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Fertility Trends and Differentials in Bihar

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Abstract

India is going through a fertility shift in numerous states. Fertility transition is a significant issue in the field of demography. As a result, it is vital to investigate the many characteristics of fertility in order to learn more about fertility trends and differences. Bihar is one of the states going through a fertility transition, yet fertility levels and trends differ. There are multiple causes for this, including female education, increased knowledge, the use of various contraceptive techniques, family planning, female sterilization, and so on. Therefore, it is a crucial issue in Bihar. As a result, we are attempting to broaden our understanding of fertility. As therefore, a research is needed to investigate fertility trends and differences in Bihar. Regardless, it is critical to understand the reason for the reduced fertility rate.

Keywords: - Fertility trends, Total fertility rate, Wanted fertility

Introduction

In India, the notion of fertility transition dates back to the 1950s. India was the first country to publicly launch a family planning program with public funding. It demonstrates the government's desire to learn more about the various elements that influence fertility transition. Several states had an early fall in fertility rates, particularly in the South. There are various elements at play. Female literacy, matrilineal practices, agrarian reforms, improved health and educational facilities, government-sponsored initiatives, and political consciousness are said to be driving the South's fast demographic transformation.

Except of Punjab and West Bengal, the majority of fertility transitions began in the 1970s. However, the fertility rate shift in Bihar has garnered comparatively little attention as compared to other northern states such as Madhya Pradesh and Uttar Pradesh. This article will look at fertility patterns and differential states in Bihar, as well as the reasons behind the state's low fertility rate. This study is based on a review of numerous studies, and data will be sourced from the NFHS, SRS, reports, research papers, and others.

Importance of Study

This study is significant because it will support national, international, and sub-national activities related to human development, education, reproductive health concerns, child health care, and population stability. In 2000, the national population policy was introduced. By 2010, the goal of this approach will contribute to reaching a replacement level of fertility. Notwithstanding this, it is vital to examine and evaluate a multitude of research papers, publications, and studies pertaining to the trends and disparities in fertility in Bihar. Thus, research on Bihar's fertility patterns or trends is essential, as an investigation into the causes of the decreasing birth rate. Policymakers would benefit from this kind of study, why Bihar's fertility rate decline is occurring at a slower rate. This research will be particularly beneficial to academics in the field of fertility transition.

Data

The secondary data used in this study derived from the Sample Registration System (SRS), the Registrar journal of India from 1981 to 2020, the NFHS, and previous studies on fertility rate. In order to examine the trends in the overall fertility rate and the slower fertility rate, a thorough examination of various research publications and careful trend monitoring are required.

