

EXTENDED ABSTRACT

Do mothers-in-law Influence Fertility Preferences of Daughters-in-law: Evidence from Rural Bihar, India

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Abstract

Several studies from developed countries have demonstrated important effects of parents' fertility behaviour on their children's fertility preferences and behaviour; but little is known on such issue from developing countries. This study advances our understanding of this intergenerational influence in context of developing countries, by extending the theoretical model to include parental preferences, sibling behaviour. Using primary data of pair of daughters-in-law and mothers-in-law from rural Bihar, we test the effect of both mothers-in-law's and mothers' fertility and preference for daughters-in-law/daughters fertility. We also examined the influence of siblings' fertility on the fertility preferences of daughters-in-law. Although both, mothers-in-law/mothers fertility and preferences influence childbearing preferences of daughters-in-law, mothers' actual fertility and preferences for their daughter's fertility have the stronger and more proximate effects. Own and spousal siblings' fertility is an additional determinants of daughters-in-law's family size preferences. Mothers' preferences continue to influence their children's preferences through early adulthood.

Previous evidence from developed countries

The association of fertility between parents and their children has been a subject of scientific research since decades. The pioneer work on this research issue is started by Pearson, Lee, and Bramley-Moore in 1899. Using the historical data on British peerage, they found a positive correlation between fertility of mother and daughter, father and son, and grandmother and granddaughter. They concluded that genetic heritability – transfer of genes from one generation to other – is the responsible factor for such association. After a long gap, other studies were conducted to examine the transmission of fecundity across the successive generations (Huestis and Maxwell, 1932; Imaizumi *et al.*, 1970). These studies argued that, across the generations, genetic transmission in the desire for children as well as in ability to have them are comparable in similar way in height, body build and so on.

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During the 60s and onwards, investigation of the intergenerational transmission of fertility continued to increase in demographic literature (Duncan *et al.*, 1965; Johnson and Stokes, 1976; Langford and Wilson, 1985; Anderton *et al.*, 1987; Bocquet-Appel and Jakobi, 1993; Kohler *et al.*, 1999; Murphy, 1999). These studies demonstrated positive association between sibling size and number of children of the individual. These studies investigated sociological mechanisms of such relationship rather than biological/genetic links. Using the multi sources data (Growth of American Families Survey, 1955, Current Population Survey, 1962 from USA), Duncan *et al.*, (1965) stated that “*family size has a tendency to run in families*” means children brought up in small families are assumed to prefer small families and conversely for those brought up in large families. They argued that *social interaction* in family of orientation and procreation influences the decision making of children’s. Duncan and his colleagues suggested that younger generation’s family size preferences are influenced by parents’ fertility. Later on, this idea is strengthened and extended by Axinn *et al.*, (1994). Using the multi-wave longitudinal data, they established a link between mother’s fertility behaviour and her preferences with their children’s fertility. They found that both mother’s fertility behaviour and preferences have strong independent effect on her daughter’s family size preferences. They concluded that the intergenerational effect is rooted in parent’s own fertility behaviour, but the effect of this behaviour is transmitted by parental preferences so that the most proximate link to young people’s preferences is parents’ preferences for their children’s family size.

A few studies have also demonstrated that parent’s childbearing behaviour affects the children’s (daughter’s) fertility behaviour. Therefore there is a strong link between *parent’s fertility behaviour* and their *children’s fertility behaviour* (Johnson and Stokes 1976; Zimmer and Fulton 1980; Anderton *et al.*, 1987; Johnson and Freymeyer 1989; Kahn and Anderson 1992). According to these studies, education is appeared as an intervening factor to establish such link. For instance, the women from large families leave school at earlier age, begin childbearing earlier and continue to bear children longer and therefore tend to have more children than those who come from smaller family and remain in school at an older age.

Demographers have also increasingly advanced the research and developed theories to understand the role of *attitudes* and *values* in shaping the demographic behaviour across the generations. Several studies have documented importance of influence of parental attitudes on young people’s fertility behaviour (Axinn and Thornton, 1992a, b, 1993; Goldscheider *et al.*, 1993). They defined the parental attitude as their preferences for grandchildren and hence suggested that it affects the children’s own childbearing preferences, which are likely to influence their marriage behaviour. For instance, a study using multi-wave surveys of mother-child pair from Detroit Metropolitan Areas (Barber and Axinn, 1998) noted that maternal preferences for grandchildren have significant impact on their children’s cohabitation and marital behaviour. Young women, whose mothers want many children from them, are more likely to marry earlier than their peers.

Beside the behavioural and preference, researchers have been trying to establish a link between *family size* of older generation and younger generation with other possible mode of

transmission. A study by Ben-Porath (1975), examined the influence of first generations' fertility on second generations fertility. He noted that sibling size of older generation is directly related with fertility of younger generation. The relationship was proved statistically but the way how this relationship exists is not clear in the study. Another study by Anderton *et al.*, (1987) established the relationship between maternal family size and daughter's fertility behaviour and observed that *age at marriage* of younger generation plays a crucial role in such relationship. They found that, daughters coming from relatively larger family sizes tend to marry earlier and have shorter birth interval, they start their childbearing earlier and have larger family size. They also extended their findings that those mothers who married later also tended to married their daughter later, thus they had longer birth intervals and had a smaller family size. The study concluded that age at marriage and completed family size of mother has significant association with relationship of mother's and daughter's fertility. However mother's age of marriage appeared stronger than those by completed family size.

Evidence from developing countries

Compared to the developed countries, very few studies have been carried out in developing countries, which documented the intergenerational influences on fertility behaviour. Moreover, unlike the previous studies – association in fertility across the successive generations – these studies have mainly focused on influence of older generation on young couples' family planning decisions. Further, these studies considered the pair of mother-in-law/daughter-in-law rather than mother/daughter or father/son.

The influence of mothers-in-law on young couples' family planning decision in South Asia is considered to be significant. For instance, a study from Bangladesh showed that contraceptive use was lowest where the daughter-in-law was co-residing with mother-in-law (Caldwell *et al.*, 1982). Study also showed the gap between knowledge and adoption of modern contraceptive methods among daughter-in-law because of opposition of her mother-in-law (Qurub, 1995). Few studies have also demonstrated common findings that mother-in-law also influences the number of children that couples want to have (Lolarga, 1983; Senanyake, 1986; Moore, 1994). A usual explanation of son preference is given for such influences in these studies. Of course these studies have drawn attention on intergenerational influences on individual fertility behaviour, but these studies are based on information collected from only one generation i.e. from daughters-in-law.

