Women's political participation through gender-based quotas and maternal mortality: Case evidence from India

Abstract

Does increased participation of women in politics translate into women-centric policy outcomes? In this paper, I attempt to observe one such policy outcome: decline in maternal mortality. I argue that an increase in women's participation in politics leads to a decrease in maternal mortality. Drawing evidence from three Indian states – Uttarakhand, Chhattisgarh and Jharkhand, I evaluate changes in women's political participation and corresponding changes in maternal mortality over similar time frames, to identify the relationship between women's political participation and maternal mortality. Most scholarly research has identified representation of women in politics as beneficial to gender equality but few make the case that women's political participation impacts policy outcomes in favor of women. I find that women holding political office are likely to make policy choices that result in policy outcomes in favor of women, and in this case, in favor of reduced maternal mortality.

Introduction

The call for improving women's political participation is predicated on the assumption that it will bring women into national decision-making roles, and as a consequence, women will be instrumental in impacting policy outcomes that make society gender-equal. To have more women in politics, is to understand why having more women in politics matters. I question if women's participation in politics have development outcomes and investigate through case evidence from

India, if increased participation of women in politics through gender-based quotas impacts women's health outcomes as measured through maternal mortality ratio. I choose maternal mortality ratio, as it is a key indicator of a society's socio-economic development (Wilmoth et al., 2012). I identify India as a site for critical analysis given that nearly one-third of all maternal deaths occur in India (Sajedinejad et al., 2015). Through this paper, I attempt to fill a need gap in current scholarly research that remains focused on establishing the merits of greater representation of women in politics rather than establishing a clear case of whether greater representation of women in politics translates to policy choices that benefit women. Through this study I argue for greater participation of women in politics at the local, state and national levels, on grounds that it leads to policy outcomes that benefit women, and in this case, reduced maternal mortality.

This paper is divided into five sections: in the first section, I present scholarly literature that speaks to women's political participation and maternal mortality ratio. In the second section, I draw case evidence from three states in India, and observe their performance on maternal mortality ratios before and after women's gender-based quota system is introduced. The third section presents my hypothesis that an increase in women's political participation reduces maternal mortality, followed by the fourth section that discusses the hypothesis with substantiated evidence. I conclude my paper with the fifth section.

Section 1: Women's political participation and maternal mortality ratios

It is well established that population health is critical for economic growth as it promises life expectancy and human capital accumulation (Soares, 2005; Weil, 2007; Ashraf et al., 2009; Shastry & Weil, 2003; Bloom et al., 2004; Lorentzen et al., 2008; Aghion et al., 2010). Several

scholars echo that reducing maternal mortality is fundamental to a woman's human capital development and employment as well as intrinsic to a country's economic growth (Albanesi & Olivetti, 2016, 2014; Jayachandran & Lleras-Muney, 2009; Bloom et al., 2015). At the macroeconomic level, Ashraf et al. (2009) find that there is a positive correlation between income per capita and life expectancy. Therefore, there is prima facie evidence that improvements in population health promise economic prosperity.

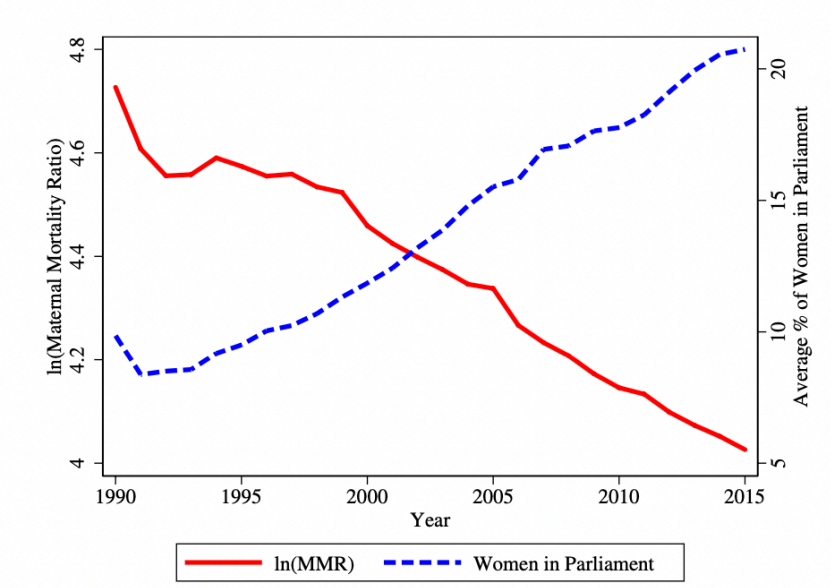
When a woman dies within 42 days of giving birth to a child, her death qualifies as maternal mortality (Bhalotra et al., 2021). Nearly 830 deaths per day globally are attributed to maternal mortality (Alkema et al.m 2016; Loudon, 1992). According to the World Health Organization (2019) the risk of maternal death in low income countries is as high as 1 in 45. It is however puzzling why the ratios of maternal mortality run this high when the technology and knowledge needed to prevent it are widely available, and the costs of intervention to reduce it are relatively small (Cutler et al., 2006; Loudon, 1992). WHO (2019) points out that close to three-fourths of maternal deaths can be prevented with skilled care before, during and after childbirth, and that low-cost primary care during pregnancy and delivery is the single most important aspect to reducing maternal mortality (Bhalotra et al., 2019; Pettersson-Lidbom, 2014; Tikkanen et al., 2020).

