

Impact of Gender Inequality in Education on Economic Growth in India: An Economic Analysis

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Abstract

Education seeks to nourish the good qualities and draw out the best in an individual. Gender inequality in education refers to the inequality in education between females and males. The United Nations Population Fund (UNFPA) mentions that, there are close links between sustainable development, reproductive health and gender equality. The paper aims to examine the gender inequality in education and investigate the impact of gender inequality in education on economic growth in India. To examine the gender inequality in education across India, gender inequality in literacy rate is examined for the period 1991-2011 using secondary data. Gender inequality in Never Attended Rate (NAR) for the different age groups i.e. 7-14, 15-19, 20-24, 25-29, 30-34, 35-59, 60+ and ANS (Age not stated) for 2011 is also examined using secondary data to examine the gender inequality in education across India. The paper also investigates the impact of gender inequality in education on economic growth in India by using time series secondary data for the period 1961-2011 upon Gross Domestic Product Per Capita (GDPPC) and Gender Gap (GG) in literacy rate. The study finds that gender inequality in education where females lag behind males exist in India as a whole and in all its States and UTs. The regression result also reveals that gender inequality in education has a negative impact on economic growth in India.

Key words: gender, inequality, education, impact, growth.

Introduction

Gender refers to the state of being male or female especially when considered with reference to social and cultural differences rather than biological ones. The condition of being unequal or lack of equality or disparity is called inequality. Gender Inequality occur in health, education, political representation, labour market etc. However, differences or inequality in physical structures and bodily strength between female and male are certainly not of discriminatory nature but simply a biological fact. There are close links between sustainable development, reproductive health and gender equality (United Nations Population Fund).

Education seeks to nourish the good qualities and draw out the best in an individual. Thus, education seeks to develop the innate inner capacities of an individual. Education gives an individual some desirable knowledge, understanding, skills, interests, attitudes and critical thinking. According to Rabindranath Tagore, the widest road leading to the solution of all our problems is education. Gender inequality in education means inequality in education between females and males.

Gender inequality in education is a function of gender discrimination and patriarchal social and cultural structures. The pervasive denial of the human right to education experienced by women and girls across the globe by the fact that two thirds of the world's non-literate adults are women is a striking example of gender discrimination and therefore true gender equality in education and beyond remain far from being achieved (Committee on the Elimination of Discrimination Against Women, 2012). According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Institute for Statistics (UIS), as on June 2014, 758 million adults in the world are illiterates out of which 279 million are men and 479 are women that makes 63 per cent of the global illiterate adult population. Under this backdrop the paper aims :

- 1) to examine the extent of gender inequality in education in India.
- 2) to investigate the impact of gender inequality in education on economic growth in India.

Review of Relevant Literature

Some of the relevant literatures on gender inequality in education and economic development are presented below:

Klasen (1999) investigated to what extent gender inequality in education and employment may reduce growth and development using cross country and panel regressions. He found that, gender inequality in education prevented progress in reducing fertility and child mortality rates, thereby compromising progress in well being in developing countries.

In 2004, Gumbel tried to measure the influence of gender inequality in health, education and the labour market using cross country regression. Focusing on democratic industrialised countries in the 1970s his study revealed that, inequality in education was strongly and negatively associated with high GNP per capita.

Moheyuddin in his study on "Gender Inequality in Education: Impact on Income, Growth and Development" in 2005 found that gender inequality in education has negative relation with economic growth.

Coulombe and Tremblay (2006) in their study on “Literacy and Growth” found that, overall, human capital indicators based on literacy scores have a positive and significant effect on the transitory growth path and on the long-run levels of GDP per capita and labour productivity. They also found that the skills associated with one extra year of schooling increased aggregate labour productivity by approximately 7%. Moreover, they found that investment in the human capital of women was more important for growth than investment in the human capital of men and that increasing the average literacy skills over all individuals have a greater effect on growth than increasing the percentage of individuals that achieve high levels of literacy skills.

Ackah, Ahiadeke and Fenny in 2009 tried to find out the determinants of female labour force participation in Ghana. They found that women's educational attainment determine women's labour force participation and women with primary school education or above were found more economically active than those with no education.

In 2010, Kapoor used a secondary panel dataset of 666 districts of India to determine which of socio and or economic factors played an important role in reducing infant mortality rates. The study found that women's literacy and child mortality at the district level.