A study from Karachi, Pakistan (Kadir *et al.*, 2003), investigated the influence of mothers-in-law on decision related to family size and family planning of their sons and daughters-in-law. The study collected information from mothers-in-law, daughters-in-law, and sons of the same family. Study found that mothers-in-law influence their daughters-in-law not to adopt family planning, even if the daughters-in-law did not wish to have more children. This reflects their demand for more grandchildren especially for grandson. Another sole study from rural Madhya Pradesh, India (Arundhati *et al.*, 2010) documented the influence of mothers-in-law on family planning decision of daughters-in-law. This study has also collected information from mothers-in-law as well as daughters-in-law. Mothers-in-law play a significant role on

the timing of sterilization of daughters-in-law, however so far is not true for the use of reversible methods.

Pathway of intergeneration transmission of fertility (Conceptual Framework)

Very first time, Barber (2001) and her colleagues pointed out *Value Socialization* as an important mode of intergenerational transmission of fertility behaviour. Through *value socialization*, parents affect their children's behaviour by influencing how their children should behave. Parents' preferences for their child shape the child's own preferences and behaviour. As the parents and children share similar attitudes, values, and preferences because they also shared same social position, background and experiences, therefore children may behave in accordance with their parents preferences simply because these are shaped by similar social forces.

The second one *Social Control* is attitude based mechanism linking the parent and children family-related behaviours. In contrast to the value socialization, this influence is direct rather than indirect (Axinn and Thornton, 1993). According to social control, parents attempt to get their children to behave in ways which parents find appropriate. Thus children alter their behaviour simply to please their parents or in order to attain or retain valued resources. If children would not act in accordance with parental preferences, this could lead to negative sanctions by parents. *Behavioural Socialization* is the third mechanism by which demographic behaviour transmitted from parents to children (Amato, 1996). In contrast to the previous mechanisms, behavioural socialization results from behavioural patterns and expectations of parents that are taken for granted in the early stage of life. The behavioural pattern of parents is perceived as a role model by the children and hence children adopt those.

The fourth mechanism is the *by-product* of *exogenous factors* that are related to both the parents and the children behaviour. These factors could be genes (Foster, 2000; Kohler *et al.*, 1999; Morgan and King, 2001), shared social conditions or similarity between parents and children in their trajectories in other life domains (Amato, 1996; Kalmijn *et al.*, Kahn and Anderson, 1992). For instance, marriage is often dependent on the successful completion of education. If parents transmit their educational achievement to their children, this could lead to similarity in the timing of entry into marriage as well. If so, then intergenerational transmission could be viewed as a by-product of factors connect lives of parents and children.

Defining generations in the present study

Almost all available literature on the research area is from western countries where intergenerational relationships in fertility behaviour have been explored mostly for the pair of mother and daughter. The main reason is that in western societies even after marriage, mother serves as immediate care taker or advisor on reproductive issues of young women (Hagestad, 1986; Uhlenberg and Hammill, 1998; Chan and Elder, 2000; Dubas, 2001; Pollet *et al.*, 2009). But in Indian society, particularly in the typical family system of north, after marriage, the daughter moves towards her in-law house where she must be re-socialized so that she could identify her own interests with those of her husband's kin; particularly with his mother. She spends most of day in close proximity with her mother-in-law where mother-in-law is the

embodied representative of the family of procreation and diverging norms, interests, decisions in a household are channelled via this relationship. The mother-in-law has control that how the feminine, fertile body of the daughter-in-law should behave and how many children should be borne of it (Saavala, 2002). Accordingly, in the present study, mother-in-law is considered as older generation and daughter-in-law as younger generation, and hence transmission on fertility behaviour across the generations is examined. However an attempt is also made to understand the mother's influence. This is done to understand that whether there is any accordance between present study and the study from western countries.

Objectives

The specific objectives of the study are:

- 1) To examine the influence of older generations on family planning use of younger generations.
- 2) To examine the influence of older generations fertility on younger generation's fertility preferences.

Hypotheses

The following hypotheses are formulated for the present study:

- 1) Younger generations are more likely to make family planning decisions by own.
- 2) Younger generation's family size preference is influenced by preference of older generation's.

Reason for selecting Bihar as study area

The present study is carried out in rural area of Bihar. Main reason for selecting Bihar as a study area is lower age at marriage in the state which warrants greater availability of eligible respondents of the two generations. Apart from that, demographic and social indicators are worse in the state. The state has experienced high level of fertility since long back and still marked with high population growth. According to the recent round of National Family Health Survey (2005-06) total fertility rate (TFR) is 4.0 per women in the state which is highest among all the states of the country. Contraceptive prevalence rate (34%) in the state is one of the lowest among the major states. Thus in a society where fertility remained highest since decades, one could expect harmony in fertility across the generations.

Data and methods

Data source

As per the objectivity of this study, it was important to have information from two successive generations. Considering the need, it was difficult to establish the relationship from secondary data sources available in India. Hence, this study used primary data collected from rural areas of Saran district of Bihar.

Sample size and selection of households and respondents

Since the purpose of the study was not to estimate the fertility indicators, rather than examine the proposed objectives of the study, hence, in order to save time, money, and men power, we applied a simple sampling method to get a good number of respondents. Using the prevalence of co-residence households (a households where mothers-in-law and daughters-in-law are residing together) in rural Bihar, the estimated sample size for the present study was about 450 households where both mothers-in-law and daughters-in-law were co-residing.

In order to attain the 450 samples (household with mother-in-law and daughter-in-law) a multi-stage stratified random sampling was used for data collection. At the first stage a block was selected using the criteria of lowest proportion of 0-6 population. The lowest proportion of 0-6 population was viewed as an indicator of presence of higher proportion of young/elder population and hence getting a household of our required criteria may be easier. At the second stage, villages with higher number of households were selected following the same criteria. We tried to choose the adjacent villages in order to minimize the survey cost. Accordingly, three villages were selected. In order to identify eligible households, a complete house listing of the selected villages was done; and those households were marked for interview where respondents of both the generations were residing together.

We preferred to interview mothers-in-law aged less than 60 years only, in order to minimize the recall bias. From the second generations, daughter-in-law (less than 40 years) with at least one living child was selected for the purpose of interview. Hence, out of total identified households, only those households were selected for the interview which fulfils all the aforesaid criteria.

Data collection and survey instruments

Data collection was done during April–June, 2011. A combination of both quantitative and qualitative data was used for the study purpose. The quantitative data was collected with the help of semi-structured schedules. A total of three schedules were used to collect the information from daughters-in-law – household schedule, individual schedule, and mother schedule. Household schedule contained the information about head of households, household members, household's income-expenditure and other household details. The individual schedule had separate sections of personal details of daughters-in-law and her spouse, relationship with mothers-in-law, fertility preferences, and interaction with mothers-in-law on different issues regarding fertility behaviour. The mother schedule contained the basic characteristics of parents and siblings, fertility preferences and behaviour of mothers. For mothers-in-law only individual schedule is used which contained the household as well individual information. All the schedules were translated into Hindi before canvassing into the field. In-depth-interview was conducted using pre-developed guidelines.

