IS DISCRIMINATED SEX RATIO A CONSEQUENCE OF ECONOMIC GROWTH? EMPIRICAL EVIDENCE FROM INDIA

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Abstract

Gender equality is one of the indicators of economic development and gender inequality shows hurdles to the process of development. Unlike economic growth, which is purely a quantitative phenomenon, economic development is deeper and tranquil showing both quantitative and qualitative changes in an economy. In a patriarchal society like India, issues pertaining to gender imbalance in the demography were not considered substantial and hence not treated with adequate importance till recent past. It is observed that the gender gap is one of the important obstacles for the balanced economic development. However, if this potential is utilised, then the overall economic efficiency can also be improved.

The paper examines the correlation between skewed sex ratio and economic growth as well as economic development across the states in India. HDI ranks of states are used as proxies for stage of economic development of the states. The economic growth is measured by the rate of growth of net state domestic product (NSDP). Further, gender parity is measured for the variables like education, employment, financial reach and income levels, influencing the process of development. The ranking of the states based on the computed gender parity in the above-mentioned variables, is then correlated to the ranks of HDI to check the impact of gender inequality on the development across the states.

Key Words: Gender parity, Human development index, Sex ratio, Economic growth.

JEL Codes: J 16, J24, O40

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1. INTRODUCTION:

Women are entitled to the same human rights as the men. But, historically, all over the world women have been discriminated against the men on the basis of gender in many ways. Their roles in economics, politics and overall society is subordinated to the men irrespective of their potentials. “All human beings, both men and women, are free to develop their personal abilities and make choices without limitations. The different behaviour, aspirations and needs of women and men are considered, valued and favoured equally. It does not mean that women and men have to become the same, but that their rights, responsibilities and opportunities will not depend on whether they are born male or female.” (International Labor Organization, 2000) Even though, there has been some improvement, unfortunately, this kind of discrimination still exist in our society. Note that, sex and gender are not synonyms as, sex is defined biologically and gender is defined by social norms. There are pre-determined socially constructed roles, behaviours, activities and attributes, that a given society considers appropriate for men and women. They may vary among societies and cultures and may also change over time. Gender equality is the indicator of having balance in these roles. Though gender equality is constituted in society its effects are seen in all aspects of economics. Gender inequality leads to unbalanced sex ratio, which further results in disturbing the other statistics of population.

Demographic data is premeditated mainly via birth rates, death rates and migration at outer layer. The detailed study of population includes the study with respect to age structure, region, religion, class, caste, education, employment, *etc*. There is a large incongruence and wide range of heterogeneity in population. Sex ratio is an important parameter showing biological heterogeneity of the population. It is measured as a ratio of female population to male population. There are various aspects of sex ratio- sex ratio at birth, at various age groups, *etc*. the classification of population in terms on sex ratio is useful to classify population from the perspectives of education, employment, work force, *etc*.

2. NATIONAL AND INTERNATIONAL SCENE OF SEX RATIO:

Sex ratio is defined as the proportion of female to male population. In the UK, the sex ratio is 98, in the US, 97 and in the EU taken as a whole, 92. In the sub-Saharan Africa, where the life expectancy at birth for both males and females is quite low, the ratio is 99. In Russia, Ukraine and some of the former Eastern bloc countries, the ratio is amongst the lowest in the world: 86 for both Russia and Ukraine whereas in India the ratio is 106. (Bhattacharya 2012). Given the number of males in these countries, there would have been 37 million more women in India and 44 million more women in China in the mid-1980s. "These numbers tell us, quietly, a terrible story of inequality and neglect leading to the excess mortality of women". (Sen 1990)

Detail study of sex ratio shows that the ratio for senior citizens in India is 90 and in China it is 91, 76 for UK, and 75 for US. However, for Russia this ratio seems astonishingly low *i.e.* only 45. In the Indian scenario, the sex ratio shows that in 1901 there were 3.2 million fewer women than men in India – a hundred years later the deficit increased over 10 times to 35 million at the time of Census 2001. The most disturbing decline is seen in the age group 0 -6 years. The sex ratio (number of girls for every 1000 boys) within this age group plunged from 1010 in 1941 to 927 in 2001 and 914 in 2011.