The Millennium Development Goals (MDG) had targeted achieving universal access to reproductive health by 2015 and while some progress was made, efforts fell short of meeting the target (Zureick-Brown et al., 2013). Bhalotra et al. (2021) argue that as long as parliaments around the world remain male-dominated, maternal mortality will not be prioritized, as male decision-making is mostly influenced by gender-agnostic preferences and information constraints. Ashraf

et al. (2020) and Powley (2007) contend that a woman's propensity to be concerned about maternal mortality is likely to be higher given that they identify with the risks.

According to Bhalotra et al. (2021), since 1990, the global share of women in parliament has risen from under 10% to over 20% and in the same time period, maternal mortality ratios have seen a fall of 44%. Annual data collected from a sample of 178 countries in the period 1990 to 2015, substantiates this. The below figure (1) shows raw data collated by Bhalotra et al. (2021) showcasing aggregate trends in 178 countries, corresponding women's share in parliament with trends in MMR in the period 1990 to 2015.

Figure 1: Women in Parliament and Maternal mortality ratios

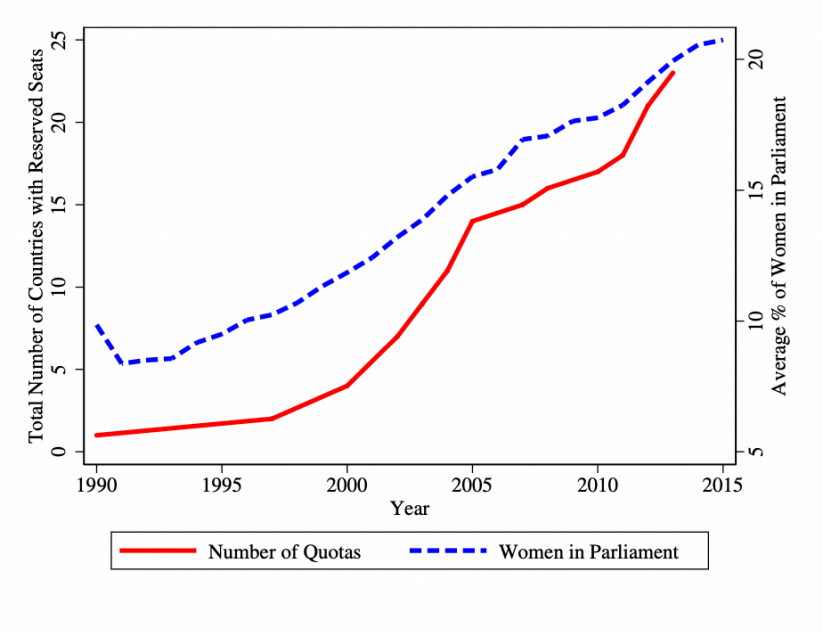


Source: (Bhalotra et al., 2021)

The rise in the share of women in parliament can be attributed to legislation passing mandatory gender quotas in parliament that were institutionalized across most of the developing world in the

mid-1990s (Bhalotra et al., 2021). This is illustrated below in figure (2) that shows countries with parliamentary gender quotas and the number of women holding parliamentary seats.

Figure 2: Reserved seats and women in parliament



Source: (Bhalotra et al., 2021)

Figure 2 illustrates a general compliance with mandated gender-based quotas, leading to an eventual rise in the share of parliamentary seats held by women (Bhalotra et al., 2021).

Sajedinejad et al. (2015) identify three key indicators among a global dataset of 439 indicators as having a statistically significant correlation with maternal mortality: education; private sector and trade; and governance. Some other macrostructural factors identified as associated with maternal mortality were employment and labor structure, economic policy and debt, agriculture and food production, private sector, infrastructure investment, and health finance (Sajedinejad et al., 2015). They find that decreasing maternal mortality requires a recognition of factors other than individual determinants – a reallocation of national health resources in the

governmental sector, education, expanding the private sector, improving governance and political will. Sajedinejad et al. (2015) conclude that to reduce maternal mortality sustainably will require long-term planning for multi-faceted development.

Section 2: Case evidence from India

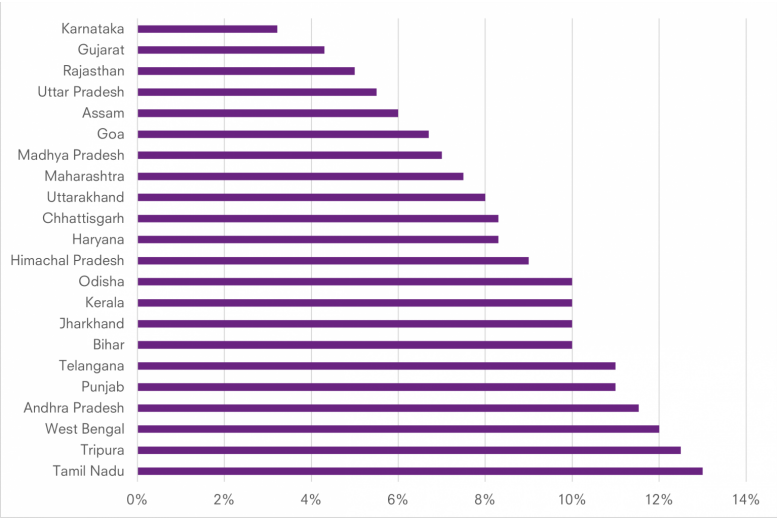
860 million women reside in South Asia – of whom three-fourths reside in India (Global Gender Gap Report, 2021). The Global Gender Gap Report (2021) ranks regions based on four measures: political empowerment; economic participation; education attainment and health and survival. On the political empowerment sub index, it finds that the South Asian region has a score of 38.7%, which is at par with the leading region, Western Europe. The report identifies Bangladesh, India and Sri Lanka as among the top 10 countries having the most years with a female head of state. The report also finds that in terms of female representation in parliament and in cabinets, the performance of South Asia is in line with other regions in the world. India is ranked as 18th on the political empowerment index in the report.

