MONSTER-IN-LAW?
THE EFFECT OF CORESIDENT MOTHER-IN-LAW ON THE WELFARE OF BANGLADESHI DAUGHTERS-IN-LAW

Draft only

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Abstract

In countries where the patriarchal joint family is the norm, most women live with their husband's family, at least during the early years of marriage. This paper investigates the causal effect of coresidence with the mother-in-law on the welfare of daughters-in-law. Data on 4,053 currently married women from the Matlab subdistrict of Bangladesh are used to capture the "mother-in-law effect". The estimation methods are Instrumental Variables, Heckman's Treatment Effects Model with Exclusion Restrictions, and also Fixed Effects on a subsample. While the IV is estimating a hybrid LATE in the presence of heterogeneous effects and multiple instruments, Heckman's model produces the mean effect of the treatment on the treated. Results indicate that living with the mother-in-law undermines a woman's autonomy and adversely affects her wellbeing. Women coresiding with the mother-in-law are significantly less likely to have participated in organizations such as microcredit projects. Mothers-in-law also have detrimental effects on the health of coresident daughters-in-law, as measured in terms of BMI. The study sheds light on the degree of responsibility that women themselves have in perpetuating their plight, and indicates the need for using selectively targeted behavior change communication tools to promote female empowerment, and also to improve the utilization of developmental programs in wide ranging areas from women's healthcare to microcredit activities.

1. Introduction

If the sheer number of mother-in-law jokes and horror stories in circulation the world over is any indication, there is no kin caricature that people love to hate as much as that of the evil mother-in-law, except, perhaps, for the wicked stepmother! In many societies, however, the presence of a mother-in-law in the household is more than a mere topic of jokes; it is a matter with serious welfare implications, at least for the coresident daughters-in-law. This paper is an attempt to measure the 'mother-in-law effect' in one such society, viz., rural Bangladesh.

In modern day nuclear families, particularly that of the west, the mother-in-law is only an occasional visitor. Therefore, in most cases, one might not expect to see much of a 'mother-in-law effect', adverse or otherwise. On the contrary, there is ample anthropological evidence that in societies where the patriarchal joint family is still the norm it may not be the case. This is especially true in the case of South Asia, home to about a quarter of the world's population (Cain et al. 1979; Dyson & Moore 1984). The role of the mother-in-law in household decision making and welfare is a matter of consequence in many other patriarchal societies too – in East Asia, in the Arab world and in many African countries.

UN Millennium Development Goal No.3 is "Promote gender equality and empower women". While a lot of attention is being devoted to women's empowerment, in the realms of research as well as policy, surprisingly very little of it is focused on the role that women themselves play in perpetuating their plight, and what they themselves can do to bring about positive changes. Herein, I try to throw one such aspect into sharp relief, viz., the part played by mothers-in-law; and also indicate a few developmental outcomes that can be affected through selective targeting of program components such as awareness campaigns at them.

Typically, in the patriarchal societies of rural South Asia, a son brings his bride to his parents' household and the couple lives there, at least during the initial years of their marriage. Using synthetic cohorts of women generated from the 1974 census data of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDRB) study area in Matlab, Bangladesh, Andrew Foster estimates that, on an average, a woman lives as a daughter-in-law in the father-in-law's household for about 4.2 years. However, there is

considerable heterogeneity in the duration of co-residence among various daughters-in-law, with at least one daughter-in-law living in the father-in-law's household for a substantial part of his tenure as household head (Foster 1993).

The nature of intrahousehold power allocation among the women of South Asia is such that during the period that a woman lives in the parents-in-law's household, she is subject to the authority of the mother-in-law and has limited role in household decision making. In a pathbreaking study that links demographic outcomes in South Asian societies to female autonomy, which in turn is significantly dependent on the prevailing kinship structure, Dyson & Moore, says

> "The fact that the in-coming female comes from another group means that in some ways she is viewed as a threat: her behavior must be closely watched; she must be re-socialized so that she comes to identify her own interests with those of her husband's kin; senior family wives tend to dominate young in-marrying wives" (Dyson & Moore 1983).

Living with the mother-in-law, in a vertically integrated patriarchal joint family, provides a young woman with the least amount of autonomy as compared to situations where she is the head of the household or the spouse of the head (Dyson & Moore 1983; Cain et. al 1979; Bloom et al. 2001) and this could have significant effects on her well-being.

To my knowledge, this is the first quantitative study that attempts to estimate the causal effect of coresidence with mother-in-law on the well-being of daughters-in-law, correcting for possible bias resulting from selection on unobservables. Considering coresidence with the mother-in-law an endogenous variable, I use Instrumental variables and Heckman's treatment effects model with exclusion restrictions to correct for selection bias. A sample of 4053 currently married women from the Matlab Health and Socio-economic Survey, 1996 is used for the analysis. On a subsample of the population, I also apply a homestead level fixed effects model to capture the 'mother-in-law effect' after controlling for homestead level fixed observable and unobservable characteristics.

Instead of concentrating on any one aspect of the daughter-in-law's welfare, I am looking at several important elements affecting her well-being, such as those that indicate her economic decision making capacity, control over health care etc., so as to shed light not only on the size, but also the breadth of 'mother-in-law effect'. I find that coresident

daughters-in-law are 7.9% less likely to have any say in the purchase of their own clothes. Results are suggestive that they are also more likely to have been prevented from working outside of their homes in the past year. Women who live with their mothers-in-law are 7.0% less likely to be members of organizations such as microcredit programs. The BMI of coresident women is lower by 0.35 units, on average, too. Mothers-in-law do not seem to affect coresident daughters-in-law's use of modern contraceptives. However, the result is mediated by a greater desire for more children.

A brief literature review is undertaken in the next section. I elucidate the phenomenon of 'mother-in-law effect' in patriarchal joint families in the third section. The fourth section describes the data and the fifth, the statistical models. The results are reported in the sixth section; and the seventh and final section summarizes the findings and concludes with a discussion of policy implications and future directions for research.

2. Literature Review

Though much has been written about the prevalence of high levels of gender inequality and low levels of female autonomy in South Asian societies, and its causes and consequences, with family structure being one of the frequently cited causes, very few empirical studies directly include coresidence with mother-in-law as a key independent variable. While analyzing the significance of household structure, the dominant position enjoyed by the mother-in-law in the intrahousehold power hierarchy, the degree of control she has over the lives of the younger women in the household and its possible effects on them are considered very important and theoretically discussed in many studies. However, in their empirical analyses, instead of trying to directly account for the 'mother-in-law effect', while a few do differentiate between the outcomes of the daughters-in-law and the other women of the household, most of them are content with just including a dummy variable indicating the household structure – joint vs. nuclear family. This paper hopes to contribute towards filling this gap in Gender and Development literature, a gap not unnoticed by researchers (Foster 2004; Balk 1997), by focusing attention on the estimation of the causal effect of mother-in-law on the well-being of coresident daughters-in-law.

Balk (1997) finds that position in the household as a daughter-in-law or sister-in-law has significant adverse effects on the mobility and decision making authority of rural

Bangladeshi women. Foster's (2004) analysis of the effect of joint residence on nutritional investments in rural Bangladeshi women suggests that intrinsic demand for heath is lower for daughters-in-law compared to other female members of the household. Neither of the studies separates out the 'mother-in-law effect' from the overall effect of joint residence.

The main shortcoming of the following studies that explicitly include coresidence with mother-in-law as one of the important variables is that they do not consider the possibility of selection bias. Jejeebhoy (2000), in her study on women's autonomy in rural India, uses coresidence with mother-in-law as one of the proxies for women's status and finds significant negative association between coresidence with mother-in-law and economic decision making and access to economic resources. From a sample of 717 urban squatter settlement households in Pakistan, Fikree et al. (2001) find that daughters-in-law are significantly more likely to use contraception in households where the mother-in-law reported that she discussed contraception with them. All the women in the sample lived with their mothers-in-law. Therefore, the study doesn't consider the question of distinguishing the contraceptive use of women who live with the mother-in-law from those who don't. In estimating the effect of various dimensions of women's autonomy on maternal healthcare utilization of 300 women in a North Indian city, Bloom, Wypij and Das Gupta (2001) finds that living with the mother-in-law decreases the decision making capacity of women, but that it has no effect on their freedom of movement, and only the latter significantly influences maternal healthcare utilization.

3. Mother-in-law effect

Women of South Asia, compared to their counterparts in most other regions of the world, enjoy very little autonomy and are the victims of severe gender discrimination at all levels, beginning at the household level. The prevalent kinship and household structures and social norms of patriarchy, patrilocal residence, extended family and gender stratification work together to hold South Asian women captive in a low level empowerment trap, with limited access to and control over information, resources and activities, severely constraining their effectiveness in implementing decisions that would improve their lives and those of their dear ones.

In South Asian societies, patrilineal, patrilocal extended family is still the norm, particularly in rural areas, where more than two thirds of the population still resides. Traditionally, a daughter is considered a temporary member of her natal family, with her marriage and subsequent migration to the husband's household attenuating the ties. She enters her affinal household a stranger, an outsider. A woman's acceptance and status in her marital home is mainly dependent on her reproductive success, particularly production of sons; age and marital duration buy her more autonomy too.

Intrahousehold allocation of power and authority is mostly based on gender, kinship and age. There is gendered division of rights and responsibilities; and within the realm of activities allotted to the women, there operates a power hierarchy with the mother-in-law at the top. A daughter-in-law is subject to her authority and even her access to her own husband and her contact with natal kin are often mediated by the mother-in-law. Elder daughters-in-law enjoy relatively more autonomy compared to the younger ones, as their status in the household rises with age, marital duration and reproductive success (Dyson and Moore 1983; Cain 1978; Jejeebhoy 2000; Bloom et al. 2001). In the words of Goode (1970),

> "The eldest woman in the household, if wise and strong-willed, often gained considerable authority over time, and in any event she could control the women."

Though the prevalent intrahousehold power hierarchy is very much biased against daughters-in-law throughout South Asia, there is considerable variation in the situation by region, religion, caste and class (not forgetting idiosyncratic differences at the household and individual levels). While North India, Pakistan and Bangladesh are considered similar as far as seclusion and subjugation of women are concerned, South India, with its less strict kin and locational exogamy rules and more gender equitable inheritance practices, is thought to provide women with a greater degree of autonomy in their marital homes and outside. (Dyson and Moore 1983; Jejeebhoy 2000). In this regard, the finding of Irudaya Rajan et al.'s Kerala Mental Health Survey, 2004, that, for married women of Kerala – the South Indian state wellknown for its gender equitable demographic outcomes – the mother-in-law is the primary source of stress and mental and physical violence, is enlightening.

On the one hand, while it is argued that Islam, with its more restrictive 'purdah' system, renders a Muslim woman much more powerless vis-à-vis women of other religions in her life outside the confines of the household, it is also said that certain Islamic marriage practices such as marriage between cousins and greater connection with natal kin may be more empowering for her in intrahousehold interactions. Empirical evidence is, however, mixed (Jejeebhoy and Sathar 2001; Bloom et al. 2000; Morgan et al. 2002).

Jejeebhoy and Sathar (2001) report from a sample of currently married women that while, 89.6, 87.2, 93.6, 69.3 and 75.7 percent of Punjabi Muslim women of Pakistan, Muslim and Hindu women of the North Indian state of Uttar Pradesh and Muslim and Hindu women of the South Indian state of Tamil Nadu, respectively, coresided with the in-laws in their first residence after marriage, 57.0, 40.1, 58.9, 31.9 and 24.5 percent currently lived with the mother-in-law. As these figures indicate, most women live with the mother-in-law in the early days of their marriage. During the initial years of marriage, a period when young women would need to make major fertility and human capital investment decisions pertaining to their own nuclear sub-households, they are left with little power or authority.

At least one of the daughters-in-law will live with the in-laws continuously throughout, as her husband would be inheriting the parental household, while the others may move out as and when household partition, formal or informal, occurs. Some or all of the sons may also choose to continue to live together in the original household even after the headship of the household is transferred from the father to one of the sons. Partition of the household is precipitated by a variety of factors such as crowding, inequality in terms of the relative contributions from and benefits to the sub-households, occupational diversification of household members and the death of the patriarch. Discord among the women of the household is also sometimes blamed for the break up of the joint family. Partition may occur earlier among landless households as compared to landed households, as the latter may have an incentive to prevent or delay the division of landholdings (Foster 1993; Joshi & Singh 2003; Amin 1998; Caldwell et al. 1984).