3. RELATIONSHIP BETWEEN ECONOMIC DEVELOPMENT AND SEX RATIOS:

The data reveals the fact in broader sense that the size of female population to male population is less. Subsequently it creates the issues in balancing the development. In addition to this, significant underutilization and misallocation of women's skills and talents still exists. Leading to low female participation in many significant fields responsible for economic growth. Due to low female participation, it bears high economic costs. The World Bank (2005) estimates that in North Africa and Middle East, annual GDP growth in 1990s would have been 0.7 percentage points higher if women had actively participated in the labour market, United States GDP growth would increase by 5 percent, Japan by 9 per cent, the United Arab Emirates by 12 per cent, and Egypt by 34 present. (International Labour Organization report 2011). Common belief is that the economic condition of women improves with economic development. This is

because economic development improves the standard of living, thereby improving women's absolute economic condition too. However, the terribly disadvantaged economic position of women in the highly developed Japanese economy seems to suggest that economic development is not the only factor, which affects women's economic status. When viewing about women's economic position, one always means relative to men. Economic development certainly can improve everybody's economic status, but it does not necessarily improve the position of women relative to men. (Meng 1998). On the other hand, literature also shows that with faster rate of economic development the progress experienced by men in employment education, ownership of productive resources is always proportionately higher than that of women.

The economic position of women compared to men depends on their labor force participation in the wage-earning sector, occupational attainment, relative wage level, educational level and the time they spend working at home which reduces the time they can spend in paid employment (Meng 1998).

Hence, in the process of economic development if there is a change in positions of men and women, it need not be in equal proportion. Fruits of economic development and technology advancement make sex selection at birth easy leading to sex selective abortions. Bhasker and Gupta (2007) showed in their studies, how these technological developments permitting sex-selective abortions have seriously aggravated the imbalances in some States of India. Economic modelling of parental choice regarding a child’s gender suggests that gender imbalances may be consistent with individual maximization and marriage-market equilibrium

4. LITERATURE REVIEW:

Female participation in employment, production, politics and social institution plays vital role in promoting economic growth and development.

Molina Al Rakhis (2015) studied the impact of economic growth on gender equality in Arab region and found that the factors other than gender inequality like capital accumulation and

overall population growth were more responsible for economic growth but the author confessed that the data limitation in panel regression can give deceptive results.

Kim, Shin, Lee (2014) have shown that the output cost of gender inequality is quite sizable. Female participation in education and employment changes the overall output sizably. It was also evidenced that the male contribution towards household and subsequently increasing the role of females in paid/ market production also shows positive results for Asian economies.

Kabeer and Nathali (2013) have shown that the growth strategies should be made more inclusive to distribute the benefits of growth equally across the gender. However, it is observed that the adoption of export-oriented growth strategies in the post-1980s era has led to a reduction of the gender gap in labour force participation in many countries - along with the economic recessions and debt crises which characterised this period - but it has done little to challenge the gender-segmented nature of the labour market, leading to a greater concentration of women in poorer quality jobs relative to men and, in some cases, to higher levels of female unemployment relative to male.

Klassen and Lamanna (2009) shows that the gender disparity in education and employment affects economic growth. The study is across countries where the education gender gap was reduced over time in few countries maintaining the gap in labour force participation hence women contribution to growth is limited. The study also shows that the gender gap in education and employment has reduced over the period of 1960 to 2002 but not vanished. Hence inequality among the men and women remains.

Åsa Löfström (2009) have shown that the gender gap in the key indicators of growth like employment and income reduces the potential growth by significant amount. Hence, it is needed that the gap should be reduced for economic growth across the countries. The reason mentioned for the gap is the burden of social infrastructure, which is also borne mainly by women, limiting their appearance in labour markets. Though like Childcare, availability, price and quality of market activities, is still a crucial factor in many countries, but care of the elderly needs to be addressed by women.

Chen (2004) has shown that due to economic development across the countries, mainly contributed by Information and Communication Technology ICT, the gender gap in education and employment is reduced.

