Second Demographic Transition or Aspirations in Transition: An exploratory analysis of lowest-low fertility in Kolkata, India

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Summary

Fertility transition occurred during the 1970s in Kolkata (erstwhile Calcutta), capital of the state of West Bengal, India, and has remained persistently at the lowest-low fertility level. It currently has the lowest fertility rate (TFR 1.2) in India. This could be a case of second demographic transition (SDT) or pertains to changing dynamics in childbearing, childrearing, and/or aspirations for children. Using primary data of 600 couples (1,200 individuals) and employing quantitative and qualitative methods, the present study found that constraints in childbearing and childrearing; and aspirations for children have a strong negative and significant effect on second and higher order childbearing among couples, particularly among women. In our study there was no strong evidence of decline in the importance of marriage, family and children as posited by SDT. Thus we argue that SDT might have to be redefined for a developing country context.

Introduction

Fertility transition in India has been underway for the past three decades. This transition has covered all regions and sections of the society during the last decade, though to varying degrees (Registrar General of India (RGI) 2011). All the southern Indian states and most of the western and north-western states have already reached low replacement level fertility, while the Hindi-speaking core zone of northern India is yet to break the barrier (Kulkarni 2011). Studies have pointed out a variety of reasons for the decline such as enhancement of female education in Kerala; implementation of efficient family welfare programmes, mass media exposure and backward class movements in other south Indian states, particularly Tamil Nadu (Zachariah 1984; Bhat and Rajan 1990; Zachariah and Rajan 1997; Kulkarni et al. 1995; Bhat 1996; Guilmoto and Rajan 2001; Guilmoto and Rajan 2005; Nair 2010; Kulkarni 2011; Guilmoto 2013). Fertility still remains high in the northern states, which are characterized by deeply-seated patriarchy, a farm-based economy and low female education (Guilmoto 2000; Guilmoto and Rajan 2001; Guilmoto 2013). On this basis we have grouped Indian states into two demographic regimes – the south with low fertility and the north with relatively high fertility.

West Bengal, a middle-ranking Indian state in terms of economic and human development indicators, occupies an ambiguous geographical space in the popular north-south demographic dichotomy. Between the polar experiences of states like Kerala and Bihar, it has eschewed both extremes, thus remaining understudied despite its fertility transition during the last decade. Available literature suggests that crude birth rates (CBR) fell sharply from 1939 to 1944 in undivided Bengal possibly due to mounting economic stress (Dyson 2001, 1989). After independence, the CBR in West Bengal rose considerably during the mid-1950s and since then has been falling fairly regularly. A recent study used period parity progression ratios to conclude that the age at first birth has not increased among women in

West Bengal despite a marginal rise in age at marriage. Yet fertility decline has occurred, particularly during the 1990s, since most women continue to have at least two births but increasingly avoid additional births (Paul and Kulkarni 2006). This has been notwithstanding a state government that has been quite indifferent to population policy and never planned any aggressive or effective family planning programme that many other states have embraced (Basu and Amin 2000).

Notably, the state capital Kolkata (formerly Calcutta) underwent fertility transition in the 1970s and achieved the lowest total fertility rate (TFR) (2.0) in the country (Bhat 1996), a rank it maintains to date (Bhat 1996; Guilmoto and Rajan 2013). The trends in fertility levels in India show that though fertility levels in other megacities are also approaching the lowest-low level, Kolkata experienced it earlier (Figure 1). Further, prevalence of single child families in Kolkata city is nearly 13%, over twice that of other Indian megacities (International Institute for Population Sciences (IIPS) and Macro International Inc. 2007). Consequently, Kolkata has been amongst the forerunners of fertility decline alongside the southern and coastal areas of India (Guilmoto and Rajan 2001).

Studies conducted during 1947-49 in West Bengal observed that more than one-third of married women of childbearing age belonging to socioeconomically advantaged sections in Kolkata had used some contraceptive method (Chandrasekaran and George 1962). The study also pointed out that the practice of family limitation among older women of this background was not infrequent at that time. This willingness to limit childbearing appears to have taken root among the advantaged socioeconomic groups (or elites, who are the forerunners of fertility decline according to Livi-Bacci 1986) and diffused to the masses (or non-elites) through social imitation (Cleland and Wilson 1987; Basu and Amin 2000). With some empirical evidence, Basu and Amin (2000) have also argued that elites in Kolkata have had much higher potential to facilitate the spread of the idea of limiting family size compared

to comparable groups elsewhere. But the question remains: what makes families of Kolkata city adhere to a maximum of two children in a country where TFR in some regions is above 3.0?

Theorizing hypotheses

The following three hypotheses could plausibly explain the lowest-low fertility in Kolkata.

1. **Constraints on childbearing and childrearing are a result of growing personal aspirations**

    Improvement in women's education has substantially altered the opportunities and lives of individual women and their families (Aassve et al. 2012; Malhotra and Riley 2009). Socio-psychological change at the societal level enables women to decide for themselves 'on the availability of opportunities for [them] to fill non-familial roles and earn prestige from them' (Ryder 2010: 613). Lowest-low fertility could thus be a response, or even strategy, towards educational and professional attainment that may be diverted by having children and adopting traditional domestic roles (Mason 1986; Mason and Palan 1981; Lloyd 1991; Basu and Desai 2012; Gipson and Hindin 2013). By restricting childbearing to a single child, women can achieve socially valued motherhood goals and manage career ambitions simultaneously (Gerson 1986). Also, families must constantly trade-off between a better lifestyle and larger families when childbearing and childrearing become expensive (Becker 1976; Esterlin 1966). Limiting family size could be one way to ensure higher consumption in a society with rising material aspirations (Basu and Desai 2012).

2. **Increasing aspirations for children**

    Lowest-low fertility could also be a response to increasing aspirations for children. While the aforesaid hypothesis argues that having children reduces the comparative gains in material needs and personal aspirations, an alternative view would emphasize even higher value of children by restricting family size. Here aspiration can be viewed as a means of

achieving social mobility and fertility limitation as a strategy for upwardly mobile families. This idea was first developed by Dumont (1890) (cited in Greenhalgh (1988)) in his 'social capillarity theory' and later advanced by Davis (1963) through the notion of 'multiphasic response'. Greenhalgh (1988) further underlined the role of social and economic institutions in creating opportunities that can be exploited by parents to achieve social mobility. In other words, middle and upper-middle class parents aspire to educate their child in private English medium schools, invest in higher education, pursue extra-curricular activities for children and also provide expensive accessories to maintain their child's social standing.