Gulati and Spencer (2021) disagree with the evaluation and explain that the index "measures the gap between women and men at the highest level of political decision-making through the ratio of women to men in parliamentary positions, and the ratio of female to male heads of state over the past 50 years". Gulati and Spencer (2021) find that India's positioning in the index may be skewed, as it is largely driven by the tenure of Prime Minister Indira Gandhi from 1966 to 1977, and then from 1980 to 1984, until her assassination and does not factor in state-level leadership, the percentage of women in ministerial positions and those in parliament. In India, only 30% of women hold ministerial positions; and only 17% of women are in parliament (Gulati

& Spencer, 2021). Furthermore, a flaw of the political empowerment sub-index is that it only focuses on leadership, rather than having a larger focus on women's representation across different levels of India's political system (Gulati & Spencer, 2021).

In an effort to improve the political representation of women at the local level in India, the 73rd Constitutional amendment was passed in 1992, that mandated one-third of village government head positions to be reserved for women (Mohanty, 1995). Scholarly literature measuring the impact of this mandate indicates that there was a substantial increase in the number of women elected as village sarpanch (village head) as well as the number of female candidates who contested seats in state and national legislatures (Duflo, 2005; O'Connell, 2020). While the numbers at the local level have shown improvement, according to Gulati and Spencer (2021), the representation at the state level has lagged – not a single state in India has a one-third proportion of female ministers, and nearly six states have no female ministers. Figure (3) below illustrates the proportion of female ministers across different state governments, omitting states that have no female representation.

Figure 3: Proportion of female ministers in state governments



Source: (Gulati and Spencer, 2021),

In 2010, the Women's Reservation Bill calling for one-third of all seats in the state legislative assemblies and in the lower house of the Parliament (Lok Sabha) was passed by the upper house of the parliament (Rajya Sabha), but it is yet to be put to a vote in the lower house (Anuja, 2021). Public discourse on the issue remains ongoing (Shivani, 2021).

Chattopadhyay and Dufflo (2004) draw evidence from two states in India – West Bengal and Rajasthan, and find that when a council seat is reserved for and occupied by a woman, it has a bearing on the provision of public goods, where female leaders are seen as investing more in public goods valued by women. Sathe et al. (2013) also find similar evidence from the state of Maharashtra but assert that the effectiveness of female political leaders rests largely on the number of years they have been on the job. They find that in female-headed villages, the availability of basic public services is found to be better when the female head has been in the role for 3 to 3.5 years. Furthermore Bhalotra et al. (2018) find that female legislators as compared to male legislators, raise economic performance in their constituencies by 1.8 percentage points per year, attributing this largely to women legislators being less corrupt, more efficient and more motivated as compared to their male counterparts. Iyer and Mani (2021) also find that under the leadership of women, greater number of women are encouraged to report crimes, owing to increased responsiveness of the police under women political representatives, especially with respect to crime against women. The evidence above has established sufficiently that when women hold a seat in politics, there are tangible benefits to be attained in the provision of public goods and services as well as in governance.

The focus of this paper is to establish whether increased participation of women in politics reduces maternal mortality. To explore this relationship, I draw out evidence from three Indian

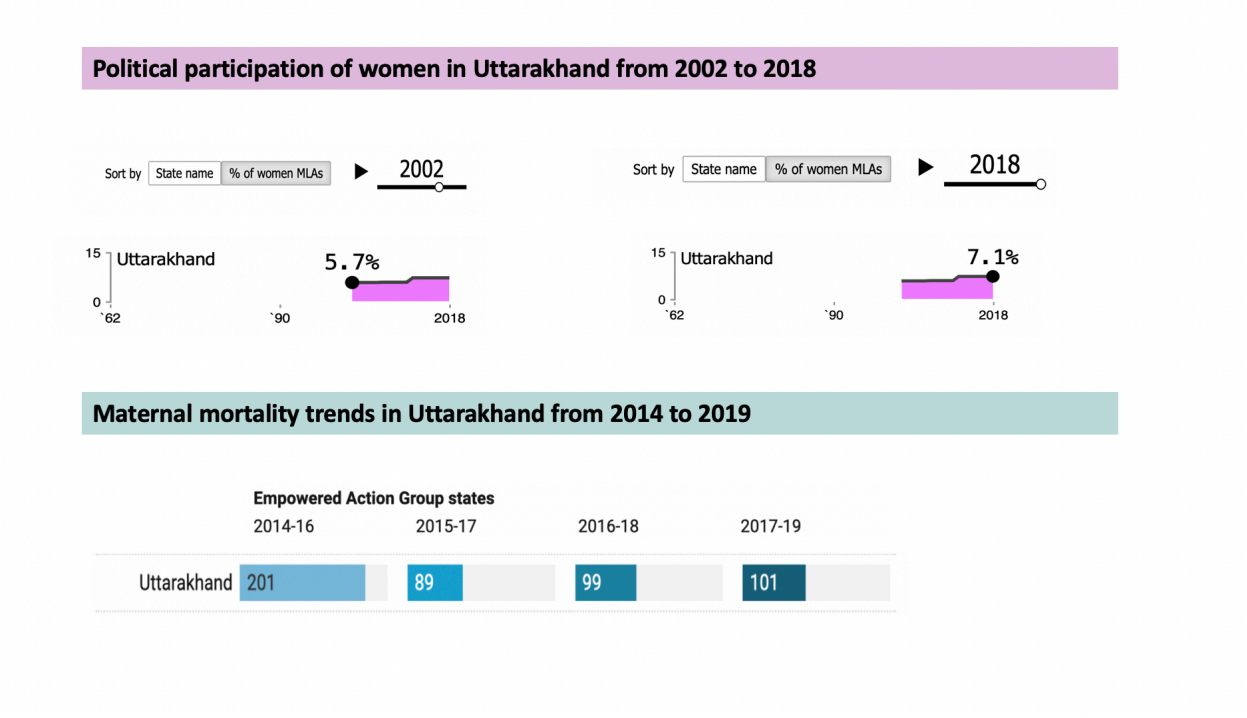
States – Uttarakhand, Chhattisgarh and Jharkhand. I choose these states, as all three states institutionalize the gender quotas and integrate women into politics around the same time – 2002, 2003 and 2005, respectively. The similar timeframe is helpful to evaluate the relationship between political participation of women and the maternal mortality ratio, across the three states. It also sets a baseline to compare the MMR ratios before women began participating in state politics and after.

