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Importance of Caste-Based Headcounts: An Analysis of Caste-Specific Demographics Transition in India

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Abstract

Caste has always been a subject of socio-political segregation in India. Inequality across caste is prominent for varying health and development outcomes, which is a subject less researched till date. Four rounds of National Family Health Surveys (1–4) conducted in the last 25 years are analysed to portray the fertility and mortality differentials across castes/ tribes. The article signifies, that distinct inter and intra-caste differences in association with the region of residence are present that must be taken into consideration while understanding the health outcomes. Despite a decline in the fertility and child mortality rates in India, caste-wise differentials suggests that the decline is associated with the socio-economic position and transition experienced by these groups. Though schemes and benefits are targeted towards backwards castes, however, sub-castes under each caste are far from realization of those benefits at equal pace. Realization of the developmental processes among castes is a matter of proper enumeration and intricate research that rationalize the distributive and affirmative policies of India.

Keywords

Caste, socio-economic inequality, Total Fertility Rate, child mortality, NFHS, India

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Introduction

The ongoing debate on enumeration of population on the basis of caste to measure development has become pertinent in the political paradigm of India. In the demand of socio-economic and caste census, several political bodies are asking the government to start conducting a caste-specific census. A prominent paradigm observes that the development of social communities is devised on the basis of caste reservation in India. Caste is a fundamental construct to measure the social stratification in India (Deshpande, 2001). This has been a source of understanding of the persisting structural inequality in social and economic dimensions (Borooah et al., 2014). The fertility and mortality outcome of the population across castes are understudied in demography. The importance of the caste system is well recognized particularly in the context of India, and previous literature dated to over 2500 years hold evidence for the existence of caste as social hierarchy (Macdonell, 1914). The evolution of the caste system demarcates the social strata, occupational contributions and material possession in terms of individual and social capital (Borooah et al., 2014; Deshpande, 2001). Eventually, social classification further gets associated with the ideology of class, which remains closely connected with sociological or related research. In that context, the research is focused upon a broad classification of caste category such as forward or unreserved, scheduled castes (SC), scheduled tribe (ST) and other backward castes (OBC). The knowledge regarding these caste categories is limited as scant sources provide information across specific castes and sub-castes underlying it. Since castes and, also necessary to mention, religions are related with socio-economic status (Kumari & Mohanty, 2020), hence demographic and health outcomes vary to a great extent in that regard. To date, major demographers or social scientists are forced to consider caste as an aggregated group in large datasets despite several classifications constructed within the caste groups mainly due to data inadequacy. Moreover, the literature available to study the demography of caste in India is severely scattered and concentrated on a few regions of India (Corrie, 1995; Pallikadavath & Wilson, 2005; Ramesh, 2008).

The formal demography of caste can be a matter of general interest to social scientists. Caste has been included in vested political interests till date. In the development paradigm, a detailed study on caste has hardly been seen. In developed nations, inequalities observed among social groups has been widely documented (Cai & Morgan, 2019; Yang & Morgan, 2003). As we are devoid of such scope yet, the limited understanding of the reserved caste categories as a minority group can be largely interrogated, henceforth. To fulfill that, one has to argue about subcastes and their social-economic position in relation to who receives a programmatic benefit in the country. However, the understanding in demographic outcomes in an Indian context remains largely unfulfilled with the current database as the last full enumeration of the population with the indicator of caste was done in 1931 by the Registrar General of India (RGI, 1931). Castes are categorized primarily into Brahmin, Kayastha, Vaisya,

Shudras and untouchables. The first three castes are designated as forward caste categories (Borooah et al., 2014). Other than the forward castes, several other castes such as SC, ST and several subcastes of OBC are considered in the reserved caste categories by the Indian constitution. There are several divisions under each caste depicting the stratification associated with the occupation they are engaged in. Yet, no national data source is available to enumerate different sections of population on the basis of their sub-castes at present. The Census of India recognizes that the proportion of population for SC and ST has increased between 1961-2011. The proportional share of reserved castes such as OBC has increased between 1999-2009 across religious categories (Bharti, 2018). Constructs of caste have intruded into religion. A large section of the Muslim population is considered in the Other Backward Class (OBC) categories. Moreover, several religious groups are largely represented by particular castes. For instance, Buddhist or Neo-Buddhists in India are represented by the SC population (Kulkarni, 1994). The concept of lower or backward castes is associated with the untouchability leading to social exclusion and marginalization which results in poor development. As societal change is interwoven into the socio-economic structure of the population, therefore, the pace of demographic transitions is influenced by the complex dynamics of it. Demographic processes like change in fertility, mortality or migration are used to comprehend such changes in the population. The disadvantageous position of the caste groups with regard to their social and economic context highlights the demand to understand the inequalities persisting in society through segregated categories of castes or sub-castes.