The traditional stereotype of dominant mother-in-law and submissive daughter-in-law obscures the more complex and subtle interactions that could, in reality, be taking

place between the two. Along the life cycle of a household, power shifts in favour of the daughters-in-law; a rational mother-in-law, who would be cognizant of the fact, has the incentive to pursue a more pragmatic and less conflict-ridden relationship with the daughters-in-law during the early years of their coresidence. In rural Bangladesh, the matter has been gaining even more significance in recent years- the rising life expectancy, particularly with women inching ahead of men in terms of longevity, in conjunction with the prevalent age difference at marriage between men and women, ensures that more and more mothers-in-law face the prospect of living many years as widows in households headed by their sons, virtually at the mercy of daughters-in-law for care and support in their old age. This could mean more farsighted behavioural changes on the part of the mothers-in-law. Based on ethnographic evidence from urban low income households from the South Indian state of Tamil Nadu, Verra-Sanso (1999) describes a scenario where greater opportunities for residential and financial independence and aspirations for upward mobility among the young are weakening the power of the mothers-in-law, even during the early years of marriage, necessitating them to strategically adjust their behaviour towards the daughter-in-law so as to avert neglect or abandonment in old age.

In the event of the mother and daughter-in-law sharing identical preferences, with regard to household consumption, production and distribution decisions, the intrahousehold power hierarchy operating against the latter need not result in outcomes disadvantageous to her. The balance of power doesn't matter in that case. However, preferences are not very likely to be identical – while the mother-in-law optimizes the welfare of the joint family, the interests of a daughter-in-law lie in maximizing her own nuclear sub-household level utility. In the presence of heterogeneous preferences, the level of autonomy enjoyed by the daughter-in-law and the bargaining power she holds in household decision making directly affects her welfare, as theories and empirical studies of intrahousehold bargaining and collective decision making would suggest (Browning and Chiappori 1998; Rangel 2006).

4. Data

The 1996 Matlab Health and Socio-economic Survey (MHSS) is the source of data for this paper. Matlab is a rural sub-district in the Ganges-Meghna delta in southern

Bangladesh. [1] For the people of this flood prone area, with a population of about 212,238 as per the 1993 census, subsistence agriculture and fishing provide the main sources of livelihood. Thirty percent of the families lack arable land. Eightyfive percent of the population is Muslim, and the remaining mostly Hindu.

MHSS, 1996 is a rich cross-sectional data set, also including detailed retrospective information, on respondents, their parents, siblings and children from 4364 households clustered in 2687 residential compounds called 'baris'. The bari forms the primary sampling unit of the MHSS.[2] Most of the households in a bari share blood or affinal relations. My working sample is restricted to 4053 currently married women living with their husbands. Widows, divorced or separated women and 'left-behind wives' of migrant laborers are excluded from the sample for fear of unobservable confounding factors and also because of unavailability of data on in-laws.[3]

889 co-resident daughters-in-law respondents are identified in the sample. They form 21.9 % of the women in the sample.[4] The proportion of coresiding daughters-in-law in the sample is not representative of the population. Due to the sampling procedure followed at the household level, while currently married women living in nuclear households are certain to be respondents, as they would be the head or spouse of the head, the daughters-in-law co-residing with the mother-in-law are less likely to be selected. Among the coresident daughters-in-law, those that live in households headed by their husbands or head the households themselves will always be selected. But, the chances of getting selected are much less for a daughter-in-law who coresides in a household headed by the parents-in-law. Table 1 has the coresident daughters-in-law categorized by relationship to the head of household. Among the coresident respondents, 61.8 % live with the mother-in-law in households headed by their husbands. Only 28.8%

[1] Since 1966, ICDDR, B has been maintaining a demographic surveillance system in Matlab and undertaking projects and research in areas such as family planning, maternal and child health etc.
[2] From each randomly selected bari, a maximum of two households was selected. All individuals over the age of fifty, their spouses even if they are below fifty, the head of the household and his/her spouse were selected for interview within each selected household. Among the remaining 15-49 year olds in the household, an individual was chosen at random and if he/she was married, the spouse was also chosen. Two children were also randomly picked.
[3] The women are linked to the mothers-in-law through their husbands/head of households. Linking to the in-laws through husband is not possible for these women, and linking through head of households will work only if they co-reside with the in-laws.
[4] The mothers-in-law of 46.5% of the women in the sample are still alive.

coreside in households headed by fathers-in-law and 5.2 % in households headed by the mother-in-law. In the household roster, which lists every member of a selected household, it is found that 926 women from 787 households are listed as the 'son's wife' of the head of the household. Less than one third of them of them find a place in the working sample. In 122 parent headed households, 251 sisters-in-law, i.e., wives of the sons, coreside. In only one such household do both the daughters-in-law get selected for interview. However, only one of those sisters-in-law is present in the working sample as the spouse of the other does not live in the household. In 29 son headed households, where the mother-in-law is also present, we have multiple daughters-in-law respondents. In 15 households multiple generations of coresiding mothers and daughters-in-law are found – in those, the mother-in-law of the younger daughter-in-law is the daughter-in-law of the older mother-in-law. 10 of those households have multiple generations of daughters-in-law represented in the working sample.

A comparison of a few of the main demographic and socio-economic characteristics of the women who live with the mother-in-law and those who don't are given in Table 2. The most striking difference is in age – the coresident women, with a mean age of twentynine years, are more than a dozen years younger, on average, than non-coresident women. They get married at a later age and have fewer children. They are slightly more educated; their husbands and even their fathers are more educated too. While 61% of the coresident women were paid dowry, only 29% of the others received it. Coresident households owned, on an average, 3.5 acres of farmland, while the others had 2.4 acres, though the difference is not statistically significant. However, it is to be noted that 27 % of coresident women and 35 % of non-coresident women come from households without any agricultural land. Most of them do live in homes owned by their households. Quite a bit of the differences outlined above are likely to be driven by age or cohort effects – even dowry and the amount of land.[5]

[5] Among Bangladeshi Muslims, the dowry system gained prominence over the traditional practice of bride price only in the 1960's (Amin 1997). The higher landholdings among the coresident women, who are relatively younger, could be, to some extent, due to the fact that household partition may not yet have taken place for many of them, whereas in the case of the non-coresident households, it would already have taken place. However, it is also true that coresidence, and longer periods of coresidence are more common among the relatively well-off. As already mentioned, household partition occurs comparatively late in landed families because of the greater incentive for delay or prevention of the fragmentation of the family estate.

Table 3 sketches the profile of mothers-in-law based on the information pertaining to the mothers-in-law of the co-resident daughters-in-law from the working sample. Their mean age is 61.7 years. 64% of them are widows and around 5 % of them head their own households. Only 13 % of them have been to school.

5. Statistical framework and estimation strategy

i. Selection Bias

Coresidence of mother and daughter-in-law is not a random event; but a matter of choice. However, few studies looking at the effect of household structure on women duly consider this possibility. Most studies treat household structure as given, rather than the product of a conscious decision taken by the participants in the relationship. Women with certain characteristics – some of which may be unobservable to the researcher – may choose to coreside. These traits that influence people's decision to coreside, may also be influential on the outcomes that are to be studied. Analyses that ignore this possibility of selection on unobservables, while controlling for the more easily observable traits like age, education etc., are running the risk of ending up with biased results.[6]

Selection into joint residence is likely to occur at two stages: first, at the time of marriage and second, at the time of household partition. In cases where the daughter-in-law is residing in the parental household which has not yet been partitioned, only the first type of selection has taken place, whereas in the case of a household that has already been partitioned, the second type of selection has also been in operation.

While the possibility of selection cannot be ruled out, there are socio-cultural reasons, however, to think that its magnitude may not be as large as feared, particularly that operating at the time of marriage. As has already been mentioned, rural South Asian brides, with few exceptions, move into the husband's parental household on marriage,

[6] For example, an independent minded daughter-in-law –her mindset neither being an easily observable trait nor a directly measurable one as far as most surveys go – might prefer to set up her own separate household with her husband and children, rather than live in the parental household. The same independent nature may enable her to participate in a microcredit organization. Running a regression to estimate the 'mother-in-law effect' on participation in microcredit programs, ignoring the possibility that independent women, on the one hand, are less likely to live with the mother-in-law, and on the other, more likely to participate in the program, will lead to erroneous conclusions by overestimating the adverse effect of living with the mother-in-law.

and unless the mother-in-law is already dead, would live with her. [7] Almost all marriages are arranged[8], and in most cases, coresidence with the mother-in-law might not be at the top of the list of matching criteria for the girls' families, who arrange the alliances, especially since they all, including the girls themselves, are conditioned by the prevalent social norms to accept it as a normal occurrence along the life cycle. Unlike the above scenario, in the case of selection taking place at the time of household partition, the women involved, particularly the daughters-in-law, have a greater role. According to anthropological evidence, incompatibility between mother and daughters-in-law has been mentioned by respondents as an important cause of household partition, and even disputes between sons that precipitate partition are many times construed the daughters-in-law's fault (Caldwell et al. 1984). However, in this regard, it is also to be noted that inheritance of parental household and permanent co-residence with the mother-in-law are usually determined by rules and customs based on region, religion and caste.

ii. Other estimation issues

The presence of reverse causality as a source of endogeniety cannot be ruled out. The coresidence of a particular daughter-in-law with the mother-in-law could be the result as well as the cause of the outcomes we observe. For example, the low BMI of a coresident daughter-in-law might not mean that she is not being properly fed by the mother-in-law; on the contrary, it could be the case that a daughter-in-law of poor health is chosen to be kept under the care of the mother-in-law and the joint family. However, reverse causality, in the context of coresidence, is a matter of selection in operation and would be taken care of by the selection correction techniques followed in the paper.

Heterogeniety of effects is expected: mother-in-law's power and control over the daughter-in-law varies according to the type of household under which coresidence occurs. The 'mother-in-law effect' in a household with just one coresident daughter-in-law may not be the same as that in a household where multiple daughters-in-law coreside; and it may not be the same in a household where the mother-in-law is the spouse of the head of household as it is in a household where she is the mother of the head. The sample

[7] 79% of the women in the working sample had the mother-in-law present in the first household where they lived with their husbands. For 55% of the remaining women, the mother-in-law was already dead at the time of their marriage.

[8] In the sample, 98% of marriages are arranged.

selection procedure of MHSS does not provide much of a scope for tackling the former case and the estimation procedures used in this study for the latter. Estimation is undertaken based on the assumption that the mean of heterogeneous effects is informative.[9] The 'mother-in-law effect' measured by the Heckman's Selection Correction model estimates the average effect and the Instrumental Variables model, a LATE parameter. However, separate regressions can be run for the larger subgroups of coresident daughters-in-law, such as those who coreside in father-in-law headed households and those in son headed households, to get an idea of whether the expected heterogeneity of effects are empirically evident. The numbers under other household structures are too small to allow independent estimation. Even for the larger subgroups on which separate regressions are run, power and precision of estimation are of concern.

Contamination bias is another source of concern. Defining coresidence as living with the mother-in-law in the same household and measuring its effect vis-a-vis women who do not have a mother-in-law in the same household is likely to result in the underestimation of the true 'mother-in-law effect'. This is so because many of the non-coresident women may have the mother-in-law living next door, within the same bari, and may still be under her control to some extent. While talking about the power and control of rural Bangladeshi mothers-in-law over daughters-in-law, Cain et. al (1979) explain,

> "The extent and duration of subordination varies; however, even after the son and daughter-in-law have established a separate household (usually in the same bari), the mother-in-law's authority continues to be felt."

To overcome the problem, non-coreseident women can be separated into those that have a mother-in-law in the same bari and those who don't, with the latter used as the comparison group.[10] This formulation will also facilitate the separate estimation of the effects of coresiding with the mother-in-law in the same household and in the same bari.

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[9] Due to the sampling design of MHSS, 61.8% of coresidence in the working sample occurs in son headed households where the mother-in-law's control is likely to be one of the lowest. As a result, the average estimated here might be an underestimation of the population average.

[10] The presence of other daughters-in-law and close relatives in the same bari may also affect the behaviour of the mother-in-law towards the coresident daughter-in-law. The empirical strategies followed in the paper do not address that source of bias.

As mentioned earlier, two households are selected from each bari, and on a subset of the sample, the second pick household from a bari can be identified as belonging to the father, mother, son or brother of the head of household of the first pick household. A bari level fixed effects can be run on a subset of those baris to isolate the effect of having a mother-in-law in the same household as compared to having one in the same homestead.

Last, but not least, is the problem of choice based sampling. The issue is problematic when the probability of sampling a coresident daughter-in-law from the dataset is not the same as the population probability of a person being a coresident daughter-in-law. The sample of coresident daughters-in-law in the dataset used here is not representative of the population – non-coresident daughters-in-law and certain types of coresident daughters-in-law are more likely to be present in the sample than others.[11] And since the true population proportion of coresident daughters-in-law or that of their types is not known, the estimates cannot be corrected for the choice based sampling problem. Hence, the results presented in the paper cannot be considered an unbiased estimate of the 'mother-in-law effect' on a randomly drawn woman from the Matlab population. It is only an unbiased estimate of the average 'mother-in-law effect' borne by the coresident daughters-in-law of the sample.

iii. Statistical Models

Considering co-residence with mother-in-law as a 'treatment', tools from the Program Evaluation literature are borrowed to correct for selection bias. The assignment of people to treatment may not be random. Herein, lies the risk of selection bias. Instrumental variables and Heckman's two step selection correction model with exclusion restrictions are utilized to correct for potential selection bias and estimate the causal effect of co-residence with the mother-in-law on the welfare of daughters-in-law. A bari level fixed effects model is run on a subset of the sample too.