Evidence from the Indian state of Uttarakhand

Uttarakhand is the 27th state of the Republic of India and is situated in the northwestern part of India. It has an area of 53,483 square kilometers, with a density of 189 per square kilometer less than the national average of 382 per square kilometer (Census 2011). The literacy rate of the state is at 78.82% above the national average of 74.04% ; males have a literacy rate of 87.40% while females have a literacy rate of 70.01% (Census, 2011).

Available data shows that starting 2002, the state of Uttarakhand begins seeing participation of women in local and state politics. Between 2002 and 2018, the participation of women MLAs (Member of Legislative Assembly) rises from 5.7% in 2002 to 7.1% in 2018, an increase of 1.4%. The figure (4) below also reveals that between 2014 and 2019, the maternal mortality ratio sees a fall from 200 (per 100,000 live births) in 2014 to 101 (per 100,000 live births) in 2018 – a 50% decline.

Figure 4: Women MLAs and MMR trends in Uttarakhand



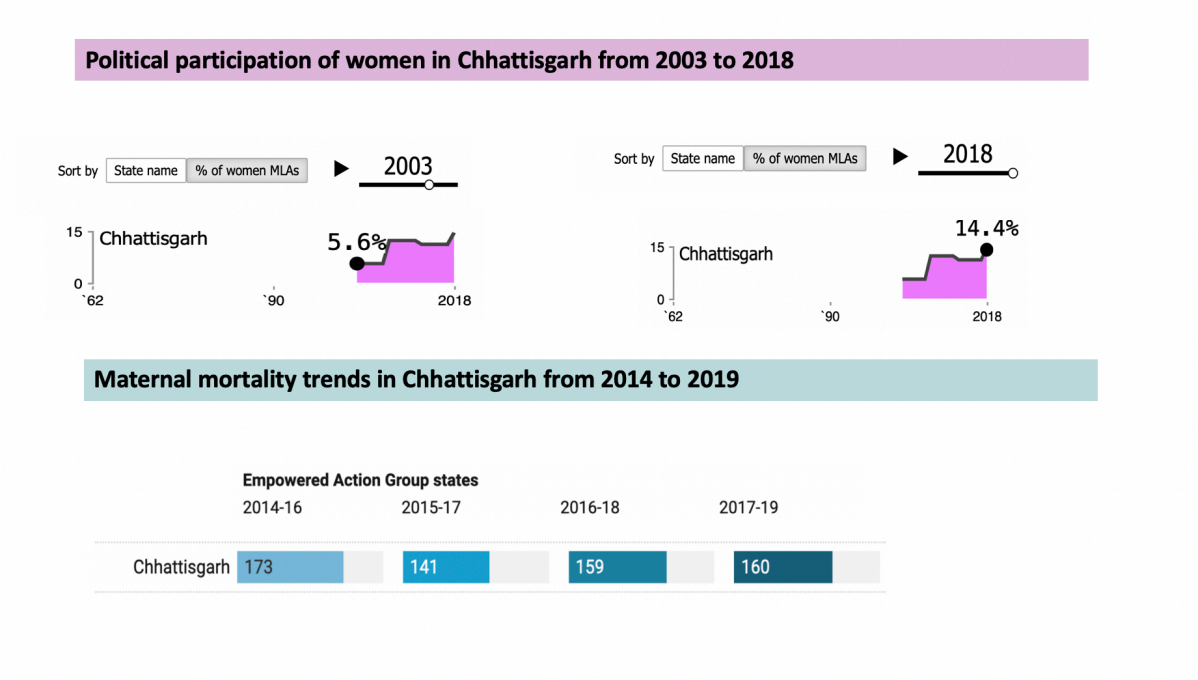
Source: (Sengupta, 2022; Vardhan 2019)

Evidence from the Indian state of Chhattisgarh

Chhattisgarh is a state in east-central India, with an area of 135,192 square kilometers and a population density of 189 per square kilometer (Census, 2011). The literacy rate of the state is 70.28%, with the male literacy rate standing at 80.27% and the female literacy rate standing at 60.24% (Census, 2011). The population of the state stands at 25 million making it the 16th most populous state in India (Census, 2011).

As per the figure (5) below, in 2003, the state of Chhattisgarh sees women's political participation begin at 5.6% and by 2018, the participation of women increases to 14.4%, an increase of 8.8%. In terms of maternal mortality ratio, between 2014 and 2019, the state sees a decline from 173 (per 100,000 live births) to 160 (per 100,000 live births), a decline of 13 (per 100,000 live births).

