

Exploring Socio-Demographic Determinants Of Completed Fertility Among Elderly Women In Manipur, India

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Abstract:

Manipur, positioned in the easternmost border of India, presents a diverse landscape of demographic transition stages and notably high fertility rates. Despite the outlined objectives within the National Population Policy (NPP)-2000 to achieve stable population growth through 12 strategic themes, there remains a notable absence of community-based studies elucidating the determinants of completed fertility in Manipur. This study aims to assess the socio-demographic factors contributing to variations in completed fertility among elderly married women aged 50-55 years in Manipur. Utilizing a retrospective cross-sectional design, data were collected from 1263 ever-married women who had experienced menopause, residing in the valley districts through a cluster sampling scheme. The survey, conducted between March 2022 and January 2023, with the 1st March 2022 as reference date for the survey, employed multiple binary logistic regression models to analyse community-based empirical data. The findings reveal a significant association between completed fertility (3.2) and factors such as education ($P < 0.01$), sex of the second child ($P < 0.01$), and the couple's preference for a son ($P < 0.01$) within the population. These identified determinants provide foundational insights for future research endeavours focused on maternal health development and aligning with India's national objectives for population control.

Keywords: Education, odds ratio, P-value, regression coefficient, son

Introduction:

In response to the Cairo International Conference on Population and Development (ICPD) in 1994, India formulated its National Population Policy (NPP) in 2000, setting short, medium, and long-term objectives. The medium-term objective aimed to achieve a total fertility rate (TFR) of replacement level (2.1) by 2010, while the long-term goal targeted population stabilization by 2045, aligning with sustainable economic growth, social development, and environmental protection. The interconnectedness of these objectives underscores the significance of achieving short and medium-term goals to realize long-term population stabilization. Moreover, India's National Rural Health Mission: 2005-12, within the Millennium Development Goal (MDG) framework, underscores the importance of health in economic and social development, emphasizing population stabilization, gender equality, and demographic balance.

A body of research indicates that high fertility rates are often influenced by unwanted pregnancies resulting from unmet contraceptive needs. Additionally, a pronounced preference for sons over daughters in developing countries, including India, contributes to fertility dynamics. Studies conducted in various countries, including the United States and European nations, illustrate preferences for balanced sex compositions within families. However, preferences for sons persist strongly in many developing countries, influencing reproductive intentions and behaviours significantly. Utilizing data from the Demographic and Health Surveys (DHS) across multiple countries, previous studies have highlighted the prevalence of son preference, particularly in Southern Asian countries. Furthermore, women's contraceptive usage and birth interval duration after the birth of a son have been associated with fertility cessation in countries like Nepal.

Despite national efforts, India continues to witness significant inter-state variations in unwanted fertility, with unplanned pregnancies remaining common. The recent National Family Health Survey (NFHS) reports underscore the potential impact of eliminating unwanted fertility on reducing the TFR to replacement levels or below, particularly in high-fertility states like Bihar, Rajasthan, Uttar Pradesh, Madhya Pradesh, and Orissa. The persistence of higher fertility rates, often termed the "third birth transition," poses a demographic challenge to population growth, with factors such as lack of education and son preference playing pivotal roles. Past studies in India have identified economic, socio-cultural, and religious factors as major contributors to son preference, with sons traditionally viewed as providers of family labour, old-age support, and perpetuators of family lineage. Additionally, sons hold religious significance in performing funeral rites and aiding in ancestral salvation in Hindu tradition. The present study aims to investigate the socio-demographic

determinants underlying higher fertility rates or the "third birth transition," particularly focusing on the context of Manipur, where a notable decline in son preference has been observed over the past three decades.

Review of Literatures:

Several studies have delved into the intricate interplay of socio-cultural, economic, and religious factors shaping son preference and its implications for fertility behaviour in India. Dharmalingam (1996) and Nath and Deka (2004) identified economic incentives, such as the provision of family labour and old-age support, as significant drivers of son preference. These economic factors intertwine with socio-cultural norms emphasizing the perpetuation of family lineage and the enhancement of family status.

Furthermore, Moore (1994) emphasized the pivotal role of sons within India's patriarchal family structure, where they are crucial for the continuity and prestige of the family lineage. Religious practices, particularly in Hindu tradition, reinforce son preference, as sons are essential for carrying out funeral rites and facilitating ancestral salvation (Nath and Leonetti, 2001). Recent demographic surveys, such as those conducted by the International Institute for Population Sciences (IIPS) and ICF (2021), indicate a declining trend in son preference in Manipur over the past three decades. This shift suggests evolving socio-cultural dynamics within the region, potentially influenced by various socio-economic and educational interventions. Recent studies by Gupta and Shukla (2020) explored the role of changing economic structures and educational attainment in altering traditional preferences for sons in India. Their findings suggest a gradual but significant shift towards gender equality in family planning decisions, driven by increased access to education and economic opportunities for women. Furthermore, a study by Kumar and Singh (2021) examined the impact of government policies and interventions aimed at promoting gender equality and reducing son preference in Indian states. Their research highlights the importance of targeted policy measures in addressing deeply ingrained socio-cultural norms surrounding son preference and fertility behaviour.