3. **Second demographic transition (SDT)**

Finally, the lowest-low fertility in Kolkata district for the past four decades could indeed be an SDT. The main features of SDT include significant increase in voluntary childlessness, substantial decline in total first marriage rate with an increase in mean age at first birth; sharp increase in divorce; marked rise in cohabitation and proportion of extra-marital births; and catalytic shift in contraceptive behaviour (Lesthaeghe 1985; Van de Kaa 1987, 1994, 1997, 1999, 2001). SDT is supposed to have begun when family models changed from an altruistic to an individualistic model, where the child lost their 'king' status and occupied a 'smaller place' in their parent's life (Ariès 1980). However Rotariu (2006) has argued that the concept of SDT is debatable since it lacks a concrete model of the final stage of demographic evolution.

Demographic discourse in India has centred on the first demographic transition, primarily because family remains at the core of social organization. Studies have also documented highly traditional gender roles, universal and relatively early marriage and son preference in Indian society (Uberoi 1993), which are all inconsistent with the value system envisaged in SDT.

Do these traditional family values also hold for families in Kolkata city today, who have maintained lowest-low fertility (TFR below two)? Though it would be naïve to reject any shift in value systems among couples in Kolkata city, as Morgan (2003) points out, there remains considerable social and psychological pressure to have at least two children in India. Moving below this threshold requires a broader cultural shift in which individualism and self-actualization are the driving force. If the way to consistent below replacement level fertility is not a cultural shift but rather growing economic pressures and familial aspirations, such an assumption needs to be evaluated.

This paper explores this phenomenon of lowest-low fertility in Kolkata city by evaluating each of the three hypotheses with the help of small-scale primary survey data. It would be reasonable to hypothesize that the lowest-low fertility in Kolkata has been primarily due to an array of lifestyle preferences as well as higher aspirations for children's lives, while the characteristic features and shift in value systems envisioned in SDT has been weak.

Study settings

Kolkata was the nucleus of British colonization in the Indian subcontinent and served as the administrative capital of British India until 1911. Consequently, it was also the first place in the subcontinent where modern knowledge and ideology of modernization spread, primarily through growth of education and print media. Kattumuri (2011) has argued that the colonial system of education was limited in motive and scope, and remained elitist to a large extent. However, it provided an opportunity for development keeping with global trends, and its impact on population at large cannot be underestimated.

Population in Kolkata city grew rapidly during the British rule due to growing opportunities for trade and commerce (Keay 2010). Population continued to grow rapidly during the post-colonial era due to an influx of migrants from both neighbouring districts as well as internationally from East Pakistan. However, in the past three decades the population

growth rate stabilized in the core city (area under Kolkata Municipal Corporation or KMC), while population growth in the urban-agglomeration area increased significantly (Kolkata Metropolitan Development Authority 2012). In 2011, Kolkata was the only megacity in India where total population decreased (to below 4.5 million, with growth rate of -1.7 per cent between 2001 and 2011). Child population (0-6 age group) has declined nearly 7.7 per cent between 1991 and 2001 and further to 13.1 per cent between 2001 and 2011. According to the 2011 census, average literacy in Kolkata was 86.3 per cent, population density was 24,306 per square kilometre and sex ratio (per 1,000 male) was 908. The corresponding figures were 80.9 per cent, 24,718 and 829 in the 2001 census (RGI 2014).

Materials and Methods

Data

The national level surveys conducted in India such as the National Family Health Survey (NFHS), India Human Development Survey (IHDI) and District Level Household Survey (DLHS) were consulted at the preliminary level to develop data collection tools for the primary survey.

A two-stage sampling design was adopted in the present study comprising of the selection of wards followed by the selection of households. At the first stage, 141 wards of KMC were ranked based on percentage of female literacy and percentage of female main workers in sectors other than agriculture (i.e. secondary and tertiary sector). Based on mean ranking, the top five, middle five and bottom five wards were identified. Finally, one ward in each of the aforesaid segments (i.e. three wards altogether) was selected randomly for data collection as representative of the city. The implicit rationale of such stratification was to obtain adequate socioeconomic variation and population heterogeneity in the sample. Ward number 12, 70 and 139 were selected during the process.

In the second stage, the three selected wards were further divided geographically into four segments – north, east, south and west. Fifty households from each segment were selected randomly for a total of 200 households in each ward, and from each selected household a currently married woman of reproductive age (15-44 years) and her spouse were interviewed. Thus, the total sample size is 1,200 individuals comprising 600 women and 600 men.

Data were collected between August and October 2014. For the quantitative survey, the questionnaire was prepared in English and then translated to Bengali, the local language. Pre-testing of the questionnaire was conducted in wards other than the study wards. The questionnaire was then finalized and administered among study participants. Apart from general demographic and socioeconomic characteristics, questions were asked regarding desired and attained number of children, desired sex composition of children, aspirations for children, old age dependency and, family and individual values. Verbal informed consent was obtained from each study participant and all collected individual data was kept confidential.

Additionally, to supplement information obtained from quantitative survey, six Focus Group Discussions (FGDs) and six open-ended In-Depth Interviews (IDIs), one each among women and men in the study wards, were also conducted. A focus group consisted of 8-10 persons from a homogeneous group according to age (younger, i.e. <25 years for women and <30 for men; middle-aged, i.e. 25-35 years for women and 30-40 years for men; and older, i.e. >35 years for women and >40 years for men); sex (male or female); and religion (Islam or non-Islam). FGDs and IDIs were conducted on issues relating to reproductive goals; social and economic changes and their effect on desired family size; aspirations for children; gender-power relations in fertility decision making and contraception use; and diffusion of ideas of family size limitation across socioeconomic strata. All FGDs and IDIs were recorded and transcribed verbatim.

Variables

The primary outcome variable in the analyses was created from the question, '*Do you want to have any more children in the future*?'

Predictor variables used in the study primarily fall into four categories: variables indicating constraints to childbearing and childrearing; variables pertaining to aspirations for children; variables signifying family and individual values; and other individual and household level control variables (for details, see Table 1).

Logarithm of per capita household expenditure has been calculated from information on household expenditure and divided into three quintiles, and taken as the proxy for household economic status. Degree of exposure to mass media was obtained by adding the following eight dummy variables: read newspaper regularly/often; read magazines/tabloid regularly/often; watch television regularly/often; obtain news using mobile phone, e-mail, internet, and social media regularly/often; and talking with people regularly/often. Similarly, degree of pursuing extracurricular activities of children was computed by adding seven dummy binary variables: learning music, dancing, drawing, swimming, computer, another language, and whatever else the child/children want to learn. Work-status for women was categorized as not-working and working, while for men it was categorized as blue-collar and white-collar jobs since all surveyed men were working during the six months prior to the survey. Blue-collar jobs primarily comprised of jobs in household industry, self-employed in petty business, and jobs which require unskilled/semi-skilled personnel. White-collar jobs included occupations in services sector requiring highly skilled personnel, regular salaried workers in government and non-governmental organizations and those self-employed in services sector. Religion was binary coded as Islam and non-Islam; non-Islam participants comprised 374 Hindus, 10 Sikhs, 8 Jains, and 4 Christians.