Croll (2001) checked the judgement of Amartya Sen, about missing 100mill women, after 10 years' time span and found that in East and South Asia, the denial of social security and welfare has been prolonged rather than foreshortened by the development process itself. The families and hence society are son cantered and hence gender inequality is still not resolved in suitable manner.

Dollor and Gatti (1999) show that the gender disparity is not good for economic growth as the relative condition of gender inequality is worst in developing countries than that of developed countries. The impact of underinvestment in girl's education is visible on employment and thus growth.

On the other hand, the paper by Cuberes and Telgnier (2011) also discusses the relationship between economic growth and gender equality. The process of development, like education, improves the standard of living, giving benefits of education and improves opportunities of employment. As a result, the birth rate reduces as it is an opportunity cost for women's career.

Martha Macdonald (1995) raises an important question that the data representation showing growth and contribution from different genders, itself is biased by domination of the patriarchal system. Hence the gender imbalance in the process of development is the result of exploitation by dominating group of male population. That does not mean that female population have been deprived of the development benefits, but the benefits are not equally distributed.

5. SEX RATIO AND ECONOMIC GROWTH RATE OF INDIA:

The role of women in economic development is much less visible that men due to the involvement of women in unpaid and non-marketable activities. Ordinary housewives contribute

enormously through their unpaid work at homes on the one hand and on the other, their faithful services at home encourage menfolk to go to work without worrying about their households. But due to this they are subordinated and hence it is observed that being born as a woman is not as profitable as a man. Therefore, the sex ratio has continuously declined over the last 100 years.

Table1. Sex Ratio (as per census data) and Growth Rate (in %) of India

Years	**1901**	**1951**	**1961**	**1971**	**1981**	**1991**	**2001**	**2011**
Sex ratio	970	946	941	930	934	927	933	940
GDP Growth Rate (%)	N.A.	2.3	7.1	5	7.2	5.3	4.1	6.7

Source: for sex ratio Office of the Registrar General and Census Commissioner, India. Page 215 of 359 and for Rate of growth in India (At factor cost) Economic survey 2013-14

The above data shows that the sex ratio in India has declined from 970 to 946 during British rule and before planning started in India. The sex ratio in India has declined even in first two decades of independence and then it showed volatility of increasing and again declined to 927 as the lowest of the century. That alarmed the thinkers about the real meaning of progress and development. This showed the real need to improve the sex rate by putting in extra efforts to recover the sex ratio. The above data shows that in India even if the rate of growth has increased from 2.3% to 6.7% the sex ratio has been not improved above the 946 which was 50-year-old data. Rather it shows decline to the lowest point of 927 females per 1000 males in 1991. Since then lot of efforts have taken to improve it to 940. The speed is still slower and needs to be taken drastic measures to have balanced sex ratio.

It is observed that a skewed sex ratio implies that there is less female population in forming human capital. The ratio is not only an imbalance for demography, but also shows a wider gap in literacy, employment, wages at macro level, ownership of property, consumption per capita, investment per capita, *etc*. Hence, men and women, despite having identical abilities, may end up contributing different levels to human capital.

6. INTERNATIONAL COMPARISON BETWEEN HDI AND SEX RATIO:

Human development index (HDI) is an appropriate measure of wellbeing of a country in terms of the wider indicator of development and not economic growth. The components used for measuring HDI includes education (Knowledge domain), life expectancy (health) and standard of living (consumption /income level).

Table 2: Sex Ratio and HDI of Developed Countries 2011

Country	World	Russian Republic	France	Japan	Germany	United Kingdom	USA	Republic of Korea
Sex Ratio	**984**	1165	1056	1054	1038	1037	1026	1020
HDI	**--**	50	22	20	06	14	08	17

Source: http://www.undp.org/content/undp/en/home/librarypage/hdr/human_developmentreport2011.html

The evidence from developed countries shows that the sex ratio is biased to male population unlike developing nations. Whereas when the sex ratios of neighbouring nations are studied, showing small countries like Myanmar and Sri Lanka having a better sex ratio. Though Myanmar and Nepal are having low HDI than India, they seem to be utilising their women strength in human capital.