Figure 5: Women MLAs and MMR trends in Chhattisgarh



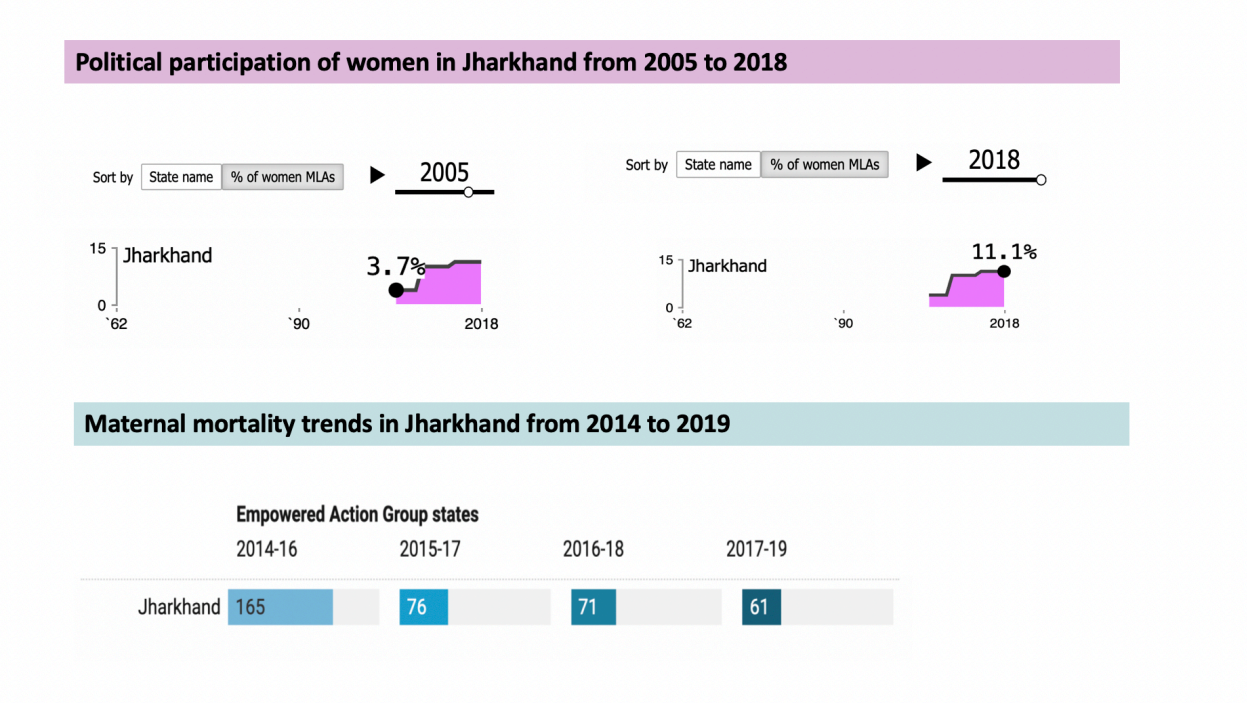
Source: (Sengupta, 2022; Vardhan 2019)

Evidence from the Indian state of Jharkhand

Jharkhand is situated in the northeastern part of India, with an area of 79,716 square kilometers and a population density of 414 per square kilometer (Census, 2011). The literacy rate in the state stands at 66.41%, with male literacy at 78.84% and female literacy at 55.42% (Census,

2011). Figure (6) below shows that women's participation in local and state politics in Jharkhand begins at 3.7% in 2005 and by 2018, it rises to 11.1%, a rise of 7.4%. Maternal mortality between 2014 and 2019, sees a decline from 165 (per 100,000 live births) in 2014 to 61 (per 100,000 live births) in 2019, a decline of 104 (per 100,000 live births).

Figure 6: Women MLAs and MMR trends in Jharkhand



Source: (Sengupta, 2022; Vardhan 2019)

Section 3: Research design

This paper rests on the hypothesis that an increase in women's political participation leads to a decrease in maternal mortality. My independent variable for this study is women's political participation and dependent variable is maternal mortality rate. I theorize that there is an inverse or negative relationship between women's political participation and maternal mortality, such that,

when there is an increase in women's political participation, there is a decrease in maternal mortality.

Independent variable

Evidence from the State of Uttarakhand, Chhattisgarh and Jharkhand shows that women's political participation at the state level increases from the early 2000s to 2018. The rate of increase differs in the case of each state: in the case of Uttarakhand, a 1.4% increase is observed in women's political participation between 2002 and 2018; in the case of Chhattisgarh, a 8.8% increase in women's political participation is observed between 2003 and 2018; and in the case of Jharkhand, a 7.4% increase in women's political participation is observed between 2015 and 2018. Overall in the years starting early 2000s up until 2018, till when the data is available, it suggests that there is an overall increase in women's political participation at the state level, with the state of Chhattisgarh and Jharkhand showing a similar rate of increase in a similar time frame.

Dependent variable

Evidence from the state of Uttarakhand, Chhattisgarh and Jharkhand suggests that there is a decline in maternal mortality, with data available between 2014 and 2019, showing an overall decline. The decline however differs in each state: in the case of Uttarakhand, there is a decline of 100 from 201 (per 100,000 live births) in 2014 to 101 (per 100,000 live births) by 2019; in the case of Chhattisgarh, there is a decline of 13 from 173 (per 100,000 live births) in 2014 to 160 (per 100,000 live births) by 2019; in the case of Jharkhand there is a decline of 104 from 165 (per 100,000 live births) in 2014 to 61 (per 100,000 live births) by 2019. Both Uttarakhand and Jharkhand show a similar level of decline – close to 100 (per 100,000 live births) in the same period.

Section 4: Discussion

To understand the relationship between women's political participation and maternal mortality is to draw out the differentiated impact on supply and demand factors that facilitate the cause and effect. In this case, I find that an increase in women's political participation leads to a decrease in maternal mortality. This section focuses on why that may be the case – how does women's leadership, engagement and participation lead to reduced maternal mortality outcomes.

