

Family structures and Fertility preferences in West Bengal, India: A mixed method study

Extended Abstract

Background:

Women's health and wellbeing are global priorities, prominently featured in Sustainable Development Goals (SDGs) 3 and 5. While a range of socio-economic and demographic factors shape women's fertility preferences, along with family as family is the fundamental unit of society. Fertility preferences encompass age at first birth, total number of children, birth intervals, and gender preferences. Substantial evidence suggests that early pregnancies following marriage, and fertility decisions controlled by husbands and in-laws significantly constrain women's autonomy in family planning and fertility practices (Char et al., 2010). These practices are deeply rooted in gender-based power dynamics, where male family members, particularly husbands, often dominate family planning and fertility decisions, which are made collectively by the family rather than by the couple alone (Blanc, 2001; Gupta, 1995). Moreover, evidence of the adverse effects of in-laws' control over women's fertility extends to severe behaviours, such as intimate partner violence and coercion by husbands and in-laws, which directly affect women's fertility choices (Raj et al., 2006; Silverman et al., 2019). The restrictive behaviour of mothers-in-law (MIL), in particular, is often driven by a misalignment of fertility preferences between the mother-in-law and the daughter-in-law (DIL). MIL frequently strongly prefer sons and may pressure DIL to conform to their desired family size and gender composition (Anukriti et al., 2020). Additionally, MIL and other in-laws often pressure women to have children immediately after marriage (Dixit et al., 2021). While fertility decision-making has increasingly become a matter between husbands and wives compared to earlier times, the influence of the extended family—especially older female members, such as MIL, sisters-in-law (SIL), and grandmothers—remains significant. However, there is a noticeable gap in research exploring the dynamics of family structures and their impact on fertility preferences in the country. Against this backdrop, using a sequential explanatory mixed-method design, this study examines the relationship between family structures and fertility preferences over the past three decades in West Bengal, India.

Data and Methods:

The study primarily utilized data from the National Family Health Survey (NFHS) for West Bengal, covering all five rounds: NFHS-1 (1992-93), NFHS-2 (1998-99), NFHS-3 (2005-06), NFHS-4 (2015-16), and NFHS-5 (2019-21). The NFHS is a nationally representative survey that provides comprehensive data on various health and empowerment indicators, including fertility. The survey employs a two-stage stratified sampling method to select women of reproductive age as respondents. Only participants who voluntarily agreed to be interviewed were included. For this study, all currently married women aged 15-49 were included in the analysis, with sample sizes from each round as follows: NFHS-1 (n = 3,421), NFHS-2 (n = 3,654), NFHS-3 (n = 4,450), NFHS-4 (n = 12,685), and NFHS-5 (n = 15,018). Additionally, to understand the reasons behind having single child, son preference, and other fertility preference components, qualitative data through Focus Group Discussion (FGDs) (n=5), Key Informant Interviews (KIIs) (n=28), and In-depth Interviews (IDIs) (n=20) were conducted and analyzed. The respondents for the FGD, KII and IDI were purposively chosen, and an informed consent procedure was followed.

The outcome variables were, (1) Age at first birth (whose age at first birth was less than or equal to 19 years was categorized as '1' and whose Age at first birth was greater than 19 years was categorized as '0'), (2) Desire for more children (those who wanted another child in future were categorized as '1' and those who did not want to take more child were categorized as '0'), and (3) Marriage to the first birth interval (the interval between marriage to first birth of 1 year or less has been coded as "1" and the interval between marriage to first birth of more than one year has been coded as "0"). The primary predictor variable used in the analysis was family structure categorized as a **nuclear family, Non-nuclear with only MIL/SIL, Non-nuclear with both MIL & SIL, and Non-nuclear without MIL & SIL**. Additionally, other socio-economic and demographic characteristics of the women, such as age at marriage, years of schooling, parity, mass-media exposure, wealth status, religion, caste, place of residence, and current use of contraceptives, were also included in the analysis. Binary logistic regression was used to check the adjusted effects of the predictor variables on the outcome variables. In all the analyses, weights were used to restore the sample's representativeness. The analyses were done with Stata (version 17) with a significance level of 5%. To check multicollinearity, Variance Inflation Factor (VIF) was used.

Thematic analysis of qualitative data was conducted through Nvivo software. The data were gathered through face-to-face interviews with the presenting author. The data were first transcribed in the native language

(Bengali) and then translated into English for analysis. Back-translation was done to ensure accuracy of the translation. Subsequently, inductive and iterative coding was performed. From these codes, sub-themes were identified, and from these sub-themes, broader themes were developed and elaborated.