A necessary pre-requisite to measure health inequality is to measure the fertility and mortality outcome of the population. Selection bias in mortality towards low socio-economic groups has been documented in several literatures, which prompt us to associate with the wealth and standard of living among the subgroups (Beydoun et al., 2016; Subramanian et al., 2006). The concept of social segregation is deeply interwoven with the occupational constructs of the population which determine the adult or child mortality of any given population (Fujishiro et al., 2017). Standard occupation and earning lead to better access to education and in turn health facilities. This helps to decipher a change in fertility or mortality outcomes. Through programmatic concepts, it can be argued that despite providing reservations and relaxation in several social welfare schemes, many sub-castes are yet to get considered in the process. An inability to reap the benefit of it might hinder development at a socio-economic front rather than the demographic front. In fact, the existence of intra-caste differentials among minority castes in association with socio-economic factors is potent enough to influence the access to a social safety net (Goli, Maurya, & Sharma, 2015; Manjula & Rajasekhar, 2015; Mishra, Veerapandian, & Choudhary, 2021; Pankaj, 2019). Therefore, a huge disparity within the social sub-groups cannot be solely explained by the education or occupation interventions alone. A typical disparity in healthcare access has always been observed among the minor social groups in India. This is evoked by

the possible difference in health behavior and practice, which can certainly influence the measure of health of any population such as fertility and mortality. Studies also argued that the concept of caste remains much more stringent in rural setups, and in urban areas development percolates more easily across castes due to sanskritization and westernization (Bharathi, Malghan, & Rahman, 2019; Shah, 2007). The way in which population across different castes reaps the benefit of development from the community and society can change the behavior and practice among the population extensively. Measurement of fertility and mortality among children for a considerable span of time would reflect the progression of the castes in India. Fertility choice is maneuvered through social and economic values associated with the individuals, and mortality is influenced by the unique combination of the socio-cultural and economic agents at different stages of child growth. Targeted intervention to improve the mortality and fertility behavior in India could essentially be modified in the social groups if a barrier is not present or policies are designed effectively. Since population growth rate influences the social and political dynamics in terms of reservations for the backward castes, it becomes essential to estimate and explore the level of fertility and child mortality across castes. The results will be important to understand the tempo of change in demographic transitions in India in terms of practices adhered to by social groups.

Data

To measure the different caste-wise fertility and child mortality of the population we have utilized four rounds of National Family Health Survey (NFHS) data of India. The Demographic and Health Survey, which is known as National Family Health Survey (NFHS) is a central to itemize the demographic and specific health parameters mainly focused upon the reproductive and sexual health of the population since 1992-93 (NFHS-1). Though it could give a broad overview of castes across states of India, however, the benefit of such information has been remarkable as it allows one to analyse the differentials in various demographic and social-economic behavior. In India, the caste distribution shown by the Socio-Economic Caste Census (2011) is 19.7 per cent SC, 8.5 per cent ST, 41.1 per cent OBC and 30.8 per cent Others / General category. It was a privilege for us, social scientists, to explore the major dimensions of demography across the caste categories consistently with all four rounds of NFHS data. Since the survey interrogates specific sub-castes under each broader caste, we have meticulously identified each type of sub-caste from those four rounds of NFHS in this study. NFHS-1 (1992-93), NFHS-2 (1998-99), NFHS-3 (2005-06) and NFHS-4 (2015-16) have been conducted among 89,777 ever married women of 13-49 years in 24 states and NCT Delhi, 90,000 ever married women of 15-49 years in 26 states, 124,385 women aged 15-49 and 74,369 men aged 15-54 in 29 states, 699,686 women of age 15-49 and 112,122 men of age 15-54 in 29 states and 7 union territories, viz.

(International Institute for Population Sciences (IIPS), 1995; International Institute for Population Sciences (IIPS) & ICF, 2017; International Institute for Population Sciences (IIPS) & ORC Macro, 2000, 2008). As it attempts to capture information over four consecutive rounds in last two decades and more, the detailed representation of the survey across different caste categories would unfold detailed trends and patterns of population across castes in India. The sampling followed is a multistage sampling with probability proportion based on population size. The missing value indicates the system missing/ skipped, caste not reported indicates that during the survey if a respondent replied 'don't know' on the question of caste, and others are those who are not categorized for a classified caste in the study.

We have tried to segregate the castes and sub-castes after a thorough and rigorous literature review and perusing a large number of online and offline sources. The distribution of those sub-castes across different rounds of surveys has been documented and then the study has tried to capture the measure of fertility and mortality in India. Castes are divided with respect to actual information on caste categories, language spoken, religion followed, ethnicity, occupational status, etc., which makes it complex caste categories considering the exclusive social and economic construct of that particular group. In the fertility measure, Total Fertility Rate (TFR) and in mortality measure, Neonatal Mortality Rate (NMR), Infant Mortality Rate (IMR), and Under 5 Mortality Rate (U5MR) has been used. The overall estimation for fertility and mortality is also calculated at the national level. For the study, we have utilized STATA 15.1 software.