Impact on supply side factors

On the supply side, I study if women's political participation through gender-based quotas improve supply side factors: reproductive health services (Miller & Valente, 2016). Wide availability of such services may reduce high fertility that can increase the incidence of MMR (Girum & Waise, 2017). Given the low-cost wages in developing countries, expanding skilled labor force in prenatal care, in birth attendants, in nurses, in mid-wives and in teachers can be seen as low-cost interventions undertaken on the supply side, that may have significant consequences for MMR (Banke-Thomas et al., 2020; Andrabi et al., 2020).

In the case of Uttarakhand, the state introduced schemes like the Janani Suraksha Yojna (Women's Protection Plan), free distribution of iron pills to pregnant women and the introduction of 108 ambulance services to reduce maternal mortality (Mishra, 2019). Additionally, the state advertised the benefits of institutional deliveries and worked closely with the midwives' association, called the Auxiliary Nurse Midwives (ANM) to support women through delivery (Mishra, 2019). Despite the hilly terrain of the region, the state ensured the presence of at least one gynecologist at all health centers across the state (Mishra, 2019).

In the case of Chhattisgarh, the state's reduced maternal mortality can be attributed to improved health care facilities provided by the state. Through the national social welfare program called the Integrated Child Development Services (ICDS) that run the community-service centers called the Anganwadi Centers (AWCs), it devised programs to improve the nutrition levels and basic health of pregnant women, and employed 50,000 community service workers called the Anganwadi workers to do so (Yatsu, 2012; TNN, 2018). The community centers were also mobilized to spread information and awareness among families about the importance of institutional deliveries (TNN, 2018). The state also introduced programs to provide freshly cooked food to pregnant women through the Anganwadi centers (TNN, 2018).

In the case of Jharkhand, the state's maternal mortality ratio saw a decline due to a number of favorable factors. Through the scheme of Janani Suraksha Yojana (Women's Protection Plan), the state was able to encourage families and women to choose institutional deliveries over home deliveries to reduce the risk of maternal mortality (Ganguly, 2020). The scheme also guaranteed monetary help to pregnant women (Ganguly, 2020). Additionally, the state set up health service centers with equipment for handling deliveries and increased the number of delivery points across the state. A larger number of ambulance services were also introduced across the state, carrying expecting mothers to hospitals and delivery points (Ganguly, 2020).

Impact on demand side factors

On the demand side, there is sufficient evidence that suggests that the uptake of maternal health measures is improved through low-cost outreach, information provision and education of women, so the likelihood of supply-side measures influencing demand-side behavior change and subsequently reducing MMR is high (Miller, 2008; Dupas, 2011; Bhalotra & Clots-Figueras, 2014; Bhalotra et al., 2019; Beaman et al., 2009; Currie & Moretti, 2003).

Education attainment among women is proven to have the potential to improve birth spacing and reduce fertility (Bhalotra et al., 2021). I find that in the case of Uttarakhand, between Census 2001 and Census 2011, the female literacy rate improves from 59.63% to 70.01% (Census, 2011). In the case of Chhattisgarh, between Census 2001 and Census 2011, the female literacy improves from 51.85% to 60.24% (Census, 2011). Similarly, in the case of Jharkhand, female literacy improves from 38.87% in 2001 to 55.42% in 2011 (Census, 2011). Bhalotra and Clots-Figueras (2014) find that women leaders influence a range of maternal health-seeking behaviors that includes immunization, iron supplementation during pregnancy, antenatal care and showing a preference for delivering at government facilities as opposed to at home.

I therefore find women's political participation in the states influence both supply-side and demand-side factors, that further contribute to reduced maternal mortality. To understand the independent effect of exposure of women's political participation on the maternal mortality rate, future research may look at controlling for confounding variables.

Section 5: Conclusion

With case evidence from India, I substantiate my hypothesis that an increase in women's political participation leads to a decrease in maternal mortality. I explain giving examples from the states of Uttarakhand, Chhattisgarh and Jharkhand that women's political participation in local and state politics, results in a decrease in maternal mortality across all three states. I show that the introduction of mandated gender quotas in the respective three states, improves women's political participation over time. I subsequently illustrate that an increase in women's political participation results in an expansion of supply side efforts by the state to improve the uptake of maternal health

practices that eventually reduce maternal mortality. All three states are shown to improve the availability and access to institutional health centers for deliveries, extend health care services through provision of food and iron supplements, and expand ambulance services. With respect to demand side factors, I explain that with improvement in women's political participation, the states also see an improvement in female literacy rates, that contributes to increased uptake in measures on maternal health. I observe that as women's political participation, engagement and leadership increases, it unleashes a host of policy choices that influence both supply side and demand side factors, benefiting women's development outcomes, and in this case maternal health outcomes. I therefore conclude through this study that an increase in women's political participation reduces maternal mortality.

References

Aghion, P., Howitt, P., & Murtin, F. (2010). The Relationship Between Health and Growth: When Lucas Meets Nelson Phelps. *NBER Working Papers*, *National Bureau of Economic Research, Inc*. https://www.nber.org/papers/w15813

Albanesi, S., & Olivetti, C. (2014). Maternal health and the baby boom. *Quantitative Economics 5*(2), 225–269. https://onlinelibrary.wiley.com/doi/pdf/10.3982/QE315

Albanesi, S., & Olivetti, C. (2016). Gender roles and medical progress. *Journal of Political Economy 124*(3), 650–695. https://www.journals.uchicago.edu/doi/abs/10.1086/686035

Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A., Gemmill, A., Fat, D., M., Boerma, T., Temmerman, M., Mathers, C., & Say, L. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter Agency Group. *The Lancet 387*(10017), 462–474. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00838-7/fulltext