Oztunc, Oo and Serin in 2015 examined the extent to which women's education affects long-term growth in the Asia Pacific region. Using panel data on GDP, literacy, fertility and the female labour force for the period 1990-2000, through regression analysis, they found that fertility rate, female labour force participation rate and female primary school enrolment were significant factors for annual per capita income growth.

Licumba, Dzator and Zhang (2015) examined the impact of gender equality in education on economic growth on a panel data of five Southern African countries between 1970 and 2010. They used Instrumental Variable Technique to examine the impact of gender equality in education as measured by a ratio of girls to boys in primary enrolment and economic growth as measured by real gross domestic product per capita at 2005 constant prices. The study found that there was a positive, robust and significant effect of gender equality in education on economic growth in the region.

Data Sources and Methodology

To examine the extent of gender inequality in education across India, gender inequality in literacy rate is examined. For the purpose, secondary data upon literacy rate of males and females for the period

1991-2011 is used. Gender Parity Index (GPI) of literacy rate (LR) is calculated to examine the extent of gender inequality in literacy rate across India. GPI is a socio-economic index usually designed to measure the differences in an outcome that men and women achieve. It is calculated as the quotient of female achievement by male achievement of an outcome. A GPI equal to one indicates parity between females and males. A value less than one indicates disparity in favour of males and a value greater than one indicates disparity in favour of females. Further, to examine the gender inequality in education in India gender inequality in Never Attended (NA) for the different age groups i.e. 7-14, 15-19, 20-24, 25-29, 30-34, 35-59, 60+ and ANS (Age not stated) for 2011 is examined using secondary data. For the purpose, NAR (Never attended rate) is calculated to find out the Gender Gap (GG) in NAR in the different age groups. GG is a disproportionate difference or disparity between the sexes. It is calculated as the male achievement over female achievement of an outcome. A GG equal to zero indicates parity between females and males. A positive value indicates disparity where male performance is higher than females and a negative value indicates male performance lower than females. To investigate the impact of gender inequality in education on economic growth in India, secondary data upon Gross Domestic Product Per Capita (GDPPC) is used. Using time series data for the period 1961-2011 of GG in literacy rate and GDPPC, the study investigates the impact of gender inequality in education on economic growth in India by using simple regression model:

$$\text{GDPPC} = \alpha + \beta \text{ GG in Literacy rate} + \epsilon$$

In the analysis, GG in literacy rate is used as a proxy for gender inequality in education and GDPPC is used as an indicator of economic growth.

Results, Analysis and Conclusion

Gender inequality in literacy rate as represented by GPI of literacy rate in India and in its states and union territories in the period 1991-2011 is presented in Table 1 (see Appendix 1). As shown in the table, female literacy rate lag behind male literacy rate throughout the period in India as a whole and in all its states and union territories. Although the inequality declined over the years in India as a whole and in most of its states and union territories, still the inequality exist in India as a whole and in all its states and union territories. According to the Government of India, Census Report 2011, the gender inequality in literacy rate where females lag behind males is found to be lowest in Meghalaya followed by Kerala and Mizoram. It may be because of the reason that multiple tribes in the state of Meghalaya in Northeast India practice or follows matrilineal system. In such societies, lineage and inheritance are traced through women. In such

societies, women are expected to play pivotal role and hold a place of pride in the social setup. However, according to the same census report, the inequality is found to be highest in Rajasthan which may be due to the reason that females are accorded low status in the region. Moreover, the inequality is found to be the second highest in Jharkhand.

Spurred by the Millennium Development Goals and the Education For All (EFA) goals, governments worldwide have been attempting to ensure that all children complete primary education by expanding their education systems, building more schools, employing more teachers and abolishing school fees. Despite the progress that had been made, 58 million children of primary school age (typically between 6 to 11 years) were out-of-school worldwide and 63 million young adolescents were out-of-school worldwide in 2012 (UIS and EFA Global Monitoring Report, 2014). According to the same report, although the numbers in South Asia have fallen by nearly 1/3rd since 2000, the region then had the largest population of out-of-school adolescents at 26 million. Out- of- school children- Any children of primary or lower secondary school age who are not enrolled in primary or secondary education are considered to be out of school. This includes a small number of children in pre-primary education and in non-formal education. Children of primary school age who are