Analytical model

Since the response variable was a dummy variable (want of child in future=0 and do not want child in future/unsure=1), multivariate binary logit regression models were used. A total of six logit models were employed. Model 1, 2, and 5 pertain to all surveyed wives, husbands, and couples (responses of wives and husbands taken together), respectively to find out relationships between predictor variables of interest and not having any more children in future. To investigate the predictors for not having a second child, models 3, 4, and 6 were employed among those wives, husbands, and couples respectively who had one living child at the time of survey. Total number of living children has been controlled as a covariate in models 1, 2, and 5. The variable religion has been dropped from models 3, 4, and 6 to avoid the problem of zero-cell count in regression modelling since out of 66 women and 67 men belonging to Islam who had one living child at the time of survey, only four women and five men reported not wanting a second child. To avoid the problem of multicollinearity in the regression modelling, various interactions were considered in all the logit models (for details, see notes below Tables 4 and 5).

Data were analyzed using Stata Release 13. To obtain basic socio-demographic characteristics of samples, descriptive statistics were produced for the surveyed population. We have estimated both unadjusted and adjusted marginal effects of the predictor variables of interest. In this context, adjusted means that all selected variables were statistically controlled in the model by holding them constant at their respective averages. Unadjusted marginal effects for all the variables of interest were estimated from a separate logit model in which that predictor variable was the only one considered. Because each underlying regression contained just one predictor variable, the unadjusted marginal effects did not incorporate controls for any other, potentially confounding, predictor variables. Both adjusted and unadjusted marginal effects were converted into percentages with zero decimal places for easy interpretation and presented in Tables 4 and 5. Similar methodology has been employed

by other researchers in the past (Mishra et al. 1999; Munshi and Lee 2000). Exact values of the continuous variables have been reported in the tables for better comparison. For concise reporting, only the variables of our interest, which are significant in the models (up to $p<0.10$), have been reported in the tables and discussed in the subsequent section.

Results

Sample characteristics

Table 2 describes basic socio-demographic and economic characteristics of the surveyed women and men of Kolkata. More than half of the women and men were of age-group 25-34 and 30-39, respectively. Median duration of nuptial union of eight years suggests majority of the surveyed couples might have completed or are on the verge of reaching their desired family size. Both women and men respondents had four siblings implying high level of fertility among the earlier generation, while mean (1.46) and median (1.00) number of living children among respondents indicate that fertility level dropped remarkably in one generation. More than one-third of women and more than four out of ten men have completed at least their graduation, while median years of schooling were found to be 11 years for women and 12 years for men. Less than half of the respondents belonged to nuclear households, while more than one-third were staying with their own-parents/parents-in-law at the time of the survey. Less than a quarter of women were working during the six months preceding the survey, while more than six out of ten men were engaged in white-collar jobs during the same reference period. 62 per cent of respondents were believers of Hinduism, while 34 per cent were followers of Islam and the remaining were non-Muslim minorities. Median monthly household per capita expenditure was found to be 3,125 INR (approximately USD 50.4), which is higher than recent average estimates for urban India (2,019 INR or USD 32.6) (Government of India, 2013), implying that the surveyed

households of Kolkata city were economically better off than the average urban Indian household.

Future fertility intention according to number of living children

Table 3 depicts percentage of wives, husbands, and couples, respectively, who did not want any more children at the time of the survey according to number of living children. Overall, 65 per cent of wives and over 67 per cent of husbands did not want to have any more children in the future. It is important to note that out of 76 couples who did not have any living children at the time of the survey, none reported not wanting a child in future; thus voluntary childlessness has conspicuously been absent among surveyed respondents.

For wives having a living child, about two-third reported not wanting a second child, a sentiment which was even higher among husbands (68 per cent). Among couples' responses, around six out of ten of those who had a living child did not want another child, while more than eight out of ten of those having two or more children did not want additional children.

Unadjusted and adjusted differentials of future fertility intention among wives and husbands separately

Table 4 presents unadjusted and adjusted differentials of not wanting any children and also of not wanting a second child according to the variables of our interest. Among variables related to constraints to childbearing and rearing, educational attainment has a negative and significant effect on having a second child in both unadjusted and adjusted models 3-4. For example, women with 10 years of schooling were 61 per cent more likely not to have a second child, while such likelihood increased to 75 per cent for women who had completed post-graduation. Similarly, post-graduate husbands were 15 percentage-points more likely not to have a second child compared to the husbands who completed 10 years of schooling.

In both the unadjusted and adjusted model 3, workingwomen were 10 percentage-points less likely to have a second child compared to their non-working counterparts in the adjusted model (63 per cent among non-working women against 73 per cent among working women). However, husbands with a white-collar job were not found to have significant association with not having a second child in the adjusted model 4. Although the importance of leisure time had a significant effect on unwillingness towards future childbearing among both women and men in all the unadjusted models 1-4, its statistical significance persists only for men in the adjusted models. Men were 7 percentage-points less likely to have any more children in future (and 4 percentage-points less for a second child in future).

All the variables relating to aspirations for children were found to have significant negative effect on future childbearing in the adjusted models. Wives and husbands who chose to send their children to private English medium schools were 68 per cent and 72 per cent, respectively, more likely not to have any child in the future, while the percentages were 64 and 67 among women and men respectively who have not reported such school choice in models 1-2. The adjusted differences were more pronounced among women and men who did not want to have their second child. Likelihood of not having a second child in future were nine and seven percentage-points higher among women and men, respectively who have reported their choice in favour of private English medium schools for their only child, compared to those who have not reported such choice (models 3-4). Pursuing extra-curricular activities of children had positive and significant adjusted effect on not having a child in future among wives but not among husbands in models 1-4. For example, marginal probability of not having any child in future and even the second child were respectively 11 and 21 percentage-points higher among women if their children were pursuing two different extra-curricular activities, compared to women whose children were not pursuing any extra-curricular activity. Providing expensive durable accessories to children also diminishes the

likelihood of wanting children in future by 11 and 7 percentage-points among wives and husbands respectively in adjusted models 1-2.