Andrabi, T., Das, J., Khwaja, A., I., Ozyurt, S., & Singh, N. (2020). Upping the ante: The equilibrium effects of unconditional grants to private schools. *American Economic Review 110*(10), 3315–49. https://www.aeaweb.org/articles?id=10.1257/aer.20180924

Anuja. (2021). India: 25 years on, Women's Reservation Bill still not a reality. *Aljazzera.* https://www.aljazeera.com/news/2021/9/8/25-years-india-women-reservation-bill-elected-bodies-gender

Ashraf, N., Field, E. M., Voena, A., & Ziparo, R. (2020). Maternal mortality risk and spousal differences in the demand for children. *National Bureau of Economic Research*. https://www.nber.org/papers/w28220

Ashraf, Q. H., Lester, A., & Weil, D., N. (2009). When Does Improving Health Raise GDP? In *NBER Macroeconomics Annual 2008, Volume 23*, NBER Chapters, pp. 157–204. National Bureau of Economic Research, Inc. https://www.nber.org/books-and-chapters/nber-macroeconomics-annual-2008-volume-23/when-does-improving-health-raise-gdp

Banke-Thomas, A., Abejirinde, I., O., Ayomoh, F., I., Banke-Thomas, O., Eboreime, E., A., & Ameh, C., A. (2020). The cost of maternal health services in low-income and middle-income countries from a provider's perspective: a systematic review. *BMJ global health 5*(6), e002371. https://gh.bmj.com/content/5/6/e002371

Beaman, L., Chattopadhyay, R., Duflo, E., Pande, R., & Topalova, P. (2009). Powerful women: does exposure reduce bias? *The Quarterly Journal of Economics 124*(4), 1497–1540. https://www.jstor.org/stable/40506265?seq=1

Bhalotra, S. R., Rocha, R., & Soares, R., R. (2019). Does universalization of health work? Evidence from health systems restructuring and expansion in Brazil. *Institute of Labor Economics*. https://www.iza.org/publications/dp/12111/does-universalization-of-health-work-evidence-from-health-systems-restructuring-and-expansion-in-brazil

Bhalotra, S., & Clots-Figueras, I. (2014). Health and the political agency of women. *American Economic Journal: Economic Policy 6*(2), 164–197. https://www.aeaweb.org/articles?id=10.1257/pol.6.2.164

Bhalotra, S., Clarke, D., Gomes, J. F., & Venkataramani, A. (2021). Maternal mortality and women's political power. *Warwick Economics Research Papers.* https://www.researchgate.net/publication/337971063_Maternal_mortality_and_women%27s_political_participation

Bhalotra, S., Fernandez- Sierra, M., & Slapin, J. (2019). Gender, Debate and Rebellion in the House of Commons, 1992–2015: A Structural Topic Modelling Approach. https://app.oxfordabstracts.com/events/772/sessions/4247/download

Bloom, D. E., Canning, D., & Sevilla, J. (2004). The effect of health on economic growth: a production function approach. *World Development 32*(1), 1–13. https://www.sciencedirect.com/science/article/abs/pii/S0305750X03001943

Bloom, D. E., Kuhn, M., & Prettner, K. (2015). The Contribution of Female Health to Economic Development. Working Paper 21411, *National Bureau of Economic Research.* https://www.nber.org/papers/w21411

Census. (2011). Chhattisgarh. *Census 2011.* https://www.census2011.co.in/census/state/chhattisgarh.html

Census. (2011). Jharkhand. *Census 2011.* https://www.census2011.co.in/census/state/jharkhand.html

Census. (2011). Uttarakhand. *Census 2011.* https://www.census2011.co.in/census/state/uttarakhand.html

Chattopadhyay, R., & Duflo, E. (2004). Women as policy makers: Evidence from a India-wide randomized policy experiment. Econometrica 72, 5 (2004): 1409- 1444. https://www.nber.org/papers/w8615

Currie, J. & Moretti, E. (2003). Mother's education and the intergenerational transmission of human capital: Evidence from college openings. *The Quarterly journal of economics 118*(4), 1495–1532. https://www.jstor.org/stable/25053945?seq=1

Cutler, D., Deaton, A., & Lleras-Muney, A. (2006). The determinants of mortality. *Journal of Economic Perspectives 20*(3), 97–120. https://www.aeaweb.org/articles?id=10.1257/jep.20.3.97

Duflo, E. (2005). Why Political Reservations? *Journal of the European Economic Association*, Volume 3(2-3), 668–678. https://doi.org/10.1162/jeea.2005.3.2-3.668

Dupas, P. (2011). Do Teenagers Respond to HIV Risk Information? Evidence from a Field Experiment in Kenya. *American Economic Journal: Applied Economics 3*(1), 1–34. https://www.aeaweb.org/articles?id=10.1257/app.3.1.1

Ganguly, A. (2020). Maternal deaths dip in Jharkhand. *The Telegraph.* https://www.telegraphindia.com/jharkhand/maternal-deaths-dip-in-jharkhand/cid/1787115

Girum, T. & Wasie, A. (2017). Correlates of maternal mortality in developing countries: an ecological study in 82 countries. *Maternal health, neonatology and perinatology 3*(1), 1–6. https://mhnpjournal.biomedcentral.com/articles/10.1186/s40748-017-0059-8

Global Gender Gap Report. (2021). Global trends and outcomes. *World Economic Forum*. https://www.weforum.org/reports/global-gender-gap-report-2021/in-full/gggr2-benchmarking-gender-gaps-findings-from-the-global-gender-gap-index-2021/

Gulati, N & Spencer, E. (2021). Leaders and citizens: Women's political participation in India. *International Growth Center*. https://www.theigc.org/blog/leaders-and-citizens-womens-political-participation-in-india/