Data compilation and data analysis

Data was compiled using CPro 4.0 software. Before starting the data entry, all the schedules were re-edited and codes were assigned to open ended questions. For data analysis purpose SPSS 18.0 and STATA 10.0 software are used.

To fulfil the objectives of this study, uni-variate, bi-variate and multivariate techniques have been used. Other than, frequency distribution, mean and standard deviation has been calculated as per the requirement. Principal Component Analysis (PCA) is used to compute household economic status index (HSEI). Coombs scale is computed to measure family size preference. Multivariate methods like binary logistic regression and multiple regression analysis have been used as per their requirement in order to fulfil the objectives.

Preliminary findings

Intergenerational influence on use of family planning services

At the outset we examined influence of mother-in-law's on contraceptive use of daughter-in-law. We also tried to capture the influence of mothers as well. However, mother's opinion is based on daughters-in-law reporting and may be a matter of caveat in terms of over or under reporting. At the outset, this chapter deals with the opinion of mothers-in-law on family planning use of their daughters-in-law. Further, we examined the role of mothers-in-law on contraceptive decision making and attitude towards contraceptive use. Furthermore, we attempted to examine the influence on MIL-DIL interactions on contraceptive use of daughters-in-law. Finally, we examined influence of older generation's contraceptive use on the family planning use of younger generations.

Authority of mothers-in-law in involvement of contraceptive decision

First we examined the perceived authority of mother-in-law in decision on contraceptive use for her daughter-in-law. Same question is also asked to the daughter-in-law to validate the response. Result shows that authority of mothers-in-law is considerable regarding female sterilization. More than four-fifths (86%) of mothers-in-law were opined that they should decide when their daughter-in-law should get sterilized and a similar proportion of daughters-in-law (85%) agreed with this position. It is notable, however, that more than three-fourths of mothers-in-law (78%) were felt left out them, when it comes to their involvement in decision regarding reversible methods of family planning. Again here, this opinion is also supported by a similar proportion (71%) of daughters-in-law. From the analysis, a discrepancy emerged in the interviews between the daughters-in-law's evaluation of the general importance of their mothers-in-law in the family and her role in decision concerning sterilization. Our findings clearly indicate that mothers-in-law wanted to make decision about their daughters-in-laws' sterilization. Majority of the mothers-in-law themselves opined that they had and should have the final say in their daughters-in-law being sterilized, but they considered communication on other contraceptive use as limited and even useless.

The results of qualitative study also confirm the notion of varying authority of mothers-in-law in involvement in contraceptive decision of her daughters-in-law. In the view of a mother-in-law (55 years old) *“Even I feel like advising my daughters-in-law, what is the use? They will not listen and will do as they feel better.”* She further added that *“I am sure my daughter-in-law is using some-thing to prevent pregnancy. She has probably discussed it with my son. I am never consulted in these matters at all.”* When asked about role of mothers-in-law on decision regarding sterilization of her daughter-in-law, another mother-in-law (58 years old) reported that *“I am the one who decides when my daughter-in-law needs to get sterilized. Unless there are at least two sons, there is no way that I am going to permit her to get it done.”*

As noted, most of the daughters-in-law reported that their mother-in-law was left out of their decisions concerning reversible family planning methods. In the qualitative study, a daughter-in-law viewed her mothers-in-law as interfering, even if they were not asked their opinion. This led to conflicts over the use of reversible contraceptive methods despite the belief that the older generation should not be involved. In the view of a daughter-in-law *“Although we had kept my mother-in-law out of the discussion about our using condoms, she somehow got to know and was annoyed with us, asking us to stop using them immediately. Fortunately, my husband is very understanding and so we continued using them”* (Daughter-in-law, 25 years old).

Influence of older generation on the decision on sterilization and spacing methods

We asked a set of hypothetical question to understand the opinion of mothers-in-law regarding family planning use of her daughters-in-law. The question was asked, *“What would be your opinion if your daughter-in-law wanted to use contraceptives”?* The response is categorised into three categories: agree, disagree, and no opinion. The question is asked for limiting and spacing methods separately. The same question is asked from daughters-in-law to evaluate their opinion of her mothers-in-law and mothers. Result shows that, majority of mothers-in-law (62%) will be agree if her daughters-in-law wanted to use sterilization. Contrary to that more than three-fourths (76%) of mothers-in-law will be disagree if her daughters-in-law wanted to use spacing methods. When evaluating the opinion of mothers-in-law from interview of daughters-in-law, we found that 64% of daughters-in-law reported that their mothers-in-law will be agree for sterilization; while about 70% were reported that their mothers-in-law will not allow them to use reversible methods.

Those mothers-in-law who reported to allow use of limiting and spacing methods to her daughter-in-law were further asked that after how many children, sons, and daughters, they will allow them to use. Result shows that mother-in-law will allow their daughter-in-law to use spacing method after having an average of 3 children (2 sons and 1 daughter) and will allow for limiting method after having an average of 5 children (3 sons and 2 daughters). Findings indicate that the sterilization will only be allowed once daughters-in-law would have ideal number of five children. The response obtained from daughters-in-law depicts a similar number.

As known male heirs are a crucial issue for kin groups in rural India; the same is observed in our study area. Findings suggest that mothers-in-law did not want their daughters-in-law to undergo the operation until she bore the number of sons mothers-in-law required. The qualitative findings indicate that *“I will get both of my daughters-in-law sterilized: first the elder one, then the younger one. One son is a must, if not two. Until a son is born the daughters-in-law will have to continue having children. No matter how many girls child are born, there will be no sterilization for them unless the required sons are born.”* (Mother-in-law, 52 years old)

A strong son preference emerged not only from talking to mothers-in-law; some daughters-in-law also felt very strongly about sons. In the view of a daughter-in-law (32 years old) *“I am the eldest daughter-in-law. I have three daughters and am currently pregnant again. But the desire to have a son is immense. I hope that this time I will have a son. My younger co-sister has two sons and so she is given a lot more importance than me in the household. I too want that position and I know I will get it only if I bear a son.”*

Awareness and opinion of mothers-in-law on contraceptive use of her daughters-in-law

We asked a question to the mother-in-law that *“Do you know that your daughter-in-law is using any method of family planning to postpone childbearing?”* This question was asked separately for ever and current use of contraceptives and disaggregated for sterilization and spacing methods. The same question is asked from daughter-in-law to know that whether her mother-in-law is aware about her contraceptives use. Result shows that either in case of ever or current use, all mothers-in-law were aware that her daughter-in-law is sterilized. For spacing methods, awareness of mothers-in-law was low for ever use (48%) and lower for current use (27%).