Among variables related to family and individual values, wives who disagreed that marriage is an outdated institution were significantly less likely to have any child in future in the adjusted models 1 and 3. Likelihood of the unwillingness to have children in future increases by 13 percentage-points among all women and 22 percentage-points among women having one living child if they did not agree with the aforesaid statement. Wives and husbands' agreement with the statement 'a child is essential for life-fulfilment' has significant positive effect on not having any child in future (as well as not having a second child) in all unadjusted models. However, such relationships did not hold in the adjusted models.

Wives and husbands having one living child who fully agreed that the parent should sacrifice for their children were significantly more likely not to have their second child by 13 and 28 percentage-points, respectively compared to those who partially agreed or did not agree altogether (adjusted models 3-4). Women who fully agreed that nowadays wealth flows from parent to child were significantly more likely to stop childbearing by nine percentage-points compared to those who partially agreed or did not agree at all in model 3.

Lack of old age dependency on children was a positive and significant predictor of not having any children in future in all the models 1-4. Women and men who reported that they would not be dependent on their children were 14 and five percentage-points, respectively less likely to have any child in the future; among those who did not want a second child, the gap was more substantial (24 and 20 percentage-points among women and men, respectively), though with lesser statistical significance.

Unadjusted and adjusted differentials of future fertility intention among couples

Findings of Table 5 depict unadjusted and adjusted differentials of not having any more children among all surveyed couples, as well as of not having a second child among those who already have one living child according to the variables of our interest (models 5-6). These results by and large support the findings of Table 4 with some exceptions.

For example, although educational attainment was positively and significantly related with not having a second child in the adjusted models in Table 4, such influence was found absent if we consider couples' actual responses (models 5-6). However, work status of women positively and significantly influence couples' decision not to have a second child in both unadjusted and adjusted models. Couples' likelihood of not having a second child increased from 53 per cent to 63 per cent if women work in wage-earning sector activities compared to housewives. Although importance of leisure time among wives and husbands was found to have a positive significant influence on couples' decision not to have any child (even a second child) in future in the unadjusted models 5-6, such influence persists for husbands in the adjusted models. The likelihood that couples would not bear any child in future decreased by 14 percentage-points (12 percentage-points for not having a second child) if leisure time was important for male counterparts compared to the couples where male counterparts did not report this.

Couples' aspiration to educate their children in private English medium schools was found to have significant and negative influence on future childbearing. Likelihood of having another child in future reduced among couples by 30 percentage-points if female partners choose to educate her children in private English medium schools compared to those couples where the female partner did not report such choice (difference was 32 percentage-points among couples where male partners reported such). Such differences were sharper among couples who did not want to have a second child. A couple's desire to have a second child significantly diminished by 21 percentage-points if the wife wanted their only child to pursue

two different extra-curricular activities compared to those who did not report such activities (model 6). A couple's decision to have another child is also significantly affected if the wife wants to provide expensive durable goods to her children as observed in models 5-6. The adjusted marginal probability of not having a second child among couples increased from 49 per cent to 61 per cent if the female partner wanted to provide costly goods to her only child compared to those who did not. Compared to husbands' aspirations, it seems that wives had a more significant, positive effect on a child's pursuance of extra-curricular activities and provision of expensive accessories.

Wives' disagreement with the statement 'marriage is an outdated institution' has significant positive effect on couples' decision regarding not having any more children (an increase of 6 percentage-points), while husbands' disagreement has a similar influence on couples' decision of not going for a second child (an increase of 13 percentage-points) after controlling for other variables in models 5-6. As found in Table 4, although a couple's decision to have children in future was significantly related to a couples' reporting of whether a child is essential for life fulfilment, the relationship became insignificant in the adjusted models. Couples' likelihood of not having a second child increased by 13 and 26 percentage-points, respectively if female and male partners fully agreed that parents should sacrifice for their children compared to those who did not agree or partially agreed (adjusted model 6). Men's agreement regarding wealth flow from parents to children significantly increased probability of not having any child in future among couples by 10 percentage-points, and by 11 percentage-points for not wanting a second child.

Lesser old age dependency of couples, particularly of mothers on their children, increases the likelihood of not having more children in future (adjusted models 5-6). Couples' decision regarding not having a second child increases from 53 per cent to 60 per cent if the

wives reported they would not be dependent on their children in old age, compared to those who reported partial or full dependency on children.

Discussions

In this paper, we have theorized and developed hypotheses of two possible kinds of aspirations, and their relationship with lowest-low fertility in Kolkata city. We have also not entirely ruled out the possibility of observing some of the characteristic features of SDT.

Aspirations for one's self include material and non-material desires for personal achievements, advancement and self-fulfilment, which could be impeded by children. Our results suggest that educated and working parents, particularly working mothers, were more likely to stop their childbearing after one child in the adjusted models. However, we did not find significant effect of education once we assume couples' responses as our unit of analyses. Evidences from a number of studies unambiguously reveal that female education is associated with decreased fertility (Bbaale 2015; Sackey 2005; Vavrus and Larsen 2003; Lam and Duryea 1999). Studies conducted in India have argued that expansion of female education would increase their bargaining capability in households, enhance autonomy in decision making, augment freedom of movement and reduce fertility (Drèze and Murthi 2001; Sujatha and Reddy 2009). According to Coale (1973), in a competitive market economy, it is rational and convenient for parents to have fewer children to maximize opportunities for one's upward mobility. Rising female employment rates and falling fertility are linked with 'New Home Economic' literature (Easterline 1976; Becker 1981; Lesthaeghe 1998; Lesthaeghe and Willems 1999). Moreover, McDonald (2004) notes how greater gender equality in professional life alongside disproportionate responsibilities of childcare at home, accounts for women's reluctance to bear children. The negative influence on fertility for women pursuing careers may be particularly immense when public and private institutions

(mainly welfare system and family) are not able to reconcile the time women spend on reproduction and production (Zuanna 2007).

In an open-ended IDI with a female media professional (post-graduate, age 29, yet to conceive) affirmed:

"My job is my source of economic independence. It is also a part of my passion for work. My income gives me a lot of confidence. Increasing expenses and the demands for a better lifestyle have made money extremely important for a woman".

In an FGD conducted among working women having one child (hereafter Group A), participants asserted:

"Nowadays women have turned extremely busy due to work and the focus on building a good career leads to a delay in initiating families. Further, maintaining balance between service sector employment and household chores poses a classic dilemma and thus women are happy with one child. However, we gained respect in the family and have a say in the decision-making process and such involvement and freedom has been greater at the in-laws' place than it was in our parental households".

An FGD, which was conducted among men working in mid-level positions in government or semi-government organization (hereafter Group B), participants confirm the views of women.

