Natural Short Fall of Woman

The shortfall of women within countries and in the world generally is growing nonstop, alarming the urgent need to address this issue across the globe. In *More Than 100 Million Women Are Missing,* Amartya Sen emphasizes the notion of the missing women and analyzes the complexity rooted in the problem. In this paper, we take a closer look at the data in 1980, 2000, and 2019 from the World Bank to study the percentage and number of missing women in eleven countries within six areas in the world.

Area	Country
South Asia	Afghanistan
	Bangladesh
	India
	Pakistan
East Asia	China
	Korea, Rep of (South)
South East Asia	Malaysia
West Asia	Saudi Arabica
West Africa	Ghana
	Nigeria
Oceania	Papua New Guinea

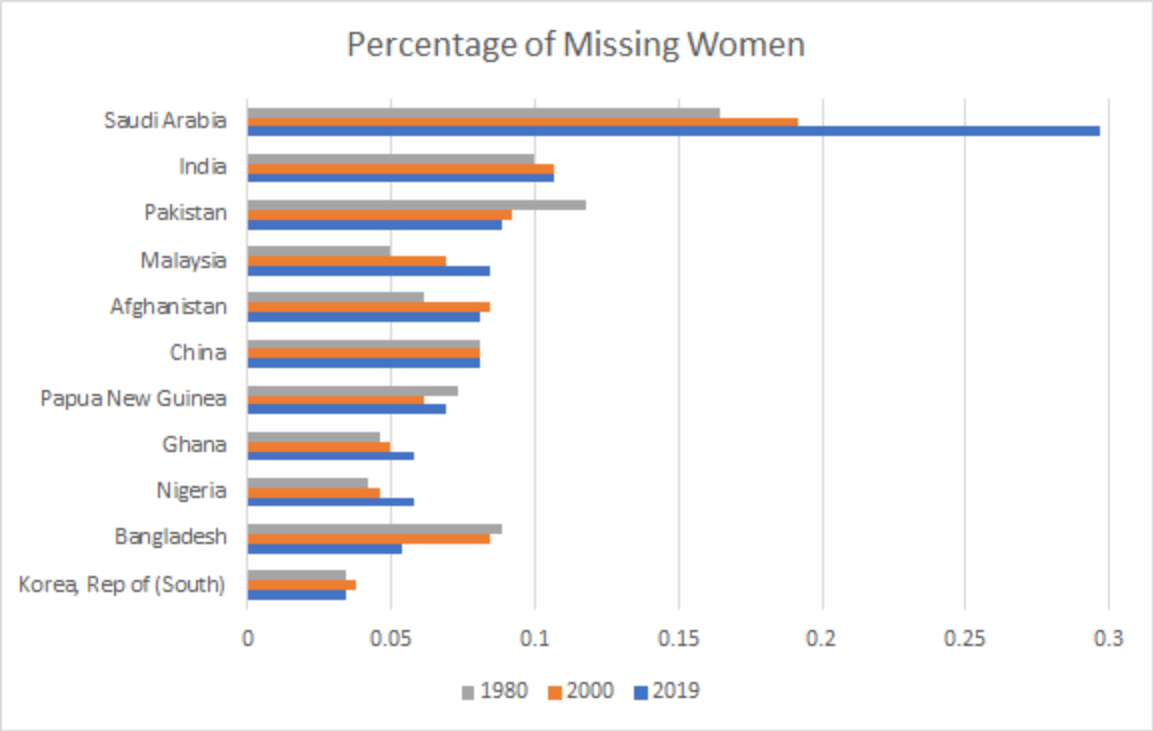
We use the data for total population and percent of female population for each country from the World Bank to calculate the sex ratio female-to-male.

$$\text{Female / male ratio} = \frac{\text{Percent of Female}}{100 - \text{Percent of Female}}$$

Assuming that the “natural” female-to-male ratio is 1.03, the short fall of women in percentage can be calculated as below.

