

Prevalence of Gender Inequality in India: Status and Determinants

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Abstract

Gender inequality continues to be a major concern for humanity as it hinders inclusivity and social progress. The gender differences are the manifestations of the complex power relations in the society aggravated by strong patriarchal norms. The paper is an attempt to examine the status and determinants of gender inequality across the states of India. The study is based on secondary datasets such as National Family Health Survey-5, Census of India, Periodic Labour Force Survey, Ministry of Law and Justice report to evaluates the gender inequality status and determinants using a gender inequality framework. The Gender Inequality Index (GII) scores revealed that overall higher levels of gender inequality do not concentrate in one particular region, rather it spread across the states. It argued that even though the status of women has improved in recent times, yet gender inequality still prevails in many parts of the country. The study found that political representation and labour force participation of women are the strong determinants of gender inequality in the Indian society. Thus, the study influences the current scenario to a great extent and major implications of the study will be helpful to formulate effective policies to ensure gender equality in the society.

Keywords: Gender Inequality; Reproductive health; Women; Gender Inequality Index (GII)

1 Introduction

Gender inequality continues to be one of the main barriers of human development as it hinders inclusivity and social progress. Gender inequality refers to the differentiated roles and responsibilities in access to resources, technologies and services which create power imbalances between men and women in the society. The gender differences between men and women are the manifestations of the complex power relations in the society and further aggravated by strong patriarchal norms⁽¹⁾.

Historically, women are considered subordinate to men in every society. The

discrimination against women starts even before her birth and continues throughout their life span. An unborn girl child is aborted before her birth with the help of technology⁽²⁾. If unfortunately, she survives, then she is treated as a burden on her family and not given equal importance as boys. As she grows, they are denied of their well-being, health and education.

This discrimination doesn't end here, parents force them to get married at a very early age. Child marriage affects the aspects of maternal and reproductive health in many ways. Low educational

attainment is a strong factor that influences child marriage by restricting autonomy in decision-making in the household. Although, child marriage has declined significantly between 1998-99 to 2015-16 in the country, but still varies over the time and space⁽³⁾. The practice of paying a dowry is commonly cited as a critical factor for preferences for sons over daughters⁽⁴⁾. Post the marriage, Indian women are often victims of domestic violence in their marital families due to insufficient dowry and little decision-making⁽⁵⁾. Prevalence of such discriminatory practices in the society creates such a habitual perception that women fail to understand their own rights and freedom⁽⁶⁾.

Despite laws mandating equal treatment of women at the workplace, gender gaps in wages still persist which also vary across regions^(7,8). Evidence suggests that women's labour force participation has increased in the recent decades accompanied with consistent economic growth⁽⁹⁾. However, there are aggregate changes in recent times mostly attributed to the movement of workforce across sectors⁽¹⁰⁾. Greater burden of unpaid domestic and care work contributed to inequalities in labour-market participation and outcomes⁽¹¹⁾.

Literatures suggest that social globalization is more consequential for gender inequality than economic or political globalization in the labour market⁽⁹⁾. Agri-food systems are considered as a major employer of women in the country. However, their livelihoods are mostly marginalized and working conditions are worse than men, which is also mirrored in their productivity and wage gaps⁽¹¹⁾. Women are still lagging behind in accessing key resources for Agri-food systems due to discriminatory social norms and rules.

Education has a strong correlation with social and economic upliftment of a society by enhancing opportunities, choices and freedom. Gender inequality in education is a multifaceted problem in India whose impacts can be clearly visible on other indicators as well⁽¹²⁾. According to the census of 2011, literacy rate of the country clearly shows the depth of gender disparities in the society where only 65.46 percent of women are literate compared to 82.14 percent of male. Gender disparities in accessing education in India marked by geographical variations⁽¹³⁾.