Those mothers-in-law, who reported awareness about contraceptive use of daughters-in-law, were further asked that whether their daughters-in-law sought permission about use of contraceptives. The same question is asked to the daughters-in-law that whether she sought permission from her mothers-in-law. This particular question was asked for any daughters-in-law (ever and current users). Most of the mothers-in-law (97%) reported that they have been consulted before sterilization while only 23% reported that their daughters-in-law taken their concern for reversible methods. The figure was more or less similar when it is asessed from daughters-in-law interview.

The qualitative findings reflects similar notion that decision on sterilization is always taken with concern of mother-in-law. A daughter-in-law aged 34 years, reported that *“We (wife and husband) discussed the possibility of my getting sterilized after we had our two sons and one daughter. We asked my mother-in-law and she agreed.”* An adverse narration is observed in case of spacing methods. Another daughter-in-law narrated that *“My husband and me discussed delaying the second child after our first was born. We jointly decided rather than involving mothers-in-law to use oral pills. My husband procures these either from the*

hospital or the medical shop. Those who want to delay pregnancy and space children should use such methods” (Daughter-in-law, 26 years old).

The mother-in-law who reported that they have taken permission before use of contraceptives was further asked that *“What was your reaction when your daughters-in-law asked permission for family planning use?”* This question was disaggregated by sterilization and spacing methods. About three-fourths (73%) of mothers-in-law reported that they approved for sterilization while more than two-thirds (67%) were disapproved use of spacing methods of her daughters-in-law. The finding was similar when obtained from daughters-in-law interview – 67% of mothers-in-law were agreed for sterilization while 58% were disagreed for reversible methods.

The mothers-in-law who were never allowed their daughter-in-law to use of contraceptives were asked the reason for doing so. We disaggregated this reason for spacing and limiting methods. Most of the daughters-in-law expressed their negative opinions on spacing methods – 33% reported that reversible methods caused side effect, 27% reported that condoms are dirty and should not be used in respectable people home. Remaining was reported that they oppose the reversible methods since they want more child and the methods are costly.

The negligence of reversible methods was also observed from in-depth interview. A mother-in-law reported that *“Oral pills lead to boils and menstrual disturbances. IUD also cause swelling and ruin the uterus. This is the reason why women opt for female sterilization.”* Negative opinion was also observed for condom. A mother-in-law reported that *“When I went to the hospital with my daughter-in-law during the delivery of her last child, the doctor showed me some condoms and suggested that I ask my son and daughters-in-law to use them. I refused even hold one in my hands. I don’t want such dirty things in my house”* (Mother-in-law, 55 years old). Another mother-in-law reported that *“I have seen condoms strewn around the village. This is most indecent thing and the government is doing wrong in promoting them. These things are for people with a bad reputation and those using it also get bad name. On the other hand, sterilization is a decent method to adopt.* For these mothers-in-law, female sterilization was far preferable. In fact most mothers-in-law in the study support this favourable view towards female sterilization. A 58 years old mother-in-law said that *“When there is sterilization, why talk about other methods? They all cause problems.”* A few mothers-in-law were also found to oppose female sterilization. Among them, majority (46%) of mothers-in-law opposed female sterilization because they want more children, 29% reported that sterilization too costly and 21% opposed because after sterilization her daughter-in-law will be weak.

Discussion on use of contraception between MIL-DIL and its influence on daughters-in-laws’ contraceptive use

Result obtained from either from daughters-in-law and mothers-in-law suggests that discussion on issue of childbearing was common and such discussion was usually started by older generations. However, discussion on contraceptive use was rare. About 60% of

mothers-in-law were reported that they never discussed on family planning issue with daughter-in-law. The corresponding figure is 67% – obtained from daughters-in-law record. A similar result is observed based on daughters-in-laws' interview. The qualitative findings also provides same notion. In a view of mother-in-law *“There is no such discussion within family and so I am not even aware if my daughters-in-law are using any contraception. I am only aware that my eldest daughter-in-law is sterilized, which she informed me after the procedure.”* Another mother-in-law said that *“Neither do I discuss such issues, nor does any-one of them discuss with me. I do not have any interest in such things.”*

Among those daughters-in-law who reported that they discuss on issue of family planning, majority of them are older than 25 years, have two or more parity, more educated, belonged to economically better households, and reported a good relationship with her mothers-in-law. Husband's education and better occupation exert positive influence on discussion on contraceptive issue with the mothers-in-law.

We made an attempt to understand the influence of discussion on childbearing and family planning issue on current use of contraceptive among daughters-in-law. Result shows that prevalence of contraceptive use was 37% among those daughters-in-law who never discussed on issue of childbearing with her mother-in-law. The corresponding figure was 43% and 45% among those who discuss sometimes and often respectively. A similar pattern is observed when we considered the discussion on childbearing issue with mother, but the differences are not significant. Contrary to that, discussion on family planning use has significant influence on prevalence of current contraceptive use. For instance, among those daughters-in-law who reported that they never discussed on the issue of family planning, the prevalence of current contraceptive was only 25%. The corresponding figure increased to 62% and 65% among those who discuss on the issue sometimes and more often respectively. The pattern was similar when we considered the discussion with mothers.

In order to understand the adjusted effect of interaction on current contraceptive use, we used binary logistic regression analysis. Five separate models have been used. The first and second models refer the interaction with mothers-in-law and mothers respectively. In the third model, interaction with both, mothers-in-law and mothers were considered together. The fourth model refers interaction with mothers-in-law, mothers, and husband. In the final model, interaction with all three (MIL, mother, and husband) were taken together with the individual, household, and spousal characteristics. We focused on interaction on family planning only, since we did not find significant influence of interaction on childbearing in descriptive analysis. Result suggests that interaction with mother has significant influence on current use of contraceptive use. For instance, among those DIL, who often discussed on the issue, the odds of current use of contraceptive 3.8 ($p < 0.01$). The pattern remained similar up to fourth model. In the fifth model, when all variables were adjusted the level of significance attenuated but the odds ratio remained more or less similar. Interaction with mother was insignificant in all the five models. Among the other confounders, individual education, household wealth and MIL-DIL relationship were significant predictors of current use of contraceptive. A similar result is observed for ever use of family planning.

Influence of older generation's behaviour on contraceptive use among daughters-in-law

This section examines the influence of ever use of family planning of older generations (both mothers-in-law and mother) on contraceptive use of daughters-in-law. Analysis was disaggregated by reversible methods and sterilization among the older generations and cross classified by ever use of reversible methods and sterilization among the daughters-in-law.

