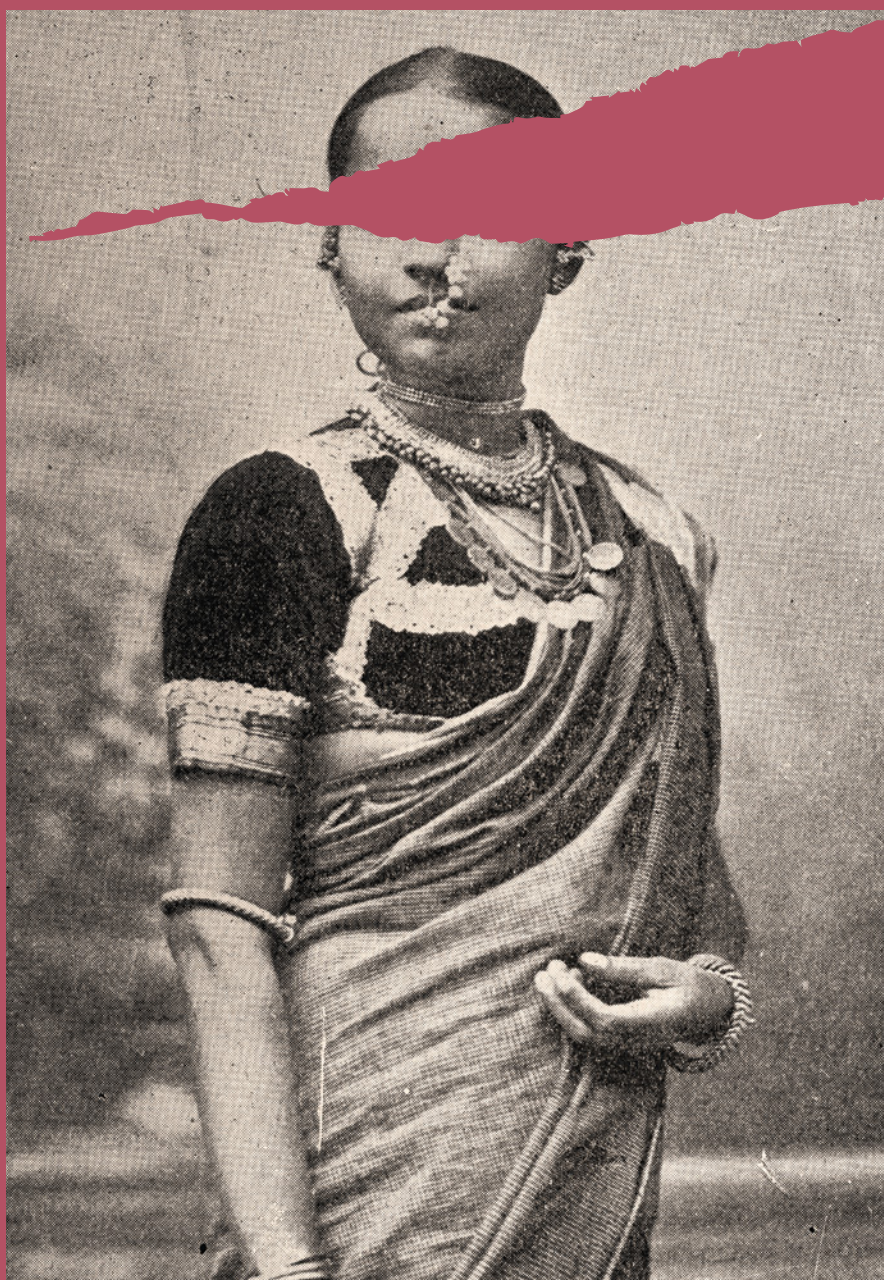


Missing women in India

By Bishnupriya Gupta



Three decades ago, Nobel laureate Amartya Sen highlighted the deficit of women in several countries in Asia. Among these countries, India was prominent. Colonial census data offer us clues to understand if the biases in the sex ratio today have historical origins. ►

In most countries, the shares of men and women in the population are roughly equal. At birth, there are typically 106 boys to 100 girls. Male infants have a higher mortality, so by the age of five the sex ratio becomes balanced. Women's mortality at older ages is lower than that of men, leading to female-biased sex ratios at older ages.