Findings:

In last thirty years, the number of children born to women declined (4 or 5 children in 1992/93 1 or 2 in 2019/21) (Figure 1). The reasons behind this have been categorized into five major themes: 1) Financial drivers, with categories of child-rearing cost, mother's employment, and working parents; 2) Child's wellbeing, with categories of better upbringing of child, child's career establishment, disbalance of attention, and sibling's rivalry, 3) Parental challenges, with categories of hardship involved to raise a child and no familial support, 4) Health challenges, with categories of disease surge and health issues and 5) specific gender composition of the child (Figure 2). After controlling for other socio-economic and demographic variables, women residing in Non-nuclear families with MIL/SIL had

22% (OR = 1.22, CI = 1.07-1.38), Non-nuclear families with both MIL & SIL had 47% (OR = 1.47, CI = 1.24-1.74), and Non-nuclear family without MIL & SIL had 25% (OR = 1.25, CI = 1.04-1.52) higher likelihood of having first childbirth within 19 years of age compared to the women residing in a nuclear family in 2015/16 (Table 1). Whereas, in 2019/21, compared to women of nuclear families, the women of Non-nuclear families with MIL/SIL had 45% (OR = 1.45, CI = 1.30-1.63), and Non-nuclear families with both MIL & SIL had 57% (OR = 1.57, CI = 1.33-1.85) higher likelihood of having first childbirth within 19 years of age. The women residing in Non-nuclear families with only MIL/SIL had 14% higher likelihood of having their first childbirth within first year of marriage in both 2015/16 (OR = 1.14, CI = 1.02-1.27) and 2019/21 (OR = 1.14, CI = 1.03-1.25) compared to women of nuclear family. Whereas, those women residing in Non-nuclear families without MIL & SIL had a 17% (OR = 1.17, CI = 1.01-1.35) higher chance of having their first childbirth within the first year of marriage in 2019/21 than women of the nuclear families. The reasons behind this, as found in qualitative data, were medical complications involved in late childbirth, uncertainty regarding the fertility of the DIL, giving MIL a chance to help in the upbringing of the child, early childbirth is for the establishment of a child, and eliminating the loneliness of the parents. There were the influences of MIL, older women, neighbors, and DIL's own parents. There was almost no change had been found regarding this timing of first childbirth within the first year of marriage in last thirty years, as one KII mentioned – "Even 25-30 years ago, where children were born in the first year of marriage, still, in most cases, children are born within the first year of marriage, in some cases, there may have been a change, some (couple) are waiting for 1-2 years" (KII-15). Women residing in Non-nuclear family with both MIL & SIL had 46% (OR = 1.46, CI = 1.11-1.94), 73% (OR = 1.73, CI = 1.28-2.34), 51% (OR = 1.51, CI = 1.12-2.03), and 22% (OR = 1.22, CI = 1.02-1.47) higher odds of desire for more child compared to women of nuclear family in 1992/93, 1998/99, 2005-06, and 2015-16 respectively. The women residing in Non-nuclear families with MIL/SIL had 37% (OR = 1.37, CI = 1.18-1.59) higher likelihood of desire for more children in 2015-16. Whereas the women of Non-nuclear families without MIL & SIL had a 75% (OR = 1.75, CI = 1.21-2.53) higher likelihood of desire for more children in 1992/93. This desire for more children depends mostly on the sex of the living children of DIL. As in the DIL's

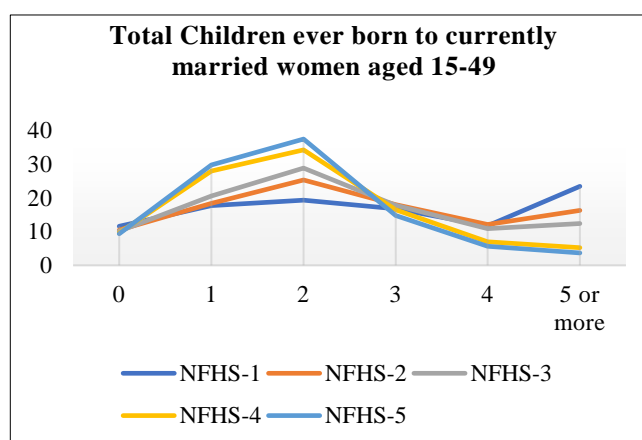


Figure 1: Total Children ever born to currently married women aged 15-49, West Bengal, India, 1992/93-2019/21