Table 3: Sex Ratio and HDI in Neighboring Countries in 2011

Neighbouring Countries	Myanmar	Sri Lanka	Nepal	Bangladesh	Pakistan	India	Brazil	Afghanistan	South Africa	Bhutan
Sex Ratio	1048	1032	1014	978	942	**940**	1031	931	1028	897
HDI	148	73	145	142	147	**130**	75	171	116	132

Source: http://www.undp.org/content/undp/en/home/librarypage/hdr/human_developmentreport2011.html

Other countries like Indonesia, Malaysia, having similar stage of development like India, also have a sex ratio better than India *i.e.* 1018 and 970 respectively.

This raises the question of finding the connection between the process of development and growth with gender equality. But, on a larger scale it is observed that those countries having low HDI are also having more skewed sex ratio. Based on this international composition, this paper has tried to observe the status of states on the basis on sex ratio since 1991.

7. INTER-STATE COMPARISON OF SEX RATIO:

Literature on gender inequality shows that there exist visible relationship between these variables and discrimination experienced by female population.

It shows that the least sex ratio is 618 females per 1000 males 2011 in Diu and Daman and the ratio is falling continuously in 1991 it was 969. Same is the case for Dadra and Nagar Haveli. The states showing decline in sex ratio are Chandigarh, Dadra and Nagar Haveli, Goa, Gujarat, Haryana, Himachal Pradesh, Maharashtra, Punjab and Sikkim. But in the next decade Chandigarh Maharashtra, Goa, Haryana and Delhi have shown improvement. But the sex ratio of these states has not yet improved up to the mark. However, states like Gujarat, Bihar, Jammu and Kashmir, Uttarakhand, Daman and Diu along with Dadra Nagar Haveli need to take drastic efforts to improve their sex ratio as these states are not only experiencing sex ratio below the mean sex ratio of India but also have shown decline in the next decade too.

These states are not poor in their GDP and even in another economic scene. That supports the earlier literature on relationship between sex ratio and economic development (Dollor Gatti (1999), Sardana (2013)). This shows that to bring balance in the sex ratio there can be more variables other than HDI.

Table 4: State-wise Comparison of Sex Ratio

State / Union Territory (U.T.)	Sex Ratio 2011	Sex Ratio 2001	Sex Ratio 1991	% Change Over 1991-2001	% Change Over 2001-2011
Andaman and Nicobar Islands	878	846	818	.0342	.0378
Andhra Pradesh	992	978	972	.0062	.0143
Arunachal Pradesh	920	901	859	.0489	.0211
Assam	954	932	923	.0098	.0236
Bihar	916	921	907	.0154	-.0054
Chandigarh	818	773	790	-.0215	.0582
Chhattisgarh	991	990	985	.0051	.0010
Dadra and Nagar Haveli	775	811	952	-.1481	-.0444
Daman and Diu	618	709	969	-.2683	-.1283
Delhi	866	821	827	-.0073	.0548
Goa	968	960	967	-.0072	.0083
Gujarat	918	921	934	-.0139	-.0033
Haryana	877	861	865	-.0046	.0186
Himachal Pradesh	974	970	976	-.0061	.0041
Jammu and Kashmir	883	892	892	0.0000	-.0101
Jharkhand	947	941	922	.0206	.0064
Karnataka	968	964	960	.0042	.0041
Kerala	1084	1058	1036	.0212	.0246
Lakshadweep	946	947	943	.0042	-.0011
Madhya Pradesh	930	920	912	.0088	.0109
Maharashtra	925	922	934	-.0128	.0033
Manipur	987	978	958	.0209	.0092
Meghalaya	986	975	955	.0209	.0113
Mizoram	975	938	921	.0185	.0394
Nagaland	931	909	886	.0260	.0242
Odisha	978	972	971	.0010	.0062
Puducherry	1038	1001	979	.0225	.0370
Punjab	893	874	882	-.0091	.0217
Rajasthan	926	922	910	.0132	.0043
Sikkim	889	875	878	-.0034	.0160
Tamil Nadu	995	986	974	.0123	.0091
Tripura	961	950	945	.0053	.0116
Uttar Pradesh	908	898	876	.0251	.0111
Uttarakhand	963	964	936	.0299	-.0010
West Bengal	947	934	917	.0185	.0139

In table no 5, Kerala, Tamil Nadu, Mizoram, Karnataka, Goa and Himachal Pradesh shows better ranks (above mean ranking) for both sex ratio as well as HDI. Hence theses states are considered as better performing states. It is observed that out of 27 states (Ranked in HDI and in Sex ratio) Tamil Nadu, West Bengal, Madhya Pradesh and Punjab have shown upliftment on both the indicators. Tamil Nadu has shown considerable change in top five states in India. Kerala has been on top in both indicators.

