed	0.0002	-0.0001	-0.0001	-0.0001	1.0033
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Relative education of wife and husband	-0.0010*	--	--	--	0.9787*
	(0.000)	--	--	--	(0.009)
Wife's education 1-9 years	--	0.0427***	-0.0098**	-0.0394***	--
	--	(0.009)	(0.003)	(0.007)	--
Wife's education 10-20 years	--	-0.1155***	-0.0099	0.0848***	--
	--	(0.017)	(0.006)	(0.015)	--
Husband's education 1-9 years	--	0.0344***	0.0035	-0.0359***	--
	--	(0.008)	(0.003)	(0.006)	--
Husband's education 10-20 years	--	0.0905***	0.0133*	-0.1020***	--
	--	(0.015)	(0.007)	(0.012)	--
NGO in village	0.0056	0.0096	0.0008	-0.0027	1.0989
	(0.006)	(0.011)	(0.004)	(0.008)	(0.105)
National Maternity Benefit Scheme	0.0103*	-0.0170*	0.0002	0.0107	1.2166*
	(0.004)	(0.008)	(0.004)	(0.007)	(0.104)
Women's Welfare Organization	-0.0136**	0.0497***	-0.0055*	-0.0352***	0.7924**
	(0.004)	(0.008)	(0.003)	(0.006)	(0.065)
Household assets	-0.0009*	-0.0143***	0.0017***	0.0139***	0.9819*
	(0.000)	(0.001)	(0.000)	(0.001)	(0.008)
Number of girls under 14 years	-0.0023	-0.0163***	0.0034*	0.0169***	0.9501
	(0.002)	(0.003)	(0.001)	(0.003)	(0.033)
Number of boys under 14 years	-0.0076***	-0.0222***	0.0037*	0.0266***	0.8528***
	(0.002)	(0.004)	(0.002)	(0.003)	(0.031)
Brahmin	-0.0147*	-0.0154	0.0180*	0.0055	0.6845
	(0.009)	(0.022)	(0.011)	(0.019)	(0.161)
High caste	0.0068	-0.0206*	0.0016	0.0147	1.1289
	(0.006)	(0.012)	(0.005)	(0.010)	(0.124)
Dalit	0.0014	0.0041	0.0033	-0.0081	1.0246
	(0.005)	(0.009)	(0.004)	(0.008)	(0.094)
Adivasi	0.0076	0.0115	-0.0024	-0.0146	1.1472
	(0.007)	(0.012)	(0.004)	(0.010)	(0.146)
Muslim	-0.0130*	0.0423**	-0.0021	-0.0204*	0.8264
	(0.007)	(0.013)	(0.006)	(0.011)	(0.106)
Sikh/Jain	-0.0157	-0.0580	0.0060	0.0715*	0.6865
	(0.015)	(0.039)	(0.019)	(0.035)	(0.251)
Christian	0.0672*	0.0216	-0.0032	-0.0676***	1.8513*
	(0.033)	(0.044)	(0.012)	(0.019)	(0.491)
Village and household-level controls?	Yes	Yes	Yes	Yes	Yes
State Controls?	Yes	Yes	Yes	Yes	Yes
Constant	0.0334**	0.8934***	0.0007	0.0652**	0.0371***
	(0.013)	(0.025)	(0.011)	(0.020)	(0.010)

Observations	17,095	15,674	15,674	15,674	17004
R-squared	0.1678	0.1054	0.0146	0.1252	--
Adj. R-squared	0.1652	0.1022	0.0111	0.1221	0.1519^{1}
Log Likelihood	--	--	--	--	-3624.036
Degrees of Freedom	--	--	--	--	50
Chi-squared	--	--	--	--	971.8993

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1
[1] Pseudo R-squared

Appendix 6: OLS & Logistic Regressions—Whether Wife Practices *Purdah*

Variables/Type of regression	(1) OLS	(2) Logistic
Mahila Mandal in village	0.0420***	1.3787***
	(0.006)	(0.069)
Presence of dirt road	0.0766***	1.7362***
	(0.013)	(0.160)
Presence of paved road	0.0469***	1.4261***
	(0.013)	(0.136)
Years paved road has existed	0.0001	1.0005
	(0.000)	(0.002)
Relative education of wife and husband	-0.0019**	1.0156**
	(0.001)	(0.006)
NGO in village	-0.0376***	0.7614***
	(0.009)	(0.052)
National Maternity Benefit Scheme	-0.0101	0.9180
	(0.006)	(0.048)
Women's Welfare Organization	-0.0016	1.0189
	(0.006)	(0.051)
Household assets	0.0017*	1.0141**
	(0.001)	(0.005)
Number of children under 14 years	0.0037*	1.0277*
	(0.002)	(0.014)
Brahmin	0.0428**	1.3825**
	(0.015)	(0.171)
High caste	-0.0351***	0.7766***
	(0.009)	(0.051)
Dalit	-0.0024	0.9623
	(0.007)	(0.055)
Adivasi	-0.0970***	0.5375***
	(0.011)	(0.042)
Muslim	0.2524***	11.0644***
	(0.012)	(1.575)
Sikh/Jain	-0.2799***	0.2482***
	(0.035)	(0.048)
Christian	-0.0843**	0.4843*
	(0.026)	(0.170)
Village and household-level controls?	Yes	Yes
State Controls?	Yes	Yes
Constant	-0.0062	0.0344***
	(0.019)	(0.006)
Observations	17,814	17,683
R-squared	0.4749	--
Adj. R-squared	0.4734	0.4173[1]
Log Likelihood	--	-6961.7955
Degrees of Freedom	--	48.0000
Chi-squared	--	4921.0524

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.1
[1] Pseudo R-squared