Method

Methodology for Estimating Fertility Rates

Fertility rate was calculated in two steps. First, using a STATA code to transform the birth history data in a table of birth. Second, we are using Poisson regression to compute the fertility rates from birth history data (Schoumaker, 2012). More specifically,

Let, X_i be the random variable that denotes the number of birth (x_i be the realization of X_i) is assumed to follow a Poisson distribution with mean μ_i

$$P(x_i=x_i|\mu_i) = \frac{\exp(\mu i)* \mu i\text{^}xi}{xi!} \quad (1)$$

the mean μ_i = (fertility rate (λ_i)*exposure (t_i)), further,

$$\log(\mu_i) = \log(\lambda_i) + \log(t_i) \quad (2)$$

$\log(\lambda_i)$ is linear combination of independent variables , thus ,

$$\log(\lambda_i)=\alpha+f_1(age)+f_2(covariates) \quad (3)$$

now for five years age group we makes dummy variables, in the form .

$$\log(\mu_i)=\log(t_i)+(\alpha+\sum_{w=20-24}^{45-49}\beta wiAwi)$$

α is the constant term; Aw_i are dummy variables for the six age groups from 20–24 to 45–49; and we have the first age group (15–19) is the reference category.

So, fertility rate (λ_i) = exp ($\alpha+\sum_{w=20-24}^{45-49}$ βwiAwi)

Predicting fertility rates for a specific age group (e.g. 20–24 years) is straightforward. The dummy variable A is equal to 1 for the specific age group and 0 for the other age groups; the rate is then equal to the exponential of the sum of the constant and the coefficient of the corresponding age group (20-24).

$\lambda_{20-24}=[\alpha+\beta_{20-24}]$

So TFR = 5*{exp(α)+(exp ($\alpha+\sum_{w=20-24}^{45-49}$ βw)}

Methodology to Compute Child Mortality Rates

We calculate child mortality rate using the STATA package SYNCMRATES, which calculate child mortality rates using DHS data by simple direct method (Masset, 2016). The child mortality rate is calculated as the quotient of the numerator divided by the denominator for each type where, numerators is defined as the number of deaths to live-born children during a specified age range and specified time period. NMR is measured by considering deaths at ages 0 to 30 days, including deaths reported at age zero months. Similarly, IMR is measured at ages 0 to 11 months, and the U5MR is measured at ages 0 to 4 years, including deaths reported at ages 0 to 59 months. The denominator considered is the number of surviving children at the beginning of a specified age range during the specified period of time.

Results

Pattern of Fertility among Castes/Sub-Castes at National and Selected State Level

Table 1 depicts the distribution of study samples interviewed across different caste categories in four rounds of NFHS represented at the household level. In NFHS, the total number of subcastes identified is 32. In NFHS-1, the percentage share of prominent upper or forward caste found to be Brahmin (7.3 per cent), Upper Caste (2.36 per cent), Kayastha (1.3 per cent), and Rajput (4.7 per cent). Beside upper castes, other castes are marked are Jat-Gurjar (3.1 per cent), Yadav (1.9 per cent), Kurmi (3.86 per cent), Service Caste, i.e. Kumhar (3.17 per cent), SC (4.92 per cent), ST (3.25 per cent), Musahar (0.14 per cent), Walmiki (0.46 per cent). Religious minorities such as Muslims share 5.3 per cent of the sample. In NFHS-2, the proportional share of the forward castes in the sample is found to be lesser to the proportional share of the forward caste found in NFHS-1. More than 40 per cent of the sample shows a missing data about the particular castes they belong to. The extra castes named in this round are OBC open (0.07 per cent), Ansari Julaha (0.41 per cent), and language (0.5 per cent). Religious representation of the caste shows Muslims are 3.37 per cent and Christian 0.7 per cent. Around 4.3 per cent did not report their caste and 42.6 per cent claimed missing, explaining no knowledge of their castes. In the NFHS-3 and NFHS-4, the

upper caste represents similar share in the sample except Kayastha, which is found to be 1.12 per cent in NFHS-3 and 0.4 per cent in NFHS-4. However, Naidu-Nadar/ Kapu Nair caste, which is a prominent upper caste in Karnataka and some southern states show a higher share in NFHS-4 (5 per cent) when compared to other rounds of NFHS. The backward castes like Yadav, Kurmi, Kumhar, SC, ST, Khan Pathan, and Ansari Julaha indicate a substantial share in the total sample of NFHS-4. It was also found that Yadav, service caste, i.e. Kumhar, SC, ST, Ansari Julaha and Khan Pathan show an increase in the sample share from the NFHS-3 to 4. The share of respondents who didn't report their caste is 5 per cent in NFHS-3 and NFHS-4. Despite a high missing response in the previous rounds, in NFHS-4 it dips to 32.7 per cent.