9. RANKING OF STATES ON THE BASIS ON THE COMPONENTS OF ECONOMIC DEVELOPMENT:

The variables like education, employment, infrastructure, financial reach and the income level are responsible for changes in GDP of each state. Here, the literacy rate is taken as a proxy for education. Rate of work force participation (WFPR) (Main labourers with age 15-59) is taken as proxy for employment. While collecting data on WFPR, it was observed that in the case of marginal workers, there are more female workers than male. Infrastructure includes transportation and electricity generation expenditure of each state. The index is measured by comparing minimum and maximum values with the actual values of infrastructure expenditure incurred by each state. The financial reach is shown by the number of deposit accounts registered in each state. Average wages received by workers for at least 100 days' work is taken as proxy for income levels in each state. The rate of economic growth of each state is measured by the changes in state net domestic products in the state in the year 2011.

Here, to analyse the gender parity in contribution to the economic growth, the gender parity ratio is measured for all above mentioned variables except for infrastructure. Following table shows the ranks of gender parity in above mentioned variables responsible for bringing economic growth.

HDI ranks are shown to cover development. For *e.g.*, literacy ratio, sex ratio and financial reach are the factors amongst others affecting economic development. Whereas infrastructure

Table 5: State-wise Comparison of Ranks of HDI and Ranks of Sex Ratio

States and U.T.	Sex Ratio Rank 2011	Sex Ratio Rank 2001	HDI Rank 2011	HDI Rank 2001
Kerala	1	1	1	1
Puducherry	2	2	NA	NA
Tamil Nadu	3	4	4	9
Andhra Pradesh	4	5	17	14
Chhattisgarh	5	3	24	23
Meghalaya	6	7	20	18
Manipur	7	6	22	17
Orissa	8	8	18	20
Mizoram	9	16	13	4
Karnataka	10	10	12	12
Goa	11	12	2	2
Himachal Pradesh	12	9	3	5
Uttarakhand	13	11	11	22
Tripura	14	13	14	15
Assam	15	18	26	25
West Bengal	16	17	8	13
Jharkhand	17	15	21	27
Lakshadweep	18	14	NA	NA
Arunachal Pradesh	19	25	27	21
Madhya Pradesh	20	23	23	24
Nagaland	21	24	19	8
Maharashtra	22	19	5	6
Rajasthan	23	20	16	16
Gujarat	24	22	10	17
Bihar	25	21	25	11
Uttar Pradesh	26	27	28	28
Punjab	27	29	6	26
Sikkim	28	28	15	3
Jammu and Kashmir	29	26	9	10
Haryana	30	30	7	7
Andaman and Nicobar Islands	31	31	NA	NA
Delhi	32	32	NA	NA
Chandigarh	33	34	NA	NA
Dadra and Nagar Haveli	34	33	NA	NA
Daman and Diu	35	35	NA	NA

Source: Ranks are calculated from the table 3 given above
Note -U.Ts. are not given HDI rank
Correlation 0.1050 for year 2011, Correlation 0.101791 for 2001

index and work participation rate (proxy for employment) are the factors affecting economic growth.

The literacy rate in Kerala is the best when compared to any other state that also reflects in the sex ratio and HDI ranking. Kerala is followed by Tamil Nadu. Theoretically, education is the main component to transform population to the human capital. In India, although the constitution bestows equal rights and opportunities to men and women, there are many inconsistencies in educating girls and selecting the field of education. We found that the highest gap between literate males and females is as large as 35% in Rajasthan. The highest gender parity in WPR is in Arunachal Pradesh followed by Andhra Pradesh whereas the lowest gender parity is observed in Jammu and Kashmir followed by west Bengal. In union territories, Delhi shows the lowest gender parity in WPR. The correlation between economic growth and WPR is inverse showing that if the gap in WPR is reduced then Economy will grow faster.