Health determines the well-being and status in the society. However, gender inequality and restrictive norms upon certain gender in accessing health care facilities adversely affects the well-being in the long run⁽¹⁴⁾. Similar to other basic indicators, gender biasness is observed in health status as well. Vast body of literature suggests that women receive lower wages and social protections compared to men in many spheres of the society. All the discussed factors are linked to each other in a cause-effect manner. Gender relations in the society is a multifaceted process which are shaped by spatial effects to a great extent⁽¹⁵⁾. However, measuring and mapping gender inequality is a complicated task because of varied level of development and socio-cultural norms. Gender equality is

a fundamental human right and an important aspect of social development. Hence, the paper attempts to measure the level of gender inequality in the country.

2 Objectives

- To examine the status of gender inequality in India.
- To examine the spatial patterns of gender inequality in India.

3 Materials and Methods

3.1 Study Area

India is located between 8°4'N to 37°6'N latitudes and 68°7'E to 97°25'E longitudes in the southern part of Asia (Figure 1). The country is surrounded by Arabian sea in the west, Indian ocean in the south and Bay of Bengal in the east. Its northern boundary is marked by lofty Himalayan Mountain system which provides a unique and diversified physiographic units blended with cultural ethos. With a population of 1,210.9 million, India is the second highest populated country in the world which accounts 17.50% of the global population⁽¹⁶⁾. United Nations Population Fund's (UNFPA) State of the World Population Report in 2023 estimated that India has surpassed China as the World's most populous country⁽¹⁷⁾. Sex ratio of the country is 943 females per 1,000 males indicates the male dominated outlook of the society. Indian society is blended with a diverse cultural values and social features which provides a unique ground for the investigation of gender relations. The study area consists of selected states of India and the selection is primarily limited by the availability of maternal mortality data for the selected states. Details of the list of states included in this study has been given in Table 2.

3.2 Data and Variables

The present study is based on the secondary data collected from different sources such as National Family Health Survey (NFHS)-5 (2019-21), Periodic Labour Force Survey, Sample Registration System (SRS) report, Ministry of Law and Justice report. An inequality index was calculated by combining dimensions such as reproductive health, empowerment, and economic status. Reproductive health refers to the state of physical, mental and social well-being, and is an important dimension of women's welfare. To analyze reproductive health, two indices of maternal mortality ratio (MMR) and adolescent fertility rate (AFR) have been used. AFR measures the pregnancy in adolescent age which endangers their overall health and future choices. Similarly, empowerment was accessed by two indices of educational attainment and parliamentary representation. Economic status was accessed by including labour force participation rate for both genders.