Table 1: Distribution of the caste categories among households selected in across National Family Health Survey of India-1, 2, 3, 4

	NFHS1		NFHS2		NFHS3		NFHS4	
Caste Group	**N**	**Percent**	**N**	**Percent**	**N**	**Percent**	**N**	**Percent**
Brahmin	6,454	7.29	5,643	6.19	5,882	5.39	26490	4.4
Upper caste	2,092	2.36	980	1.07	894	0.82	2545	0.4
Kaystha	1,180	1.33	1,025	1.12	1,224	1.12	2332	0.4
Rajput	4,173	4.71	4,142	4.54	3,404	3.12	17571	2.9
Naidu Nadar Kapu Nair	1,034	1.17	1,764	1.93	1,856	1.7	30258	5
Bania	2,319	2.62	2,024	2.22	3,408	3.13	18271	3
Maratha	41	0.05	1,393	1.53	1,595	1.46	10597	1.8
Jat-gurjar	2,783	3.14	2,512	2.75	2,139	1.96	9940	1.7
Yadav	1,681	1.9	2,660	2.92	2,908	2.67	25559	4.2
Kurmi	3,415	3.86	1,679	1.84	2,136	1.96	16014	2.7
Service caste -KUMHAR+	2,805	3.17	3,398	3.73	3,527	3.23	33244	5.5
Vishkarma	1,042	1.18	1,658	1.82	2,161	1.98	10505	1.7
Muslim	4,699	5.31	3,074	3.37	3,128	2.87	20669	3.4
Khatik Dusadh	953	1.08	1,496	1.64	1,657	1.52	12799	2.1
SC	4,357	4.92	4,361	4.78	5,490	5.03	51761	8.6
ST	2,874	3.25	2,441	2.68	3,703	3.4	31706	5.3
Fisherman	524	0.59	589	0.65	469	0.43	3314	0.6
Lodhi-others	159	0.18	306	0.34	749	0.69	4986	0.8
Mixed caste-Bengali, Bhagat	2,369	2.68	4,093	4.49	755	0.69	6341	1.1
Musahar	121	0.14	97	0.11	101	0.09	1241	0.2
Walmiki	406	0.46	570	0.63	685	0.63	3266	0.5
OBC open			62	0.07	83	0.08	997	0.2
Sindhi	157	0.18	184	0.20	105	0.1	693	0.1
Khan Pathan	518	0.58	813	0.89	1,340	1.23	9483	1.6
Buddhist Boudha	687	0.78	147	0.16	168	0.15	1523	0.3
Ansari Julaha			374	0.41	1,211	1.11	8938	1.5
Sikh	1,447	1.63	596	0.65	664	0.61	6158	1
Jain	365	0.41	289	0.32	404	0.37	1198	0.2
Christian	2,780	3.14	621	0.68	809	0.74	4214	0.7
Language			457	0.50	518	0.48	1590	0.3
Caste not reported	5,627	6.35	3,920	4.30	5,514	5.06	30396	5.1
Missing	31,497	35.57	37,828	41.48	50,354	46.18	196910	32.7
Total	88559		91196		109041		601509	

N.B. Not classified group is many castes name with small number which could not be specified to the above major groups.

Figure 1 shows the TFR of study sample across selected sub-caste/ caste groups in India.[1] The figure has included Brahmin and upper castes from forward caste, Maratha, Jat-Gurjar, and Yadav from backward castes, Kumhar, Walmiki, and Vishkarma from the service castes, and Muslim, mixed castes—Bengali and Bhagat and Buddhist Boudha from the remaining sections of the castes. Mixed castes are those social subgroups involved in multiple and/or a wide range of occupations for instance-agricultural activities, service sectors, or any other occupational types. Despite belonging to the same social subgroup, they represent a diverse economic status. Results also indicate that Maratha had TFR more than five (5) during NFHS-1 and other selected castes clustered between TFR 3-4. Over the course of the survey, the change in the TFR of the castes has shown a variation and in NFHS-4 though the fertility showed a convergent pattern, yet the range of TFR that is represented by these castes have shown a wide variation.

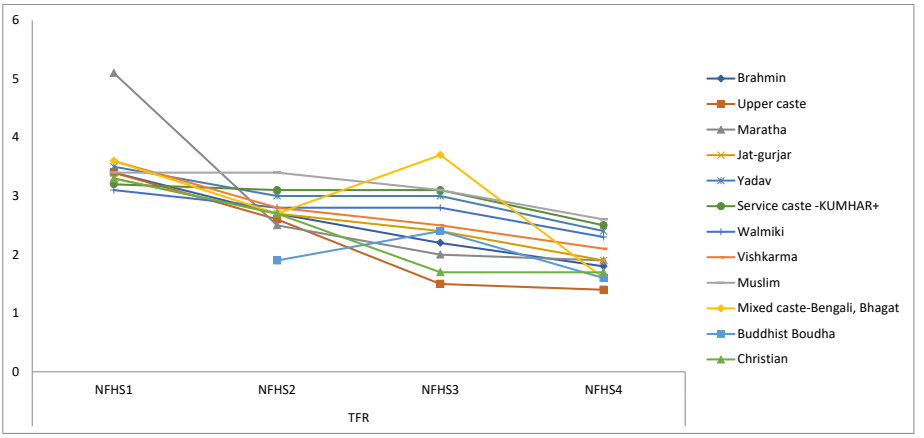

Figure 1: Estimates of fertility (Total Fertility Rate) across castes in 4 rounds of NFHS (1-4) in India