Methodology

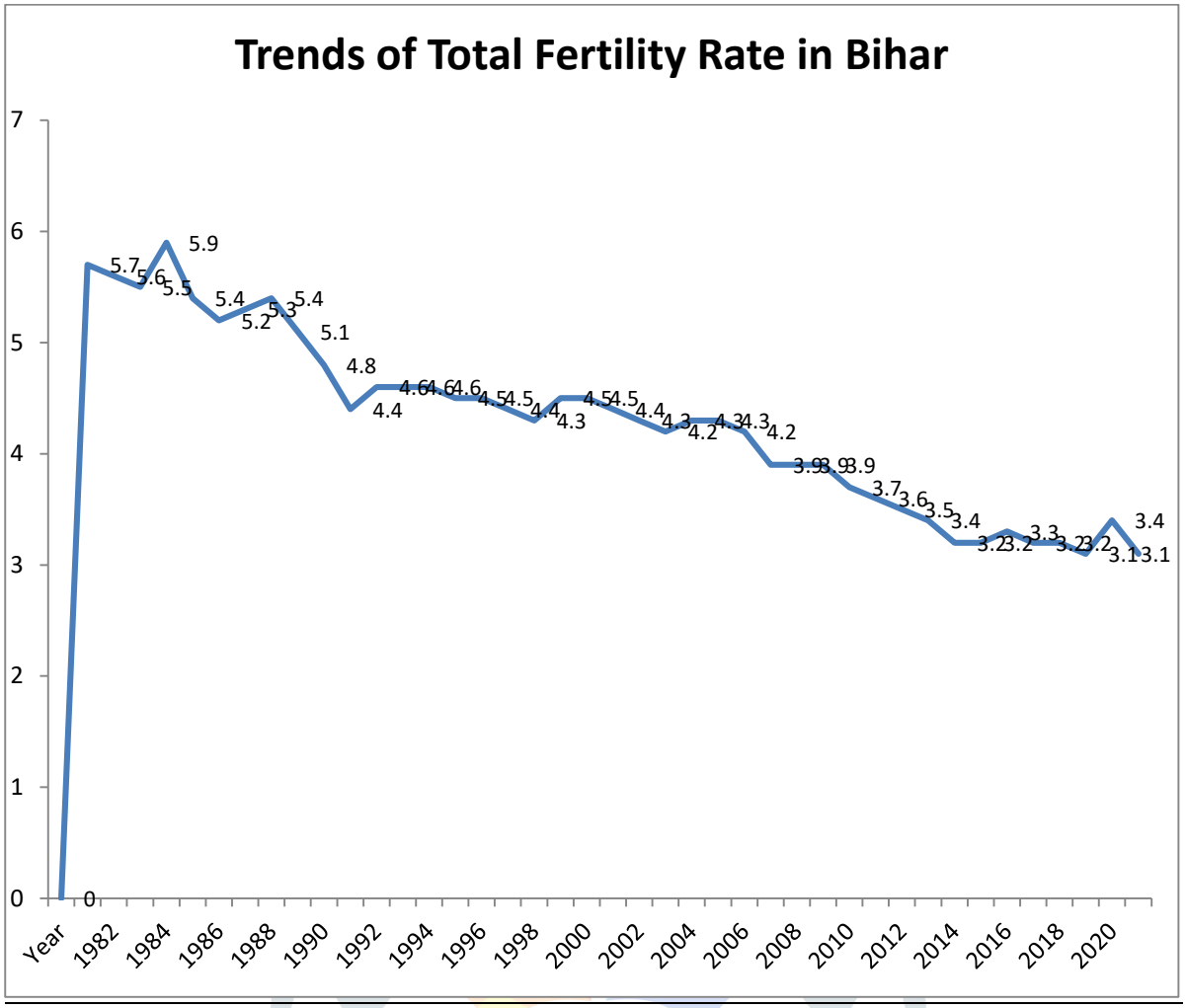
The NFHS, SRS (Sample Registration System), and other sources of data have been used in the examination of changes and trends which took place between 1981 and 2020.

Results

Fertility trends in Bihar

In order to characterize the reproductive patterns in the Indian state of Bihar, the decadal census and sample registration system are crucial. The most populated state in India is Bihar. When we compare the fertility rates of Bihar and India, we discover that in the 1981 census, TFR in Bihar was 5.7 children per woman, whereas TFR in India was 4.5, representing a 1.2 percentage point difference. Nevertheless, thirty years later, or in the 2011 census, the TFR for India is 2.7 children per woman, but for Bihar it is 4.2 children per woman, indicating a 1.5 percentage point discrepancy. Therefore, even though Bihar's TFR has decreased by 1.5 percentage points over the past 30 years, the irony is that the gap with the national average has widened by 0.3 percentage points. Bihar's fertility trend from 1981 to 2020 is shown in Table 1. The use of contraceptives, and especially female sterilization, was a major factor in the state's declining fertility. Because of its enormous population pressure and economic deficit, Bihar is still underprivileged despite having a rich tradition and a wealth of natural resources.

Table 1: Trends in Total Fertility Rate (TFR) during 1981 to 2020 in India and Bihar



Source: - SRS Data & NFHS

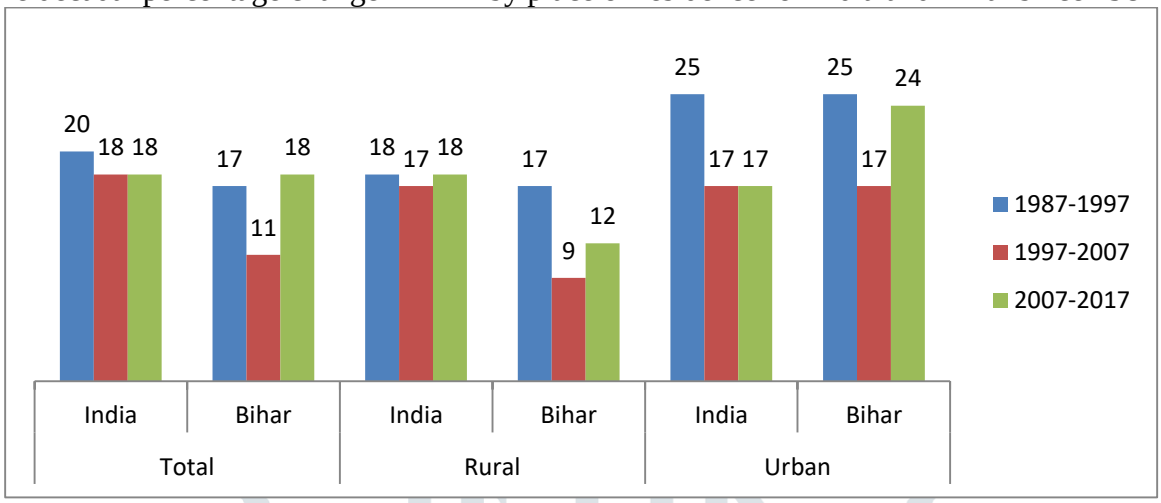
Bihar's districts are additionally distinguished by geographic variety, which may be reflected in fertility rates. Fertility varied from 5.3 in Kishanganj and Katihar to 3.9 in Patna in the 2001 census, but it varied from 5.7 in Kishanganj to 3.5 in Patna in the 2011 census. Except for Patna, the state capital, which has a fertility rate greater than the national average, almost every district in Bihar has demonstrated extremely high fertility.