The following statistical model lays out the selection problem.

$$Y_i = \delta D_i + \beta X_i + \varepsilon_i$$

Y_i represents the outcome, for example, the membership in a microcredit organization. X_i is a vector of observables such as age. ε_i is the error term. D_i indicates coresidence with the mother-in-law and δ measures the causal effect of co-residence.

[11] See section 4, paragraph 3 for details.

The problem of selection bias arises because D_i may be correlated with ε_i , i.e., if

$$E(D_i \varepsilon_i) \neq 0$$

Participation in co-residence is assumed to take place according to the following latent rule and is a function of observed characteristics Z_i and ν_i the error term.

$$d_i = \gamma Z_i + \nu_i$$

A woman participates in co-residence and has $D_i = 1$, if $d_i > 0$ and doesn't participate and has $D_i = 0$, if $d_i < 0$.

Selection bias, $E(D_i \varepsilon_i) \neq 0$, may occur because of correlation between ε_i and Z_i, i.e., 'selection on observables' or because of correlation between ε_i and ν_i, i.e., 'selection on unobservables'. With the rich MHSS data set and a reasonable understanding of the participation process, the problem of 'selection on observables' is relatively tractable. Hence, this paper is more concerned with the problem of 'selection on unobservables'.

If there is a subset of Z_i that is exogenous with respect to ε_i, they can act as instruments for D_i to solve the selection problem. Variables that are not expected to have any effect on the outcomes measuring women's welfare, other than through their effect on the probability of coresidence, are suitable candidates for use as instruments in estimating the 'mother-in-law effect'. In the presence of heterogeneous effects, however, the IV estimates can only be considered Local Average Treatment Effect (LATE) parameters and not the mean effect of the treatment.

Alternatively, the selection bias can also be eliminated by using Heckman's treatment effects model with exclusion restrictions. Heckman's two step selection correction model controls for the correlation between ε_i and ν_i by using the estimated conditional expectation of ε_i as a regressor in the outcome equations.[12] In the first step, the Inverse Mills Ratio, which is the estimated conditional expectation of ε_i, is generated through a Probit estimation of the participation equation. The outcome equation is then estimated by OLS including the Inverse Mills Ratio as one of the regressors.

$$Y_i = \delta D_i + \beta X_i + \rho\, \sigma_\varepsilon \left[D_i \frac{\varphi(-\gamma Z_i)}{1 - \phi(-\gamma Z_i)} + (1 - D_i) \frac{\varphi(-\gamma Z_i)}{\phi(-\gamma Z_i)} \right] + \eta_i$$

The coefficient, δ, now gives an unbiased estimate of the mean effect of the treatment. The coefficient on Inverse Mills Ratio measures the covariance between ε_i and ν_i . Its size,

[12] The derivation of the conditional expectation of ε_i is provided in Appendix I

sign and significance indicate the nature of selection bias. In the absence of exclusion restrictions, the system is identified by the non-linearity of the Probit function and is sometimes considered empirically unreliable. Therefore, the quality of results is considered dependent on the strength of the exclusion restrictions (Heckman 1979; La Londe 1986).

From among the baris where the second pick household belonged to that of the father, mother, son or brother of the head of the first pick household, a subsample of two hundred and eighteen women, from one hundred and nine baris, were identified as sisters-in-law who live in the same bari, but in different households. These women share the same mother-in-law, with one of them living with the mother-in-law in the same household, while her counterpart feels the 'mother-in-law effect' from next door. A bari level fixed effects model can be run on the subgroup.

$$Y_{ib} = \delta Minhh_{ib} + \beta X_{ib} + \psi_b + \eta_{ib}$$

Y_{ib} is the outcome for the i^{th} woman in the b^{th} bari. $Minhh_{ib}$ indicates whether the mother-in-law is coresident. X_{ib} are the observed individual level characteristics. The error term comprises of ψ_b, the bari level fixed unobservables and η_{ib}, the random error.

As mentioned before, the mother-in-law's authority may extend to non-coresident daughters-in-law who live in the same bari as well as those who live with her in the same household. However, the 'mother-in-law effect' on coresident daughters-in-law is expected to be stronger. Running the above bari level fixed effects model will control for the effect of all homestead level fixed observable and unobservable factors, including the common 'mother-in-law effect', and facilitate the estimation of the additional 'mother-in-law effect', if any, borne by the coresident daughter-in-law.

While the bari level fixed effects model controls for the unobserved fixed traits of the mother-in-law, the unobserved traits of a particular daughter-in-law, which might also have influenced her selection as the coresident daughter-in-law over her non-coresident sister-in-law, is still not controlled for. Therefore, the assumption of the model that η_{ib}, the idiosyncratic error, is uncorrelated with $Minhh_{ib}$ may not hold and the coefficients could be biased. The smallness of the sample could have implications for the power and precision of the estimates too.

iv. Exclusion Restrictions (Instruments)

Finding plausible exclusion restrictions, that, while influencing the probability of participation in coresidence, have no direct impact on the outcomes which coresidence is expected to affect, is no easy task. The following three variables, viz., 'Number of mother-in-law's sons'[13], 'Woman's husband is the eldest among male siblings'[14], 'Co-resided with the mother-in-law in the residence where the woman first lived with her husband after marriage' are reasonably persuasive exclusion restrictions.

The number of sons a mother-in-law has is an indication of her options for co-residence. And rules of probability dictate that the larger the number of brothers-in-law a woman has, the lower is her probability of living with the mother-in-law. Once observables such as family size, land etc. are controlled for, mother-in-law's number of sons may not exert any significant effect on outcomes.

Although Islamic law is silent on the subject, as per Bangladeshi custom, the eldest among the male siblings generally inherits the parental household (Foster 1993; Joshi and Sinha 2004). Unlike the stem family system of Northern Europe, where one son, usually the eldest, inherits all (unigeniture) or bulk of the property, there is equal division of property among the sons under the South Asian patriarchal joint families (Das Gupta 1997).[15] Hence, the greater inheritance of eldest sons attracting wives with certain desirable unobservable traits that might predispose them towards achieving better outcomes may not be a big source of selection. On the other hand, there is also the possibility that more empowered women may refuse to marry the eldest son so as to avoid permanent coresidence with the mother-in-law. However, it wouldn't be too unreasonable to assume that not many rural Bangladeshi women would be empowered enough to convince their fathers and other relatives, the decisionmakers in arranged marriages, to steer clear of marriage proposals from eldest sons. [16]

[13] After controlling for family size, land holdings etc.
[14] Here, a person is considered the eldest son only if he has brothers. Only sons, who are sole heirs to their parents' wealth, are excluded as selection might be a greater concern for them.
[15] Though Hindu women are eligible for equal share and Muslim women for half of a son's share, in practice, however, very few women receive their due inheritance (Caldwell et al. 1984; Cain et al. 1979).
[16] The practice of parents living with the youngest son has also been mentioned in the Matlab context (Aziz 1979). That possibility further diminishes the concern of selection in the choice of eldest sons' brides. (Husband's status as the youngest son did not turn out to be a significant predictor of coresidence with mother-in-law. It is not included among the exclusion restrictions for fear of bias from weak instruments.)

The outcomes considered in this paper are the kind to be affected by current coresidence with the mother-in-law, rather than by the duration or history of co-residence. Therefore, the presence of mother-in-law in the first residence where a woman cohabited with her husband is not expected to have any effect on her current outcomes. On the other hand, as required for an exclusion restriction, it increases the probability that a woman currently lives with the mother-in-law: among those who currently coreside with the mother-in-law, 94% had mother-in-law present in the first marital household. For households where partition is yet to occur, the effect of selection acts through the choice of marrying into a household where the son is likely to bring his bride to the parent's home. For such households, this exclusion restriction may not seem adequate. However, for reasons already explained, that type of selection may not be that big a deal.

v. Father-in-law effect

Although the mother-in-law heads the power hierarchy operating amongst the female half of the household, she herself is subject to the authority of her husband, the father-in-law. Therefore, the possibility of a 'father-in-law effect' operating separately from the 'mother-in-law effect' cannot be dismissed. The authority of the father-in-law extends to every member of the household, including the daughters-in-law. However, due to the gendered division of activities in the household and the traditional relationship of 'avoidance' practised between the father and daughter-in-law, there is little direct interaction between the two. In such circumstances, it is not clear which way the 'father-in-law effect', if it exists, would go. On the one hand, we might find little or no adverse effect; instead, it might even turn out that the father-in-law has a protective and beneficial effect on the well-being of the daughters-in-law. On the contrary, it is also possible that the presence of the patriarch in the household strengthens the traditional norms and practices that often are detrimental to the welfare of the daughters-in-law.

In our working sample we find 364 women, i.e., 9 % of the total, coresiding with the father-in-law. While the majority (61.8%) of coresidence with the mother-in-law occurs in households headed by sons, coresidence with the father-in-law occurs mostly in households headed by the father-in-law himself (70.3 %). Only in 55 cases did we find women coresiding with the father-in-law in the absence of a mother-in-law in the same household, and only in 10 of those cases were the mother-in-law still alive.

In trying to isolate the 'father-in-law effect', just as in the case of the 'mother-in-law effect', the process of selection into coresidence has to be taken onto account. However, there do not seem to be any major reason to think that a separate process of selection, distinct from that of the selection of coresidence with the mother-in-law, is in operation in the case of coresidence between the father and daughter-in-law. Where the father and mother-in-law are both alive, and they live together (the latter seems to be mostly the case as per the working sample), they can be considered to be acting in unison, as far as selection is concerned. Therefore, the participation equation would be specified as predicting coresidence with the father or mother-in-law and the same exclusion restrictions that were laid out earlier would be used in the estimation. In addition, the response to the question, 'whether the father-in-law was present in the household where the woman lived with her husband for the first time after marriage', will also be included among the exclusion restrictions.

vi. Estimation Equations

Estimation of the 'mother-in-law effect' is undertaken in two stages to take care of the endogeneity of coresidence. In the first, the probability of participation in a coresidence arrangement with the father or mother-in-law is estimated. In the second, the effect of coresidence on the welfare of women is measured through six outcomes that are intended to gauge the depth as well as the breadth of the 'mother-in-law effect'.

a. Participation Equation:

The estimation of the participation equation and the Inverse Mills Ratio comprises of the first stage of the two stage estimation process. The participation equation predicts the probability of a woman residing with her mother or father-in-law based on her own demographic and socio-economic characteristics and also that of her husband, and her affinal and natal households. The equation is specified as follows, where d_i is the probability of participation in coresidence.

$$d_i = \gamma Z_i + \alpha X_i + \nu_i$$

The presence of the mother-in-law in the woman's first martial home, the presence of the father-in-law there, whether the husband is the eldest among the sons of the family and the number of brothers the husband has are used as instruments and are

denoted by the Z_i. Though they influence the probability of coresidence, they are not expected to have any effect on the outcomes measuring the women's welfare.[17]

The X_i's denote the observable characteristics of the woman and her family that not only influence her participation in coresidence, but also potentially influence her welfare. They would, therefore, be included in the outcome equations too. The woman's age, age at marriage and age difference between her and her husband would likely be capturing cohort effects in patterns of coresidence as well as their direct effects on the probability of coresidence. Age at marriage has been rising and spousal age difference falling over the years. A higher age at marriage and lower age difference may signal a more egalitarian marriage and greater autonomy for the woman. Theory, however, is not clear in this regard.[18] The level of education acquired by the woman and her husband are included; and so are dummies showing whether her father, father-in-law and mother-in-law went to school. Increase in the size of the nuclear subhousehold is one of the main reasons for household partition; therefore, the number of children, boys and girls separately, is included. Differential effects of sons and daughters, if any, would be interesting in that it may be an indication of how the desirability for coresidence and/or status of a woman depend on the gender of the children she produces.

The financial status of the household is captured through variables indicating whether they owned their house and the acreage of agricultural land they own. Whether the walls of the main bedroom of the house are made of durable materials like cement, tin or wood is included as one more indicator of the household's socio-economic status. The financial situation and likely support from her natal family is measured thorough variables indicating whether her father is alive and also his ownership of house and farmland.[19] The number of brothers she has and whether she was paid dowry at the time of marriage are also included for the purpose. The natal and affinal family variables are expected to proxy some of the factors influencing the match at the time of the marriage and also the current form of residence. The status and support from a woman's natal

[17] See Section 5.iv. for details.
[18] For example, on the one hand, a higher age at marriage for a given age may mean that the woman enters the marriage as a more educated or a more mature woman with more life experience, and, hence, may have more decision making skills and authority, but it could also be the result of some unobservable, undesirable traits that lowered her demand in the marriage market compared to her peers.
[19] The amount of agricultural land owned by the natal household could not be included as the information was missing for a large number of women whose fathers are known to own agricultural land.

family is considered influential not only for her entry into the particular household as a bride, but also her continuing/changing status there. The influence of religion, if any, on coresidence is measured using a dummy indicating whether the woman is a Hindu or not.

