Castes and demographics of India: A thorough understanding of fertility and child mortality with 4 rounds of National Family Health Survey.

Extended Abstract:

Motivation of the study: Caste is a fundamental construct to measure the social stratification in India (Deshpande, 2001). This has been a source of understanding the persisting structural inequality in social and economic dimensions (Borooah, Diwakar, Mishra, Naik, & Sabharwal, 2014). Research on the fertility and mortality outcome in India has found caste as a significant factor that contribute significantly to fertility and child mortality change. The knowledge regarding these caste categories is limited as very few sources give information across specific castes and subcastes underlying it. Since castes and, also necessary to mention, religions are related to the socio-economic status (Kumari & Mohanty, 2020), hence, demographic and health outcomes must be varying to a great extent in that regards. Till now major demographers or social scientists are forced to consider the caste as an aggregated group in large data set despite several classifications constructed within the caste groups mainly due to data inadequacy. As we are devoid of such scope yet, the limited understanding of the different reserved caste categories as a minority group can be largely interrogated. Therefore, we take an opportunity to measure the total fertility rates and child mortality such as neonatal mortality rate, infant mortality rate and child mortality rate at the national and selected higher fertility states of India.

Data and Methods:

To address the objective, study has utilized 4 rounds of National Family Health Survey (NFHS) i.e. NFHS-1 (1992-93), NFHS-2 (1998-99), NFHS-3 (2005-16) and NFHS-4 (2015-16). We have tried to segregate the castes and sub-castes after a thorough and rigorous literature review and exploiting a large number of online and offline sources. The distribution of those sub-castes across different round of surveys have been documented and then the study has tried to capture the measure of fertility and mortality in India. Here, we are discussing the fertility measure i.e. Total Fertility Rate (TFR) and mortality measure i.e. Neonatal Mortality Rate (NMR), Infant Mortality Rate (IMR), and Under 5 Mortality Rate (U5MR). The overall estimation for fertility and mortality is also calculated for the high fertility states of Uttar Pradesh, Madhya Pradesh, Rajasthan, and Bihar.

To calculate the fertility estimates, firstly, Stata code is used to transform the birth history data in a table of birth. Secondly, we used Poisson regression to compute the fertility rates from birth history data (Schoumaker, 2012). 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 specified age range and specified time period.

Major findings:

Here we only show the results for the estimates at national level. In NFHS 1, the total number of caste identified is 20. The percentage share of prominent upper or forward caste found to be Brahmin (7.3%), Upper Caste (2.2%), Kayastha (1.3%), and Rajput (4.7%) are considerable. Beside upper castes, other castes are marked are Jat-gurjar (3.1%), Yadav (1.7%), Kurmi (3.9%), Service Caste- Kumhar (2.7%), Scheduled Caste (SC) (4.4%), Scheduled Tribe (ST) (1.7%), Musahar (0.1%), Walmiki (0.5%) etc. Religious minority such as Muslim shares 5.8% of the sample. While in the NFHS-3 and NFHS-4, the upper caste represents similar share in the sample. However, Naidu-Nadar/ Kapu Nair caste which is a prominent upper caste in Karnataka or some southern states shows a higher share in NFHS-4 (5%) in compared to NFHS-2. The backward castes like Yadav, Kurmi, Kumhar, SC, ST, mixed castes etc. are showing substantial share in the total sample. It was also found out that Yadav, Service caste-Kumhar, and Khan Pathan show an increase in the sample share in the survey during NFHS-3 to 4.