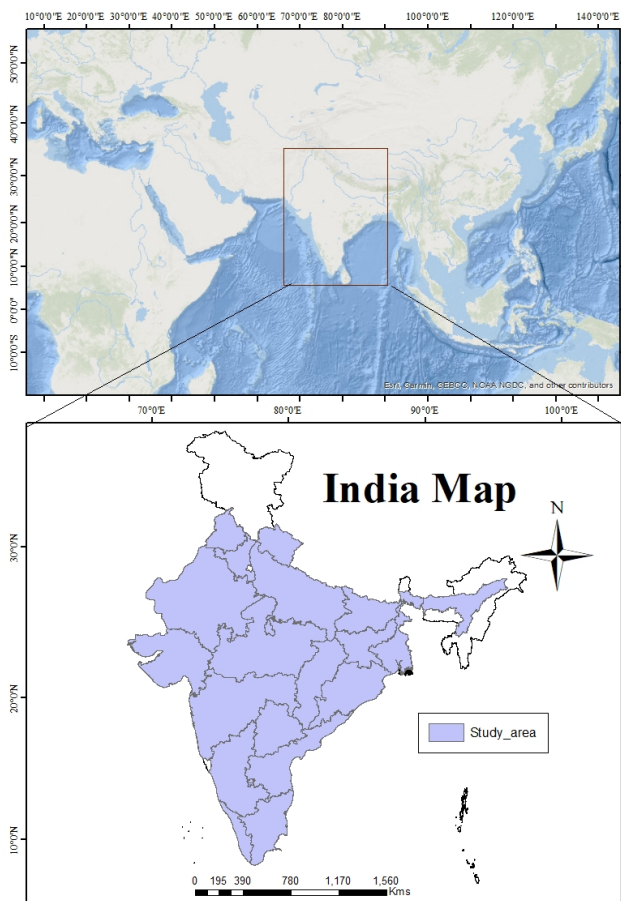


Fig. 1. Location of India showing Study Area

Details of the data and variables are given in the Table 1.

3.3 Methods

The study employed different statistical techniques, graphs, and indexes to meet the objectives. In the first part, cross-tabulation and descriptive statistics were employed to explain the broad picture of the indicators. In the second part, a multidimensional inequality Index has been calculated to analyze the status of gender inequality and states have been ranked based on it. The Gender Inequality Index (GII) was proposed in the Human Development Report published by the United Nation Development Program (UNDP). The index which is used in this study as follows; Reproductive health is measured using the two indices of MMR and AFR. The MMR is rescaled by 0.1 to account for the truncation of the MMR at 10 in the following Equation (1):

$$\overline{Health} = \left(\sqrt{\frac{10}{MMR} \cdot \frac{1}{AFR} + 1} \right) / 2 \quad (1)$$

Where,

Category	Variables	Description	Year	Source
Reproductive health	Maternal mortality ratio	Number of maternal deaths per 1,00,000 live births	2018-20	Sample Registration System
	Adolescent fertility rate	Number of births per 1,000 women in age 15-19	2019-21	National Family Health Survey-5
Empowerment	Educational attainment	10 or more year of schooling (%)	2019-21	National Family Health Survey-5
	Political representation	Share of seats in State Legislative Assembly (%)	2019	Ministry of Law and Justice report
Economic status	Labour market	Labour force participation rate (%) in usual status for 15 year and above for India	2019-20	Periodic Labour Force Survey report
Human Development Index (HDI)	Healthy life, educational access, standard of living	Life expectancy at birth, mean year of schooling, expected year of schooling, GNI per capita	2021	Subnational HDI database of Global Data Lab

Source: Authors' compilation.

MMR = Maternal Mortality Ratio

ABR = Adolescent Fertility Rate

Dimension of empowerment is obtained from Equation (2):

$$\overline{Empowerment} = \left(\sqrt{PR_f \cdot EA_f} + \sqrt{PR_m \cdot EA_m} \right) / 2 \quad (2)$$

Where,

PR = Political Representation

EA = Educational Attainment

Economic status measured through labour force participation rate (LFPR) using the Equation (3):

$$\overline{LFPR} = \frac{LFPR_f + LFPR_m}{2} \quad (3)$$

Where, LFPR = Labour Force Participation Rate

In the next steps, all the dimensions are aggregated for each gender using geometric mean based on the following



Equations (4) and (5) to make the GII more sensitive⁽¹⁸⁾:

$$G_m = \sqrt[3]{\sqrt[1]{1. (PR_m \cdot EA_m)^{\frac{1}{2}} \cdot LFPR_m}} \tag{4}$$

$$G_f = \sqrt[3]{\sqrt[1]{\left(\frac{10}{MMR} \cdot \frac{1}{AFR}\right)^{\frac{1}{2}} \cdot (PR_f \cdot EA_f)^{\frac{1}{2}} \cdot LFPR_f}} \tag{5}$$