Results show that older generations' family planning use has a positive influence on contraceptive use of younger generations. If mothers-in-law had ever used reversible method, in such case the prevalence of ever use of reversible method among the daughters-in-law was 69%, similarly if mothers-in-law never used reversible methods the prevalence of never use among daughters-in-law was 61%. A similar result is observed for mother's behaviour. When we cross classified the prevalence of sterilization across the generation, we found that those mothers-in-law who were sterilized, 64% of their daughters-in-law were sterilized. Contrary to that, to the non-sterilized mothers-in-law 82% of daughters-in-law were non-sterilized. A similar pattern is observed with mothers' sterilization.

We also tried to examine the influence of older generations' ever use of family planning on current contraceptive use of younger generations. We applied binary logistic regression and four separate models have been used. The first and second models refer ever use of contraceptives among mothers-in-law and mothers respectively. In the third model, ever use of contraceptives of both mothers-in-law and mothers were considered together. The fourth model refers ever use of contraceptive of mothers-in-law and mothers along with the individual, household, and spousal characteristics. Result suggests that family planning use of mothers-in-law's has significant independent effect on current use of contraceptive among daughters-in-law (OR: 1.96; $P < 0.01$). Similar result is observed for mothers behaviour (OR: 2.31; $P < 0.01$). When mother-in-law and mother are considered together, the effect of mothers-in-law remained same (OR: 1.87; $P < 0.01$), however effect of mother's behaviour attenuated. In the fourth model, the influence of mothers-in-law's remained similar and significant (OR: 1.72; $P < 0.05$). Among the other confounders, individual education, household wealth and MIL-DIL relationship were significant predictors of current use of contraceptive. A similar analysis was done to examine the influence on ever use of contraceptive among daughters-in-law and similar results are observed.

Intergenerational influence on fertility behaviour

Influence of older generation's fertility on daughters-in-law's family size preference

Coombs scale is used to examine the influence of older generation's fertility on family size preferences of younger generations. We asked three levels of question to measure family size preferences of daughters-in-law. The first question (opening question) was asked to daughters-in-law "If you could have just the number you would like, what number of children would you want to have when your family is completed?" After this, the respondents were further asked "If you will not have (the number respondent gave) children, would your next

choice be (one number lower) or (one number higher)?” The answer to that question is used as base for third question: *“And if you will not have that number, would you rather prefer (the next lower number) or (next higher number).”* Response to these questions is used to construct the fertility preference scale known as “Coombs scale”. The scale measures fertility size preferences accurately than a single-question of preferences measures (Coombs, 1974). The same question is also used to measure preference for son.

In our study, response to the opening question ranged from 0 to 6. Based on this response, Coombs scale is coded on ordinal measure that varied from 1 to 24: 1 reflects preferences for small families and 24 reflects preferences for large families. Using this scale as a dependent variable we used ordinary least square regression to examine the influence of older generation’s fertility on the family size preferences of younger generations. We used four separate models. The first one accounted of mothers-in-laws’ fertility and her preferences for daughter-in-law family size along with individual characteristics. In the second model, mother’s fertility and her preferences were considered. In the third model, sibling’s fertility (both spousal and own) was taken into account. In the final model fertility of older generation and siblings were taken into account together with individual characteristics.

Results show that daughters-in-law’s family size preference was positively and significantly influenced by mothers-in-law fertility as well her preference. For instance, coefficient of mothers-in-law’s fertility and preference was 0.145 ($p < 0.01$) and 0.313 ($p < 0.01$) respectively. A similar influence is observed for mother’s fertility (0.166; $p < 0.01$) and preference (0.429; $p < 0.01$). Sibling’s (both spousal and own) fertility were more likely to influence the family size preference of daughter-in-law. When older generations’ and siblings’ fertility as well as individual characteristics were taken all together (model-IV), results still hold positive and significant influence of older generations fertility and their preferences on younger generation’s family size preference. However, the effect of fertility was somehow weaker than the family size preference. For instance, coefficient of mothers-in-law fertility was 0.117 ($p < 0.05$) while coefficient of her preference was 0.242 ($p < 0.01$). Sibling’s fertility (both spouse and own) continued to be influencing daughter-in-law’s family size preference, but influence of own siblings was somehow stronger (0.282; $p < 0.01$) than spouse siblings (0.146; $p < 0.05$). Among the other factors, individual and mother’s education exert a negative and significant influence on daughter-in-law’s family size preference.

A similar exercise is done to understand the influence of older generation’s total number son and their preferences for number of son for younger generations’ son preference. In such case response to the opening question ranged from 1 to 4 and hence the Coombs scale for preferred number of son varied from 1 to 16. We used four separate models as we did previously. Result shows that when all the factors were taken into account, mother-in-law’s total number of son has significant and positive influence (0.494; $p < 0.01$) on daughters-in-law’s preferred number of son. A similar influence is observed for mother-in-law preference for number of son to her daughters-in-law but the result was insignificant. Mother’s total number of son and her preferences exerts a positive and significant influence on her daughter preferred number of son. This result holds for sibling’s (both spousal and own) total number

of son. Our result appeared with two specific findings. First, mother fertility behaviour and her preferences for family size of their daughter have stronger effect on younger generation's family size than that of mothers-in-law. Second, daughters-in-law family size preference is more likely to be shaped by her own sibling's fertility rather than spouse sibling's fertility.

Association in fertility behaviour across the generations

We tried to examine the association in children ever born and other reproductive indicators (age at marriage, age at birth, and birth interval) across the successive generations. At the outset we examined the association between fertility of index women (daughter-in-law) and older generation's and sibling's fertility. Pearson correlation coefficient is used to have an overview of association in fertility of successive generations. Since all the daughters-in-law were in the reproductive age group, thus we included only those daughters-in-law who were above 30 years and were sterilized at the time of survey.

Result shows that fertility of index women is positively and significantly correlated with fertility of her mother-in-law and mother. However the association is slightly stronger for mothers' fertility than mothers-in-law – correlation coefficient was 0.053 ($p < 0.05$) with mothers-in-law and 0.087 ($p < 0.05$) with mothers' fertility. A stronger correlation was observed with the fertility of siblings. The correlation of index women's fertility with spouse siblings fertility was 0.150 ($p < 0.01$) and with own siblings' was 0.207 ($p < 0.01$). Thus result indicates that index women fertility is closely and highly associated with her maternal family rather than in-laws kin.