Table 1
GPI of Literacy Rate across India

Sl. No.	States/UTs	1991	2001	2011
		GPI	GPI	GPI
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1	Andaman & Nicobar Islands	0.83	0.87	0.913
2	Andhra Pradesh	0.59	0.72	0.790
3	Arunachal Pradesh	0.58	0.68	0.795
4	Assam	0.70	0.77	0.851
5	Bihar	0.43	0.55	0.723
6	Chandigarh	0.88	0.89	0.902
7	Chhattisgarh	0.47	0.67	0.750
8	Dadra & Nagar Haveli	0.50	0.59	0.755
9	Daman & Diu	0.72	0.80	0.869
10	Delhi	0.82	0.86	0.888
11	Goa	0.80	0.85	0.914
12	Gujarat	0.66	0.73	0.813
13	Haryana	0.59	0.58	0.785
14	Himachal Pradesh	0.69	0.79	0.848
15	Jammu & Kashmir	NA	0.65	0.735
16	Jharkhand	NA	0.58	0.721
17	Karnataka	0.66	0.75	0.826
18	Kerala	0.92	0.93	0.958
19	Lakshadweep	0.81	0.87	0.920
20	Madhya Pradesh	0.50	0.66	0.752
21	Maharashtra	0.68	0.78	0.859
22	Manipur	0.66	0.75	0.841
23	Meghalaya	0.85	0.91	0.960

24	Mizoram	0.92	0.96	0.956
25	Nagaland	0.81	0.86	0.920
26	Odisha	0.55	0.67	0.785
27	Puducherry	0.78	0.83	0.884
28	Punjab	0.77	0.84	0.879
29	Rajasthan	0.37	0.58	0.658
30	Sikkim	0.71	0.79	0.874
31	Tamil Nadu	0.70	0.78	0.846
32	Tripura	0.70	0.80	0.904
33	Uttar Pradesh	0.45	0.61	0.740
34	Uttarakhand	0.57	0.72	0.801
35	West Bengal	0.69	0.77	0.864
36	All India	0.61	0.71	0.799

Source: Government of India, *Census Reports 1991,2001, 2011*

Note: NA represents not available.

enrolled in preprimary education are counted as out of school, because the educational content of preprimary education and the Pedagogical qualifications of its teaching staff are not equivalent to the standards required for primary education. Children in non-formal education programs are also considered to be out of school, because the nature of these programs is not, in general, equivalent to that of formal primary and lower secondary education. The report of the UNESCO (2015) on "Fixing the broken promise of education for all- findings from the global initiative on out of school children" confirmed that the task of achieving education for all was far from over.

The government of India has also been taking initiatives for giving education to the young as well as adult illiterates. Those illiterates being in the working age, their educational up liftment benefits themselves and the society. Children, adolescents and adults who have never attended any educational institutions is observed in all the States and Union Territories (UTs) of India. It is seen that never attended rate vary between males and females in India.

Gender inequality in NAR in the Indian States and UTs and in India as a whole in the age groups 7-14, 15-19, 20-24, 25-29, 30-34, 35-59, 60+ and ANS in 2011 is shown in the Table 2 (see Appendix 2). Gender inequality in NAR is shown by GG of NAR in the table. From the table, it can be seen that male NAR is lower than female NAR in all the age groups in India as a whole. Moreover, except in six States and UTs viz., Chandigarh, West Bengal, Lakshadweep, Kerala, Puducherry and Andaman and Nicobar Islands, in all the States and UTs, female NAR surpassed male NAR in all the age groups. It can also be seen from the table that in the ANS group, except in the three States and UTs, namely Jammu and Kashmir, Chandigarh and Kerala, in the other States and UTs of India, male NAR remained lower than female NAR. Moreover, If all ages above six years are considered, male NAR remained lower than female NAR in India

as a whole and all its States and UTs. Gender disparity in NAR, where females lag behind males, in India as a whole and in majority of the States and UTs of India including Assam, increased with the higher age groups i.e., from the age group 7-14 up to the age group 60+.