In case of financial reach the observation shows that 71.5% of men and 28.5% of women hold deposit accounts of total account holders. Since men are considered as bread winners and there is a notion that women do not have capability of handling funds. Even if, out of compulsion if they are made to handle the funds they avoid to encounter the saving opportunities in formal financial system. It is seen that they prefer to keep cash as they consider it to be a very small in size. MFS and SHGs are the ways to bring that money in formal system and increase the velocity of money. In Tamil Nadu, there are success stories which elucidate this. Hence, as shown in above table, at least half of the Female population seems to be using formal financial system like banks.

In case of infrastructure, Goa tops the list of infrastructure index at present, and Andaman Nicobar is the last. Infrastructure is the main component of economic growth. The ranking of infrastructure per capita indicates that states like Goa are successful in building infrastructure to boost economic growth in the future. Haryana is second in the list, showing that it is also ready for economic growth (8.33) but in HDI it is lagging way behind (7^{th}).

Table 6: Ranking of States as per various Variables Influencing Economic Development in 2011

States And UT	Sex Ratio Rank	Ranks of Literacy Ratio	Ranks of WPR	Ranks wrt Fin Reach	Ranks as Per Infra	Ranks of Growth Rate	HDI Ranks
Kerala	1	1	29	5	10	14	1
Puducherry	2	10	21	25	17	24	Na
Tamil Nadu	3	14	10	4	6	18	4
Andhra Pradesh	4	31	6	3	4	17	17
Chhattisgarh	5	27	13	18	22	20	Na
Meghalaya	6	24	11	28	29	3	20
Manipur	7	18	14	2	3	6	22
Orissa	8	25	30	14	20	29	18
Mizoram	9	3	3	26	30	32	13
Karnataka	10	23	8	17	26	30	12
Goa	11	4	20	13	2	1	2
Himachal Pradesh	12	11	19	15	26	19	3
Uttarakhand	13	16	23	20	8	8	11
Tripura	14	5	24	24	18	11	14
Assam	15	26	26	16	11	22	26
West Bengal	16	19	28	6	7	26	8
Jharkhand	17	32	33	19	24	27	21
Lakshadweep	18	2	35	11	16	33	Na
Arunachal Pradesh	19	34	9	27	27	28	27
Madhya Pradesh	20	28	17	35	23	7	23
Nagaland	21	15	2	30	31	12	19
Maharashtra	22	12	5	9	12	25	5
Rajasthan	23	33	15	10	13	23	16
Gujarat	24	17	16	22	25	16	10
Bihar	25	35	32	8	14	5	25
Uttar Pradesh	26	29	31	1	9	2	28
Punjab	27	21	25	12	15	21	6
Sikkim	28	13	7	31	35	4	15
Jammu and Kashmir	29	30	34	21	19	15	9
Haryana	30	22	27	7	1	13	7
Andaman and Nicobar Islands	31	7	18	32	32	10	Na
Delhi	32	8	22	29	28	9	Na
Chandigarh	33	9	12	23	5	31	Na
Dadra and Nagar Haveli	34	20	4	33	34	34	Na
Daman and Diu	35	6	1	34	33	35	Na

Note: Computed from table given in Annexure

10. CONCLUSION:

The constitutional right to equality remains only on papers. In reality, a lot of discrepancies are observed for opportunities available for personal growth and also the growth expected for macroeconomic upliftment. Reduction in gender inequality in work and employment leads to fair distribution of resources and comprehensive economic growth. The need of the hour is to help girls to not only break out of the culturally determined patterns of employment but also offer advice about career possibilities that look beyond the traditional list of jobs.

The study reveals that economic progress is not always even for all. It is enjoyed mainly by those holding power. Gender wise distribution of population, in male dominated society, shows that the power is still in the hands of men. When the relationship between economic growth and sex ratio is analysed it was found that many states having better rate of economic growth have poor performance in maintaining a balanced sex ratio. Hence, the study was extended to check HDI and sex ratio. Though sex ratio is not directly a part of the human development index, gender development index affects human development index indirectly. The same relationship is found when gender parity of the components of economic growth was correlated with HDI.