The Pearson correlation analysis is also performed to examine the bivariate correlations of children ever born and intermediate reproductive indicators (age at marriage, age at births, and gap between successive births) between the generations. The correlation for these indicators was examined for pair of mothers-in-law/daughters-in-law and mother/daughter only. The analysis was disaggregated by order of women to determine whether the strength of intergenerational relationship changed by birth order. Previous studies showed that intergenerational influence of fertility is higher on older than younger siblings (Hendershot 1969; Sulloway, 1996).

When all index women were considered, our findings show positive and significant correlation in age at marriage, age at first birth between the pair of MIL-DIL. The correlation coefficient of age at marriage and age at first birth was 0.110 ($p < 0.05$) and 0.044 ($p < 0.05$) respectively. A similar pattern is observed when pair of mother and daughter is considered and the association was somehow stronger. When the analysis was disaggregated by order of index women, we found a significant correlation in age at marriage (0.084; $p < 0.05$), age at first birth (0.126; $p < 0.01$), between first born index women and her mothers-in-law. The strength of correlation and significance for these indicators was attenuated when second and higher order index women were considered. Contrary to that, in the pair of daughter and mother, age at marriage, age at first birth was positively and significantly correlated for the first order daughters as well as second and higher order daughters. For example, for second

order daughters, the correlation coefficient of age at first birth was 0.128 ($p < 0.01$). When it comes to association in birth intervals between older generations and younger generations, we found a negative but insignificant correlation for both the pair irrespective of the birth order of index women.

We also analysed the bivariate relationship between family size of index women with her own and spousal siblings. Result presented in figure 6.1 indicates that index women with more spousal siblings are tended to have larger family and vice versa. This relationship was clearer for the first born spouse. For instance, the first order index women whose mothers-in-law had 1-2 children averaged between 2-3 children of their own. Further, index women whose mothers-in-law had more than six children averaged between four and five children of their own. We observed same pattern with mother's family size. The index women whose mothers had less than five children averaged between three to four children of their own. Similarly, index women, whose mothers had more than six children, averaged more than 4 children for their own. Again, relationship between index women and their mother's CEB was more responsive for first-born daughters than for second and higher-born daughters.

Summary and conclusions

While assessing the influence of older generations on younger generations' contraceptive use, this study paints mixed results. One hand, there is greater involvement of mothers-in-law on decision about sterilization of her daughters-in-law. The mothers-in-law did not want their daughter-in-law to undergo the operation until she bore number of sons mother-in-law required. On the other hand, most of the mothers-in-law were left out in decision regarding reversible methods. The mothers-in-law were appeared having more conservative approach toward modern contraceptive use for her daughter-in-law. A discrepancy emerged in the findings when compared the interview of mothers-in-law with that of daughters-in-law. This finding is similar to that of previous study conducted in India (Arundhati *et al.*, 2010). Despite being a patriarchal society, joint decisions on the family planning is observed in the study area. The role of conjugal communication appeared especially evident in decisions about using reversible methods. Though there is very little interaction between mothers-in-law and daughters-in-law on the issue of family planning use, however, among those pair who reported interaction, it has significant and positive effect on use of family planning among the daughters-in-law. The effect was greater for interaction between mothers-in-law – daughters-in-law compared to mothers and daughters. Our findings indicate that mothers-in-law's actual behaviour has significant influence on daughters-in-law family planning use after controlling the individual characteristics.

Though the younger generations hold control on decision regarding use of reversible methods of family planning in the study area. However, the family size preference of younger generations is influenced by the preferences as well as actual fertility of older generations. Additionally, sibling's fertility has significant and positive influence on daughters-in-laws' family size preferences. Importantly, the influence of mothers and own siblings is somehow stronger than that of mothers-in-law and spousal siblings respectively. This inter-relationship

in fertility preferences between generations could be channelized through *behaviour socialization*, particularly at early ages. Our findings revealed a positive and significant correlation (though less) between fertility and other reproductive indicators across the generations. The correlation coefficient was greater for pair of daughters and mothers. When disaggregated by birth order of index women, the correlation coefficient was found to be greater for first-born index women between second and higher-birth-order index women. This finding indicates of first-born daughter's greater socialization and greater identification with their mothers. This finding is similar to that of previous studies which have suggested that first born are more likely to conform parental norms as they are more susceptible to social pressure from parents than subsequent children (Hendershot, 1969). More recently, a study finds empirical support for the hypothesis that first-borns are more conformist than later-borns in adoption of fertility behaviour (Sulloway, 1996). Our findings exhibit a clear impression of transmission of older generations' fertility on risk of childbearing among index women. When disaggregated by parity, the transmission is stronger for first parity; for mothers than of mothers-in-law.

To conclude, intergenerational influence on contraceptive use, mothers-in-law were found to have an important influence on family decisions pertaining to the timing of their daughters-in-law being sterilised, but they did not seem to have the same authority or influence with regard to decisions on the use of reversible contraceptive methods, which were mainly being made by young couples themselves. Given the right information, and availability of and access to reversible methods, young couples in rural Bihar are increasingly making contraceptive choices for themselves. Though interaction on contraceptive issues is less between the older generation and younger generations, however, it has significant influence on current contraceptive use of daughters-in-law. Moreover, influence of mothers-in-law is somehow stronger than mothers. Our study exerts a significant association between fertility of index women and in-laws/maternal family and the correlation is significantly higher with the later one. Both, preferences and fertility of older generations' are likely to significantly influence the younger generations' family size preference and fertility. These findings are consistent with cross national studies (Jennings *et al.*, 2012). The influence of mothers' fertility is significantly greater than that of mother-in-law. There is clear evidence of intergenerational transmission of entry into motherhood and the strength is stronger for pair of mother and daughters than mothers-in-law and daughters-in-law. This finding is in similar tune with the recent study which documented increasing intergenerational transmission of age at birth (Steenhof and Liefbroer, 2008).