Objectives:

This study aims to investigate the socio-demographic determinants of higher fertility rates, commonly referred to as the "third birth transition," focusing on Manipur, India. Specifically, the research seeks to explore the influence of factors such as education, socio-economic status, and changing preferences on fertility behaviours in the region. By understanding the underlying determinants of higher fertility rates, the study aims to contribute to informed policy interventions aimed at population stabilization and demographic balance in Manipur and beyond.

Materials and Methods:

This study employed a retrospective cross-sectional approach involving 1263 elderly married women aged 50-55 years who had experienced menopause. The research was conducted in the valley districts of the Manipur using a cluster sampling scheme. Data collection took place between March 2022 and January 2023, with the 1st March 2022 as reference date for the survey.

A binary logistic regression analysis was utilized to analyse the community-based empirical data. The logistic regression model aimed to identify determinants associated with the "third birth transition" phenomenon within the state. In this context, the response variable was defined as the occurrence of a third live birth, coded as 1 if the mother had given birth to at least three children and 0 otherwise indicating a maximum of two live births. Several explanatory variables were considered in the analysis, including religion (coded as 1 for the subject's religion and 0 for other religions), residence (urban=1, rural=0), family type (nuclear=1, joint=0), educational level, employment status (employed=1, others=0), age at marriage, desired number of sons by the couple, infant mortality (coded as death=1, alive=0) of previous children, sex of the previous/index child (female=1, male=0), and contraceptive use during the transition to a third birth (used=1, others=0). Categorical variables were represented using binary dummy variables (0, 1), while educational attainment was measured by the number of completed academic years. The analysis involved interpreting the results based on the P-values of the regression coefficients (b) and odds ratios (OR), quantified by the exponential of the regression coefficients (Exp.(b)) of the variables.

Analysis and Findings:

Out of the 1263 eligible women included in the study, approximately 50% (635 women) were found to have experienced their third birth. A binary logistic regression analysis was conducted to explore the determinants of the transition to a third birth. Among the fourteen variables considered, seven were identified as significant determinants, with their adjusted odds ratios (ORs) presented in Table - 1. These significant factors included the education level of the wife ($P<0.01$, $OR=0.90$), age at marriage of the wife ($P<0.01$, $OR=0.89$), employment status of the husband ($P<0.01$,

OR=2.16), couple's desire for the number of sons ($P<0.01$, OR=1.73), sex of the previous/index child ($P<0.01$, OR=2.08), death of a previous child during infancy ($P<0.05$, OR=2.39), and duration of post-partum amenorrhea ($P<0.05$, OR=1.04). The majority of these significant factors were positively associated with the occurrence of a third birth, except for the education level and age at marriage of the wife, which exhibited negative impacts.

Subsequently, a stepwise logistic regression identified the best set of determinants for the transition to a third birth, resulting in a model comprising five factors: type of family, education level of the wife, age at marriage, couple's desire for the number of sons, and sex of the previous child, as shown in Table - 2. In the final model, after adjusting for the joint effects of the other variables, educational attainment and age at marriage of the wife were negatively associated with the phenomenon of third birth transition. Conversely, the desire for a higher number of sons and the previous child being female were positively associated with the occurrence of a third birth.

Discussion:

The findings of this study shed light on the complex interplay between socio-cultural, economic, and demographic factors influencing fertility behaviour, particularly in the context of son preference in India. The previous findings highlighted the deep-rooted socio-cultural norms surrounding son preference in India, where economic incentives, such as the provision of family labour and old-age support, play a significant role (Dharmalingam, 1996; Nath and Deka, 2004). Moreover, the patriarchal family structure in India emphasizes the importance of sons for family continuity and status enhancement, further reinforced by religious practices, particularly within Hindu tradition (Moore, 1994; Nath and Leonetti, 2001). However, recent demographic surveys suggest a declining trend in son preference in regions like Manipur, potentially influenced by socio-economic and educational interventions (IIPS and ICF, 2021). The analysis of this study identified several determinants of the transition to a third birth, including the education level and age at marriage of the wife, employment status of the husband, couple's desire for sons, sex of the previous child, death of a previous child during infancy, and duration of post-partum amenorrhea. Notably, the desire for a higher number of sons and the previous child being female were positively associated with the occurrence of a third birth, while higher education levels and older age at marriage of the wife were negatively associated. These findings resonate with recent research by Gupta and Shukla (2020) and Kumar and Singh (2021), which emphasized the role of changing economic structures and educational attainment in altering traditional preferences for sons in India. Gupta and Shukla (2020) found a gradual but significant shift towards gender equality in family planning decisions, driven by increased access to education and economic opportunities for women. Similarly, Kumar and Singh (2021) highlighted the importance of targeted policy measures in addressing socio-cultural norms surrounding son preference and fertility behaviour.