Pattern of Child Mortality among Castes/ Sub-castes at National and Selected State Level

Figure 2 represents the estimation in neonatal mortality across selected castes in 4 rounds of NFHS. A clear decline in the NMR has been observed across rounds of NFHS. In NFHS-4, the neonatal mortality shows a convergence. The highest NMR is represented by the mixed caste Bengali and Bhagat in NFHS-1 (70) in NFHS-1 and it declined to NMR 20 in NFHS-4 representing a sharp decline after NFHS-3. The upper caste has a relatively lower NMR than previous mixed caste, however, the pattern of decline in NMR has been observed to be similar to those. The decline in NMR for the Christian, Maratha along with upper caste in NFHS-4 was found to be remarkable in perspective to the NMR found in the previous rounds for these castes. Among the

[1]The National Family Health Survey (NFHS)-4 (2015-16) collects data at the district level that has aimed around 1000 HHs. As a result, the large sample size has been considered for the survey than its previous rounds, which gave state level estimations.

Yadav caste, the decline was not found to be very significant. Walmiki does not show any noticeable improvement in the NMR across all the rounds of NFHS.

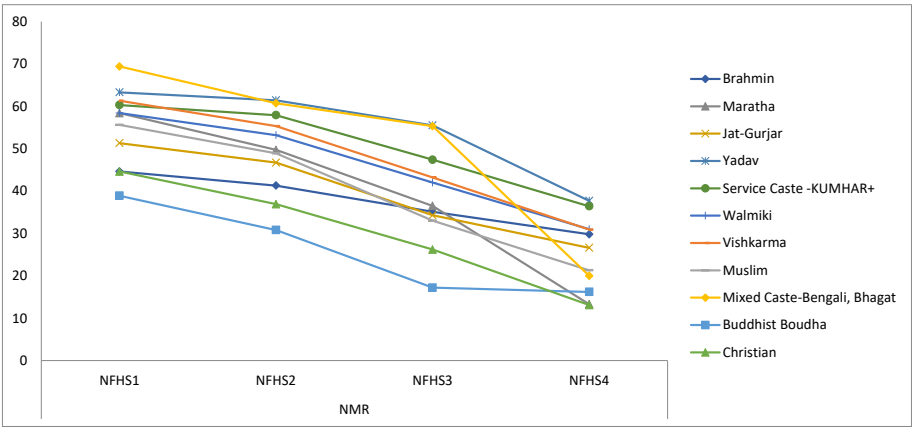

Figure 2: Estimates of Neo-natal Mortality Rates across selected castes in 4 rounds of NFHS (1-4) in India

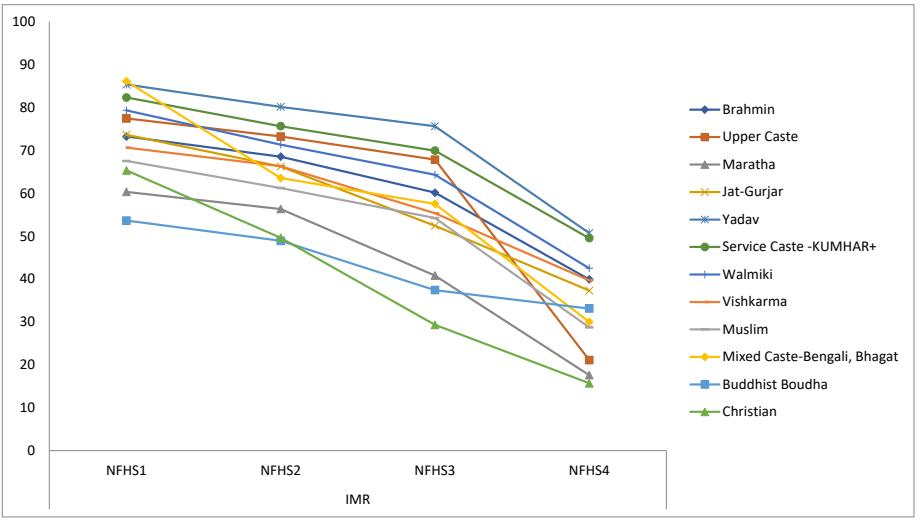

Figure 3: Estimates of Infant Mortality Rates (IMR) across selected castes in 4 rounds of NFHS (1-4) in India

Figure 3 represents the estimated infant mortality rates of the selected caste across four rounds of NFHS in India. The pattern of decline in infant mortality has been found to be distinct and no noticeable convergence has been observed here across the rounds of NFHS. During NFHS-1 to 3, the IMR has shown a sustained decline, while in NFHS-4 these castes show a sharp decline in IMR. Other than upper caste, Christian and Maratha, which show a sharp decline in IMR during NFHS-3 to NFHS-4, no other caste is noticed with a significant change in IMR. Figure 4 represents the

estimates of under 5 mortality rates across castes in four rounds of NFHS in India. The level of decline in U5MR from NFHS-1 to 4 shows a divergence in the mortality pattern. Castes such as Walmiki and Maratha who were positioned relatively lower in the U5MR in NFHS-1 are declined to the lowest. Jat-Gurjar, Mixed castes, namely, Bengali Bhagat and Muslim have found to achieve a similar level of U5MR in NFHS-4 though they were at different levels of mortality in NFHS-2 & 3.