Table 2
GG of NAR in the Indian States and UTs in 2011

States/UTs	Age-group								
	7-14	15-19	20-24	25-29	30-34	35-59	60+	ANS	>6
India	-1.69	-4.51	-10.90	-14.85	-18.67	-24.45	-30.48	-10.12	-15.82
J & K	-3.93	-9.43	-15.99	-22.84	-27.03	-32.29	-26.50	1.14	-19.67
H Pradesh	-0.48	-0.39	-1.68	-4.15	-7.47	-21.77	-39.97	-5.73	-13.66
Punjab	-0.81	-0.12	-2.05	-5.04	-8.45	-13.42	-23.47	-2.53	-9.50
Chandigarh	-0.97	0.12	-3.25	-7.62	-11.17	-13.46	-20.29	0.68	-8.53
Uttarakhand	-0.56	-1.77	-5.61	-10.67	-17.04	-30.19	-45.47	-6.55	-17.06
Haryana	-2.26	-3.64	-7.81	-11.69	-17.49	-31.37	-33.47	-9.58	-17.89
Delhi	-0.39	-0.27	-3.50	-6.88	-10.77	-17.02	-27.66	-3.04	-9.99
Rajasthan	-6.32	-13.49	-25.50	-33.17	-38.29	-39.03	-31.52	-20.59	-26.63
UP	-1.95	-5.27	-15.79	-23.72	-28.31	-33.39	-31.94	-11.91	-19.05
Bihar	-3.52	-8.95	-21.23	-23.67	-24.73	-29.23	-32.77	-9.25	-19.00
Sikkim	-0.25	-0.69	-2.36	-5.55	-10.04	-25.68	-31.58	-4.92	-10.53
Aru. Pradesh	-2.89	-5.03	-10.77	-16.91	-21.54	-29.69	-18.96	-12.99	-14.22
Nagaland	-0.16	-0.34	-2.10	-4.47	-6.23	-13.79	-24.35	-3.08	-6.09
Manipur	-1.11	-2.84	-5.69	-8.54	-10.67	-22.73	-39.76	-2.42	-13.02
Mizoram	-1.61	-2.68	-4.19	-4.07	-3.43	-4.90	-13.24	-5.72	-4.27
Tripura	-0.65	-2.82	-4.33	-5.52	-6.71	-12.84	-29.57	-0.88	-8.85
Meghalaya	2.48	2.58	0.19	-1.93	-3.27	-10.33	-18.72	-5.72	-3.17
Assam	-0.15	-2.09	-8.16	-10.00	-12.20	-19.34	-32.40	-6.61	-11.27
West Bengal	0.28	-1.72	-5.58	-7.51	-9.76	-17.19	-33.39	-5.71	-11.05
Jharkhand	-2.35	-9.56	-21.05	-24.79	-28.61	-32.95	-34.61	-11.24	-20.97
Odisha	-1.83	-6.86	-11.87	-14.12	-17.97	-25.89	-39.24	-10.63	-17.45
Chhattisgarh	-1.58	-5.45	-12.61	-17.68	-24.86	-33.72	-37.70	-10.07	-20.02
M Pradesh	-0.76	-6.04	-16.28	-20.96	-25.22	-31.05	-33.52	-7.95	-19.18
Gujarat	-2.07	-4.88	-10.02	-13.30	-16.82	-23.50	-30.74	-10.24	-15.79
Daman & Diu	-0.45	1.95	-4.11	-7.99	-9.86	-18.90	-38.63	-10.94	-11.67
D & N Haveli	-2.23	-11.15	-20.33	-21.58	-24.49	-32.27	-27.24	-15.74	-20.47
Maharashtra	-0.65	-1.38	-3.83	-6.23	-10.03	-19.25	-32.20	-5.91	-12.56
Andhra Pradesh	-0.97	-3.61	-10.33	-14.88	-18.12	-22.56	-24.21	-9.43	-15.26
Karnataka	-0.98	-2.43	-6.27	-10.14	-13.94	-21.60	-30.19	-3.64	-14.11
Goa	-0.42	-0.48	-1.40	-2.47	-3.24	-9.70	-24.56	-0.25	-8.06
Lakshadweep	0.17	-0.04	-0.29	-0.52	-0.95	-9.94	-47.18	-1.45	-7.91
Kerala	0.05	0.04	0.07	0.01	-0.24	-3.28	-15.39	4.63	-3.66
Tamil Nadu	-0.12	-0.64	-2.86	-6.21	-10.38	-20.07	-31.15	-6.01	-12.87
Puducherry	0.05	-0.27	-1.10	-2.28	-4.80	-15.24	-32.60	-9.14	-10.17
A & N Islands	0.17	-0.22	-0.86	-2.98	-4.53	-14.71	-31.30	-14.81	-7.62

Source: Government of India, *Census Report, 2011*

Notes: A & N Islands, Aru. Pradesh, D & N Haveli, H Pradesh, J & K and M Pradesh represents Andaman and Nicobar Islands, Arunachal Pradesh, Dadra and Nagar Haveli, Himachal Pradesh, Jammu and Kashmir and Madhya Pradesh.