Trends and changes in Total Fertility Rate in India and Bihar

The Total Fertility Rate (TFR) trends for India and Bihar from 1981 to 2020 are shown in Table 1. The table makes it evident that there are variations in TFR increases and decreases over time in Bihar and throughout India. According to the table, TFR (5.9) increased in 1984 compared to the previous three years (1981, 1982, and 1983). The TFR is then somewhat raised again in 1992 and 1999 (4.6 and 4.5). Similarly, the TFR was raised (5.5) in 1986 and (5.3) in 1989 in India. TFR of India (4.6) in rural Bihar had a sharp decline in 1990; TFR acceptance had already decreased in 1984 (6). We can observe the overall fertility rate's volatility in rural India. 1986 saw the highest overall fertility rate (5.7). In 1989 and 1990, the TFR was likewise high (5.4 for each year). For urban Bihar, there was a little increase in TFR in 1984 (4.9) and 1993 (3.7). In 1986, there was a significant increase in TFR in urban India (4.9). In 1987 it dropped to 3.2.Then, from 3.1 in 1988 to 4.8 in 1989, it increased

once again. In 1992 fertility rate had a little increase in TFR, but from that point on, TFR decreased until 2007 (2). A similar outcome was seen in the research of India by Pathak K. B. and Murthy P. K. (1987).

Figure 1: The decadal percentage change in TFR by place of residence for India and Bihar since 1987 to 2017



The decadal percentage change in TFR for India and Bihar by location of residence is displayed in Figure 1. It is abundantly obvious from the decadal percentage shift in TFR that Bihar is not the only state in India experiencing transformation. Across Bihar, TFR decreased by 18% and across India by 20% between 1987 and 1997. There was a comparable condition in both rural and urban regions; however, there was a greater disparity in rural vs. urban areas between India and Bihar when it came to the TFR decadal change. One striking observation is that there was essentially no difference in TFR between urban Bihar and urban India between 1997 and 2007. In a similar vein, it is true that the TFR changed essentially unchanged from 2007 and 2017. It could be as a result of Bihar's high fertility and low urbanization.

Determinant of fertility

Population increase is influenced by a number of elements, including economic situation, demography, and societal standing, among others. The low reproductive rate in society is a complicated problem. Numerous hypotheses have been proposed to lower the fertility rate, but how will they apply to the current situation? It's a deeply understood subject. Many developing nations throughout the world that have faced numerous hardships recently are seeing a sharp drop in fertility rates. The main focus of traditional demographic transition theory was on how modernization or economic forces contributed to the decline in fertility. The allocation of mother's time and the quantity-quality swap were the two main factors that the neoclassical demand theories focused on when emphasizing the influence of economic forces (Schultz 1981). Economic considerations do not appear to fully account for the fertility shift in emerging nations. Therefore, a few variables that may be contributing to the fall in fertility include socioeconomic, educational, religious, and rural-urban disparities, among others.