The participation equation is estimated using Probit, as required in the first step of the Heckman two step models and also by OLS. The Inverse Mills Ratio is generated for each observation from the fitted values of the participation equation, assuming normality of the error term, ν_i. Since the households are clustered in baris, with many of the bari members being relatives, the standard errors are robust clustered at the bari level.

b. Outcome Equations

Outcome equations of the following form are estimated in the second step to quantify the 'mother-in-law' effect, after taking care of the selection issue in the first step.

$$Y_i = \delta Minhh_i + \theta Finhh_i + \pi Minbari_i + \tau Finbari_i + \beta X_i + \psi\, IMR_i + \eta_i$$

Y_i is the outcome, $Minhh_i$ indicates the presence of the mother-in-law in the household, $Finhh_i$ indicates the presence of the father-in-law, $Minbari_i$ indicates that the mother-in-law lives in the same bari but not in the same household, $Finbari_i$ indicates that the father-in-law is present in the same bari and X_i are the observed characteristics. IMR_i is the Inverse Mills Ratio of each observation and η_i the random error.

The coefficients δ and π capture the mother-in-law effects, with the former being the coefficient of highest interest. It measures the direct effect of coresiding with the mother-in-law. θ and τ are the corresponding father-in-law effects. The statistical significance of the coefficient ψ on the Inverse Mills Ratio informs whether selection is a major concern. The sign indicates the direction of selection. The outcome equations are estimated with OLS, Instrumental variables and Selection correction models. Standard errors are robust clustered at the bari level.

While the first two outcomes assessed in the paper are direct indicators of a woman's autonomy and regular components of autonomy indices, the remaining four are dependent to varying degrees on various aspects of autonomy and thus its indirect indicators. All the outcomes assessed here have direct welfare consequences for the women and also indirect consequences for their children. Table 4 provides the summary statistics for the outcomes under consideration.

Women's autonomy is a multidimensional and context specific concept that is not very amenable to direct or accurate measurement. In this paper, I pick a few outcomes that are the indicators of or determined by some of the important facets of female autonomy, such as household decision making autonomy, autonomy of mobility, economic autonomy and social autonomy[20]. The outcomes that I have chosen involve very minimal requirements of autonomy that most women, even those with highly traditional gender attitudes such as those of rural South Asia, would consider necessary for their welfare.

It is difficult to imagine that any adult woman would enjoy being in a domestic situation where she has absolutely no say whatsoever in the purchase of her own clothes. The survey question, "Who decides the purchase of sarees (women's clothing) for yourself?" has been reformulated to estimate the woman's decision making power in the purchase of own clothes.[21] Whether coresidence has any effect on the probability of a woman ending up with so little autonomy in household decision making that she has no say even in the purchase of her own clothes is worth investigating.

There is a question in the MHSS, "Did your husband/other household member prevent you from working outside of the home in the last year?" Preventing a woman from going out to work, when she wishes to do so, is a violation of her fundamental right to make decisions pertaining to her own life, a severe restriction on her mobility and a denial of access to economic resources. Whether the mother-in-law has a role in this welfare reducing activity will be estimated. However, in this regard, a measurement issue is noted –if a woman is certain of being prevented from going out to work, she might not seek to do it in the first place.

Bangladesh has been the frontrunner in implementing microcredit programs intended to empower women and also alleviate their poverty. However, the ability of a woman to participate in such programs is also quite dependent on her existing freedom of movement and decision making powers. If coresidence with the mother-in-law imposes

[20] Whether the researcher chooses to use individual indicators of the varied aspects of autonomy or form composite indices of autonomy by categorizing and adding up the individual indicators, both of which methods are used in related literature, the decision is essentially an arbitrary one.

[21] The responses to the original question ranged from 'husband and other family members decide' to 'self alone'. The question was reformulated to 'whether the woman has any say at all in the purchase of own sarees', with 'no say at all' being coded one and any say in the purchase, with even the response 'husband, other family member and self decide', being coded zero.

restrictions on a woman's autonomy, it might have adverse effects on her participation in microcredit programs and other socio-economic organizations. To analyze the same, the responses to the question, "Are you currently the member of any organization, group, samity or NGO?", with the options listing several micro-credit organizations such as the Grameen Bank and also community organizations such as school and mosque committees, are utilized.[22]

Living under the authority of the mother-in-law may constrain a woman's knowledge of and access to modern contraceptives and even limit her ability to communicate with her spouse about contraception. It might also influence her preferences for fertility and contraception.[23] It is also be possible that even if she herself prefers a smaller family and contraception, she may not be able to exercise her preferences if it contradicts with the preferences of the more traditional mother-in-law. Therefore, the questions, "Have you ever used modern contraceptives?" and "Do you wish to have more children?" are included.

To be able to live a physically healthy life is a fundamental right of every individual as per the Universal Declaration of Human Rights. The question arises whether a woman is able to satisfactorily exercise this right within a household structure that may be placing restrictions on her autonomy. In a household where she coresides with her mother-in-law, where she enjoys relatively little bargaining power, it is plausible that a daughter-in-law could become the victim of discrimination in healthcare and nutritional investments. The Body Mass Index, which is a reasonably good indicator of current and recent health and nutritional status, is chosen to test the hypothesis.

All the demographic and socio-economic variables used in the participation equation, except for the exclusion restrictions, father and mother-in-law's literacy status and age of marriage are included as independent variables in the outcome equations. The literacy status dummies are not included because they are the attributes of the father-in-law and mother-in-law and will be embedded in the coresidence dummies. Age at

[22] While Bangladeshi women are actively encouraged to participate in microfinance activities, their participation in organizations such as mosque and school committees is likely to be rare because of the widespread prevalence of purdah (seclusion of women).

[23] For e.g., a coresident daughter-in-law may prefer to have more children and have them faster, and hence may defer or abstain from the use of contraception, if she feels that children can improve her status in the joint family or if she feels that more children and consequent crowding could hasten household partition and her escape from the joint family.

marriage is replaced with marital duration, as the latter is more relevant for the outcomes under analysis, and including both would result in perfect collinearity, with marital duration being the difference between age and age at marriage. The current household size is also controlled for in all the regressions.

Since 1978, intensive family planning and maternal and child health services, including fortnightly visits from community healthworkers, have been provided in the Matlab region by the ICDDRB, with about half the population belonging to an exogenously assigned intervention area and the rest to the control area. A treatment area dummy is included in all the outcome equations to control for the effects, if any, of the intensive interventions, not only on the health and contraceptive behaviour of the women, but also on their gender attitudes.

In addition to the above variables, which are uniformly included in all the outcome equations, certain other variables are selectively included in some of the regressions, as leaving them out would be inviting omitted variable bias. A woman's behaviour and well-being are significantly affected by the presence of dependent small children in her life. Therefore, a variable indicating whether the woman has children below the age of five is included in all the outcome equations, except for the one on her say in the purchase of own clothes. The use of contraceptives is very much dependent on whether a woman has produced her desired number of children or not. Hence, a dummy variable on whether the respondent wishes to have more children is added to the regression on contraceptive use. A dummy variable indicating whether the premises of the house were clean and hygienic is also included in the BMI equation. The presence in the bari of a person who is already the member of an organization is likely to enhance the knowledge of a woman about the existence and performance of the organization, and also ease her entry into it. To take this aspect into account, a variable indicating whether anyone else in the bari has/had membership in any organization is added to the equation estimating the 'mother-in-law effect' on the probability of participation in organizations.

6. Results

i. Participation Equation

Table 5 provides the results of the OLS and Probit estimations of the participation equation, the latter being the first step in Heckman's Two Step model. Three of the four

exclusion restrictions are statistically significant predictors of current coresidence with the mother or father-in-law. The presence of the mother-in-law in the first marital household of a woman increases the probability of current coresidence by 13.6%. The presence of the father-in-law, on the contrary, does not seem to be an important predictor of coresidence, either in terms of size or statistical significance. However, in this regard, it is to be noted that while 58.4% of women had the father-in-law present in the first residence, only 9% have him in their current residence and among those just 15% of them do not have a mother-in-law also coresident. Husband's status as the eldest son increases the probability of coresidence by 4.7%, while an increase in the number of brothers-in-law causes the probability to fall by 4.4%.

Hindu women are more likely to be coresident daughters-in-law. As theorized, ownership and amount of agricultural land by the affinal and natal households considerably increase the probability of coresidence, with ownership of more than five acres of land increasing the probability by as much as 41%. However, education doesn't seem to have any big influence on coresidence patterns. Number of sons and daughters reduce the probability of coresidence, as expected, but only by a percentage each, and neither achieves statistical significance.

ii. Outcome Equations[24]

When it comes to women's decision making role in the purchase of her own clothes, coresidence, whether with the mother-in-law or the father-in-law, is bad, as the figures in Table 6 show. Coresident daughters-in-law have a much lower probability of having any say in buying their own sarees. A woman with a coresident mother-in-law is 7.9% less likely to have any role in the decision. The effect is statistically significant at the 5% level. Acquiring more education consistently improves women's decision making power in the household. Having some high school education reduces the probability of having 'no say' by a statistically significant 19%. While education may not be of much help to a woman in avoiding coresidence with the mother-in-law, it could buy her more decision making power within the household.

[24] Results from OLS, IV and Heckman Selection Correction Models are given in the Tables. While OLS results suffer from selection bias, IV is measuring more of a hybrid Local Average Treatment Effect (LATE) rather than the mean effect of the treatment on the treated (TTE). As the Heckman models estimate the TTE, the parameter of greater interest, the coefficients provided in this section are from those.

Living with the mother-in-law seems to increase the probability of having been prevented from going out for work in the past year by 5.3%, but the effect is not statistically significant. However, because of the measurement issue mentioned earlier, this result could be an underestimation. Table 7 has the results. In the case of both the saree purchasing decision and going out to work, while the number of sons has no discernible effect, the number of daughters has statistically significant empowering effects. This seems contrary to the perception that, in South Asia, a woman's status and autonomy rises with the number of sons, and may even fall with the number of daughters.

Table 8 displays the adverse 'mother-in-law effect' on women's participation in socio-economic activities such as microcredit programs and school committees. A woman living with the mother-in-law is 7.0 % less likely to be a member in such organizations. The result is statistically significant at the 5% level. Since ownership of 50 cents or less of cultivable land is one of the eligibility criteria for participation in microcredit organizations[25], the regression is also run restricting the sample to women whose households own 50 cents of land or less. The results are strengthened with the stratification; the adverse 'mother-in-law effect' rises to 8.9%. The single largest predictor is the presence in the bari of someone who is/was a member of such organizations, with the probability of membership rising by more than 32% with it.

As far as women's contraceptive use is concerned, it looks like coresidence with mother-in-law does not have any big effect, adverse or otherwise.[26] The results displayed in Table 9 suggest that, for the full sample, the effect is essentially zero. When the sample is restricted to women below the age of forty, the sign changes and coresidence increases the probability of contraceptive use by 1.4%. Neither of the results is statistically significant. However, for women with mothers-in-law present in the same bari, the probability of contraceptive use is higher by a statistically significant 6.8%, in the full sample. The number of children and the desire for more children, both, have statistically significant effects in the expected directions, with the latter reducing the probability of contraceptive use by as much as 20%. However, if, as mentioned earlier, coresidence

[25] Eligibility is determined on the basis of the quality of land rather than quantity. Therefore, households nominally owning more than 50 cents of land may be deemed eligible for participation.

[26] The lack of effect could also be an indication of the success Bangladeshi family planning programs has had in penetrating even the most conservative of household structures. As per the sample, 64% of women have used modern contraceptives.

with the mother-in-law influences the fertility preferences of women, then the 'mother-in-law effect' estimated here would be an underestimation. The hypothesis that desire for more children is acting as a mediator on contraceptive use by coersident women was tested. The results in Table 10 provide the evidence. Coresidence with mother-in-law does increase the desire for more children, by a statistically significant 7.3%.

When it comes to BMI, adverse 'mother-in-law effect' is discernible (p-value: 0 .084), as seen in Table 10. The BMI of women living with the mother-in-law is lower by 0.35 units. While the mother-in-law's presence in the same household or in the same bari seems to be disadvantageous to daughters-in-law, having a father-in-law there seems advantageous to the former and disadvantageous to the latter. Compared to the control group, the BMI of women with father-in-law in the same household is higher by 0. 20 units and that of women with father-in-law in the same bari is lower by 0.57 units.