The impact of gender inequality in education on economic growth in India is shown in Table 3 (Appendix 3). The regression result reveals that, the impact of GG in Literacy Rate on GDPPC is significantly negative. If GG in Literacy Rate increase by one per cent, GDPPC decrease by 128.42 U.S. dollar. The coefficient of the independent variable has come out to be significant at five per cent.

Table 3
Impact of Gender Inequality in Education on Economic Growth in India

Dependent variable	Independent variable/ constant	Coefficient	Standard error	t value	Significance	Durbin-Watson	F value
GDPPC (1961-2011)	Constant	3414.729	619.590	5.511	0.005	2.384	23.325
	GG in literacy rate	-128.429	26.592	-4.830	0.008		

$R^2=0.854$, Adj. $R^2=0.817$

Sources:

1. data.worldbank.org
2. Government of India, various census reports

From the above analysis it can be concluded that gender inequality in education where females lag behind males exist in India as a whole and in all its States and UTs. The study finds that gender inequality in education has a negative impact on economic growth in India. The government therefore, need to take suitable steps or strategies so as to reduce gender inequality in education in India. In this regard, since many researchers have found income to be a major factor behind gender inequality in education, government can adopt policies that raise income of the poor people and thereby reduce the gender inequality in education. To reduce the gender inequality in education, the government need to look into the proper implementation of policies regarding informal learning, specially for the adult females so that they do not keep themselves away from education due to age, place and time problem. Moreover, in order to reduce the gender inequality in education, motivation of the people is important for the successful implementation of the policies taken by the authority to reduce gender inequality in education. Relevance of literacy, lifelong learning, adult literacy and literacy and women empowerment may be widely communicated to motivate the people.

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www.data.worldbank.org



Appendix 1

Female Literacy Rate and Male Literacy Rate during 1991 to 2011 in the Indian States and UTs

Sl. No.	States/UTs	1991		2001		2011	
		Female	Male	Female	Male	Female	Male
1	2	3	4	5	6	7	8
1	Andaman & Nicobar Islands	65.46	78.99	75.20	86.30	82.425	90.267
2	Andhra Pradesh	32.72	55.12	50.40	70.30	59.149	74.883
3	Arunachal Pradesh	29.69	51.45	43.50	63.80	57.698	72.551
4	Assam	43.03	61.87	54.60	71.30	66.269	77.848
5	Bihar	21.99	51.37	33.10	59.70	51.502	71.204
6	Chandigarh	72.34	82.04	76.50	86.10	81.189	89.987
7	Chhattisgarh	27.52	58.07	51.90	77.40	60.236	80.269
8	Dadra & Nagar Haveli	26.98	53.56	43.00	73.30	64.318	85.174
9	Daman & Diu	59.40	82.66	70.40	88.47	79.549	91.544
10	Delhi	66.99	82.01	74.70	87.30	80.758	90.937
11	Goa	67.10	83.60	75.40	88.40	84.661	92.650
12	Gujarat	48.60	73.10	58.60	80.50	69.675	85.750
13	Haryana	40.50	69.10	45.70	78.50	65.945	84.058
14	Himachal Pradesh	52.10	75.40	67.40	85.40	75.927	89.532
15	Jammu & Kashmir	NA	NA	43.00	66.60	56.434	76.754
16	Jharkhand	NA	NA	38.90	67.30	55.417	76.837
17	Karnataka	44.30	67.30	56.90	76.10	68.081	82.475
18	Kerala	86.10	93.60	87.90	94.20	92.070	96.113
19	Lakshadweep	72.90	90.20	80.50	92.50	87.946	95.557
20	Madhya Pradesh	29.40	58.50	50.30	76.10	59.236	78.729
21	Maharashtra	52.30	76.60	67.00	86.00	75.871	88.381
22	Manipur	47.60	71.60	60.50	80.30	70.258	83.583
23	Meghalaya	44.90	53.10	59.60	65.40	72.887	75.955
24	Mizoram	78.60	85.60	86.80	90.70	89.268	93.348
25	Nagaland	54.80	67.60	61.50	71.20	76.114	82.751
26	Odisha	34.70	63.10	50.50	75.40	64.008	81.585
27	Puducherry	65.60	83.70	73.90	88.60	80.674	91.265
28	Punjab	50.40	65.70	63.40	75.20	70.731	80.442
29	Rajasthan	20.40	55.00	43.90	75.70	52.120	79.194
30	Sikkim	46.70	65.70	60.40	76.00	75.611	86.552
31	Tamil Nadu	51.30	73.80	64.40	82.40	73.435	86.765
32	Tripura	49.70	70.60	64.90	81.00	82.728	91.526
33	Uttar Pradesh	24.40	54.80	42.20	68.80	57.184	77.281
34	Uttarakhand	41.60	72.80	59.60	83.30	70.007	87.403
35	West Bengal	46.60	67.80	59.60	77.00	70.540	81.691
36	All India	39.30	64.10	53.70	75.30	64.635	80.884