In India, by contrast, sex ratios are generally male biased, and significantly so. In India, in the 2011 census, 57 women were missing for every 1,000 men and 81 female infants were missing at birth for every 1,000 male infants. In Delhi, for every 100 girls born, there were 122 boys. In some parts of the country, over 100 women were missing for every 1,000 men.

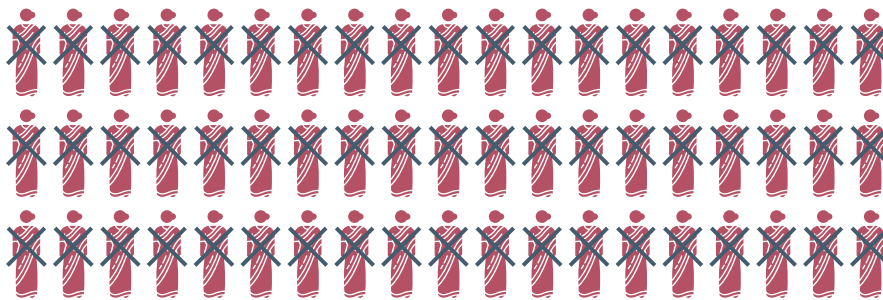
Across regions, a general pattern is visible: there are many more missing women in the North and West, and more balanced sex ratios in the South.

In search of missing women in India

What can explain India's missing women? We use data from the colonial censuses to understand the degree to which women are missing due to deeply rooted causes such as agricultural practices, and to what degree they are missing due to recent phenomena such as prenatal sex selection.

We ask two questions of the historical data. First: 'where' were women missing from? Second: 'when' did women go missing? In considering where women were missing from, we describe differences in the sex ratio by region, religion, and geography. In considering when women went missing, we describe sex ratios over the life cycle, for example at adolescence or in older age.

Our data come from censuses conducted every ten years by the colonial government between 1881 and 1931. We document the population of men and women by district over this period and



57 NUMBER OF WOMEN MISSING FOR EVERY 1000 MEN IN 2011 INDIA CENSUS

calculate the share of women in the population by region, by religion, and by age group.

We test for correlations between the share of women in the population and geographical variables that could influence the economic role of women, such as the potential role in specific crops, the ruggedness of the terrain and access to the coast.

Today's gender bias is deep rooted

We find that in colonial India there were more missing women in the population in the North, which includes the colonial provinces of the Punjab and the United Provinces. The sex ratio was more balanced in the South, which includes Madras Presidency and the princely states of Hyderabad, Mysore and Cochin.

The sex ratio in the East was less skewed than in the North but less balanced than in the South.

The regional variation in the share of women and the divide between North and South are still found in India today. There is a high correlation between 1931 and 2011 in the share of women in the population at the district level, even looking across districts in the same present-day state.

This suggests that the gender bias in India today has deep roots. The regional variation in missing women in India in 1931 has persisted to the present day.

Prenatal sex selection has played a part

Next, we look at differences in sex ratio across religions in colonial India. The two largest religious groups are Hindus and Muslims. We do not find systematic differences in the female deficit in the two communities. The sex ratio was most male biased among Sikhs and most balanced among Buddhists and tribal communities.

Further, we find that sex ratios of different religious groups correlate across districts - where the population of one religious group was disproportionately male, the population of other groups were often more likely to be disproportionately male as well.

The relative similarity of Hindu and Muslim sex ratios in the past contrasts with patterns in the present, as today the deficit of women is higher among Hindus. Attitudes to prenatal sex selection technology in recent times accounts for some of this difference, as Muslims make less use of this technology (Bhalotra et al., 2021).

Geography and agriculture are not causes

Literature on the economic role of women in society has argued that women have greater economic value in rice-growing regions, but not in wheat-growing regions, because they

participate more in the cultivation of rice than in the cultivation of wheat (Bardhan, 1974).

Cross-country evidence shows that in countries where the plough was used historically in cultivation, gender norms are biased against women in the present (Alesina et al., 2013). Geography, then, can be a predictor of gender norms in society.

We do not, however, find a robust negative correlation between the share of women in the population and wheat cultivation, nor do we find robust positive correlation between the share of women in the population and rice cultivation. The lack of a robust correlation between wheat and the sex ratio remains if we consider external measures of the potential yield of wheat, rather than cultivation itself.