Iyer, L. & Mani, A.(2018). The power of women's political voice. *Ideas for India*. https://www.ideasforindia.in/topics/social-identity/the-power-of-womens-political-voice.html

Jayachandran, S. & Lleras-Muney, A. (2009). Life Expectancy and Human Capital Investments: Evidence from Maternal Mortality Declines. *The Quarterly Journal of Economics 124*(1), 349–397. https://www.nber.org/papers/w13947

Lorentzen, P., McMillan, J., & Wacziarg, R. (2008). Death and development. *Journal of Economic Growth 13*(2), 81–124. https://link.springer.com/article/10.1007/s10887-008-9029-3

Loudon, I. (1992). *Death in Childbirth: An International Study of Maternal Care and Maternal Mortality 1800–1950*. Oxford, UK: Clarendon Press. https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780198229971.001.0001/acprof-9780198229971

Miller, G. (2008). Women's Suffrage, Political Responsiveness, and Child Survival in American History. *The Quarterly Journal of Economics* *123*(3), 1287–1327. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3046394/

Miller, G. & Valente, C. (2016). Population Policy: Abortion and Modern Contraception Are Substitutes. *Demography* *53*(4), 979–1009. https://link.springer.com/article/10.1007/s13524-016-0492-8

Mishra, I. (2019). Uttarakhand improves maternal mortality. *Times of India*. https://timesofindia.indiatimes.com/city/dehradun/ukhand-improves-maternal-mortality-ranked-8th-best-in-country-in-mmr/articleshow/71975294.cms

Mohanty, B. (1995). Panchayati Raj, 73rd Constitutional Amendment and Women. *Economic and Political Weekly*, *30*(52), 3346–3350. http://www.jstor.org/stable/4403611

O'Connell, S., D. (2020). Can Quotas Increase the Supply of Candidates for Higher-Level Positions? Evidence from Local Government in India. *The Review of Economics and Statistics* 2020; 102 (1), 65–78. doi: https://doi.org/10.1162/rest_a_00802

Pettersson-Lidbom, P., & Lorentzon, L. (2014). Midwives and maternal mortality: Evidence from a midwifery policy experiment in Sweden in the 19th century. *Journal of the European Economic Association, 19 (4), 2052-2084*. https://academic.oup.com/jeea/article/19/4/2052/6217426

Powley, E. (2007). Rwanda: The impact of women legislators on policy outcomes affecting children and families. *Background Paper, State of the World's Children*.

https://www.minaslist.org/documents/rwanda-the-impact-of-women-legislators-on-policy-outcomes-affecting-children-and-families

Sajedinejad, S., Majdzadeh, R., Vedadhir, A., Tabatabaei, M., G., & Mohammad, K. (2015). Maternal mortality: a cross-sectional study in global health. *Globalization and Health*, *11*, 4. https://doi.org/10.1186/s12992-015-0087-y

Sathe, D., Priebe, J., Klasen, S., & Biniwale, M. (2013). Can the female sarpanch deliver? Evidence from Maharshtra. *Ideas for India*. https://www.ideasforindia.in/topics/governance/can-the-female-sarpanch-deliver-evidence-from-maharashtra.html

Shastry, G., K., & Weil, D., N. (2003). How much of cross-country income variation is explained by health? *Journal of the European Economic Association 1*(23), 387–396. https://www.jstor.org/stable/40005188?seq=1

Shivani. (2021). Women MP's push for 33% reservation in Parliament. *Hindustan Times.* https://www.hindustantimes.com/india-news/international-women-s-day-women-mps-push-for-33-reservation-in-parliament-bill-101615185297685.html

Soares, R., R. (2005). Mortality reductions, educational attainment, and fertility choice. *American Economic Review 95*(3), 580–601. https://www.aeaweb.org/articles?id=10.1257/0002828054201486

Tikkanen, R., Gunja, M., Z., FitzGerald, M., & Zephyrin, L. (2020). Maternal Mortality and Maternity Care in the United States Compared to 10 Other Developed Countries. *Issue*

briefs, Commonwealth Fund. https://www.commonwealthfund.org/publications/issue-briefs/2020/nov/maternal-mortality-maternity-care-us-compared-10-countries

Times News Network (TNN). (2018). Chhattisgarh: Maternal mortality drops to 173. *Times of India*. https://timesofindia.indiatimes.com/city/raipur/maternal-mortality-drops-to-173/articleshow/64516402.cms

Weil, D., N. (2007). Accounting for the Effect of Health on Economic Growth. *The Quarterly Journal of Economics 122*(3), 1265–1306. https://www.jstor.org/stable/25098873?seq=1

WHO (2019). Maternal Mortality, World Health Organization. https://www.who.int/ news-room/fact-sheets/detail/maternal-mortality

Wilmoth, J. R., Mizoguchi, N., Oestergaard, M., Z., Say, L., Mathers, C. D., Zureick-Brown, S., Inoue, M., & Chou, D. (2012). A New Method for Deriving Global Estimates of Maternal Mortality. *Statistics, politics, and policy*, *3*(2), 2151-7509.1038. https://doi.org/10.1515/2151-7509.1038

Yatsu, M. (2012). The Impact of Anganwadi Centers' Services on Infant Survival in India. *The public purpose.* https://www.semanticscholar.org/paper/The-Impact-of-Anganwadi-Centers-%E2%80%99-Services-on-in-Yatsu/7c433f6b91635c40b17705fe016e984013e53f7c

Zureick-Brown, S., Newby, H., Chou, D., Mizoguchi, N., Say, L., Suzuki, E., & Wilmoth, J. (2013). Understanding global trends in maternal mortality. *International perspectives on sexual and reproductive health 39* (1).