Source: Government of India, *Census Reports 1991, 2001, 2011*

Note: NA represents not available

Appendix 2
Female NAR and Male NAR in 2011 in the Indian States and UTs

States/UTs	Age-group																	
	7-14		15-19		20-24		25-29		30-34		35-59		60+		ANS		All ages>6	
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
<i>I</i>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Jammu & Kashmir	14.33	10.40	17.64	8.21	28.32	12.33	38.63	15.79	47.24	20.21	65.19	32.90	86.46	59.96	57.04	58.18	42.21	22.54
Himachal Pradesh	3.28	2.80	2.38	1.99	4.77	3.09	8.37	4.22	12.73	5.26	33.70	11.93	77.49	37.52	34.57	28.84	23.56	9.89
Punjab	7.30	6.49	7.97	7.85	12.44	10.39	18.21	13.17	25.40	16.95	38.82	25.40	71.09	47.62	40.89	38.36	28.42	18.92
Chandigarh	6.03	5.06	6.28	6.40	10.31	7.06	16.19	8.57	21.52	10.35	26.93	13.47	36.28	15.99	38.62	39.30	18.31	9.78
Uttarakhand	6.41	5.86	6.81	5.04	12.61	7.00	20.16	9.49	28.68	11.64	47.44	17.25	76.20	30.73	37.49	30.94	29.39	12.33
Haryana	8.24	5.98	9.36	5.72	15.56	7.75	21.67	9.98	30.26	12.77	53.26	21.89	78.96	45.49	44.15	34.57	33.18	15.29
NCT of Delhi	5.76	5.37	5.49	5.22	9.90	6.40	14.29	7.41	19.28	8.51	28.79	11.77	45.01	17.35	34.50	31.46	18.86	8.87
Rajasthan	14.74	8.42	20.89	7.40	36.32	10.82	48.29	15.12	57.82	19.53	71.88	32.85	86.71	55.19	56.14	35.55	47.17	20.54
Uttar Pradesh	14.99	13.04	17.62	12.35	31.43	15.64	44.06	20.34	52.86	24.55	65.25	31.86	81.13	49.19	51.89	39.98	42.06	23.00
Bihar	20.55	17.03	26.99	18.04	44.67	23.44	51.89	28.22	56.23	31.50	67.91	38.68	82.10	49.33	58.84	49.59	47.59	28.58
Sikkim	3.95	3.70	4.58	3.89	7.25	4.89	11.99	6.44	17.71	7.67	44.65	18.97	80.40	48.82	28.94	24.02	23.03	12.50
Arunachal Pradesh	18.26	15.37	16.43	11.40	26.92	16.15	36.23	19.32	44.37	22.83	66.05	36.36	90.50	71.54	52.92	39.93	39.20	24.98
Nagaland	11.99	11.84	10.18	9.84	13.10	11.00	16.04	11.57	18.87	12.64	33.49	19.70	64.85	40.50	48.55	45.47	21.49	15.40
Manipur	10.67	9.55	10.78	7.94	15.71	10.02	19.48	10.94	22.84	12.17	41.04	18.31	75.08	35.32	39.38	36.96	27.54	14.52
Mizoram	7.22	5.61	6.78	4.10	9.56	5.37	9.40	5.33	8.68	5.25	12.03	7.13	23.47	10.23	40.55	34.83	10.40	6.13
Tripura	4.85	4.20	6.05	3.23	8.49	4.16	10.87	5.35	12.60	5.89	23.74	10.90	52.49	22.92	42.06	41.18	16.99	8.14
Meghalaya	14.09	16.56	10.54	13.12	17.37	17.56	23.18	21.25	26.95	23.68	41.23	30.90	61.73	43.01	47.29	41.57	25.54	22.38
Assam	13.69	13.54	15.40	13.31	24.32	16.16	30.28	20.28	34.63	22.43	48.33	28.99	69.28	36.88	51.79	45.18	32.98	21.71
West Bengal	7.95	8.23	10.54	8.82	17.85	12.27	23.37	15.86	28.02	18.26	42.21	25.02	63.38	29.99	44.33	38.62	28.96	17.91