All the indices have been aggregated across gender groups using a harmonic mean using the Equation (6) to identify inequality across gender and to create an index of equal gender distribution:

$$HARM(G_f, G_m) = \left(\frac{(G_f)^{-1} + (G_m)^{-1}}{2}\right)^{-1} \tag{6}$$

Where, *HARM* = Harmonic mean

In the next step, the geometric mean of the arithmetic means for each indicator using equal weights (to treat the genders equally) are calculated using the following Equation (7):

$$G_{f,m} = \sqrt[3]{Health. Empowerment. LFPR} \tag{7}$$

Lastly, Gender Inequality Index (GII) is calculated using the following Equation (8):

$$GII = 1 - \frac{HARM(G_f, G_m)}{G_{f,m}} \tag{8}$$

In the third part, spatial analysis was done by using Arc-GIS (10.7.1) software to understand the regional pattern across the selected states of India. In the fourth part, regression analysis has been done based on enter method using SPSS (27.0.1.0) software to explain the key determinants affecting the level of gender inequality index across states.

4 Result and Discussion

4.1 Maternal Mortality Ratio (MMR)

MMR is one of the important component of reproductive health. Over the last two decades, maternal mortality has declined by almost 70%, but still India accounts for one-fifth of the global maternal death⁽¹⁹⁾. Today, MMR stands at 97 per 1,00,000 live births at the national level as per Sample Registration System (SRS) report for the period of 2018-20 with regional variations. State-wise analysis reveals that most of the southern states except Karnataka have already achieved the global 2030 SDG target of 70 maternal deaths per 100,000 live births, before time. Kerala has the lowest MMR (19 deaths per 1,00,000 live births). Similarly, most of the Empowered Action Group states and Assam except Jharkhand have high maternal mortality in the range of 149-215 per 1,00,000 live births.

4.2 Adolescent Fertility Rate (AFR)

The United Nations defines adolescent fertility rate (AFR) as the annual number of births to women aged between 15-19 years per 1,000 women. Adolescent pregnancy is a serious public health concern associated with the risk of antenatal complications, obstructed labor, premature delivery and low birth weight of babies even deaths of child and mother⁽¹⁷⁾. Teenage pregnancy further limits educational prospects and economic opportunities of women. Adolescent fertility rate stands at 43 births per 1000 women aged between 15-19 years for the country as per NFHS-5 (2019-21). Of the 19 selected states, West Bengal recorded the highest adolescent fertility rate (AFR) for women between 15-19 age groups with 81 births per 1000 women aged between 15-19 years, followed by Bihar (77) and Andhra Pradesh (67). The lowest AFR is recorded in Kerala with 18 births per 1,000 women aged between 15-19 years. Region wise pattern shows that Southern states (Andhra Pradesh, Karnataka, Telangana) have high AFR in the range of 40-60 births per 1,000 women aged between 15-19 years.

4.3 Ten or more year of schooling

In the present times, gender inequalities in educational attainment is a major concern for both public and scientific discourse. Gender differences in educational outcome has a strong impact upon the occupation types which further related to vertical inequalities in status and pay⁽²⁰⁾. We examine the gender gaps in 10 or more year of schooling to understand the ground reality across the selected states. On an average, 42.38% of women have completed 10 or more year of schooling compared to 50.81% for men, which clearly indicates gender gaps in educational attainment. Out of 19 states, Kerala is the only state with high number of women (77%) with 10 or more year of schooling compared to men. Three states namely Bihar, Madhya Pradesh and Assam have less than thirty-percent women with at least 10 more year of schooling.

4.4 Labour Force Participation Rate (LFPR)

Post the economic reforms, the country has achieved rapid economic growth and notable reduction in the poverty level. But the inequality between male and women in many dimensions remains the major concerns for the country. The analysis of the data suggests huge gender gaps between male and women in labour force participation. Women participation in the labour market remain more or less stagnant over the last few years (Figure 2). At the national level, labour force participation remains at 75.8% and 26.3% for men and women respectively in 2019-20 which shows a clear gender-based divide at national level (Figure 2). Gender gaps in labour market remains high (above 50%) in states like Bihar, Assam, Uttar Pradesh, Haryana, West Bengal, and



Punjab. It reflects the male dominant character labour market and less opportunities for women in workforce.