Overall, the picture painted by the IV estimates is grimmer. The magnitude of the adverse 'mother-in-law effect' is much higher under the IV models compared to the rest. [27] This suggests the possibility that under the IV estimation, greater weight is being given to those daughters-in-law for whom coresidence with the mother-in-law has a comparatively bigger adverse effect. Out of the four instruments, mother-in-law's presence in the first residence of marital cohabitation is the most powerful predictor of coresidence. As explained earlier, the variable is more relevant in the selection of those daughters-in-law who live in parent headed households rather than those who live under other household structures such as husband headed households; and the 'mother-in-law effect' is expected to be the highest for the former group.

As far as the question of the empirical stability of Heckman's Selection Correction Model is concerned, if it is affecting the results here, it may not be unreasonable to conclude that it is doing so only by underestimating the adverse 'mother-in-law effect'. The effect sizes are considerably smaller than that of the IV models, which seem to be giving more weight to the 'mother-in-law effect' for the most policy relevant group, the young daughters-in-law who live in parent headed households. Moreover, the Inverse Mills Ratio is even statistically significant (p value: 0.070) only in the case of

[27] Except for contraceptive use and desire for more children.

membership in organizations.[28] This lends empirical support to the expectation (the theoretical grounds for which were explained earlier) that coresidence with the mother-in-law may, anyway, not involve serious selection issues.

iii. Sensitivity Analyses

a. Test of selection using height as an outcome variable

Unlike the BMI which is more of an indicator of recent health and nutritional conditions, height is mostly determined by childhood health and nutrition. Therefore, the height of an adult woman should not be affected by coresidence with the mother-in-law.[29] Height is, hence, used as an alternative test for selection. Results in Table 12 indicates that there is no significant relationship between height and coresidence; thus reinforcing the quality of the other results.

b. Heterogeneous subgroups

As mentioned before, the nature and magnitude of the 'mother-in-law effect' is considerably dependent on the household structure under which coresidence occurs. To get a glimpse of the possible heterogeneity of effects, separate analyses of the main two subgroups – those for which the effects are likely to be the highest and the lowest, are undertaken in this section.[30] The smallness of the subgroups raises concerns about the power and precision of the analyses.

The mother-in-law is likely to be able to exert the highest degree of authority over coresident daughters-in-law in a household where she is the spouse of the patriarch. Since much of the fertility decisions and early human capital investments in children are made by daughters-in-law during this period of coresidence, the 'mother-in-law effects' for this subgroup of daughters-in-law are the most policy relevant. Since all the households of the type have both father-in-law and mother-in-law coresident, it is not possible to separate out the mother and father-in-law effects. Table 12 gives the results and supports the hypothesis that daughters-in-law enjoy the least amount of autonomy when living with the mother-in-law in father-in-law headed households.

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[28] The positive sign of the coefficient implies that the coresident women, if not for the coresidence, would have been more likely to have been members of organizations.

[29] The mean age at marriage is only 15.8 years. Hence, some of the women might have grown taller during the early years of coresidence.

[30] Women with other types of coresidence with mother-in-law or father-in-law are taken out of the sample in both the subgroup analyses.

The mother-in-law's authority over the daughter-in-law is expected to be the lowest in households where the father-in-law is no more and the headship has passed to the son. This is the most common form of coresidence in the sample. The results are provided in Table 13. The 'mother-in-law effects' are smaller and none of the effects is statistically significant, except for that of the BMI.

c. Effect of having a mother-in-law in the same bari

The separation of non-coresident women into those that have a mother-in-law in the same bari and those who don't enabled the verification of the expectation that the control of the mother-in-law extends over daughters-in-law who live in the same bari. The only statistically significant difference between the women with mother-in-law in the same bari and the comparison group is in the use of contraceptives, with the former 6.8% more likely to use them. The magnitude of the mother-in-law effect borne by them is considerably smaller than that felt by the coresident daughters-in-law for all the outcomes and the difference between the two is statistically significant in the case of saree purchasing decisions, membership in organizations and the use of contraceptives.

Table 14 displays the results of the bari-level fixed effects estimation. The model controls for homestead level unobserved characteristics, and estimates the additional effect of coresidence with the mother-in-law in the same household vis-à-vis the same bari. The standard errors are robust. Most of these women live under household structures where the power and control of the mother-in-law is the lowest – 92.3% are spouses of the head of household and 0.97% are heads themselves. Hence, the average 'mother-in-law effect' estimated from this subgroup would be an underestimation of the population average. Coresident daughters-in-law are 21% more likely to have been prevented from going out to work and the effect is statistically significant at the 10% level. Contrary to the findings so far, women who live with the mother-in-law are found to be 17% more likely to be members of organizations. The effect is statistically significant at the 10% level. However, it is quite plausible that the bari level fixed effects estimate suffers from selection bias.[31] The sample size is very small too.

[31] In this regard, it is to be noted that the Inverse Mills Ratio on the selection corrected estimates of membership in organizations on the full sample, though statistically significant only at the 10% level, had implied that the women who were selected into coresidence were the type more likely to be members of organizations, other things being the same.

7. Conclusion

This paper provides valuable insights into a little researched topic within the widely discussed area of female empowerment in South Asia –the welfare impacts of coresiding with the mother-in-law in the patriarchal joint family. As hypothesized, living with the mother-in-law is found to be detrimental to the autonomy and well-being of daughters-in-law. Results indicate that coresidence with mothers-in-law constrains the decision making capacity of women and their access to economic resources. Their participation in poverty eradication and empowerment activities such as microcredit organizations is curtailed. Even their health is adversely affected.

The findings of this study have relevance not just for Matlab, but for the rest of rural South Asia too, where patriarchal joint families with similar intrahousehold power dynamics still abound, and are likely to persist for a long time to come. There are behavioural and cultural reasons, however, to think that the magnitude of effects found in Matlab might belong to the lower end of the spectrum of mother-in-law effects prevalent in the region. The bari system, where close kin live in households clustered within a single compound, is not a common feature of all of South Asia. The 'mother-in-law effect' under the bari system is likely to be smaller: the mother-in-law would have an incentive to tone down her behaviour towards the daughters-in-law to preserve her image among the people of the neighboring households, most of them her close relatives, as their physical proximity makes it harder her to conceal the true situation. Again, as mentioned in the introduction, certain marriage practices among Muslims may grant the daughters-in-law greater power and consideration in intrahousehold relations.

The effects estimated in this paper are only averages, hiding the heterogeneity of the true effects that exist among the various household structures under which mother and daughters-in-law co-reside. Moreover, due to the sampling procedure followed, the majority of co-residence in the sample occurs in son-headed households where the mother-in-law's power is likely to be the lowest. Hence, the average effects estimated are likely to be lower than what would exist among the general population. The (stereo)typical form of co-residence, and where the effects are likely to be the largest, is the one in which daughters-in-law live with the mother-in-law under the headship of the father-in-law. However, as already seen in the sensitivity analysis on the subset, for such

households, the estimation strategies followed in this paper are not adequate to separate the mother-in-law effect from the father-in-law effect.

Although the influence of household structure on women's welfare has long been known, it doesn't seem to offer much scope for direct policy interventions, particularly because of the deeprooted nature of the institution of patriarchal joint family and because of the role it plays in the provision of care for senior citizens in the absence of adequate public social security systems in South Asian nations. However, the significant mother-in-law effects uncovered here call attention to a possible avenue for policy interventions, in varied areas ranging from family planning and maternal health to poverty alleviation and women's empowerment. Selective targeting of awareness generation campaigns and behavior change communication tools, which already form important components of many developmental programs, might be the key here. [32]

The differential effects of duration of coresidence with mother-in-law on women's well-being haven't been considered in this paper. Duration could have significant and long lasting effects on many outcomes such as the economic activities of daughters-in-law or their reproductive outcomes, to name a few. The influence of mothers-in-law on grandchildren's outcomes has also been left unexplored. Unlike the case of daughters-in-law, it is plausible that coresidence may have positive effects on children. These offer future directions for research.

[32] The following policy interventions from Nepal and Senegal help illustrate the possibilities. SUMATA, the USAID funded safe motherhood initiative launched in Nepal in 2002, follows the entertainment/education approach and targets husbands and mothers-in-law, the key decision makers in the reproductive health choices of Nepali women, through street dramas, radio programs and printed material, to tackle maternal mortality, the leading killer of Nepali women of reproductive ages (Center for Communication Programs, John Hopkins Bloomberg School of Public Health, 2004). In Senegal, Aubel et al. (2004) found that a participatory communication/empowerment education approach that encouraged grandmothers (mothers-in-law) to improve pregnancy related nutritional practices resulted in pregnant women receiving decreased workload and better diet during pregnancy.

Appendix I

Derivation of the Inverse Mills Ratio

If ε_i and ν_i are assumed to be jointly normally distributed, the conditional expectation of ε_i, i.e., the Inverse Mills Ratio, is proportional to the conditional expectation of ν_i and is estimated as follows.

$$Y_i = \delta D_i + \beta X_i + [(D_i E(\varepsilon_i / D_i = 1, X)) + ((1- D_i) E(\varepsilon_i / D_i = 0, X))] + \eta_i$$

By construction,

$$E (D_i \eta_i) = 0$$

Assuming $(\varepsilon_i , \nu_i) \sim N (0, 0, \sigma^2_\varepsilon, 1, \sigma^2_{\varepsilon\nu})$,

$$E(\varepsilon_i / D_i = 1, X) = E(\varepsilon_i / d_i > 0, X)$$

$$= E(\varepsilon_i / \nu_i > -\gamma Z_i, X)$$

$$= \rho\, \sigma_\varepsilon E(\nu_i / \nu_i > -\gamma Z_i, X)$$

$$= \rho\, \sigma_\varepsilon \frac{\varphi(-\gamma Zi)}{1 - \phi(-\gamma Zi)}$$

$$E(\varepsilon_i / D_i = 0, X) = E(\varepsilon_i / d_i < 0, X)$$

$$= E(\varepsilon_i / \nu_i < -\gamma Z_i, X)$$

$$= \rho\, \sigma_\varepsilon E(\nu_i / \nu_i < -\gamma Z_i, X)$$

$$= \rho\, \sigma_\varepsilon \frac{\varphi(-\gamma Zi)}{\phi(-\gamma Zi)}$$

where $\varphi(-\gamma Zi)$ is the normal probability density function and $\phi(-\gamma Zi)$ the normal cumulative density function.

Once the Inverse Mills Ratio is generated from the Probit estimation of the participation equation, the outcome equation is estimated by OLS, including the Inverse Mills Ratio as one of the regressors.

$$Y_i = \delta D_i + \beta X_i + \rho\, \sigma_\varepsilon \left[D_i \frac{\varphi(-\gamma Zi)}{1 - \phi(-\gamma Zi)} + (1- D_i) \frac{\varphi(-\gamma Zi)}{\phi(-\gamma Zi)}\right] + \eta_i$$

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Table 1

Number of daughters-in-law co-residing with the mother-in-law by relationship to the head of household

Head of household	Number	Percentage
Husband	549	61.8
Father-in-law	256	28.8
Mother-in-law	42	5.2
Self	9	1.0
Husband's brother	29	3.3
Total	889	100.0

Table 2

Women's Traits

	Coresident Women	Mean Non-coresident Women			
		Mother-in-law in the bari	Others		All
			Mother-in-law alive	dead	
	(1)	(2a)	(2b)	(2c)	(2)
Age	29.0 (7.9)	33.5 (7.3)*	34.5 (7.1)*	46.2 (11.3)*	42.4 (11.7)*
Age at marriage	17.2 (3.4)	16.1 (3.3)*	16.0 (3.8)*	15.1 (4.0)*	15.4 (3.9)*
Education	3.3 (3.3)	1.9 (2.7)*	2.4 (3.2)*	1.5 (2.5)*	1.7 (2.7)*
Husband's education	4.0 (3.9)	2.8 (3.6)*	3.4 (4.1)*	3.1 (3.7)*	3.1 (3.8)*
Father's education	3.0 (3.8)	2.3 (3.5)*	2.6 (3.7)*	3.1 (3.7)*	2.3 (3.5)*
No. of sons	1.2 (1.2)	1.7 (1.2)*	1.9 (1.3)*	2.6 (1.5)*	2.3 (1.5)*
No. of daughters	1.1 (1.2)	1.7 (1.3)*	1.7 (1.2)*	2.3 (1.5)*	2.1 (1.5)*
Own agricultural land	0.73 (0.4)	0.50 (0.5)*	0.54 (0.50)*	0.71 (0.5)	0.65 (0.5)*
Amt. of agri. land	3.5 (39.3)	0.7 (8.3)*	1.4 (15.6)	3.1 (29.9)	2.4 (25.6)
Dowry paid	0.61 (0.5)	0.51 (0.5)*	0.47 (0.50)*	0.20 (0.40)*	0.29 (0.5)*
N	889	541	452	2167	3164

i. Standard Deviation in parentheses
ii. * Significantly different from coresident women

Table 3

Profile of Co-resident Mothers-in-law

	Mean
Age	61.7 (10.8)
Widow	0.64 (0.5)
Literate	0.13 (0.3)
No. of sons	2.6 (1.4)
No. of daughters	3.0 (1.5)
Head of household	0.05 (0.2)