Rural-Urban Indicator

All ages and civilizations have seen lower levels of fertility in urban regions than in rural ones; the primary causes of this decline in fertility are the corresponding populations' wealth, education, age-sex patterns, and other characteristics. Table 2, which verifies the birth rates in rural and urban areas from 1981 to 2020, provides a clearer picture of the differences in recent years. The table illustrates how urbanization modifies the idea of children's economic value as an asset for older people. Second, the idea of the nuclear family lends credibility to the viewpoint. Fertility is also decreased by lower infant mortality rates brought about by better medical care, standards of living, and urban diet, among other factors. +

Table 2: Birth rate in urban and rural areas of Bihar

Bihar	Urban	Rural
1981	33.9	39.7
1991	25.5	31.3
2001	23.4	32.3
2011	22	28.8
2020	21.9	26.8

Source: Sample Registration System (SRS)

Economic Status Indicator

According to Becker and Tomes (1976), a rise in the rate of income growth over time has extra effects as it raises children's endowment in comparison to their parents' income. In other words, more wealth influences norms and preferences for how money is spent, which may reduce fertility by increasing the relative demand for material items. A higher kid endowment lowers the parent's investment, which lowers the shadow cost per child and frees up more funds for investing in human capital to improve the child's future. The negative association between fertility and income is supported by Table 3, which shows that those in the richest quintile have fewer children overall and vice versa. Since the wealth index has not been changed, we can now more confidently explain the association between fertility and wealth index based on more recent data. How will it affect the relationship stated above?

Table 3: Distribution of Birth and Total Birth according to Wealth Index

Wealth Index	Percentage Distribution of Birth	Number of Births
Lowest	33.8	7389
Second	37.4	8277
Middle	16.6	3726
Fourth	8.8	1954
Highest	3.3	734

Source: DLHS, Bihar, 2007-08

Occupational Indicator

Studies reveal that there is a universally observed inverse association between economic well-being and fertility level, making the occupational indicator a crucial tool for examining fertility levels. The husband's working

status and the wife's active participation in paid work are frequently regarded as markers of the family's socio-economic standing and social standing. Studies revealed that, depending on professional criteria, there are notable differences in fertility rates by income level. Similarly, there are indications that the birth rate is lower for women in meaningful employment. A study conducted in North-Eastern portions of India by Sanku Dey and Sankar Goswami found that increased agricultural activity was associated with higher fertility rates for both husbands and women. Similar to this, Bihar's rural population is mostly dependent on agriculture as a result of rising fertility. Women in Europe who reported greater fertility rates than women whose husbands worked in non-agricultural jobs did so even in the agricultural sector (UN, 1976-49).

Religious and Social Group Indicator

Important factors that understand the association between the fertility transitions include social and religious groups. It is possible to think about religion's impact on demography in terms of the socio-economic "characteristics" of various religious communities. With the exception of their views on population control, a systematic comparison of Islam and Hinduism reveals no differences in their theological stances on demographic concerns. Muslim fertility is greater than Hindu fertility in the majority of states and union territories. In contrast to Eastern and North-Eastern states, where it is noticeably greater, the difference is minimal in South and West India. Fertility varies by area, as is widely known, and several studies have conclusively shown that northern India has higher fertility than southern and western India (Bhat 1996; Guilmoto and Rajan 2001). Regardless of religion, there has been a decrease in Muslim and Hindu fertility in other states. High fertility is portrayed in religion as a typical occurrence. Despite the fact that Muslim fertility in Bihar is higher than Hindu fertility, two important points should be noted: first, Hindu fertility transitioned earlier than Muslim fertility, and second, despite Muslim fertility being higher, Muslims' share of India's population is still smaller than that of Hindus due to the size of the Hindu community. Intriguingly, regardless of Hindu and Muslim populations, all districts with low female literacy rates also have higher fertility rates if literacy is considered one of the key determinants influencing fertility. In Bihar, social groups still have a significant role in determining population. At this point in the demographic transition, it is closely linked to differences in fertility and mortality as well as socio-economic status. The SCs and STs remain marginalized in society even after the state government implemented affirmative action. The TFR for OBCs is lower than that of SCs, as can be shown, yet the desired fertility rate and the current fertility rate are still very different. Fertility will stay unregulated until and until this population is taught and made aware of the usage of contraceptives.