Early marriage and childbirth was a factor in colonial India

Finally, we consider sex ratios in the population in four age groups: 0-10, 10-20, 20-40 and 40+. Although there is a significant share of missing girls in the youngest age group in the North, the largest female deficit appears in adolescence. In every region and across all religions, we find a dip in the share of women in the age group 10-20.

There are two likely explanations. First, adolescent females were likely to be reported either as older if already married or younger if unmarried. Second, evidence shows maternal mortality to be high in colonial India, particularly during the first birth for mothers under the age of 15. In a society where the average age at marriage was 13, many women gave birth before the age of 15. ◀

About the author

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Figure 1: Percentage female by age and region, 1901

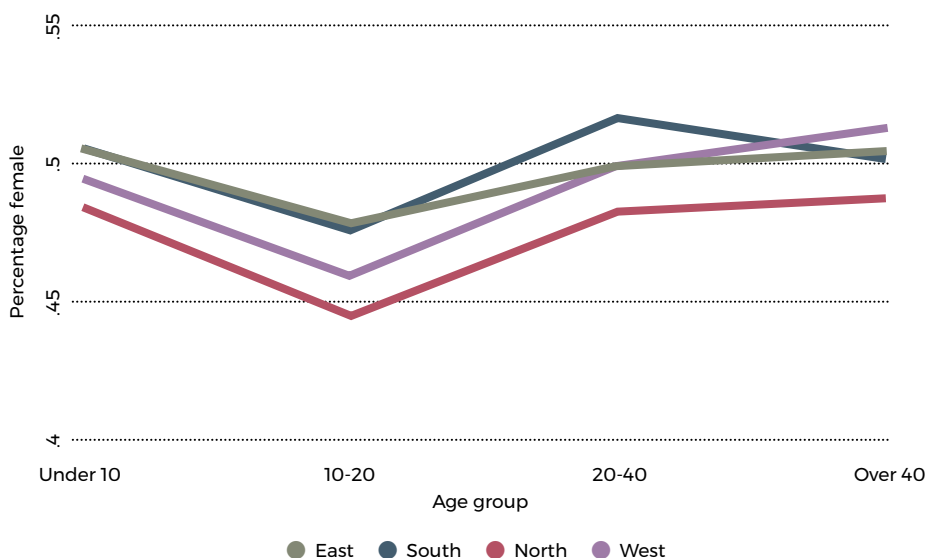
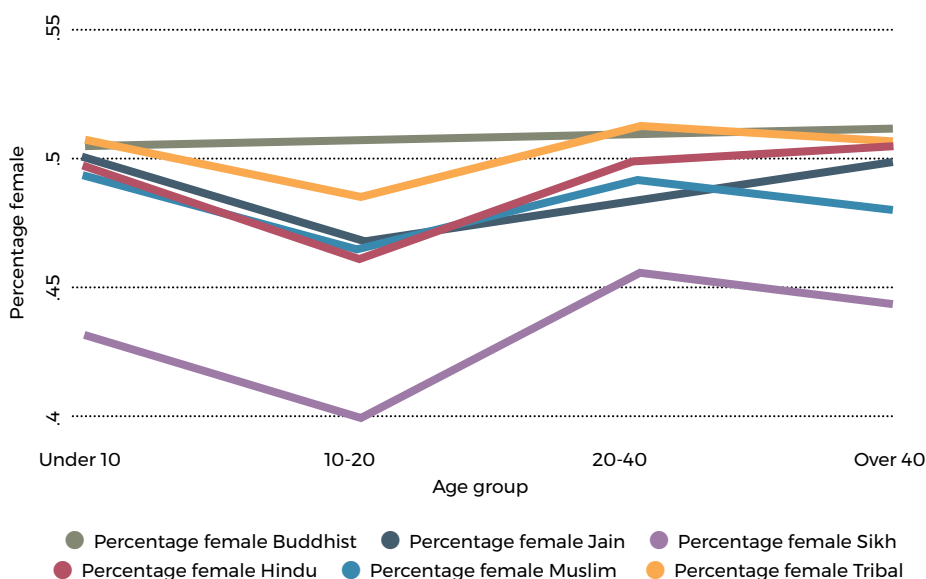


Figure 2: Percentage female by age and religion, 1901



Publication details

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