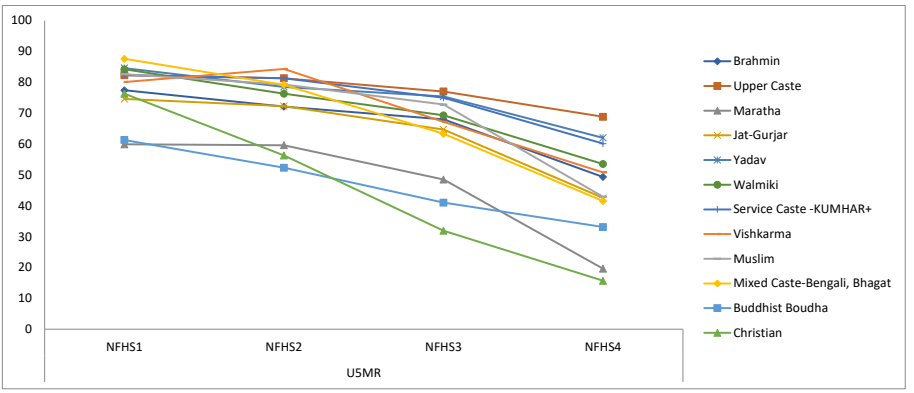

Figure 4: Estimates of Under 5 Mortality Rates (U5MR) across selected castes in 4 rounds of NFHS (1-4) in India

Discussion

This study is the first ever attempt to envisage the demographic outcomes of population segregated by castes in India. At this juncture when many castes claim reservations, adherence for distributive and affirmative actions, this research would provide a classic example of the fertility and mortality trends of the population belonging to the particular caste over around 25 years. Our study finds a long-term transition in fertility and child mortality across different caste categories in India. First, forward castes have displayed a significant and large decline in fertility along with the religious subgroups or castes such as Sikh, Jain, Christian, and Sindhi. The TFR of these castes have reached way below the replacement level of fertility, which suggests a greater focus required to maintain the population size in the long-term. Second, decline in child mortality in terms of NMR, IMR, and U5MR have shown a decline and convergence for the selected castes. However, there is no uniform decline observed in child mortality among forward castes and religious castes. Muslim and other Islamic castes have shown better child mortality outcomes, although the fertility outcome of those did not show a decline relative to the backward caste categories in the study period. Last, there remains an intra-caste inequality while looking at the fertility and mortality rates across four rounds of NFHS found in the study.

The differentials in demographic outcomes among reserved/ backward and unreserved caste are often measured in terms of development indicators such as education, employment, minimum wages, health care access, etc. Forward castes have

an upper hand in possessing material resources, better opportunities to modify life chances and achieve improved economic wellbeing. A desire towards children has been on the decline among the upward castes in India. In contrast, the reserved and deprived castes, which are often considered to be minority, are unable to decline the fertility to maintain their kinship as a motive to conserve their socio-economic status(Chamie, 1977). This study shows a similar pattern in such contexts illustrating a higher TFR among the reserved/ backward castes at a national level. This pattern can be well explained by the fertility model given by Bongaarts in 1978. Primarily, the proportion of population getting married or age at marriage can be a vital factor to explain the fertility pattern. The increase in the age at marriage mainly due to educational improvement and higher opportunities for the employment of women has supported the decline in fertility among forward castes. The study has depicted that SCs and STs are observed to have a lower median age at marriage, mainly due to cultural norms and lower educational attainment (Saxena & Mohanty, 2013). Moreover, improvement in child marriage among the backward castes in the Empowered Action Group states of India such as UP, Bihar, Rajasthan, etc., has been found to be lower than that of forward castes and OBC measured through the NFHS-3 (2005-06) data. Development to the backward castes has been supported by other literature that suggests the SC group of Musahar has seen an increase in child population by 1.5 per cent in 2001-11. Increase in fertility in this caste community could be explained by the lower development, untouchability, and marginalization practiced in the society (Singh, 2016).

Marriage and social mobility can explain the fertility behavior of the population sub-groups. Inter-caste marriage among the forward castes results in similar fertility behavior in the population. There remains a concept of sub-sub-caste within a prominent caste. Marriage within such sub-castes might not help to escalate better health behavior and hence, demographic outcomes. Studies also provide evidence that among illiterate or low educated individuals, homogamy has been found to be higher in rural areas, whereas, it is contrasting for those residing in urban areas in India (Borkotoky & Gupta, 2016). In a particular state, the fertility decline is also explained by the proportion of Schedule Castes, Muslim and urban population out of the total population (Das & Mohanty, 2012). The presence of cultural norms, taboos, beliefs among the backward classes such as ST women would increase the likelihood of conception at a younger age (Singh et al., 2020). Women empowerment has been a crucial tool in the fertility transitions in India (Panandiker & Umashankar, 1994). Mehrotra (2006) argued that upper castes don't generally follow endogamy. Caste mobility in that situation becomes a possibility. Considering the religious caste such as Muslim, several scholars mention that this religious caste is known to maintain horizontal equality as per the textual norms of Islam, however, in South Asia it adopted vertical hierarchy (Akbar, 2017). It changes along with the change in associated geography and neighbouring communities. Ansari Jualaha is a caste which is basically positioned lower among Muslims. But in Bihar, they are placed at the middle position in the caste hierarchy of Muslims (Akbar, 2017). The social position of the caste and diversity across region could improvise the demographic behavior significantly.