Conclusion:

This present investigation delves into the intricate web of factors shaping fertility behaviour in India, with a particular focus on son preference. Through our analysis, we have uncovered several significant determinants influencing the transition to a third birth, encompassing socio-cultural, economic, and demographic dimensions. These findings emphasise the enduring impact of socio-cultural norms surrounding son preference on reproductive choices. Economic incentives, such as reliance on family labour and the cultural significance attached to sons within patriarchal family structures, perpetuate the preference for male offspring. However, there are indications of a gradual shift in this trend, possibly driven by socio-economic and educational advancements. Key determinants identified in this study include the educational attainment and age at marriage of women. Higher levels of education and delayed marriage are associated with a decreased likelihood of transitioning to a third birth, highlighting the pivotal role of women's empowerment and education in reshaping traditional family dynamics. Conversely, the desire for sons and the sex of the previous child emerge as factors positively correlated with the occurrence of a third birth. This underscores the need for targeted policy interventions aimed at challenging deeply entrenched cultural norms and promoting gender equality in reproductive decision-making.

The present findings suggest that initiatives aimed at enhancing women's education and empowerment, coupled with strategic policy interventions, have the potential to mitigate high fertility rates and foster gender equality. However, addressing entrenched cultural preferences surrounding son preference remains a formidable challenge, necessitating sustained efforts and multidimensional approaches. Further research and policy initiatives are essential to effectively tackle these complex issues and achieve national demographic goals.

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Table -1: Odds Ratios of variables on 3rd births transition

Variable	b	Wald Statistics	P-value	OR (with 95% CI)
Residence	-0.31	2.61	P>0.05	0.74 (0.51, 1.07)
Type of family	0.31	3.77	P>0.05	1.37 (1.00, 1.87)
Religion (Hindu)	0.09	0.15	P>0.05	1.10 (0.69, 1.76)
Religion (Muslim)	0.15	0.05	P>0.05	1.17 (0.28, 4.89)
Education of husband	0.02	0.51	P>0.05	1.02 (0.97, 1.07)
Education of wife	-0.10	31.53	P<0.01	0.90 (0.87, 0.94)
Employment status of husband	0.77	19.89	P<0.01	2.16 (1.54, 3.03)
Employment status of wife	0.66	2.88	P>0.05	1.93 (0.90, 4.12)
Age at marriage of wife	-0.11	37.76	P<0.01	0.89 (0.86, 0.93)
Couples desire number of son	0.55	25.92	P<0.01	1.73 (1.40, 2.13)
Sex of previous child	0.73	21.96	P<0.01	2.08 (1.53, 2.83)
Use of contraceptives	0.12	0.15	P>0.05	1.13 (0.61, 2.11)
Death of previous child	0.87	18.11	P<0.05	2.39 (1.03, 6.17)
Post partum amenorrhoea	0.04	5.12	P<0.05	1.04 (1.01, 1.07)
Constant	1.62	6.39	P<0.05	5.03

Table-2: Odds Ratios of variables on 3rd birth transition in Stepwise Models

Step	Variable	b	Wald Statistics	P-value	OR (with 95% CI)
1	Age at marriage of wife	-0.14	72.52	P<0.01	0.87 (0.85, 0.90)
	Constant	3.63	94.63	P<0.01	37.64
2	Education of wife	-0.08	28.08	P<0.01	0.92 (0.89, 0.95)
	Age at marriage of wife	-0.11	44.81	P<0.01	0.89 (0.86, 0.92)
	Constant	3.77	97.84	P<0.01	43.53
3	Education of wife	-0.08	24.81	P<0.01	0.93 (0.90, 0.96)
	Age at marriage of wife	-0.10	37.18	P<0.01	0.90 (0.87, 0.93)
	Couples desire no. of son	0.44	19.44	P<0.01	1.56 (1.28, 1.89)
	Constant	2.62	33.19	P<0.01	13.75
4	Education of wife	-0.08	26.40	P<0.01	0.92 (0.90, 0.95)
	Age at marriage of wife	-0.11	37.24	P<0.01	0.90 (0.87, 0.93)
	Couples desire no. of son	0.54	26.63	P<0.01	1.72 (1.39, 2.11)
	Sex of previous child	0.74	23.47	P<0.01	2.09 (1.55, 2.82)
	Constant	2.14	20.64	P<0.01	8.47
5	Type of family	0.32	4.16	P<0.05	1.37 (1.01, 1.86)
	Education of wife	-0.08	24.92	P<0.01	0.93 (0.89, 0.95)
	Age at marriage of wife	-0.11	37.89	P<0.01	0.90 (0.87, 0.93)
	Couples desire no. of son	0.56	27.75	P<0.01	1.74 (1.41, 2.14)
	Sex of previous child	0.73	22.53	P<0.01	2.07 (1.53, 2.79)
	Constant	1.92	15.78	P<0.01	6.79