*Standard Deviation in parentheses

Table 4

Women's Outcomes

Mean

	Co-resident women	Non-co-resident women		
		Mother-in-law in the bari	Others	All
No say in purchase of own clothes	0.740 (0.439)	0.612* (0.488)	0.629* (0.483)	0.626* (0.484)
Prevented from working	0.337 (0.473)	0.280* (0.450)	0.258* (0.437)	0.262* (0.440)
Member of organization	0.147 (0.355)	0.260* (0.439)	0.168 (0.374)	0.184* (0.388)
Used modern contraceptives	0.707 (0.455)	0.822* (0.383)	0.584* (0.493)	0.625* (0.484)
Desire more children	0.547 (0.498)	0.296* (0.457)	0.120* (0.325)	0.150* (0.357)
BMI	19.212 (2.382)	18.640* (2.365)	18.846* (2.851)	18.806* (2.772)
Height in centimeters	149.894 (5.722)	150.334 (5.348)	149.047 (5.963)*	149.277 (5.875)*
No. of women	889	541	2619	3164

i. Standard Deviation in parentheses
ii. * Significantly different from coresident women

Table 5

Probability that a woman has a coresident mother or father-in-law

Instruments	OLS	Probit Marginal Effects
Mother-in-law in first household	0.129 (0.017)***	0.136 (0.014)***
Father-in-law in first household	0.001 (0.017)	0.001 (0.018)
Husband eldest son	0.044 (0.016)***	0.047 (0.018)***
Husband's number of brothers	-0.042 (0.006)***	-0.044 (0.007)***
N	3397	3397
R^2 / Pseudo R^2	0.447	0.463
Obs. P		0.256
Pred. P (x-bar)		0.126

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 5a in Annexure 1 provides the results for all the independent variables

Table 6

Probability that a woman has no say in the purchase of her own clothes

Key Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	0.089 (0.035)**	0.298 (0.151)**	0.079 (0.037)**
Mother-in-law in the bari	0.006 (0.036)	0.042 (0.055)	-0.011 (0.036)
Father-in-law coresident	0.089 (0.044)**	-0.054 (0.147)	0.087 (0.043)**
Father-in-law in the bari	0.029 (0.046)	0.051 (0.048)	0.024 (0.047)
Number of sons	-0.006 (0.010)	0.001 (0.013)	-0.005 (0.010)
Number of daughters	-0.016 (0.009)*	-0.016 (0.011)	-0.016 (0.009)*
Inverse Mills Ratio			0.024 (0.027)
N	3773	3523	3386
R^2	0.062	0.045	0.066

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 6a in Annexure 1 provides the results for all the independent variables

Table 7

Probability that a woman has been prevented from working outside in the past year

Key Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	0.010 (0.034)	0.268 (0.149)*	0.053 (0.038)
Mother-in-law in the bari	-0.008 (0.035)	0.051 (0.054)	0.013 (0.035)
Father-in-law coresident	-0.062 (0.046)	-0.160 (0.143)	-0.040 (0.049)
Father-in-law in the bari	-0.024 (0.044)	-0.028 (0.047)	0.003 (0.044)
Number of sons	-0.012 (0.010)	-0.001 (0.012)	-0.006 (0.011)
Number of daughters	-0.018 (0.009)	-0.011 (0.010)	-0.018 (0.010)*
Inverse Mills Ratio			-0.017 (0.029)
N	3727	3483	3342
R^2	0.046	0.025	0.051

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 7a in Annexure 1 provides the results for all the independent variables

Table 8

Probability that a woman is a member of organizations

Key Independent Variables	OLS	IV	Selection Corrected	Selection Corrected for land <= 0.5 acres
Mother-in-law coresident	-0.013 (0.031)	-0.111 (0.117)	-0.070 (0.034)**	-0.089 (0.042)**
Mother-in-law in the bari	0.057 (0.031)*	0.036 (0.044)	0.030 (0.030)	0.049 (0.036)
Father-in-law coresident	-0.025 (0.037)	-0.087 (0.101)	-0.039 (0.034)	-0.020 (0.046)
Father-in-law in the bari	-0.031 (0.037)	-0.067 (0.037)	-0.048 (0.037)	-0.067 (0.042)
Has a member in the bari	0.313 (0.023)***	0.307 (0.024)***	0.319 (0.023)***	0.338 (0.029)***
Inverse Mills Ratio			0.040 (0.021)*	0.047 (0.029)
N	3776	3526	3390	2078
R^2	0.194	0.187	0.208	0.222

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 8a in Annexure 1 provides the results for all the independent variables

Table 9

Probability that a woman has ever used modern contraceptives

Key Independent Variables	OLS	IV	Selection Corrected	Selection Corrected for age < 40 years
Mother-in-law coresident	0.027 (0.027)	0.080 (0.129)	0.000 (0.031)	0.014 (0.035)
Mother-in-law in the bari	0.078 (0.027)***	0.095 (0.044)**	0.068 (0.028)**	0.051 (0.029)*
Father-in-law coresident	0.007 (0.040)	0.014 (0.121)	0.020 (0.040)	0.035 (0.042)
Father-in-law in the bari	0.001 (0.035)	-0.004 (0.037)	-0.019 (0.034)	-0.042 (0.035)
Number of sons	0.034 (0.009)***	0.036 (0.011)***	0.037 (0.009)***	0.080 (0.016)***
Number of daughters	0.020 (0.008)**	0.022 (0.010)**	0.024 (0.009)***	0.039 (0.016)***
Desire more children	-0.207 (0.028)***	-0.203 (0.034)***	-0.200 (0.028)***	-0.119 (0.029)***
Inverse Mills Ratio			0.024 (0.023)	-0.025 (0.028)
N	3738	3490	3358	1881
R^2	0.328	0.326	0.334	0.280

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 9a in Annexure 1 provides the results for all the independent variables

Table 10

Selection Corrected Effects of Desire for more children

Key Independent Variables	Desire more Children	Contraceptive use without controlling for desire	Contraceptive use controlling for desire
Mother-in-law coresident	0.073 (0.029)**	-0.014 (0.031)	0.000 (0.031)
Mother-in-law in the bari	-0.017 (0.028)	0.072 (0.028)***	0.068 (0.028)**
Father-in-law coresident	0.086 (0.037)**	-0.000 (0.041)	0.020 (0.040)
Father-in-law in the bari	0.043 (0.041)	-0.028 (0.034)	-0.019 (0.034)
Inverse Mills Ratio	-0.028 (0.020)	0.029 (0.023)	0.024 (0.023)
N	3358	3397	3358
R^2	0.542	0.0320	0.334

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 10a in Annexure 1 provides the results for all the independent variables determining desire for more children

Table 11

Body Mass Index

Key Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	-0.153 (0.185)	-1.652 (0.809)**	-0.352 (0.204)*
Mother-in-law in the bari	-0.148 (0.187)	-0.546 (0.296)*	-0.275 (0.189)
Father-in-law coresident	0.298 (0.228)	-0.0162 (0.708)	0.200 (0.229)
Father-in-law in the bari	-0.541 (0.227)**	-0.748 (0.255)***	-0.568 (0.228)***
Inverse Mills Ratio			0.071 (0.140)
N	3377	3152	3100
R^2	0.110	0.071	0.107

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 11a in Annexure 1 provides the results for all the independent variables

Table 12

Height of Women (in cm)

Key Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	-0.298 (0.452)	-3.274 (1.887)*	-0.286 (0.498)
Mother-in-law in the bari	0.428 (0.410)	-0.413 (0.686)	0.478 (0.427)
Father-in-law coresident	-1.050 (0.532)**	-0.115 (1.799)	-0.803 (0.556)
Father-in-law in the bari	-0.116 (0.510)	-0.181 (0.531)	-0.135 (0.514)
N	3384	3159	3107
R^2	0.088	0.058	0.090

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels
iii. Table 12a in Annexure 1 provides the results for all the independent variables

Table 13

Selection corrected effects of coresidence in father-in-law headed households

Key Independent Variables	No say in purchase of clothes	Prevented from work	Member of organiza-tions	Used contrace-ptives	BMI
Joint mother and father-in-law effect	0.203 (0.056)***	0.0821 (0.064)	-0.169 (0.041)***	-0.044 (0.060)	-0.284 (0.327)
Mother-in-law in the bari	0.002 (0.037)	0.001 (0.035)	0.037 (0.026)	0.065 (0.028)**	-0.223 (0.192)
Father-in-law in the bari	0.026 (0.048)	0.013 (0.047)	-0.050 (0.039)	-0.006 (0.033)	-0.730 (0.221)***
Inverse Mills Ratio	-0.029 (0.045)	-0.098 (0.044)**	0.033 (0.031)	-0.019 (0.044)	-0.012 (0.257)
N	2666	2631	2670	2643	2459
R^2	0.080	0.048	0.207	0.351	0.113

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 14

Selection corrected effects of coresidence in husband headed households

Key Independent Variables	No say in purchase of clothes	Prevented from work	Member of organiza-tions	Used contrace-ptives	BMI
Mother-in-law coresident	0.073 (0.057)	0.039 (0.057)	-0.050 (0.045)	-0.001 (0.043)	-0.467 (0.285)*
Mother-in-law in the bari	-0.002 (0.037)	0.014 (0.035)	0.033 (0.030)	0.073 (0.028)**	-0.239 (0.191)
Father-in-law in the bari	0.026 (0.040)	0.008 (0.045)	-0.062 (0.036)	-0.022 (0.035)	-0.596 (0.226)***
Inverse Mills Ratio	0.036 (0.045)	0.018 (0.045)	0.029 (0.035)	0.016 (0.033)	0.211 (0.223)
N	3011	2977	3015	2986	2767
R^2	0.053	0.039	0.229	0.345	0.101

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 15

Bari level Fixed Effects

Key Independent Variables	No say in purchase of clothes	Prevented from work	Member of organiza-tions	Used contrace-ptives	BMI
Mother-in-law coresident	-0.110 (0.120)	0.207 (0.110)*	0.171 (0.099)*	0.022 (0.093)	-0.449 (0.726)
Father-in-law coresident	-0.092 (0.125)	-0.204 (0.176)	0.183 (0.093)*	-0.016 (0.149)	1.699 (1.085)
N	206	200	204	198	166
R^2 (Within)	0.317	0.252	0.396	0.508	0.354

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Annexure 1

Table 5a

Probability that a woman has coresident mother or father-in-law

Independent Variables	OLS	Probit Marginal Effects
Mother-in-law in first household	0.129	0.136
	(0.017)***	(0.014)***
Father-in-law in first household	0.001	-0.001
	(0.017)	(0.018)
Husband eldest son	0.044	0.047
	(0.016)***	(0.018)***
Husband's number of brothers	-0.042	-0.044
	(0.006)***	(0.007)***
Age	-0.063	-0.038
	(0.005)***	(0.006)***
Age squared	0.001	0.000
	(0.000)***	(0.000)***
Age at marriage	0.006	0.005
	(0.002)***	(0.002)**
Spousal age difference	-0.007	-0.009
	(0.002)***	(0.002)***
Number of sons	-0.009	-0.010
	(0.005)*	(0.008)
Number of daughters	-0.009	-0.011
	(0.005)*	(0.008)
Primary school educated	0.018	0.012
	(0.021)	(0.021)
Middle School educated	0.083	0.058
	(0.039)**	(0.042)
High School educated	0.047	0.006
	(0.050)	(0.042)
Husband primary school educated	-0.007	-0.004
	(0.019)	(0.021)
Husband middle school educated	-0.008	0.004
	(0.027)	(0.029)
Husband high school educated	-0.032	0.004
	(0.029)	(0.031)
Husband college educated	-0.001	0.004
	(0.094)	(0.075)
Mother-in-law literate	0.064	0.050
	(0.034)*	(0.036)
Father-in-law literate	0.017	0.013
	(0.023)	(0.023)
Father literate	0.001	0.007

	(0.018)	(0.019)
Father alive	-0.011	-0.019
	(0.020)	(0.018)
Number of brothers	-0.004	-0.003
	(0.005)	(0.005)
Dowry paid	-0.008	-0.004
	(0.022)	(0.020)
Father has own house	-0.019	-0.037
	(0.038)	(0.053)
Father has farmland	0.039	0.038
	(0.022)*	(0.021)*
Has own house	0.149	0.106
	(0.033)***	(0.016)***
Sturdy walls for the house	0.040	0.048
	(0.017)**	(0.019)**
Farmland below 50 cents	0.093	0.120
	(0.021)***	(0.029)***
Farmland between 50 cents to 5 acres	0.166	0.206
	(0.022)***	(0.030)***
Farmland more than 5 acres	0.234	0.410
	(0.038)***	(0.071)***
Hindu	0.100	0.130
	(0.031)***	(0.044)***
N	3397	3397
R^2 / Pseudo R^2	0.447	0.463
Obs. P		0.256
Pred. P (x-bar)		0.126