The geographical location of the castes in turn decides the decline in TFR in a great extent. The heterogeneity of any particular caste in larger caste categories should also be considered, when we measure the changes. For instance, Jat Gujjar are categorized to be OBC and ST in the few designated states of India. The analysis shows a decline in the fertility rate among Jat Gujjar, however, the overall child mortality is found to be high. On an obvious note, ST population residing in the rural areas would have a lesser chance to access basic resources and improve rigid cultural norms. The sample distribution of the Jat-Gujjar community in our study has shown the proportional distribution for urban sample as varying between 12-19 per cent. Therefore, a section of this caste community faces several deprivations and remains far away from developmental benefits. However, the transfer of certain behavior from urban to rural community of any particular castes has been claimed to be rapid (Shah, 2007). As a result, imbibing practices such as family planning, childcare, immunization, etc., should be more easily transferred among the population. Since the concept of caste is rural (Shah, 2007), hence, the structural composition of the castes in the villages of any state can decipher the social and demographic attitude of the population.

Further, evidence from NFHS-4 data shows that a relatively higher proportion of under 20 years aged SC/ST women are giving birth to their first child (40 per cent) than non-SC/ST mothers of under 20 years (35 per cent) (Bora, Raushan, & Lutz, 2019). Hence, there remains a higher likelihood for under five deaths among reserved caste categories. Difference in the time of child mortality among Dalits and Adivasis explains the deficiency in the accessible services in several parts of India (Ram, Singh, & Yadav, 2016). Child mortality differentials are already noted to be true for the Hindus and Muslims at a national level. Bhat & Zavier (2005) argued about the presence of major concentration or clustering of Muslims in a formation of ghetto and mostly in the urban areas. Access to health facilities is most crucial to control child mortality than the fertility of population. Living in urban areas offers a higher chance to acquire knowledge, access and development. While backward castes such as ST, fisherman, Musahar, etc., have shown to be residing mostly in the rural areas or urban fringes representing lower developmental outcomes. Linguistic castes show mixed caste categories and hence, demographic outcomes are conclusive enough to be discussed. However, decline in child mortality outcome among Bengalis and Bhagats can be explained on the basis of educational achievement, better access to public health facilities and by observing fertility transitions for a lengthy period of time (Dyson & Moore, 1983).

Caste inequality varies across states in India. The northern states are known for a higher intra-caste inequality, leading to greater chaos in population (George, 2015). Intra-caste inequality can result in differentials in the fertility and mortality transitions in the last 25 years. Our study finds that several castes such as Yadav, Kurmi, etc., secure a higher socio-economic position and achieve the benefit far more prominently than any other in the OBC categories. Therefore, it can be deduced from this study

that lower position subgroups within a caste still experience a low development due to a persistent gap in the availability and accessibility of the schemes, programmes and policies. Receiving support from the government is compromised as we observe power hegemony within a caste. Often, castes, which are the most downtrodden, suffer the most in terms of primary healthcare services in rural areas. Our study shows that castes such as Vishkarma, Khatik Dusadh, Musahar, etc., placed in lower strata of caste hierarchy show a higher rate for child mortality. The mortality outcome of OBC open and other OBCs have been found to be lower from the few upper castes. It is due to OBCs placed at a higher position than SCs or STs, and thus reap the benefit from developmental programmes. That signifies a greater monopoly in terms of social inclusion and access to basic resources by the OBCs (George, 2015).

This article could capture the indicators by segregating the caste with the utmost effort. The categorization of the caste in a particular reserved category in a particular state is subject to the particular socio-economic status of the respective state. Our study could not capture the change in the population share of caste groups in the representative sampling as NFHS do not consider the sub-castes in the sampling frame. We were also limited to identifying those particular socio-economic status in reference to selected states while performing the analysis. It opens a scope for further detailed analysis in this particular issue. Data set identifying the castes or communities in particular along with the other socio-economic determinants, health outcomes and wellbeing measure could capture the inequality in the population more comprehensively. Numerous individuals could not have reported the castes or sub-castes perhaps due to lack of awareness or low education or socio-political reasons. As a result, a large proportion of the sample has been placed into missing and not reported categories. To be able to capture this information would enrich our study in a great extent.