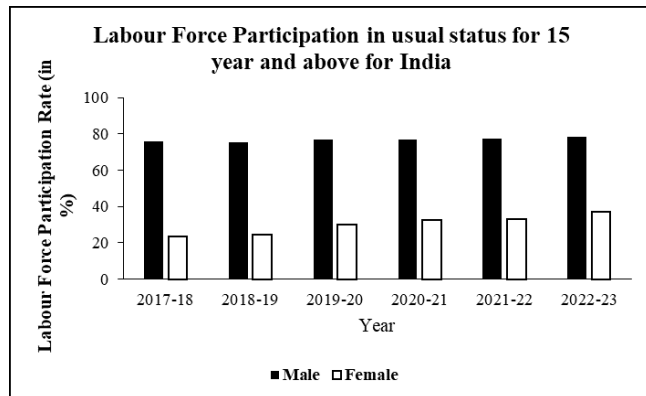


Fig. 2. LFPR between 2017-18 to 2022-23. Source: PLFS Report, Ministry of Statistics and Program Implementation, Govt. of India

4.5 Political Representation

Another dimension of concern is the representation of women in legislative and decision-making body. Representation of women in political sphere is important to bring out a balance between the principles and practices of law and improving the quality of deliberation⁽²¹⁾. In this paper, representation of male and women members in the state legislative assembly (MLAs) were taken into account. Women make half of the population of the country, but only 14.39% of women MP representing that half in the Parliament in the 17th Lok Sabha. It shows that India still lags behind several countries like South Africa (46%), United Kingdom (35%). The analysis of the data suggests that all the selected states have male dominate representation in their state legislature. On an average only 9.2% of MLAs are women in the selected states. This shows that women have made overall less progress in the political sphere compared to education or in the labour market.

4.6 Gender Inequality Index (GII)

Descriptive statistics of the constituents of gender inequality index is given in Table 2. It is clear from the national GII (0.499) that situation of women is far below that of men in the country. Regional distribution of gender inequality across the country is shown in Figure 3.

The results reveals that no single state has achieves the “perfect” result (0.000), although there are some states like Kerala (0.379), Chhattisgarh (0.433), Uttarakhand (0.436), performs well on this index. On the other hand, Bihar (0.673) and Assam (0.664) have least satisfactory score on the index, which shows disadvantage position of women in the societies.

It can also be observed that overall levels of gender inequality do not concentrate in one particular region, rather it spread across the states.

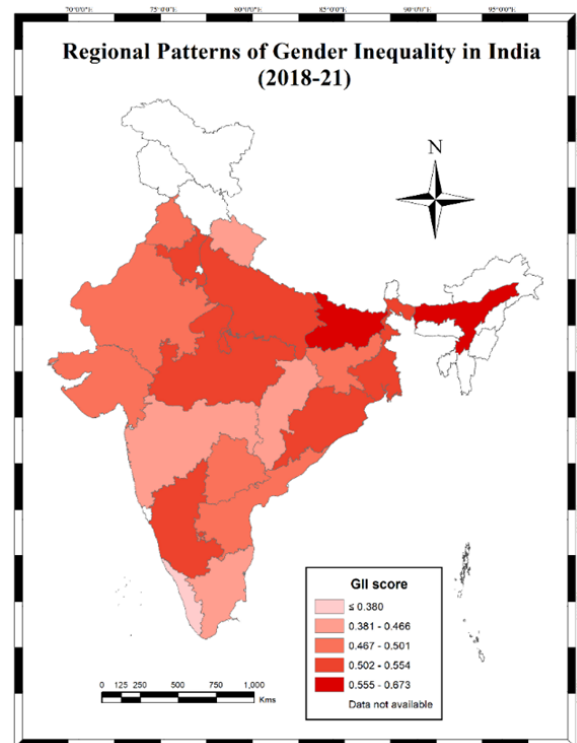


Fig. 3. Spatial Pattern of Gender inequality map of India (2018-21)