References:

- Amato, PR (1996) Explaining the intergenerational transmission of divorce. *Journal of Marriage and the Family* 58, 628-640.
- Anderton, DL, Tsuya, NO, Bean, LL, & Mineau, DGP (1987) Intergenerational transmission of relative fertility and life course patterns. *Demography* 24, 467-480.
- Apostolou, M (2007a) Elements of parental choice: The evolution of parental preferences in relation to in-law selection. *Evolutionary Psychology* 5, 70-83.
- Apostolou, M (2007b) Sexual selection under parental choice: The role of parents in the evolution of human mating. *Evolution and Human Behaviour* 28, 403-409.
- Arundhati, C, Saavala, M, & Kulmala, T (2010) Influence of mother-in-law on young couples family planning decisions in rural India. *Reproductive Health Matters* 18(35), 154-162.
- Avan, BI, & Saima, A (2006) Role of family type in idealization of larger number children by husband in Pakistan. *Journal of Biosocial Sciences* 38, 203-220.
- Axinn, WG, & Thornton, A (1992a) Cohabitation and divorce: Selectivity or causal influence? *Demography* 29, 357-374.
- Axinn, WG, & Thornton, A (1992b) The influence of parental resources on the timing of the transition to marriage. *Social Science Research* 21, 261-285.
- Axinn, WG, & Thornton, A (1993) Mothers, children and cohabitation: The intergenerational influences of attitudes and Behaviour. *American Sociological Review* 58, 233-246.
- Axinn, WG, Clarkberg, ME, & Thornton, A (1994) Family influences on family size preferences. *Demography* 31(1), 65-79.
- Barber, JS (2001) Intergenerational influences on the entry into parenthood: Mother's preferences for family and non-family behaviour. *Social Forces* 79(1), 319-348.
- Barber, JS, & Axinn, WG (1988) The impact of parental pressure for grandchildren on young people's entry into cohabitation and marriage. *Population Studies* 52(2), 129-144.
- Barneet B (1998) Family planning use often a family decision. *Network* 18(4):10-11, 13-14.
- Blau, PM, & Duncan, OD (1967) *The American Occupational Structure*. New York: Wiley & Sons.
- Bocquet-Appel, JP, & Jakobi, L (1932) A test of a path model of biocultural transmission of fertility. *Annals of Human Biology* 20(4), 335-347.
- Broude, GJ, & Green, SJ (1983) Cross-cultural codes on husband-wife relationships. *Ethnology* 22, 263-280.
- Caldwell, JC (1976) Toward a restatement of demographic transition theory. *Population and Development Review* 2(3-4), 321-366.
- Caldwell, JC, Immerwahr, G, & Ruzicka, LT (1982) *Illustrative Analysis: Family Structure and Fertility*. World Fertility Survey Scientific Report No. 39, vol. 64. International Statistical Institute. Voorburg, the Netherlands.
- Chan, CG & Elder GH (2000) Matrilineal advantage in grandchild-grandparent relations. *Gerontologist* 40(2):179-190.
- Coombs, LC (1974) The measurement of family size preferences and subsequent fertility. *Demography* 11(4), 587-611.
- d'Addido, AC (2007) *Intergenerational transmission of disadvantage: Mobility or immobility across generations?* OECD Social, Employment and Migration Working papers No. 52. Paris: Organisation for Economic Co-operation and Development.
- Dubas, JS (2000) How gender moderates the grandparent-grandchild relationship – A comparison of kin keeper and kin-selector theories. *Journal of Family issues* 22(4):478-492.
- Duncan, OD, Freedman, R, Coble, JM, & Slesinger, D. P. (1965) Marital fertility and the size of family of orientation. *Demography* 2, 508-515.

- Fapounda, RE, Todaro, PM (1988) Family structure, implicit contracts, and demand for children in Southern Nigeria. *Population and Development Review* 14(4), 571-594.
- Foster, C (2000) The limits to low fertility: A biosocial approach. *Population and Development Review* 26, 209-234.
- Frayser, SG (1985). *Varieties of sexual experience*. New Haven: HRAF Press.
- Ganzeboom, Harry BG, & Nieuwbeerta, P (1999) Access to education in six Eastern European countries between 1940 and 1985. Results of a cross-national survey. *Communist and Post-Communist Studies* 32, 339-357.
- Goldscheider, FA, Thornton, A, & Young-DeMarco, L (1993) A portrait of the nest-leaving process in early adulthood. *Demography* 30, 683-699.
- Hagedsted, GO (1986) The family: women and grandparents as kin-keepers. *Our aging Society: Paradox and promise* 141-160.
- Hendershot, GE (1969) Familial Satisfaction, Birth Order, and Fertility Values. *Journal of Marriage and the Family* 31(1), 27-33.
- Huestis, RR, & Maxwell (1932) Does family size run in families. *The Journal of Heredity* 77-79.
- Imazumi, Y, Nei, M, & Furucho, T (1970) Variability and heritability of human fertility. *Annals of Human Genetics* 33, 251-259.
- International Institute for Population Sciences (IIPS) & Macro International (2007) *National Family Health Survey (NFH-3), 2005-06*. IIPS, Mumbai, India.
- International Institute for Population Sciences (IIPS) & Ministry of Health and Family Welfare (2009) *District Level Household and Facility Survey under Reproductive and Child Health Project (DLHS-3)*. District Fact Sheet, 2007-08. IIPS, Mumbai, India.
- Jennings, JA, Sullivan, AR, & Hacker JD (2012) Intergenerational transmission of reproductive behaviour during the demographic transition. *Journal of Interdiscip Hist* 42(4), 543-569:
- Johnson, BE, & Freymeyer, RH (1989) Replicating family size: Does living in a single parent family matter? *Sociological Focus* 22, 263-273.
- Johnson, NE, & Stokes, CS (1976) Family size in successive generations: The effects of birth order, intergenerational change in lifestyle and familial satisfaction. *Demography* 13, 175-187.
- Kadir, MM, Fikree, FF, Kahn, A, & Sajan, F (2003) Do mothers-in-law matter? Family dynamics and fertility decision-making in urban squatter settlements of Karachi, Pakistan. *Journal of Biosocial Science* 35, 545-558.
- Kahn, JR, & Anderson, KE (1992) Intergenerational pattern of teenage fertility. *Demography* 29, 39-57.
- Kalmijn, M, Liefbroer, AC, Poppel, FV, & Solinge, HV (2006). The family factor in Jewish-gentile intermarriage: A sibling analysis of the Netherlands. *Social Forces* 84(3), 1347-1358.
- Kohler, Hans-Peter, Joseph, LR, & Kaare, C (1999) Is fertility behaviour in our genes? Finding from a Danish twin study. *Population and Development Review* 25(2), 253-288.
- Langford, CM, & Wilson, C (1985) Is there a connection between a women's fecundity and that of her mother? *Journal of Biosocial Science* 17, 437-443.
- Lolarga, E (1983) How many children would you like to have? *IMCH Newsletter* 14(166), 1.
- Marini, MM (1978) The transition to adulthood: Sex differences in educational attainment and age at marriage. *American Sociological Review* 43, 483-507.
- Mayer, SE, Duncan G, & Kalil, A (2004) *Like mother, like daughter? SES and the intergenerational correlation of traits, behaviours and attitudes*. Harris School Working Paper Series 04.15.