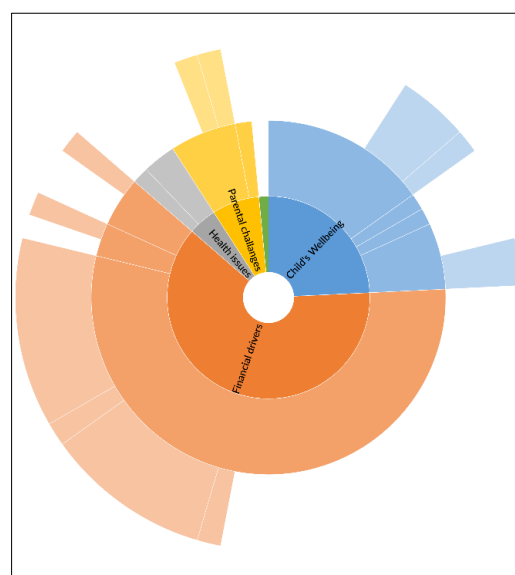


Figure 2: Key themes emerged as reason behind having single child

family (specifically in MIL and other older women), there is a son preference, though it declined from previous times. The reasons behind son preferences were categorized into five themes – 1) Patriarchal factors (lineage forward, son will stay at home, property transfer, and old age traditions), 2) Economic aspects (son's contribution of income to family and dowry for girls), 3) Caregiving activities, 4) Religious factors (funeral and family puja), 5) Family reputation (elopement marriages for girls) (Figure 3).

Discussion & Conclusion:

The study found a significant association between family structure and fertility preferences in West Bengal, India. Women living in non-nuclear families experienced negative impacts on their fertility preferences. Among all family members, the MIL plays a crucial role in shaping women's fertility decisions, particularly regarding first

childbirth, childbirth within the first year of marriage, and the desire for more children. The study also revealed that a significant percentage of women become mothers at a young age, with the state ranking second among all Indian states for teenage childbearing (Pautunthang, 2023). The influence of MIL is a contributing factor. This finding aligns with an earlier study (Dixit et al., 2021). As found in past studies, we also found MIL generally prefer more children—at least one son—and exert pressure on DIL to fulfil this preference (Anukriti et al., 2020). Despite variations in family structure, the majority of couples now prefer to have a maximum of two children, with families significantly influencing the timing and sex of the child, though less so the total number of children. These findings are consistent with the research of Das, Ghosh, and Shenk (2023). The study thus concludes that the MIL continues to influence the fertility preference of DIL in West Bengal although the influence has declined over time due to broader socio-economic development and empowerment of education.

References

- Anukriti, S., Herrera-Almanza, C., Pathak, P., & Karra, M. (2020). Curse of the Mummy-ji: The Influence of Mothers-in-Law on Women in India. *American Journal of Agricultural Economics*. <https://doi.org/10.1111/ajae.12114>
- Blanc, A. K. (2001). The effect of power in sexual relationships on sexual and reproductive health: an examination of the evidence. *Studies in Family Planning*, 32(3), 189–213. <https://doi.org/10.1111/j.1728-4465.2001.00189.x>
- Char, A., Saavala, M., & Kulmala, T. (2010). Influence of mothers-in-law on young couples' family planning decisions in rural India. *Reproductive Health Matters*, 18(35), 154–162. [https://doi.org/10.1016/S0968-8080\(10\)35497-8](https://doi.org/10.1016/S0968-8080(10)35497-8)
- Das, K., Ghosh, S., & Shenk, M. K. (2023). Responsibility, social aspirations, and contemporary low fertility: a case study of rural West Bengal, India. *Asian Population Studies*, 1–19. <https://doi.org/10.1080/17441730.2023.2287336>
- Dixit, A., Bhan, N., Benmarhnia, T., Reed, E., Kiene, S., Silverman, J., & Raj, A. (2021). The association between early in marriage fertility pressure from in-laws' and family planning behaviors, among married adolescent girls in Bihar and Uttar Pradesh, India. *Reproductive Health*, 18. <https://doi.org/10.1186/s12978-021-01116-9>
- Gupta, M. Das. (1995). Life Course Perspectives on Women's Autonomy and Health Outcomes. *American Anthropologist*, 97(3), 481–491. <http://www.jstor.org/stable/683268>
- Pautunthang, N. (2023). Levels, Trends and Differentials of Teenage Childbearing in India. *Asian Journal of Population Sciences*, 2(1), 37–53. <https://doi.org/10.3126/ajps.v2i1.51089>
- Raj, A., Livramento, K. N., Santana, M. C., Gupta, J., & Silverman, J. G. (2006). Victims of intimate partner violence more likely to report abuse from in-laws. *Violence against Women*, 12(10), 936–949. <https://doi.org/10.1177/1077801206292935>
- Silverman, J. G., Boyce, S. C., Dehingia, N., Rao, N., Chandurkar, D., Nanda, P., Hay, K., Atmavilas, Y., Saggurti, N., & Raj, A. (2019). Reproductive coercion in Uttar Pradesh, India: Prevalence and associations with partner violence and reproductive health. *SSM - Population Health*, 9, 100484. <https://doi.org/10.1016/j.ssmph.2019.100484>