"Women do not wish to get married before they have set up a stable career and prioritize their job, and childbearing is not an issue for them. Further, women are becoming increasingly health conscious and reluctant to conceive more than one or two children".

Some studies have argued that family-friendly employment policies could solve the problem of declining fertility (Chesnais 1996; McDonald 2004; Castles 2003). An IDI with a 27 year-old housewife (yet to conceive) also provides some useful insight on this issue. She narrated:

"As I'm a graduate and am still not past the age of employment, I'd like to do a job. It's also a question of self-satisfaction. I wish to get employed in the government sector as the private sector is not always suitable for housewives".

The IDI with the same media professional reveals,

"There are problems as well as conveniences. As I stay with my in-laws I do not have to shoulder the entire responsibility of the family. My husband is also very co-operative. My mother-in-law had been a working woman herself and she is also extremely supportive".

Apart from personal advancement and achievements, we found importance of leisure time of parents, particularly of fathers, also had significant implications for not having another child after controlling other variables. Unlike some economic literature (e.g., Francis and Ramey 2008; Galindev 2011) which classifies parents' engagement in activities such as playing with and talking to children as leisure activities, we generally mean leisure here as a type of durable consumption good such as watching television, going shopping or to the movies, eating out and, chatting with friends and relatives. Though hardly any study was conducted to find an association between leisure time and fertility intention in developing countries, available literature of Western countries finds that similar to occupational aspirations, a high leisure orientation tends to interfere with fertility intention and consequent behaviour of a couple, particularly women (Becker and Lois 2012; Claxton and Perry-Jenkins, 2008; Kalmijn and Bernasco 2001; Easterline 1969).

According to women of Group A,

"In many cases both the husband and the wife hesitate to take up the burden of looking after more than one child as they want to enjoy their life. Moreover, nowadays most women feel that it would not be worthwhile to keep rearing children all their life by giving up leisure time".

The FGD, which was conducted among housewives belonging to the lower-middle class (hereafter Group C), conveyed:

"Earlier husband-wife means father-mother. Nowadays husband-wife jointly wishes to spend some time together and enjoy their lives first and then have a baby".

Men belonging to Group B perceived:

"People working in service sectors are too busy to build families. Those who have the time and the means to have more than one child are guided by consumerism and leisure, and restrict their family size to the minimum".

Although we found significant relationships between family size and markers of personal consumption and freedom, indicators of aspirations for children, particularly of women, signify a more profound and nuanced association in limiting family size. As noted by other researchers (for example, Greenhalgh 1988; Basu and Desai 2012) a desire to invest in children and attain social mobility of the family through these investments may encourage families to limit childbearing to one child.

We have found that pursuing children's education in private English medium schools, engagement in extra-curricular activities apart from studying, and providing expensive durable accessories to children have a significant relationship with limiting family size to one. It is not very surprising that public recognition of poor quality education in government schools makes parents seek alternatives (Basu and Desai 2012). Evidence also suggests enrolment in private schools and reliance on private tutoring has increased sharply in recent years (Kingdon 2007). At the same time, employment opportunities have not increased at the same pace as educational growth, which results in increased competition for scarce jobs. These conditions could force parents to invest their resources in upward mobility by having a single child to improve quality of family life (Zuanna 2007; Basu and Desai 2012).

Respondents of FGD Group A conveyed:

"Private or government is no longer a matter of individual choice. Our preferences are largely determined by the influences that we have all around. Education has become very expensive and a lot needs to be spent on schooling. Most of the parents send their children to private English medium

schools so that this preference also adds to the expense. Private tutor is essential for better grooming since jobs are very scarce these days. Learning extra-curricular activities are also important these days. If children couldn't find a suitable job then they can explore other opportunities around them."

Participants of FGD of Group C agreed that,

"Children's desire for branded accessories has increased nowadays. They are also learning this from the children of our neighbourhood. We also provide these as much as we can since we didn't have these during our upbringing in a large family".

According to Basu and Desai (2012), raising highly qualified and better-prepared children (not only educationally, but socially and emotionally) could also be a response to neoliberal economic policies. This in turn creates opportunities for socioeconomic mobility among urban and educated middle class sections.

Such ambition among parents is further supported by lower old age dependency on children as the present study has observed. As Caldwell (1982, 2005) argues in the demand theory framework, mass education reversed the direction of wealth flow between parents and children. According to Participants of Group B:

"It has become the norm to have one child and to provide the best possible upbringing. Since the level of expectations from children has decreased in recent times, it is worth not to invest resources and energy on rearing a second child".

Our study could not find any significant relationship between fertility intention and economic affluence after controlling for other confounding factors. This implies that lowest-low fertility has been cutting across economic classes and in such cases the role of diffusion in spreading small family norms from the economically affluent class to lower income categories may be possible (Kulkarni 2011).

According to respondents of Group B:

"Decrease in family size has become a regular feature among people belonging to the lower rung of society. This might have happened due to the spread of education, increase in the levels of awareness, and learning from others".

Respondents of Group C further affirmed:

"People of lower economic class have realized that rise of income has not been commensurate with rise in prices and thus restricted their childbearing".

We attempted to distinguish two sets of aspirations, which could either be seen as conflicting or reinforcing one another. For example, some researchers argue that women's aspirations for their children reflect their own life experiences and empowerment, as well as belief in the potential of their children to go beyond traditional expectations (Duflo 2011; Malhotra et al. 2002; Kabeer 1999). According to Gipson and Hindin (2013), in smaller families with less time spent on reproduction and childrearing, women may avail, or even create new opportunities not only for themselves but also for their children.

Lastly, we address whether some of the characteristic features of the second demographic transition could be visible in the study population. Contrary to the expectations of SDT, our quantitative analyses suggest that those women who did not accept that marriage is an outdated institution, were significantly more likely to stop childbearing compared to those who either fully or partially accepted marriage to be an outdated institution. We have also found that men, who fully agreed with the statement that parents should sacrifice for their children, were significantly more likely not to have more children (even a second child) compared to those who did not fully agree with the statement. As we have already mentioned, we could not find a single case of voluntary childlessness in our study sample.

Further, 96 per cent of women and 97 per cent of men agreed that married life is very important to them, while 99 per cent of women and men agreed that family is very important for them. Moreover, similar percentages of women and men concurred that a child is very important for them. We could not include these variables in our multivariate models because

of their highly skewed distribution. Apart from these variables, 71 per cent of women and 63 per cent of men did not support divorce, while 92 per cent of women and 77 per cent of men did not support pre-marital sexual relationships; 99 per cent of women and 96 per cent of men did not support extra-marital relationship.