- Moore, M (1994) Indian plan thwarted by quest for sons. Population grows as farmers insist upon two male heirs. *Washington Post*, Sept. 7, A26.
- Morgan, SP, & King, RB (2001) Why have children in the 21st century? Biological predisposition, social coercion, rational choice. *European Journal of Population* 17, 3-20.
- Murdock, GP (1981) *Atlas of World Cultures*. Pittsburgh: University of Pittsburgh Press.
- Murphy, M (1999) Is the relationship between fertility of parents and children really weak? *Social Biology* 46(1), 122-145.
- Pearson, K., Lee, A., & Bramley-Moore, L. (1899) Mathematical contributions to the theory of evolution. VI. Genetic (reproductive) selective: Inheritance of fertility in man, and of fecundity in thoroughbred Racehorse. *Philosophical Transactions of the Royal Society of London. Series A, Containing Papers of a Mathematical or Physical characters* 192, 257-330.
- Pollet, TV, Nelissen, M & Nettle, D (2009) Lineage based differences in grandparental investment: Evidence from a large British cohort study. *Journal of Biosocial Science* 41(3):355-379.
- Qurub, SA (1995) Hope for the future: 3. Planning for the sons. *People and Planet* 4(4), 23-24.
- Reher, DS, Ortega, JA, & Gimeno, AS (2008) Intergenerational transmission of reproductive traits in Spain during the demographic transition. *Human Nature* 19, 23-43.
- Saavala, M (2002) *Fertility and Familial Power Relations: Procreation in South India*. Nordic Institute of Asian Series, Monograph Series, No. 87.
- Sear, R, Mace, R, & Ian, AM (2003) The effect of kin on female fertility in rural Gambia. *Evolution and Human Behaviour* 24(1), 25-42.
- Senanyake, P (1986) A step towards raising the status of women. Round table: Family planning and maternal health care: A common goal. *World Health Forum* 7(4), 333-335.
- Sewell, WH, & Hauser, RM (1975) *Education, Occupation and Earning: Achievement in the Early Career*. Academic Press, New York.
- Sewell, WH, Hauser, RM, & Wolf, WC (1980) Sex schooling and occupational status. *American Journal of Sociology* 86, 551-583.
- Steenhof L, & Liefbroer, AC (2008) Intergenerational transmission of age at first birth in the Netherlands for birth cohort born between 1935 and 1984: Evidence from municipal registers. *Population studies* 62(1), 69-84.
- Sugiyarto, T (2008) Intergenerational transmission of poverty in west Sumatra: An analysis based on the 2006 National Socioeconomic Survey. *Journal of Population* 14(2), 145-155.
- Sulloway WL (1996) *Born to Rebel: Birth Order, Family Dynamics, and Creative Lives*, New York: Pantheon.
- Uhlenberg, P, & Hammill BG (1998) Frequency of grandparent contact with grandchildren sets: Six factors that make a difference. *Gerontologists* 38(3):276-285.
- Yoram, Ben-Porath (1975) First-generation effects on second-generation fertility. *Demography* 12(3), 397-405.
- Zimmer, BG, & Fulton, J (1980) Size of family, life chances and reproductive behaviour. *Journal of Marriage and the Family* 42, 657-670.

Table 1 Opinion of mothers-in-law and daughters-in-law on role of mothers-in-law on family planning in rural Saran, Bihar, 2011

	Mother-in-law's response			Daughter-in-law's response		
	Agree	Disagree	No opinion	Agree	Disagree	No opinion
Opinion of mothers-in-law						
<i>I am very important in the family</i>	73.0	8.0	19.0	69.3	14.4	16.3
<i>I decide when my daughter-in-law get sterilized</i>	86.3	10.6	3.1	84.7	12.6	2.7
<i>The son and daughter-in-law do not involve me in their family planning decisions</i>	78.3	5.4	16.3	71.4	16.4	12.2

Table 2 Percentage of ever use of family planning and sterilization among daughters-in-law by use of mothers-in-law and mothers in rural Bihar, 2011

	Daughters-in-law family planning use	
	Ever used	Sterilized
Mother-in-law	(29.51)***	(24.53)***
Yes	68.9	64.4
No	39.1	18.0
Mother	(88.23)***	(11.80)**
Yes	78.7	59.0
No	27.4	24.2

Note: Number given in parenthesis is chi-square test and applied for each variable separately.

***p<0.01; **p<0.05

Table 3 Odds ratio showing the intergenerational influence on family planning use among daughters-in-law in rural Saran, Bihar, 2011

	Model-I	Model-II	Model-III	Model-IV
Mother-in-law ever used				
No (Ref)	1.00		1.00	1.00
Yes	1.96**		1.89*	1.72*
Mother ever used				
No (Ref)		1.00	1.00	1.00
Yes		2.31***	2.21**	2.03**
Individual education				
Uneducated (Ref)				1.00
Primary				0.80
Secondary and above				2.45**
Household wealth				
Low (Ref)				1.00
Middle				1.28**
High				1.91***

Model-IV is adjusted for interaction with mother-in-law on family planning, interaction with mother on family planning issues, interaction with husband on family planning, age of individual, caste, working status, media exposure, age of husband, husband education etc. Ref: Reference categories. ***p<0.01; **p<0.05; *p<0.10

Table 4 Ordinary least square estimates of models predicting daughters-in-law's family size preference in rural Saran, Bihar, 2011

	Model-I	Model-II	Model-III	Model-IV
Mother-in-law's total children	0.145***			0.117**
Mother-in-law preference for family size of daughters-in-law	0.313***			0.242***
Mother's total children		0.166***		0.118**
Mother's family size preference for family size of daughters		0.429**		0.324***
In-law's total children			0.194**	0.146**
Sibling's total children			0.359***	0.282***
<u>Controls</u>				
Individual education				
Uneducated (<i>Ref</i>)				
Primary	-0.096	-0.097***	-0.086	-0.085
Secondary and above	-0.235**	-0.214**	-0.179**	-0.128**
Husband education				
Uneducated (<i>Ref</i>)				
Primary	0.723*	0.447*	0.234	0.254
Secondary and above	-0.918***	-0.974***	-0.394	-0.222**
Mother-in-law education				
Uneducated (<i>Ref</i>)				
Primary	0.087	0.062	0.091	0.070
Secondary and above	0.024	0.042	0.046	0.070
Mother education				
Uneducated (<i>Ref</i>)				
Primary	0.562	0.616	-0.618	-0.540
Secondary and above	-0.920*	-0.265	-0.214***	-0.121***
Household wealth				
Poorest (<i>Ref</i>)				
Poor	0.509	0.614	-0.148	0.119
Middle	0.120	0.111	-0.826	0.051
Rich	0.213	0.102	-0.305	0.067
Richest	0.571	0.274	0.145	0.141
<i>Adjusted R</i> ²	0.209	0.184	0.127	0.215

Dependent variable: Coombs measure of family size preferences (1-24)

Ref: Reference category; ***p<0.01; **p<0.05; *p<0.10