Human Development Index (HDI) measures the achievement in basic dimension of human development such as a long and healthy life, access to knowledge and a decent standard of living. The Figure 4 shows the level of GII plotted against HDI based on size of population. Regarding the categories by HDI level, we find that achievement in HDI do not keep pace with reducing GII level. Thus, it can be said that human development gains are not equally distributed between both genders. The figure clearly indicates the prevalence of gender inequality in the states of India in some forms or the other. Most of the Empowered Action Group (EAG) states marked in orange outline in the figure are showing highly male biased society with medium level of human development. Adjacent states are clustered around each other shows the similar level of gender inequality.

4.7 Determinants of GII

It was hypothesized that reproductive health, educational attainment, political representation, and labour force participation of women will predict the GII values.



Table 2. Descriptive Statistics

Name of the States	Reproductive Health		Empowerment				Economic Status		Gender Inequality Index
	Maternal mortality ratio	Adolescent fertility rate	10 or more year of schooling (%)		Share of seats in State Legislative Assembly (%)		Labour Force Participation Rate (%)		
			Men	Women	Men	Women	Men	Women	
Andhra Pradesh	65	67	47.9	39.6	92	8	78.1	39.2	0.5015
Assam	215	61	35.5	29.6	95.24	4.76	77	16.4	0.6644
Bihar	149	77	42.8	28.8	89.3	10.7	73	9.5	0.6734
Chhattisgarh	159	24	41.5	36.9	85.56	14.44	82.3	53.1	0.4336
Gujarat	75	34	45.6	33.8	92.86	7.14	79.4	31.1	0.5008
Haryana	91	27	62.2	49.5	90	10	73.7	15.7	0.5371
Jharkhand	71	64	46.6	33.2	87.65	12.35	76.9	35.7	0.4938
Karnataka	92	40	56.5	50.2	96.86	3.14	77.4	33.8	0.5513
Kerala	43	18	73.3	77	92.14	7.86	71.7	31.9	0.3796
Maharashtra	46	47	61	50.4	91.67	8.33	75.6	38.7	0.4497
Madhya Pradesh	173	37	39.9	29.3	90.87	9.13	80	37.7	0.5305
Odisha	150	40	38.6	33	91.1	8.9	78.3	33.1	0.5295
Punjab	129	21	58.7	56	88.89	11.11	77.2	23.7	0.4902
Rajasthan	164	31	51.9	33.4	88	12	76.2	38.6	0.5006
Tamil Nadu	60	34	59.1	56.6	94.87	5.13	77.9	40.2	0.4661
Telangana	63	48	61.2	45.5	94.96	5.04	75.7	44.3	0.4975
Uttarakhand	99	19	59.8	50.4	88.57	11.43	74.6	31.8	0.4367
Uttar Pradesh	197	22	48.6	39.3	88.34	11.66	76	17.7	0.5539
West Bengal	98	81	34.7	32.9	86.3	13.7	80	24	0.551
India	97	43	50.2	41	85.6	14.39	75.8	26.3	0.4998

Source: Authors’ estimation from various data sources mentioned in Table 1.

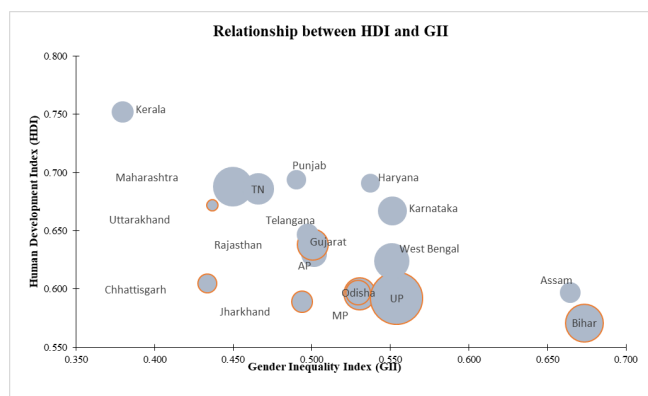


Fig. 4. HDI vs. GII based on population size of the states

Thus, the study seeks to investigate the explaining factors affecting the inequality index through a multiple regression

analysis and its results are shown in Table 3.