NFHS-1 shows that the TFR at the aggregate level was above 3. TFR among the forward castes hovers around 3.5. Only TFR among Maratha remained to be highest i.e. 5.1. Some of the backward castes like fisherman or ST shows a typically high fertility at this time but decline in the subsequent rounds across all the castes. However, Musahar is the caste which shows an exception due to increase in TFR from NFHS1 (3.4) to NFHS 4 (4.8). In NHFS 2, most of the forward castes, and also SC, ST, Walmiki, and Ansari Julha have been found with TFR below 3. The castes mentioned by their religious groups like Sikh, Jain, Christian also show a steady decline in the fertility from NFHS1 to NFHS2. Khan Pathan caste has shown a high TFR (3.8) in NFHS 2. Linguistic castes or mixed castes- Bengali, Bhagat showed an increase in TFR in NFHS3 in compared to NFHS 2, but decline in NFHS-4. In NFHS 4, most of the forward castes, Maratha (1.9), Jath-Gurjar (1.9), Kurmi (1.9), mixed castes- Bengali Bhagat (1.6), and minority castes like Buddhist Bodha (1.6), Sikh (1.6), Jain (1.3), Christian (1.7) and also General Other Backward Class (OBC) open (1.5) have achieved below replacement level fertility i.e. 2.1.
The NMR remains low and further declined among the forward castes such as Brahmin, upper castes, Kaystha, Naidu Nair/ Kapu Nair, Maratha, Mixed caste Bengali Bhagat and few minority religious groups/ castes such as General OBC open, Sindhi, Buddhist Boudha, Jain, Christian in the last 2 decades captured through four rounds of NFHS 1 to NFHS 4. While, backward classes such as Yadav, Kurmi, Vishkarma, Service caste- Kumhar, SC, ST, fisherman, Lodhi-others, and Mushar show a high NMR. Brahmin which is the top notch among all the castes are showing IMR 73.2 in NFHS 1 and 39.9 in NFHS 4. This is way worse outcome than the IMR for Maratha which is showing 60.3 in NFHS 1 and 17.6 in NFHS 4. However, backward castes like Yadav, Kumhar, SC, ST, and Lodhi are showing a higher rate for infant mortality and under 5 mortality. For U5MR, it is showing a similar pattern to IMR for these castes. Those who belong to upper castes have shown a higher U5MR despite socio-economical advantageous position hold by them. While, Jain, Christian, and Sindhi show a lower rate for infant and under 5 mortality.

Discussion:

The study is the first ever attempt to envisage the demographic outcomes of the population segregated by the castes in India along with a special focus on the higher fertility states of India. Firstly, forward castes have shown a significant and large decline in the fertility along with the religious subgroups or castes such as Sikh, Jain, Christian, and Sindhi. The level of fertility has reached below TFR 2 recently, suggesting a greater focus on these particular castes is needed. However, there is not any uniform decline observed in the child mortality among the forward castes and above discussed religious castes. In recent times, Muslim and other Islamic castes have shown a better child mortality outcome at national level, although their fertility declined did not show a decline in relative to the backward caste categories. Subsequently, across states forward and backward castes show a varying pattern for the fertility outcome. Relatively higher castes within forward caste groups show a higher decline in the fertility and mortality outcome. This outcome is varying to an extent across selected states in the study. At any specific state, few of the forward castes may represent a lower fertility and mortality outcome than the backward castes. This explains about the geographical clustering and associated health and socio-economic outcomes of those particular castes. The study also finds that in Uttar Pradesh, forward caste such as Brahmin represents a higher child mortality rate such as NMR, IMR, and Rajput represents a NMR, IMR, U5MR than other backward and reserved caste categories. Muslims are performing far better than many backward or minor castes in India. Additionally, the performance of a particular caste varies across selected states depicting a dissimilar relevance of the caste and demographic dynamics at the particular region.

References:

Borooah, V. K., Diwakar, D., Mishra, V. K., Naik, A. K., & Sabharwal, N. S. (2014). Caste , inequality , and poverty in India : a re- assessment. *Development Studies Research*, *1*(1), 279–294. https://doi.org/10.1080/21665095.2014.967877

Deshpande, A. (2001). Caste at Birth ? Redefining Disparity in India, *5*(January 1999), 130–144.

Kumari, M., & Mohanty, S. K. (2020). Caste , religion and regional differentials in life expectancy at birth in India : sectional estimates from recent, 1–10. https://doi.org/10.1136/bmjopen-2019-035392

Masset, E. (2016). SYNCMRATES: Stata module to compute child mortality rates using synthetic cohort probabilities. Retrieved March 8, 2021, from https://ideas.repec.org/c/boc/bocode/s458149.html

Schoumaker, B. (2012). tfr2 : A Stata module for computing fertility rates and TFRs from 3 . Why a Stata module for fertility rates ? In *International Union for the Scientific Study of Population* (pp. 1–30). San Francisco.