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 6a

Probability that a woman has no say in the purchase of her own clothes

Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	0.089 (0.035)***	0.298 (0.151)**	0.079 (0.037)**
Mother-in-law in the bari	0.006 (0.036)	0.042 (0.055)	-0.011 (0.036)
Father-in-law coresident	0.089 (0.044)**	-0.054 (0.147)	0.087 (0.043)**
Father-in-law in the bari	0.029 (0.046)	0.051 (0.048)	0.024 (0.047)
Age	-0.032 (0.006)***	-0.028 (0.010)***	-0.035 (0.006)***
Age squared	0.000 (0.000)***	0.000 (0.000)***	0.000 (0.000)***
Marital Duration	0.001 (0.003)	0.003 (0.004)	0.002 (0.003)
Spousal age difference	-0.002 (0.003)	-0.002 (0.003)	-0.002 (0.002)
Number of sons	-0.006 (0.010)	0.001 (0.012)	-0.005 (0.010)
Number of daughters	-0.016 (0.009)*	-0.016 (0.010)	-0.016 (0.009)*
Family Size	0.003 (0.005)	-0.002 (0.010)	0.005 (0.005)
Primary school educated	0.004 (0.028)	0.013 (0.030)	-0.007 (0.028)
Middle School educated	-0.046 (0.050)	-0.038 (0.054)	-0.059 (0.051)
High School educated	-0.175 (0.065)***	-0.193 (0.069)***	-0.189 (0.068)***
Husband primary school educated	-0.016 (0.026)	-0.020 (0.027)	0.006 (0.025)
Husband middle school educated	-0.029 (0.038)	-0.047 (0.039)	-0.005 (0.037)
Husband high school educated	-0.037 (0.041)	-0.038 (0.044)	-0.047 (0.041)
Husband college educated	-0.282 (0.176)	-0.266 (0.188)	-0.233 (0.141)*
Father literate	-0.033 (0.027)	-0.023 (0.027)	-0.003 (0.025)
Father alive	0.018 (0.026)	0.013 (0.026)	-0.019 (0.026)

Number of brothers	0.005	0.003	0.012
	(0.007)	(0.007)	(0.007)
Dowry paid	-0.040	-0.042	-0.028
	(0.027)	(0.028)	(0.028)
Father has own	-0.062	-0.051	-0.036
house	(0.051)	(0.054)	(0.052)
Father has farmland	0.030	0.024	-0.005
	(0.033)	(0.035)	(0.031)
Has own house	0.066	0.068	0.020
	(0.052)	(0.056)	(0.051)
Sturdy walls for the	0.002	-0.006	-0.007
house	(0.024)	(0.025)	(0.024)
Farmland below 50	0.033	0.026	0.042
cents	(0.029)	(0.031)	(0.029)
Farmland between	0.031	0.026	0.033
50 cents to 5 acres	(0.031)	(0.035)	(0.032)
Farmland more than	0.010	-0.043	-0.016
5 acres	(0.064)	(0.074)	(0.068)
Hindu	-0.005	0.006	-0.089
	(0.039)	(0.040)	(0.038)**
Treatment Area	0.022	0.023	0.046
	(0.022)	(0.023)	(0.022)**
Inverse Mills Ratio			0.024
			(0.027)
N	3773	3523	3386
R^2	0.062	0.045	0.066

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 7a

Probability that a woman has been prevented from working outside in the past year

Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	0.010	0.268	0.053
	(0.034)	(0.149)*	(0.038)
Mother-in-law in the bari	-0.008	0.051	0.013
	(0.035)	(0.054)	(0.035)
Father-in-law coresident	-0.062	-0.160	-0.040
	(0.046)	(0.143)	(0.049)
Father-in-law in the bari	-0.024	-0.028	0.003
	(0.044)	(0.047)	(0.044)
Age	-0.003	0.003	-0.000
	(0.008)	(0.012)	(0.008)
Age squared	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Marital Duration	-0.005	-0.003	-0.006
	(0.003)*	(0.004)	(0.003)*
Spousal age difference	0.001	0.002	0.004
	(0.002)	(0.003)	(0.002)
Number of sons	-0.012	-0.001	-0.006
	(0.010)	(0.012)	(0.011)
Number of daughters	-0.018	-0.011	-0.018
	(0.009)	(0.010)	(0.010)*
Has children below five	-0.000	0.008	0.012
	(0.027)	(0.030)	(0.028)
Family Size	0.020	0.012	0.018
	(0.006)***	(0.010)	(0.006)***
Primary school educated	0.026	0.039	0.036
	(0.029)	(0.030)	(0.030)
Middle School educated	0.020	0.034	-0.004
	(0.049)	(0.051)	(0.050)
High School educated	0.005	0.021	-0.018
	(0.064)	(0.067)	(0.065)
Husband primary school educated	0.003	-0.011	0.017
	(0.025)	(0.026)	(0.027)
Husband middle school educated	-0.021	-0.037	-0.001
	(0.038)	(0.038)	(0.041)
Husband high school educated	-0.047	-0.052	-0.059
	(0.040)	(0.042)	(0.042)
Husband college educated	-0.028	0.002	-0.175
	(0.137)	(0.150)	(0.120)
Father literate	0.077	0.087	0.070
	(0.026)***	(0.028)***	(0.026)***

Father alive	-0.043	-0.044	-0.038
	(0.026)*	(0.027)	(0.026)
Number of brothers	0.012	0.013	0.002
	(0.008)	(0.008)	(0.008)
Dowry paid	0.016	0.003	0.017
	(0.028)	(0.029)	(0.029)
Father has own house	0.146	0.157	0.123
	(0.042)***	(0.045)***	(0.043)***
Father has farmland	-0.032	-0.039	-0.001
	(0.033)	(0.037)	(0.032)
Has own house	-0.013	-0.049	-0.008
	(0.046)	(0.055)	(0.046)
Sturdy walls for the house	0.043	0.033	0.040
	(0.024)*	(0.025)	(0.026)
Farmland below 50 cents	0.021	0.007	0.041
	(0.028)	(0.029)	(0.028)
Farmland between 50 cents to 5 acres	-0.016	-0.040	0.016
	(0.029)	(0.034)	(0.031)
Farmland more than 5 acres	-0.154	-0.203	-0.132
	(0.053)***	(0.060)***	(0.056)**
Hindu	-0.083	-0.103	-0.082
	(0.032)***	(0.039)***	(0.034)**
Treatment Area	0.024	0.024	0.037
	(0.021)	(0.023)	(0.022)*
Inverse Mills Ratio			-0.017
			(0.029)
N	3727	3483	3342
R^2	0.046	0.025	0.051

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 8a

Probability that a woman is the member of organizations

Independent Variables	OLS	IV	Selection Corrected	Selection Corrected for land <= 0.5 acres
Mother-in-law coresident	-0.013	-0.111	-0.070	-0.089
	(0.031)	(0.117)	(0.034)**	(0.042)**
Mother-in-law in the bari	0.057	0.036	0.030	0.049
	(0.031)*	(0.044)	(0.030)	(0.036)
Father-in-law coresident	-0.025	-0.087	-0.039	-0.020
	(0.037)	(0.101)	(0.034)	(0.046)
Father-in-law in the bari	-0.031	-0.067	-0.048	-0.067
	(0.037)	(0.037)*	(0.037)	(0.042)
Age	0.012	0.006	0.007	0.018
	(0.005)***	(0.008)	(0.005)	(0.006)***
Age squared	-0.000	-0.000	-0.000	-0.000
	(0.000)***	(0.000)*	(0.000)***	(0.000)***
Marital Duration	0.005	0.003	0.004	0.005
	(0.002)**	(0.003)	(0.002)**	(0.003)*
Spousal age difference	-0.001	-0.002	-0.003	-0.005
	(0.002)	(0.002)	(0.002)	(0.002)***
Number of sons	-0.002	-0.009	-0.001	-0.007
	(0.006)	(0.008)	(0.006)	(0.009)
Number of daughters	0.002	-0.002	0.006	0.002
	(0.006)	(0.007)	(0.006)	(0.009)
Has children below five	0.010	0.009	-0.006	-0.004
	(0.020)	(0.023)	(0.021)	(0.026)
Family Size	-0.001	0.005	-0.001	-0.001
	(0.003)	(0.007)	(0.003)	(0.005)
Primary school educated	0.006	0.015	0.019	0.031
	(0.021)	(0.022)	(0.022)	(0.028)
Middle School educated	0.037	0.067	0.046	0.054
	(0.033)	(0.037)*	(0.033)	(0.044)
High School educated	0.115	0.134	0.092	0.172
	(0.050)**	(0.054)**	(0.046)**	(0.073)**
Husband primary school educated	0.016	0.029	0.020	0.016
	(0.021)	(0.021)	(0.020)	(0.025)
Husband middle school educated	-0.025	-0.007	-0.021	-0.025
	(0.026)	(0.027)	(0.027)	(0.035)
Husband high school educated	-0.018	-0.014	-0.021	-0.057
	(0.028)	(0.031)	(0.029)	(0.035)
Husband college educated	-0.119	-0.124	-0.130	-0.064
	(0.072)*	(0.072)*	(0.065)**	(0.088)

Father literate	-0.023	-0.029	-0.024	-0.011
	(0.019)	(0.020)	(0.019)	(0.023)
Father alive	-0.007	-0.001	-0.010	-0.004
	(0.021)	(0.022)	(0.022)	(0.025)
Number of	-0.000	-0.000	-0.001	-0.007
brothers	0.005	(0.005)	(0.005)	(0.007)
Dowry paid	0.016	0.024	0.019	0.024
	(0.023)	(0.023)	(0.022)	(0.030)
Father has own	0.090	0.096	0.094	0.114
house	(0.032)***	(0.035)***	(0.034)***	(0.042)***
Father has	-0.019	-0.022	-0.029	-0.029
farmland	(0.025)	(0.027)	(0.026)	(0.031)
Has own house	0.026	0.035	-0.001	-0.017
	(0.031)	(0.035)	(0.034)	(0.038)
Sturdy walls for	-0.004	-0.003	-0.006	-0.018
the house	(0.017)	(0.018)	(0.018)	(0.023)
Has farmland				-0.041
				(0.023)*
Farmland below	-0.047	-0.045	-0.043	
50 cents	(0.022)**	(0.024)**	(0.023)*	
Farmland less	-0.048	-0.045	-0.053	
than 5 acres	(0.023)**	(0.028)	(0.023)**	
Farmland more	-0.040	-0.022	-0.047	
than 5 acres	(0.033)	(0.041)	(0.035)	
Hindu	0.003	-0.019	0.025	0.009
	(0.032)	(0.032)	(0.030)	(0.034)
Treatment Area	0.033	0.032	0.033	0.054
	(0.016)**	(0.017)*	(0.016)**	(0.021)***
Has a member in	0.313	0.307	0.319	0.338
the bari	(0.023)***	(0.024)***	(0.023)***	(0.029)***
Inverse Mills			0.040	0.047
Ratio			(0.021)*	(0.029)
N	3776	3526	3390	2078
R^2	0.194	0.187	0.207	0.222

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 9a

Probability that a woman has ever used modern contraceptives

Independent Variables	OLS	IV	Selection Corrected	Selection Corrected for age < 40 years
Mother-in-law coresident	0.027	0.080	0.000	0.014
	(0.027)	(0.129)	(0.031)	(0.035)
Mother-in-law in the bari	0.078	0.096	0.068	0.051
	(0.027)***	(0.044)**	(0.028)**	(0.029)*
Father-in-law coresident	0.007	0.014	0.020	0.035
	(0.040)	(0.121)	(0.040)	(0.042)
Father-in-law in the bari	0.001	-0.004	-0.019	-0.042
	(0.035)	(0.037)	(0.034)	(0.035)
Age	0.028	0.032	0.029	0.060
	(0.007)***	(0.009)***	(0.008)***	(0.021)***
Age squared	-0.001	-0.001	-0.001	-0.001
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Marital Duration	0.002	0.002	0.003	0.012
	(0.003)	(0.003)	(0.003)	(0.004)***
Spousal age difference	-0.000	0.000	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Number of sons	0.034	0.036	0.037	0.080
	(0.009)***	(0.011)***	(0.009)***	(0.016)***
Number of daughters	0.020	0.022	0.024	0.039
	(0.008)**	(0.010)**	(0.009)***	(0.016)***
Has children below five	0.050	0.059	0.078	0.055
	(0.023)**	(0.026)**	(0.0.23)***	(0.027)**
Desire more children	-0.207	-0.203	-0.200	-0.119
	(0.028)***	(0.026)***	(0.023)***	(0.029)***
Family Size	-0.001	-0.005	0.000	-0.002
	(0.005)	(0.008)	(0.005)	(0.008)
Primary school educated	0.036	0.035	0.040	0.023
	(0.023)	(0.024)	(0.023)*	(0.027)
Middle School educated	0.067	0.080	0.097	0.080
	(0.040)*	(0.043)*	(0.041)**	(0.044)*
High School educated	0.116	0.127	0.137	0.112
	(0.047)***	(0.048)***	(0.052)***	(0.055)**
Husband primary school educated	0.007	0.007	0.025	0.050
	(0.024)	(0.025)	(0.023)	(0.027)*
Husband middle school educated	0.014	0.012	0.039	0.032
	(0.032)	(0.033)	(0.035)	(0.040)
Husband high school educated	0.008	0.001	0.036	0.055
	(0.035)	(0.037)	(0.037)	(0.042)