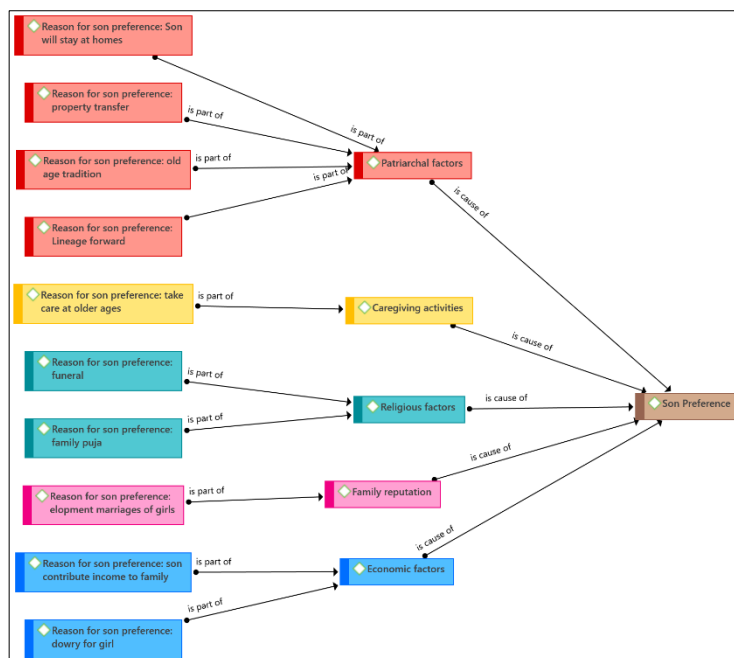


Figure 3: Mind map of key themes of reason of son preference

Table 1: Adjusted Odds Ratio (AOR) of Predictors of Age at first birth, Marriage to first birth interval and Desire for more child, West Bengal, India, 1992/93-2019/21

Age at first birth					
Predictor variables	Adjusted Odds Ratio (AOR) [95% CI]				
	NFHS-1	NFHS-2	NFHS-3	NFHS-4	NFHS-5
Family Structure					
Nuclear ®	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]
Non-nuclear with only MIL/SIL	1.11 [0.85-1.46]	0.94 [0.74-1.20]	1.23 [0.97-1.55]	1.22** [1.07-1.38]	1.45*** [1.30-1.63]
Non-nuclear with both MIL & SIL	1.11 [0.83-1.49]	1.14 [0.87-1.50]	1.25 [0.94-1.66]	1.47*** [1.24-1.74]	1.57*** [1.33-1.85]
Non-nuclear without MIL & SIL	1.18 [0.80-1.73]	1.03 [0.74-1.43]	0.81 [0.59-1.11]	1.25* [1.04-1.52]	1.11 [0.94-1.32]
Marriage to first birth interval					
		NFHS-2	NFHS-3	NFHS-4	NFHS-5
Family structure					
Nuclear ®		1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]
Non-nuclear with only MIL/SIL		0.94 [0.78-1.13]	0.99 [0.83-1.17]	1.14* [1.02-1.27]	1.14** [1.03-1.25]
Non-nuclear with both MIL & SIL		0.91 [0.73-1.12]	0.84 [0.68-1.04]	0.95 [0.82-1.10]	1.14 [0.99-1.31]
Non-nuclear without MIL & SIL		0.9 [0.70-1.17]	1 [0.80-1.26]	1.13 [0.96-1.32]	1.17* [1.01-1.35]
Desire for more child					
Predictor variables	NFHS-1	NFHS-2	NFHS-3	NFHS-4	NFHS-5
Family structure					
Nuclear ®	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]	1 [1.00-1.00]
Non-nuclear with only MIL/SIL	1.19 [0.91-1.54]	1.29 [0.97-1.72]	1.22 [0.94-1.58]	1.37*** [1.18-1.59]	1.06 [0.92-1.21]
Non-nuclear with both MIL & SIL	1.46** [1.11-1.94]	1.73*** [1.28-2.34]	1.51** [1.12-2.03]	1.22* [1.02-1.47]	1.11 [0.93-1.32]
Non-nuclear without MIL & SIL	1.75** [1.21-2.53]	1.05 [0.68-1.64]	1.1 [0.75-1.64]	1.01 [0.80-1.28]	0.93 [0.76-1.15]
These AORs are controlled for age at marriage, years of schooling, parity, mass-media exposure, wealth status, religion, caste, place of residence, and current use of contraceptives					

Note: * p<0.05, ** p<0.01, *** p<0.001, ® “Reference category”, CI “confidence interval”