The study found that Kerala has been at the top ranked state in almost all variables like literacy level, sex ratio favouring female population and HDI. Uttar Pradesh, Bihar, Haryana, Punjab Jammu and Kashmir are the few states having very poor sex ratio and hence poor HDI. The rate of growth on the other hand, cannot be a full proof indicator of being a better off state as states like Bihar, having highest rate of growth, are undergoing a catch-up effect. Here, the combination of the net state domestic product with the rate of economic growth would have been the correct method.

11. FUTURE SCOPE AND LIMITATION OF STUDY:

The study is based on secondary data observed mainly from NSSO and Census. The limitations of data restrict the preciseness in results. Consequently, the analysis is within the availability of information domain. However, the analysis can be made more precise by selecting top five states and last few states to compare the results. In future, the study can be modified by taking the microscopic view of above mentioned states and studying them in detail.

Advance statistical testing is expected to be incorporated in future to check the causal relationship between sex ratio (gender inequality) and economic growth.

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ANNEXURE:

(This table is measured from the data collected from various reports published by census and economic surveys. From the gender, wise data about literacy rates, work participation, wages and financial reach, gender parity is calculated by using a formula of **Gender Parity = Female Population/ Male Population)**

Table A1: Gender parity scores of various states 2011

States	Wpr	Wgs	Fin Reach	Literacy Rate	Pop Sex Ratio	Eco. Growth Rate	HDI Ranking
ANDHRA PRADESH	0.55	0.73	0.44	0.79	0.99	7.51	**17**
ARUNACHAL PRADESH	0.65	0.73	0.25	0.80	0.94	4.49	**27**
ASSAM	0.25	0.59	0.30	0.85	0.96	5.33	**26**
BIHAR	0.26	0.63	0.32	0.72	0.92	10.29	**25**
CHHATTISGARH	0.50	0.81	0.25	0.75	0.99	6.98	**24**
GOA	0.34	0.88	0.44	0.91	0.97	20.21	**2**
GUJARAT	0.25	1.13	0.55	0.81	0.92	7.66	**10**
HARYANA	0.22	0.94	0.34	0.78	0.88	8.03	**7**
HIMACHAL PRADESH	0.45	0.73	0.34	0.85	0.97	7.31	**3**
JAMMU & KASHMIR	0.17	0.75	0.34	0.74	0.89	7.95	**9**
JHARKHAND	0.33	0.64	0.35	0.72	0.95	4.49	**21**
KARNATAKA	0.45	0.77	0.29	0.83	0.97	3.69	**12**
KERALA	0.28	0.69	0.46	0.96	1.08	7.96	**1**
MADHYA PRADESH	0.43	0.78	0.48	0.75	0.93	9.69	**23**
MAHARASHTRA	0.49	0.70	0.29	0.86	0.93	4.82	**5**
MANIPUR	0.59	0.94	0.33	0.84	0.99	9.79	**22**
MEGHALAYA	0.58	0.79	0.28	0.96	0.99	12.58	**20**
MIZORAM	0.60	0.87	0.45	0.96	0.98	-2.55	**13**
NAGALAND	0.73	0.59	0.77	0.92	0.93	8.32	**19**
ODISHA	0.23	0.79	0.28	0.78	0.98	3.78	**18**
PUNJAB	0.18	0.80	0.39	0.88	0.90	6.52	**6**
RAJASTHAN	0.42	0.79	0.33	0.66	0.93	5.17	**16**
SIKKIM	0.52	0.82	0.34	0.87	0.89	10.77	**15**
TAMIL NADU	0.47	0.69	0.54	0.85	1.00	7.39	**4**
TRIPURA	0.23	0.81	0.33	0.90	0.96	8.69	**14**
UTTAR PRADESH	0.20	0.76	0.54	0.74	0.91	20.21	**28**
UTTARAKHAND	0.39	0.83	0.29	0.80	0.96	9.36	**11**
WEST BENGAL	0.20	0.76	0.28	0.86	0.95	4.72	**8**