Table 4: Total fertility, wanted fertility and mean children ever born in different religious and social groups

Religion	Total Fertility Rate	Total Wanted Fertility Rate	Mean number of children ever born to women age 40- 49 years
Hindu	3.86	2.44	5.1
Muslim	4.81	2.47	6.4
Social Groups			
Scheduled caste (SC)	4.87	2.79	6.4
Other backward class (OBC)	4.03	2.41	5.3
Other[1]	3.36	2.18	4.6

[1] Not belonging to Schedule Caste, Schedule Tribe and Other Backward Caste in Bihar
Source: NFHS-3 (2005-06)

Educational Indicator

Reviewing studies that have been carried out at the national and international levels is crucial to comprehending the impact of education on the fertility rate. These studies include those that examine the relationship between female education and fertility as well as the impact of education on the decline in fertility (Graff, 1979, Caldwell, 1980, Jain1981, Dreze and Murthi 2001, Bhat 2002, Kravdal, 2002). Numerous scholars contended that a wife's education has a greater influence on a couple's decision to have children than does a husband's education (Cochrane 1983, Cleland and Rodriguez 1988). Thus, research to far have demonstrated that while education in general affects fertility reduction, education for women is more important. Through rising the age of marriage, enhancing the likelihood of entering the workforce, encouraging a positive attitude toward small-size standards, and raising awareness of the use of family planning techniques, education lowers fertility (Patnaik 1985; Arora 1990; Vashisht et al. 1991). When Bogue (1969) analysed the relative effects of nine modernization indexes on fertility, she discovered that while all other modernization indexes combined accounted for an additional 16 percent of the variance, education alone explained 56 percent of the variation in the movement of nations from high to low fertility. Numerous aspects are impacted by female education, including age at marriage; fertility is directly impacted by work possibilities outside the house, social mobility, husband-wife communication, religion, infant mortality, and exposure to contraceptive information devices. Table 5 demonstrates that educational attainment clearly affects fertility. As can be observed, among all the levels in Bihar, illiterate women have the greatest fertility, followed by women with no formal education. The overall fertility decreases as we climb the ladder. It's possible that the reproductive patterns of educated women have an impact on illiterate women, leading to a fall in fertility in the corresponding years for those groups.

Table 5: Total fertility rate by women's educational level in Bihar

Educational level of a women	2011	2012	2013
Illiterate	4.7	4.6	4.4
Total Literate	2.5	2.5	2.5
Without any formal education	3.5	3.0	3.3
Below Primary	3.1	2.8	3.0

Primary	2.8	2.7	2.6
Middle	2.6	2.7	2.7
Class X	1.9	2.0	2.0
Class XII	1.4	1.6	1.3
Graduate and above	1.6	2.1	1.7

Source: Sample Registration System

Conventional Factors

One significant demographic element is the conventional factor. It claims that there is a strong correlation between women's autonomy and a number of demographic outcomes. Based on the review of the literature, it is clear that women in the Indian patriarchal kinship system have little to no autonomy due to gender-power relations, which are largely responsible for the extremely high rates of fertility and infant, child, and maternal mortality in Bihar. These rates are determined by prevailing cultural norms. The desire for a boy kid is a significant factor in determining fertility. Son preference can have a significant impact on patterns of mortality and fertility as well as significant social and economic ramifications.

Diffusion of factors

The fundamental idea behind the diffusion dynamic is that one person's actions or knowledge may have a positive or negative ripple impact on another's motivation (Montgomery and Caster man 1998). Numerous channels, including education, the media, government information campaigns, education and communication initiatives, and more, can contribute to social dissemination. Interventions are most crucial for reducing fertility has not yet been determined. It is a very recent endeavour to examine the reduction in Indian fertility through a diffusion mechanism. However, the dissemination is still purely theoretical because it is very hard to measure. Once a change has occurred, attribution of dissemination is rather simple. The fall in fertility in Bihar was attributed to political and economic measures, as well as development plans, such as land reforms and higher salaries for agricultural labourers. Consequently, this article reveals a number of factors that affect.

Conclusion:

First, among all the variables, the effect of female literacy are the most resilient when other variables are taken into account, according to the state of Bihar's fertility rate. Second, a significant element influencing fertility rates is the "son preference." Third, there is a stark difference between the substantial impacts of female literacy and son choice on reproduction levels and the little link between other measures of modernity and general development, such as social and religious groupings, urbanization, and occupational indicators. There is no statistically significant relationship between any of these factors and fertility. Thus, Bihar has to take a more targeted strategy and still have a long way to go until the state's fertility levels are effectively replaced. It has to implement high-impact strategies to achieve the expected levels of various family planning methods to fulfil the ambitious state-specific goals (Couples Protection Rate (65.0%) and Total Fertility Rate (2.7) for the 12th Five-

Year Plan period by 2016– 17. As cultural rigidities and taboos are still prevalent in Bihar, the state will have to play a mega role to overcome all these barriers and direct itself toward a development path.

Recommendation

1. Awareness of literacy must be encouraged among females and males of Bihar.
2. Use of several contraceptives and pills methods must encourage among couples.
3. Gender discrimination should be removed from the family members.

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