Does this indicate that the features of SDT were absent in our sample survey? It might be that value systems related to marriage, family and children remain intact, but values pertaining to living together, pre- and extra-marital relations have been changing in some segments of the surveyed population. We have indeed tried to explore the current status of values regarding family and children through FGDs and IDIs.

Participants of Group B opined:

"Live-in relationships may gradually gain foothold in a very limited segment of society, but may not be the reason for current declining fertility rates in the city".

They further maintained that,

"The number of divorces has definitely increased compared to earlier times and at the same time re-marriages among divorcees have also increased indicating strategy of love is changing".

Participants of a FGD conducted among high-level male professionals (Group F) expressed:

"Pre- as well as extra-marital affairs have increased significantly in Kolkata but need for family life and importance of children in the family remains".

According to participants of Group C:

"Although incidence of divorce, pre- and extra-marital affairs, and domestic violence has increased; family values and necessity of a child in the family remain intact".

An IDI of the same female media professional was quite revealing to understand how pre-marital and extra-marital relations are gaining ground in society without questioning the necessity of family. According to her:

"I support the idea of premarital sex because I think this is quite natural and we should not unnecessarily fuss about these things. If someone is fully aware and understands her body well then there are no problems with sex before marriage… It is perfectly okay to have an extramarital affair unless it does not affect your marriage. You may have a separate sexual life outside your marriage. But sexual relation is not always the whole of an extramarital affair; it can also be about emotional camaraderie – spending time and being together without demands and expectations. However, it is true that a sexual relation may develop in the process".

She also maintained:

"It is important to have children for maintaining the family and society. Yes, fertility is declining and people may not be able to go for a second child due to economic issues. But having two children helps in protecting social and emotional relations within the family. Even if parents are working and are away from home, the children can be companions to each other and learn things about sharing and loving".

An IDI of a male working in a global telecommunication company who had married a divorcee mentioned:

"It is very natural to have pre- and extra-marital sexual relationships. I don't have any problem with those…even I strongly feel that prostitution should be legalized…; however, these should not anyway affect one's family and children".

From the results of the qualitative analyses one could argue that there are incremental changes in the value systems among limited sections of couples of Kolkata city, without questioning the primary importance of family and children. Hence the sharp decline in fertility in Kolkata city is not necessarily due to the demographic passage from an altruistic family model to an individual family/couple model. A similar type of transition occurred in the east European country of Romania (Rotariu 2006). Arguably, like the first demographic transition theory, SDT as it was defined in the Western context may not be a 'grand theory' (Cleland 2001; Dyson 2010). The theory needs to be reconsidered and redefined in the

context of developing countries where fertility has been declining steadily and is headed towards a phase of lowest-low fertility without affecting value systems pertaining to family and children.

It must be acknowledged, however, that the current study has certain limitations. First, the study is based on cross-sectional data at a single point in time, which ideally does not allow determining cause-effect relationships between future fertility intention and its determinants. Secondly, we could not incorporate religion as a variable in the models estimating likelihood of not having second child. For this reason, effects of other predictor variables could be over-estimated to some extent. Thirdly, the present study was based on small-scale survey data and exploratory in nature, which imposes restriction on generalization. Finally, the study was limited only to married couples; reporting of future fertility desire as well as that of individual and family values could be biased due to post-marital rationalization. Interviews of some unmarried women and men could have been helpful to understand how individual and family value systems might be changing more generally.

Nonetheless, despite the above limitations, our study was able to establish a linkage between lowest-low fertility in the city of Kolkata and aspirations for both individuals and one's children. Characteristic features of SDT, particularly those pertaining to importance of family and children, as envisioned by the theory of SDT are largely absent. The findings possibly hold for most urban areas in India, where one-child families have become a norm, particularly among middle-income groups (Basu and Desai 2012). Large scale studies should be conducted in urban India and other developing countries to validate the arguments presented here and also to understand further intricacies between personal aspirations and aspirations for children in the context of lowest-low fertility.

Acknowledgement

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Figure 1: Fertility levels and trends in major megacities in India and also of West Bengal and India as a whole
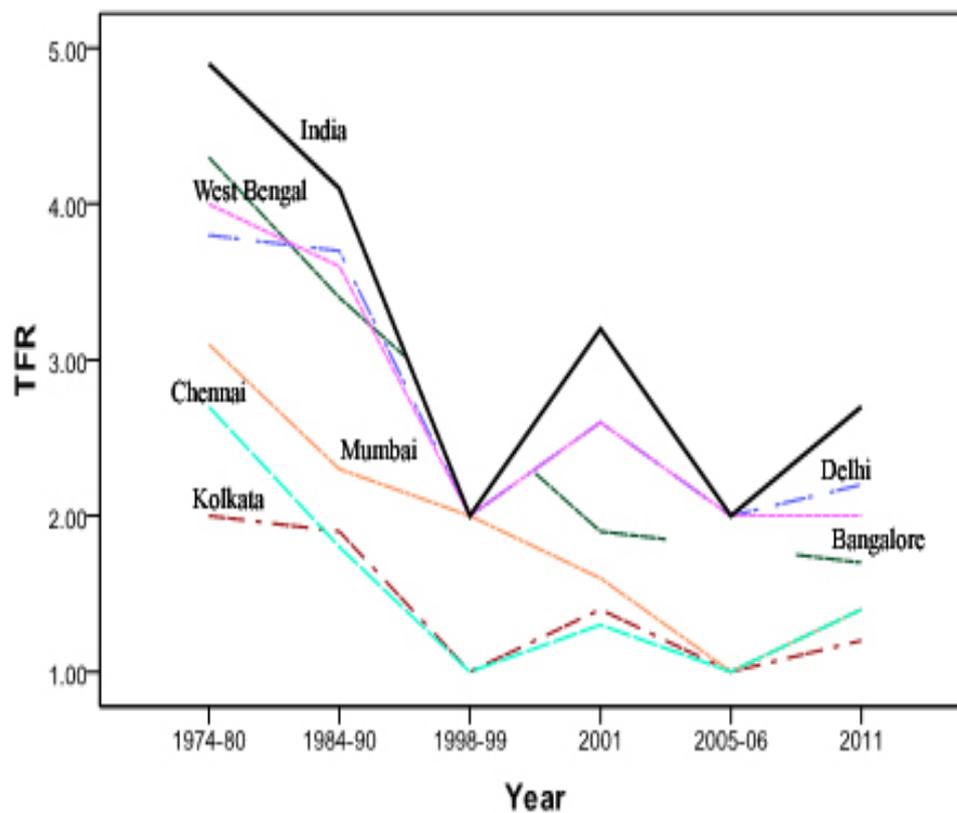
Note: Random fluctuations of the trend lines are due to different methodologies employed in the estimation procedures in the following sources.