Conclusion

Caste has been a measure of social inequality which has been envisaged by the demographic outcome in our study. The decline in fertility and child mortality is associated with the underlying deep-rooted socio-economic inequality that persists heavily in our society. The forward castes are more likely to reap the benefits of development earlier than the backward castes. However, a decline in fertility would impose negative socio-economic consequences. Moreover, few selected sub-castes within a major caste show skewed patterns of development as they cornered themselves with bargaining power and privilege to control the position, resources and benefits. Thus, equity must be evoked through state machinery such as programmes and policies to improve the benefits of the backward castes in India as well as to balance the unequal decline in the birth and death rates among the forward castes. Counting and identifying the caste would be comprehensive to design target-based programmes and policies.

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Annexure

Table 2: Estimates of fertility (Total Fertility Rate) across castes in 4 rounds of NFHS (1-4) for India

India	TFR			
Caste	**NFHS1**	**NFHS2**	**NFHS3**	**NFHS4**
Kaystha	3.6	2.7	1.7	1.6
Rajput	3.4	2.9	2.6	2
Naidu Nadar Kapu Nair	3.2	2.4	1.6	1.7
Bania	3.5	2.8	2.9	2.2
Kurmi	3.5	2.7	2.4	1.9
Khatik Dusadh	3.2	3.3	3.4	3.1
SC	3.4	2.9	3.3	2.3
ST	3.5	2.9	2.9	2.3
Fisherman	3.7	2.7	3.2	2.2
Lodhi-others	3.1	3.4	3.2	2.7
Musahar	3.4	3.5	5.9	4.8
OBC open		2.5	2.4	1.5
Sindhi	3.1	2.8	1.6	1.7
Khan Pathan	3.4	3.8	3.4	2.5
Ansari Julaha	3.5	2.8	3.1	2.7
Sikh	3.3	2.7	2.2	1.6
Jain	3.1	2.7	1.5	1.3
Language		2.9	1.8	1.7
Caste not reported	3.4	3.2	2.8	2
Missing	3.4	2.8	2.5	2.1

Table 3: Estimates of Neonatal Mortality Rates (NMR), Infant Mortality Rate (IMR), Under 5 Mortality Rate (U5MR) across castes in 4 rounds of NFHS (1-4) for India

India	NMR				IMR				U5MR			
Caste group final	**NFHS1**	**NFHS2**	**NFHS3**	**NFHS 4**	**NFHS1**	**NFHS2**	**NFHS3**	**NFHS 4**	**NFHS1**	**NFHS2**	**NFHS3**	**NFHS 4**
Kaystha	66.3	60.1	45.3	26.3	61.3	74.8	55.7	34.1	69.2	67.9	63.1	48.4
Rajput	68.7	61.2	44.8	30	75.2	71.3	63.9	42.3	81.2	78.5	76.1	51.2
Naidu Nadar Kapu Nair	63.2	60.3	47.7	18.1	69.7	63.5	57.5	24.7	76.9	73.6	68.2	36
Bania	59.6	54.6	45.8	28	77.2	72.1	65.1	39	85.6	84.2	79.6	49.4
Kurmi	59.7	56.3	42.8	23.7	72.3	67.3	59.9	31.5	77.5	76.3	69.5	39.3
Khatik Dusadh	58.9	51.3	46.3	49.7	77.5	73.2	68.6	66.2	89.6	85.6	81.7	77.4
SC	65.2	58.4	55	35.2	79.6	74.1	68.2	48.9	85.4	91.3	84.2	58.1
ST	63.2	56.9	48.7	31.2	76.3	72.3	69.7	42.3	81.2	84.2	76.2	66.6
Fisherman	60.2	53.1	46.2	30.7	70.5	66.3	60.9	39.2	90	85.6	81.5	43.7
Lodhi-Others	55.3	51.9	45.2	44.6	82.1	78.1	73.5	62.1	95.6	90.5	85.7	79.1
Musahar	60.3	56.2	47.7	45.1	80.5	79.3	63.6	57.8	102.5	95.6	89.4	81.2
OBC Open	49.7	40.1	27.2	18.6	74.1	66.5	56.2	26.1	75.4	70.1	56.2	29.6
Sindhi	63.5	31.2	22.8	16	55.3	39.7	22.8	16	62.3	50.2	22.8	16
Khan Pathan	59.4	49.3	45	29.9	79.6	73.2	67.7	49.5	89.8	86.3	82.4	54.6
Ansari Julaha	55.2	47.5	36.1	31.9	78.9	70.5	65.7	44.4	89.4	84.1	67.4	55.6
Sikh	52.3	44.6	32.2	25.5	52.3	47.6	38.4	36.1	83.2	69.8	43.9	38.7
Jain	42.6	37.6	26.9	11.7	48.7	39.6	25.4	16.1	53.2	40.1	15.6	16.1
Language	50.2	44.6	36	34	60.1	55.6	42	47.8	78.2	63.2	43.3	61.6
Caste Not Reported	55.6	50.4	44	21.4	67.6	67.2	59.6	31.8	91.3	86.6	79.9	38.2
Missing	59.8	52.3	42.7	27.7	66.5	61.3	53.7	38.8	96.3	89.1	83.6	48.9