Results shows that 94% of the variance in gender inequality can be accounted for by the selected predictors, collectively, $F(5,13) = 57.478, p < 0.001$. Looking at the unique individual contributions of the predictors, the results shows that maternal mortality ratio ($\beta=0.348, t=3.532, p=0.004$), and adolescent fertility rate ($\beta=0.330, t=3.553, p=0.004$) positively predicts the gender inequality. Furthermore, results also reveal that political representation ($\beta=-0.328, t=-5.335, p=0.000$) and women labour force participation ($\beta=-0.475, t=-6.869, p=0.000$) are more likely (negatively) to report the gender inequality. This suggests that poor reproductive health outcomes of women have positively affects general index level across the states. On the other hand, increasing political representation and labour force participation of women actively reduces gender inequalities.



Table 3. Regression results

	Unstandardized Coefficients (B)	SE	β	t Stat	P-value
(Constant)	0.645	0.063		10.241	0
Maternal mortality ratio	0	0	0.348	3.532	0.004
Adolescent fertility rate	0.001	0	0.33	3.553	0.004
Educational attainment of women	-0.002	0.001	-0.293	-2.597	0.022
Political representation of women	-0.007	0.001	-0.328	-5.335	0
women labour force participation rate	-0.003	0	-0.475	-6.869	0

Source: Authors’ estimation from Table 2.

5 Conclusion

The study explores gender inequalities in key dimensions across the selected states of the country and its determinants. The paper finds that gender inequality is still prevalence in Indian society. In many cases women are fails to realize their basic rights and capabilities and accepted their subordinate position to men. Economic status and political representation are the key determinants of gender inequality in country. Hence the study holds significance to understanding the dynamics of gender relations and developing strategies to promote gender equity. We have explored that, innovative changes within the constituent policies and organizational frameworks in the recent years by the government has made remarkable progress towards gender equality in the country. Yet there are many grey areas which need to be addressed by raising awareness about marriage choices of girls, contraceptive uses and sex education in the society⁽²²⁾. At the same time, well-being and health of married teen must be take care on a priority basis. Furthermore, government must allocate higher resource to the health budget especially towards reproductive health which will improve accessibility and reduces out-of-pocket expenditures⁽²³⁾.

Political representation is directly linked to economic independence of women, hence more representation should be provided to women. The 106th amendment act, 2023 provides one-third reservation of all seats for women in Lok

Sabha, State legislative assemblies, and the Legislative assembly of the National Capital Territory of Delhi is a welcoming step in this regard. Employment generation measures through vocational training is required to enhancing the skills and employability of women. Labour laws need to be implemented strictly especially in the informal or casual work to protect labour rights and ensure equal wages to women. This study is limited by the availability of maternal mortality data and the GII scores may not provide the actual levels of inequality due to ignorance of other important dimensions such as cultures, social conditions, geographical environments. In spite of limitations, the present study influences the current scenario to a great extent and major implications of the study will be helpful to formulate effective policies to ensure gender equality in the society.

To conclude, considering the multifaced forms of gender inequality in the country, this study suggests for a state-specific evidence-based frameworks to address the issue of gender inequalities in which each aspect must be dealt with more specific approach. Gender equality can be achieved through programmatic and policy interventions based on multi sectoral actions, policy decentralization and social participation. On going initiatives of the government need to be further reassessed to provide more opportunities to women especially in the vulnerable states. Because inclusive development cannot be achieved without the participation of women.



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