$$\text{Natural Short Fall of Women (\%)} = 1.03 - \text{Female / male ratio}$$

, which results in

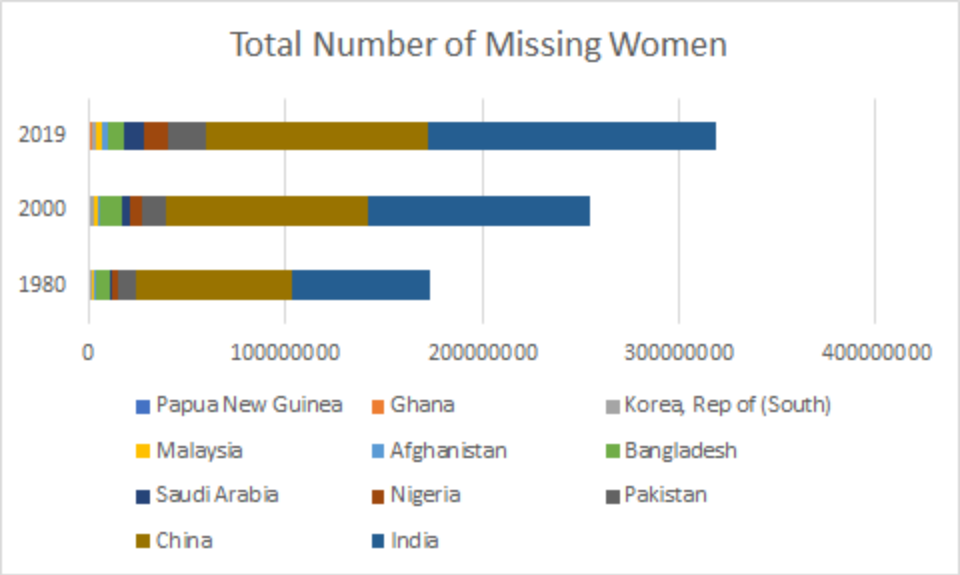


Among the eleven countries, the rising trend in the percentage of natural women shortfall can be observed from Saudi Arabia, India, Malaysia, Afghanistan, Ghana, and Nigeria. On the other hand, the situation seems to be more positive in Pakistan, Papua New Guinea, and Bangladesh where the percentages decline over the course of 40 years. Surprisingly, China remains with the same level of missing women. South Korea's shortfall in women increases in 2000 then decreases to its initial position in 2019. The issue of gender inequality looks most severe in Saudi Arabia with a rise of more than 10% in the last two decades, making it the country with the highest percentage of missing women - 0.29 - in 2019.

Since these countries have diverse population sizes, in order to calculate the actual number of missing women in each country, we need to take the total population into account.

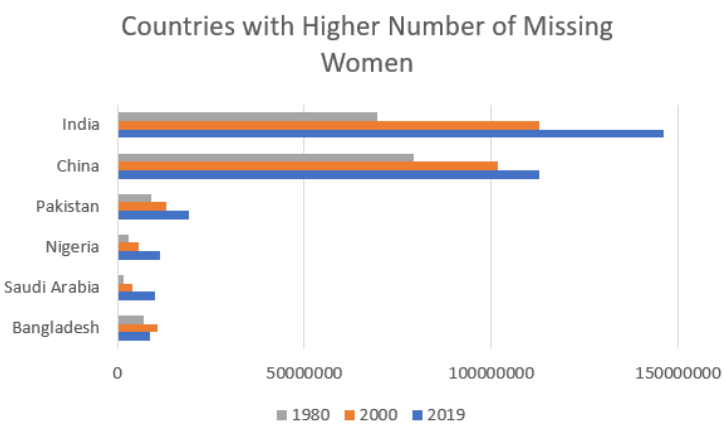
$$\text{Actual Number of Missing Women} = \text{Natural Short Fall of Women} * \text{Total Population}$$

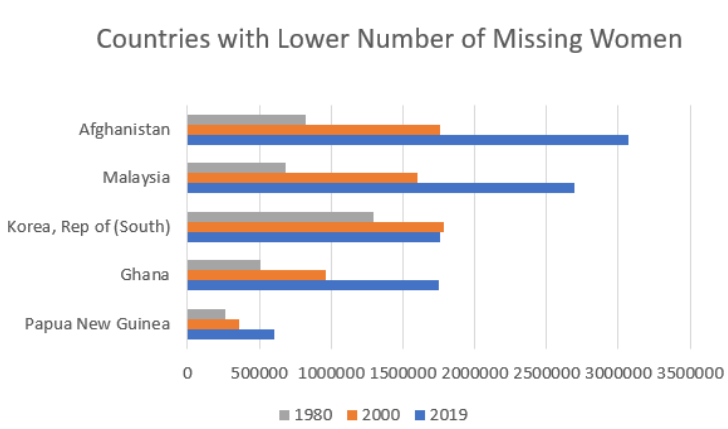
The overall number illustrates how severe the problem is in the recent 40 years over the world.



From 173 million in 1980 to more than 313 million in 2019, the number of missing women in these six areas has nearly doubled. In a positive light, the growing speed seems to slow down from the year 2000 with a 25% growth comparing to the earlier stage of 47% increase. More detailedly, the graph shows some contradicting figures to the above percentage of missing woman graph. Saudi Arabia only takes fourth place in the total number of missing women, while India and China play pivotal roles.

Thus, we continue to look into the number of missing women in each country.





Taking each country's population into consideration, it clearly shows that the gender inequality issue is becoming more alarming everywhere. India, with an increasing percentage, tops with almost 1.5 billion total missing women in 2019. Although China's percentage of women shortfall seems promising, its actual number of missing women reaches 1.1 billion in 2019, taking the second-highest position. There is no sign of ceasing even in countries with decreasing shortfall percentages: Pakistan, Papua New Guinea, and Bangladesh, two of which even rise to the

higher top among the eleven countries. Regarding the growing speed, it is surprisingly more serious in countries with a lower total number. Especially in Afghanistan, Malaysia, and Ghana, the number of missing women increases almost twice every two decades.

To some extent, this paper supports Sen's argument that the problem of gender inequality lies in the integration of economic and cultural differences on a much more complicated level. It cannot be denied that China is witnessing the fastest economic expansion among the eleven countries, yet it continues to suffer from a growing shortage of women. As we look into three different continents and six areas, there is no specific trend in neither the percentage nor the number of missing women regarding cultural differences embedded in the geography. Overall, the data shows frightening numbers and research tackling this issue with a larger scope should be conducted to examine the more general gender inequality across the globe.