Husband college	-0.092	-0.084	-0.006	0.019
educated	(0.098)	(0.096)	(0.086)	(0.098)
Father literate	0.042	0.044	0.023	0.009
	(0.020)**	(0.021)**	(0.021)	(0.025)
Father alive	0.016	0.016	-0.009	-0.037
	(0.021)	(0.021)	(0.021)	(0.022)
Number of	0.012	0.012	0.014	0.019
brothers	(0.006)**	(0.006)**	(0.006)**	(0.007)***
Dowry paid	0.020	0.026	0.039	0.023
	(0.024)	(0.025)	(0.023)*	(0.023)
Father has own	-0.007	0.004	-0.012	-0.063
house	(0.042)	(0.044)	(0.045)	(0.052)
Father has	0.025	0.027	0.037	0.057
farmland	(0.027)	(0.027)	(0.026)	(0.030)*
Has own house	-0.023	-0.049	0.014	0.005
	(0.042)	(0.045)	(0.043)	(0.042)
Sturdy walls for	0.013	0.006	-0.003	0.008
the house	(0.019)	(0.020)	(0.020)	(0.027)
Farmland below	0.005	0.008	-0.020	-0.031
50 cents	(0.025)	(0.027)	(0.024)	(0.030)
Farmland less	-0.026	-0.034	-0.058	-0.027
than 5 acres	(0.027)	(0.031)	(0.027)**	(0.035)
Farmland more	0.028	0.050	-0.001	-0.009
than 5 acres	(0.063)	(0.067)	(0.064)	(0.070)
Hindu	-0.049	-0.064	-0.064	-0.086
	(0.029)*	(0.034)*	(0.031)**	(0.038)**
Treatment Area	0.266	0.265	0.268	0.269
	(0.019)***	(0.021)***	(0.020)***	(0.023)***
Inverse Mills			0.024	-0.025
Ratio			(0.023)	(0.028)
N	3738	3490	3358	1881
R^2	0.328	0.326	0.334	0.280

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 10a

Probability that a woman desires to have more children

Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	0.081 (0.259)***	-0.069 (0.105)	0.073 (0.029)**
Mother-in-law in the bari	-0.000 (0.029)	-0.053 (0.042)	-0.017 (0.028)
Father-in-law coresident	0.093 (0.035)***	-0.032 (0.095)	0.086 (0.037)**
Father-in-law in the bari	0.0463 (0.0.041)	0.029 (0.044)	0.043 (0.041)
Age	-0.062 (0.006)***	-0.072 (0.008)***	-0.058 (0.006)***
Age squared	0.001 (0.000)***	0.001 (0.000)***	0.001 (0.000)***
Marital Duration	-0.008 (0.002)***	-0.010 (0.003)***	-0.009 (0.002)***
Spousal age difference	-0.002 (0.002)	-0.003 (0.002)	-0.002 (0.002)
Number of sons	-0.052 (0.006)***	-0.063 (0.008)***	-0.052 (0.006)
Number of daughters	-0.020 (0.005)***	-0.029 (0.006)***	-0.020 (0.005)
Has children below five	-0.005 (0.019)	-0.012 (0.022)	0.010 (0.021)
Family Size	0.000 (0.003)	0.011 (0.006)*	-0.001 (0.004)
Primary school educated	-0.002 (0.019)	0.006 (0.021)	-0.011 (0.019)
Middle School educated	-0.011 (0.034)	0.024 (0.038)	-0.019 (0.037)
High School educated	-0.0198 (0.047)	0.018 (0.028)	0.022 (0.048)
Husband primary school educated	-0.014 (0.017)	-0.024 (0.019)	-0.002 (0.018)
Husband middle school educated	-0.018 (0.024)	-0.027 (0.026)	-0.014 (0.025)
Husband high school educated	-0.013 (0.026)	-0.037 (0.028)	-0.006 (0.026)
Husband college educated	-0.000 (0.136)	-0.050 (0.127)	-0.037 (0.084)
Father literate	-0.011 (0.017)	-0.004 (0.019)	-0.014 (0.016)

Father alive	0.003	0.001	0.007
	(0.020)	(0.021)	(0.021)
Number of brothers	-0.008	-0.009	-0.011
	(0.005)*	(0.005)*	(0.005)**
Dowry paid	0.021	0.010	0.023
	(0.023)	(0.025)	(0.024)
Father has own house	-0.018	-0.024	-0.012
	(0.029)	(0.033)	(0.029)
Father has farmland	0.023	0.032	0.019
	(0.022)	(0.025)	(0.020)
Has own house	-0.070	-0.037	-0.042
	(0.038)*	(0.042)	(0.036)
Sturdy walls for the house	0.000	0.004	0.010
	(0.015)	(0.016)	(0.016)
Farmland below 50 cents	-0.009	0.006	-0.004
	(0.019)	(0.022)	(0.019)
Farmland between 50 cents to 5 acres	0.017	0.035	0.012
	(0.021)	(0.024)	(0.021)
Farmland more than 5 acres	-0.040	-0.008	-0.037
	(0.033)	(0.042)	(0.034)
Hindu	-0.035	-0.026	-0.034
	(0.027)	(0.032)	(0.029)
Treatment Area	0.024	0.021	0.030
	(0.014)*	(0.016)	(0.014)**
Inverse Mills Ratio			-0.028
			(0.020)
N	3738	3490	3358
R^2	0.529	0.507	0.542

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 11a

Body Mass Index

Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	-0.153	-1.652	-0.352
	(0.185)	(0.809)**	(0.204)*
Mother-in-law in the bari	-0.148	-0.546	-0.275
	(0.187)	(0.296)*	(0.189)
Father-in-law coresident	0.298	0.162	0.200
	(0.228)	(0.708)	(0.229)
Father-in-law in the bari	-0.541	-0.748	-0.568
	(0.227)**	(0.255)***	(0.228)**
Age	0.081	-0.001	0.080
	(0.042)**	(0.064)	(0.045)*
Age squared	-0.001	-0.001	-0.001
	(0.000)***	(0.001)	(0.000)***
Marital Duration	-0.001	-0.008	-0.006
	(0.016)	(0.019)	(0.017)
Spousal age difference	0.002	-0.015	-0.002
	(0.012)	(0.015)	(0.013)
Number of sons	-0.040	-0.133	-0.070
	(0.057)	(0.074)*	(0.060)
Number of daughters	-0.008	-0.062	-0.019
	(0.057)	(0.071)	(0.059)
Has children below five	-0.434	-0.482	-0.408
	(0.131)***	(0.149)***	(0.147)***
Family Size	0.044	0.138	0.049
	(0.029)	(0.055)**	(0.030)*
Primary school educated	0.120	0.166	0.148
	(0.147)	(0.158)	(0.151)
Middle School educated	0.546	0.656	0.529
	(0.238)**	(0.262)**	(0.242)**
High School educated	1.018	1.044	1.109
	(0.347)***	(0.389)***	(0.374)***
Husband primary school educated	0.187	0.229	0.115
	(0.142)	(0.150)*	(0.148)
Husband middle school educated	0.281	0.271	0.245
	(0.215)	(0..221)	(0.225)
Husband high school educated	0.354	0.353	0.352
	(0.214)*	(0.227)	(0.227)
Husband college educated	1.362	1.142	1.790
	(1.020)	(1.059)	(1.364)
Father literate	0.319	0.297	0.369
	(0.136)**	(0.144)**	(0.141)***

Father alive	-0.152	-0.152	-0.096
	(0.133)	(0.150)	(0.140)
Number of brothers	0.088	0.096	0.072
	(0.035)***	(0.037)***	(0.038)**
Dowry paid	0.042	0.072	0.023
	(0.139)	(0.151)	(0.140)
Father has own house	0.014	-0.043	0.155
	(0.346)	(0.389)	(0.382)
Father has farmland	-0.076	0.061	-0.241
	(0.167)	(0.188)	(0.170)
Has own house	-0.436	-0.374	-0.439
	(0.296)	(0.319)*	(0.338)
Sturdy walls for the house	0.472	0.485	0.468
	(0.133)***	(0.145)***	(0.139)***
Yard clean	0.160	0.160	0.135
	(0.111)	(0.119)	(0.117)
Farmland less than 50 cents	-0.182	-0.113	-0.080
	(0.146)	(0.159)	(0.150)
Farmland less than 5 acres	-0.284	-0.124	-0.261
	(0.182)	(0.203)	(0.185)
Farmland more than 5 acres	-0.036	0.131	0.067
	(0.351)	(0.361)	(0.371)
Hindu	0.655	0.767	0.589
	(0.205)***	(0.232)***	(0.220)***
Treatment Area	0.231	0.216	0.211
	(0.122)*	(0.134)	(0.126)*
Inverse Mills Ratio			0.071
			(0.140)
N	3377	3152	3100
R^2	0.110	0.071	0.107

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels

Table 12a

Height of Women (in cm)

Independent Variables	OLS	IV	Selection Corrected
Mother-in-law coresident	-0.298	-3.274	-0.286
	(0.452)	(1.887)*	(0.498)
Mother-in-law in the bari	0.428	-0.413	0.478
	(0.410)	(0.686)	(0.427)
Father-in-law coresident	-1.050	-0.115	-0.803
	(0.532)**	(1.799)	(0.556)
Father-in-law in the bari	-0.116	-0.181	-0.135
	(0.510)	(0.531)	(0.514)
Age	0.167	0.053	0.165
	(0.088)*	(0.133)	(0.090)*
Age squared	-0.002	-0.001	-0.002
	(0.001)**	(0.001)	(0.001)**
Marital Duration	-0.096	-0.089	-0.084
	(0.037)	(0.043)*	(0.038)**
Spousal age difference	-0.020	-0.044	-0.009
	(0.024)	(0.031)	(0.025)
Number of sons	0.261	0.172	0.299
	(0.131)**	(0.159)	(0.135)**
Number of daughters	0.235	0.147	0.227
	(0.123)*	(0.139)	(0.127)*
Has children below five	-0.244	-0.288	-0.169
	(0.330)	(0.372)	(0.347)
Family Size	0.058	0.165	0.027
	(0.068)	(0.122)	(0.067)
Primary school educated	0.936	1.078	0.793
	(0.348)***	(0.365)***	(0.037)**
Middle School educated	1.560	2.118	1.268
	(0.550)***	(0.574)***	(0.584)**
High School educated	2.694	3.005	2.107
	(0.748)***	(0.813)***	(0.759)***
Husband primary school educated	-0.152	-0.089	-0.177
	(0.331)	(0.338)	(0.354)
Husband middle school educated	0.614	0.429	0.488
	(0.483)	(0.506)	(0.513)
Husband high school educated	0.451	0.233	0.688
	(0.493)	(0.514)	(0.514)
Husband college educated	1.608	0.965	2.968
	(1.586)	(1.862)	(1.872)
Father literate	-0.276	-0.241	-0.197

	(0.030)	(0.320)	(0.318)
Father alive	0.485	0.513	0.393
	(0.309)	(0.334)	(0.318)
Number of brothers	-0.058	-0.056	-0.029
	(0.090)	(0.093)	(0.091)
Dowry paid	0.243	0.206	0.169
	(0.337)	(0.338)	(0.353)
Father has own house	0.118	0.092	-0.198
	(0.576)	(0.590)	(0.608)
Father has farmland	0.268	0.313	0.377
	(0.346)	(0.369)	(0.355)
Has own house	0.323	0.759	0.142
	(0.640)	(0.685)	(0.727)
Sturdy walls for the house	-0.272	-0.319	-0.379
	(0.319)	(0.342)	(0.334)
Yard clean	-0.330	-0.287	-0.300
	(0.277)	(0.286)	(0.292)
Farmland less than 50 cents	-0.229	-0.132	-0.436
	(0.361)	(0.390)	(0.387)
Farmland less than 5 acres	-0.237	-0.073	-0.234
	(0.394)	(0.431)	(0.409)
Farmland more than 5 acres	-0.366	-0.021	-1.079
	(0.954)	(1.036)	(0.824)
Hindu	-2.091	-1.746	-2.235
	(0.435)***	(0.497)***	(0.461)***
Treatment Area	-0.614	-0.490	-0.761
	(0.264)**	(0.280)*	(0.274)***
Inverse Mills Ratio			0.198
			(0.368)
N	3384	3159	3107
R^2	0.088	0.058	0.090

i. Standard errors given in parentheses
ii. *, ** and *** indicate 10%, 5% and 1% significance levels