Sources: Data for 1974-80 and 1984-90 were obtained from Bhat (1996); 1998-99 and 2005-06 were obtained from National Family Health Survey (NFHS) and, 2001 and 2011 were obtained from Guilmoto and Rajan (2013)

Table 1: Variables tested for significance of association with not wanting any more children in multivariate binary logit regression models 1-6

Variables indicating constraints for childbearing and childrearing: years of schooling(continuous); degree of media exposure (continuous); work-status/type of work(categorized as not-working and working for women; and blue-colour and white colour jobs for men); and importance of leisure time for own (categorized as not important/rather important and very important)
Variables pertaining to aspirations for children: pursuing /want to pursue children's education in private English medium school ((categorized as no and yes); degree of pursuing extra-curricular activities of children (continuous); wish to provide expensive durable goods to children (categorized as no and yes)
Variables specifying family and individual values: marriage is an outdated institution (categorized as fully/partially agree and do not agree at all); child is essential for life-fulfilment (categorized as fully agree and partially agree/do not agree at all); parents should scarify for their children (categorized as fully agree and partially agree/do not agree at all); wealth flows from parent to child now a days (categorized as fully agree and partially agree/do not agree at all); whether depend on children during old age (categorized as fully/partially and no);
Individual and household level control variables: marital duration (continuous); sex of the child (categorized as boy and girl) / total number of children; number of own siblings (continuous); gender of the respondent (categorized as female and male);type of family (categorized as nuclear, living with in-laws/own parents, and joint/extended); religion (categorized as Islam and non-Islam); quintile of log per capita monthly expenditure (categorized as bottom quintile, middle quintile and upper quintile)

Table 2: Sample characteristics of the study population

Background characteristics	Women (N=600)	Men (N=600)
Current age		
16-24 aged for women / <30 aged for men	18.3	14.8
25-34 aged for women / 30-39 aged for men	54.8	50.3
35-44 aged for women / 40+ aged for men	26.8	34.9
Median age of the respondents (in years)	30 (6.1)	36(6.6)
Median age at marriage of the respondents (in years)	21 (4.0)	27 (4.3)
Median duration of marital union of the respondents (in years)	8.0 (5.7)	8.0 (5.8)
Median numbers of siblings of the respondents	4 (1.8)	4 (1.9)
Educational attainment		
Up to middle school	29.8	26.6
Up to secondary	18.2	14.2
Up to higher secondary	17.0	15.0
Graduation and above	35.0	44.2
Median years of schooling of the respondents	11 (4.5)	12 (4.7)
Mean and median number of living children of the respondents	1.46 [1] (1.1)	
Mean and median number of living children of the respondents having at least a living child	1.67 [1] (1.0)	
% of respondents belonging to nuclear households	48.5	
% of respondents stay with own-parents/parent-in-laws	35.0	
% of respondents stay in extended households	16.5	
% of respondents working during last six months or more (white-colour job for husbands)	23.7	61.5
% of respondents believer of Hinduism	62.3	
% of respondents follower of Islam	34.1	
% of respondents belonging to other religions (Christian, Jain and Sikh)	3.6	
Per capita monthly household expenditure (median)	3,125 INR (USD 50.4)	

Notes: () denotes standard deviation, [] denotes median, if not mentioned

Table 3: Percentage of women, men and couples who want no more children by number of living children

Number of living children	Number	Percent women who don't want any more children	Percent men who don't want any more children	Percent couples who don't want any more children
0	76	0.0	0.0	0.0
1	296	65.5	68.2	58.1
2 or more	228	86.0	88.6	83.8
Total	**600**	**65.0**	**67.3**	**60.5**

Table 4: Unadjusted and adjusted estimates (in percent) of want of no more children according to different characteristics of women and men separately

Background characteristics	Estimates of not want of any more children among all women and men				Estimates of not want of any more children among women and men having one living child			
	Women (model 1)		Men (model 2)		Women (model 3)		Men (model 4)	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
Variables indicating constraints for childbearing and childrearing								
Years of schooling (YOS) (continuous)								
10	65	65	67	66	59	61	64	57
15	65	68	67	69	76***	72	76***	69*
17	65	69	67	70	82***	75**	80***	72*
Work-status for wives/Type of jobs for husbands (WS)								
Not-working (Blue-colour for husbands)	64	65	68	65	58	63	60	60
Working (White-colour for husbands)	68	65	67	65	80**	73**	72*	63
Importanceof leisure time for own (LESOWN)								
Not important/rather important	58	63	53	63	44	60	31	66
Very important	69**	65	73***	70***	74***	66	79***	70**
Variables pertaining to aspirations for children								
Pursuing children's education in private English medium school (PVTENG)								
No	67	64	62	67	59	62	70	65
Yes	63	68*	76**	72*	67	71**	66	72**
Degree of pursuing extra-curricular activitiesof children (EXTDEG) (continuous)								
0	55	64	61	68	47	55	60	68
1	68***	70*	68***	67	65***	66	67**	68
2	78***	75*	74***	66	80***	76**	74**	68
Wish to provide expensive durable goods to children (EXPGOOD)								
No	64	59	72	62	65	61	79	65
Yes	66	70**	64*	69**	64	63	61**	68
Variables specifying family & individual values								
Marriage is an outdated institution (MOI)								
Fully/partially agree	53	54	64	65	69	44	78	72
Do not agree at all	67*	67***	68	68	63	66**	67	67
Child is essential for life fulfillment (CHLIFE)								
Fully agree	67	65	77	68	74	64	84	71
Partially/do not agree at all	58*	64	54***	67	61*	65	34***	61
Parents should sacrifice for their children (PARSAC)								
Fully agree	68	66	76	67	66	66	84	76
Partially/do not agree at all	49***	61	54***	68	56	53*	28***	48***
Wealth flows from parent to children nowadays (WFLOW)								
Fully agree	72	63	77	67	78	68	85	67

Partially/do not agree at all	58***	67	58***	68	51***	59***	46***	68
Whether depend on children during old age (OLDDEP)								
Fully/partially	57	60	59	64	44	51	41	55
No	75***	74**	76***	69*	82***	75*	85***	75*
Total cases	**600**		**600**		**296**		**296**	

Notes:

1. Variable names are given in the parenthesis.
2. Total number of living children has been considered as covariate in models 1-2.
3. Religion has been dropped from models 3-4 to avoid zero-cell in regression modelling.
4. Interaction terms controlled in Model 1 are: WS and quintile of per capita household expenditure (QMPCE); YOS and WS; PVTENG and QMPCE; EXPGOOD and QMPCE; OLDDEP and QMPCE; religion (RELIG) and OLDDEP; RELIG and QMPCE; LESOWN and WS; and RELIG and EXTDEG.
5. Interaction terms controlled in Model 2 are: RELIG and degree of media exposure (DME); PVTENG and QMPCE; LESOWN and WS; WS and QMPCE; WS and RELIG; QMPCE and RELIG; OLDDEP and RELIG; QMPCE and OLDDEP; and QMPCE and EXTDEG.
6. Interaction terms controlled in Model 3 are: YOS and WS; PVTENG and QMPCE; EXPGOOD and QMPCE; OLDDEP and QMPCE; LESOWN and WS; EXTDEG and QMPCE; PVTENG and EXPGOOD; EXPGOOD and DME; and WFLOW and YOS.
7. Interaction terms controlled in Model 4 are: PVTENG and QMPCE; LESOWN and WS; WS and QMPCE; EXTDEG and QMPCE; EXPGOOD and QMPCE; WFLOW and YOS; WS and YOS; DME and YOS; WS and DME; and PVTENG and DME.
8. None of the individual and household level control variable and interaction terms has been reported in the Table for the brevity of space. For the sake of comparison, exact values of the continuous variables are used in the Table.
9. ***p<0.01; **p<0.05; *p<0.10

Table 5: Unadjusted and adjusted estimates (in percent) of want of no more children according to different characteristics of couples

Background characteristics	Estimates of not want of any more children among all couples (model 5)		Estimates of not want of any more children among couples having one living child (model 6)	
Variables indicating constraints for childbearing and childrearing	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
Years of schooling of women (WYOS) (continuous)				
10	61	61	52	56
15	59	61	67***	60
17	59	61	73***	62
Years of schooling of men (HYOS) (continuous)				
10	60	59	51	56
15	62	61	66***	58
17	62	62	71***	59
Work-status for women (WSW)				
Not-working	60	61	52	53
Working	61	62	69**	63*
Occupation of men (HOCCU)				
Blue-colour	58	62	46	54
White-colour	62	68	63**	59
Importance of leisure time for women (WLESOWN)				
Not important/rather important	56	56	42	58
Very important	63*	62	64**	57
Importance of leisure time for men (HLESOWN)				
Not important/rather important	46	55	21	47
Very important	67***	69**	67***	59*
Variables pertaining to aspirations for children				
Women want to pursue her children's education in private English medium school (WPVTENG)				
No	64	38	54	23
Yes	58	68**	58	67***
Men want to pursue his children's education in private English medium school (HPVTENG)				
No	67	45	58	38
Yes	56*	77**	56	82***
Degree of pursuing extra-curricular activities of children as women want (WEXTDEG) (continuous)				
0	53	60	44	48
1	62***	61	56***	57**
2	70***	61	68***	69**
Degree of pursuing extra-curricular activities of children as men want (HEXTDEG) (continuous)				
0	54	63	47	59
1	61***	60	55***	57
2	67***	58	63**	56
Women wish to provide expensive durable goods (WEXPGOOD)				
No	59	53	56	49

Yes	61	65**	57	61**
Men wish to provide expensive durable goods (MEXPGOOD)				
No	67	61	69	59
Yes	57*	60	50**	53
Variables specifying family & individual values				
Women agreed that marriage is an outdated institution (WMOI)				
Fully/partially agree	47	55	57	50
Do not agree at all	62*	61**	57	58
Men agreed that marriage is an outdated institution (HMOI)				
Fully/partially agree	58	50	65	44
Do not agree at all	61	60	56	57**
Women agreed that child is essential for life fulfillment (WCHLIFE)				
Fully agree	63	60	54	55
Partially/do not agree at all	53*	61	67*	63
Men agreed that child is essential for life fulfillment (HCHLIFE)				
Fully agree	71	62	72	59
Partially/do not agree at all	47***	58	23***	50
Women agreed that parents should sacrifice for their children (WPARSAC)				
Fully agree	64	61	59	59
Partially/do not agree at all	44***	56	46*	46**
Men agreed that parents should sacrifice for their children (MPARSAC)				
Fully agree	70	63	72	62
Partially/do not agree at all	47***	57	19***	36***
Women agreed that wealth flows from parent to children nowadays (WWFLOW)				
Fully agree	68	60	70	61
Partially/do not agree at all	54***	61	44***	52
Men agreed that wealth flows from parent to children nowadays (HWFLOW)				
Fully agree	69	65	70	64
Partially/do not agree at all	53***	55**	44***	53**
Women's dependency on children during old age (WOLDDEP)				
Fully/partially	54	56	39	53
No	69***	68**	72***	60**
Men's dependency on children during old age (HOLDDEP)				
Fully/partially	53	58	35	48
No	68***	54	71***	59*
Total cases	**600**	**600**	**296**	**296**

Notes:

1. Variable names given in the parenthesis.
2. Total number of living children has been considered as covariate in model 5.
3. Religion has been dropped from model 6 to avoid zero-cell in regression modelling.
4. Interaction terms controlled in model 5 are: current age of women (WAGE) and current age of husband (HAGE); WYOS and HYOS; WDME and HDME; WSW and WYOS; WEXPGOOD and quintile of per capita household expenditure (QMPCE); HEXPGOOD and QMPCE; WOLDDEP and QMPCE; religion (RELIG) and WOLDDEP; RELIG and QMPCE; WLESOWN

and WSW; HLESOWN and HOCCU; QMPCE and HOLDDEP; RELIG & HOLDDEP; WPVTENG and QMPCE; RELIG & HPVTENG; HPVTENG and HYOS; HPVTENG and HDME; HLESOWN and HOLDDEP; HLESOWN and QMPCE; HPVTENG and HLESOWN; HPVTENG and HOCCU; QMPCE and WPVTENG; and HMOI and HPVTENG.

5. Interaction terms controlled in model 6 are: WAGE and HAGE; WYOS and HYOS; WDME and HDME; WEXPGOOD and QMPCE; WSW and WPVTENG; HEXPGOOD and QMPCE; WOLDDEP and QMPCE; WLESOWN and WSW; HLESOWN and HOCCU; QMPCE and HOLDDEP; HPVTENG and HYOS; HPVTENG and HDME; HLESOWN and QMPCE; HPVTENG and HLESOWN; HPVTENG and HOCCU; QMPCE and WPVTENG; and HMOI and HPVTENG.

6. None of the individual and household level control variable and interaction terms has been reported in the Table for the brevity of space. For the sake of comparison, exact values of the continuous variables are used in the Table.

7. ***p<0.01; **p<0.05; *p<0.10