Contd.....

Female NAR and Male NAR in 2011 in the Indian States and UTs (Continued)

Jharkhand	12.44	10.10	19.77	10.21	36.26	15.21	44.93	20.14	52.39	23.78	66.69	33.74	82.35	47.74	45.61	34.37	43.48	22.51
Odhisa	9.21	7.37	14.44	7.58	21.47	9.60	26.96	12.84	33.55	15.58	50.11	24.22	75.89	36.65	47.79	37.16	34.84	17.40
Chhattisgarh	8.20	6.62	11.78	6.33	21.19	8.58	30.51	12.83	41.49	16.63	63.53	29.81	83.93	46.23	46.74	36.67	38.56	18.53
Madhya Pradesh	8.44	7.68	14.58	8.54	28.63	12.35	38.41	17.45	46.57	21.35	61.37	30.32	80.61	47.09	46.73	38.78	39.36	20.18
Gujarat	7.65	5.59	10.65	5.77	18.08	8.06	23.19	9.89	29.22	12.40	43.29	19.79	64.15	33.41	36.17	25.93	29.47	13.67
Daman & Diu	5.00	4.55	5.39	7.34	11.16	7.05	15.11	7.12	17.56	7.70	30.23	11.33	62.52	23.89	37.96	27.02	20.23	8.56
Dadra Nagar Haveli	6.50	4.27	17.29	6.14	27.77	7.44	32.28	10.70	38.01	13.52	60.02	27.75	82.25	55.01	51.74	36.00	35.21	14.75
Maharashtra	4.82	4.17	4.90	3.52	8.82	4.99	12.82	6.59	18.33	8.30	33.41	14.16	61.45	29.25	34.33	28.42	23.09	10.53
Andhra Pradesh	6.50	5.53	10.33	6.72	21.95	11.62	33.63	18.75	42.41	24.29	60.73	38.17	79.40	55.19	43.02	33.59	40.00	24.74
Karnataka	5.62	4.64	7.69	5.26	13.99	7.72	21.55	11.41	28.83	14.89	47.58	25.98	70.65	40.46	45.58	41.94	31.10	16.99
Goa	3.61	3.19	2.80	2.32	5.05	3.65	6.92	4.45	7.90	4.66	17.26	7.56	43.34	18.78	33.13	32.88	14.84	6.78
Lakshadweep	2.13	2.31	1.14	1.10	1.85	1.56	2.15	1.63	2.71	1.76	12.18	2.24	69.92	22.74	36.59	35.14	11.82	3.91
Kerala	1.39	1.44	0.66	0.70	1.04	1.11	1.45	1.46	1.87	1.63	6.75	3.47	26.16	10.77	31.75	36.38	7.03	3.37
Tamil Nadu	2.22	2.10	2.63	1.99	6.56	3.70	12.46	6.25	18.97	8.59	39.28	19.21	65.59	34.44	45.74	39.73	25.73	12.86
Puducherry	1.83	1.88	1.41	1.14	3.27	2.17	5.86	3.58	9.68	4.88	25.63	10.39	55.97	23.37	37.71	28.57	17.64	7.47
Andaman & Nicobar Island	2.63	2.80	1.96	1.74	4.62	3.76	7.65	4.67	9.99	5.46	28.48	13.77	62.92	31.62	35.84	21.03	16.98	9.36
India	10.63	8.94	13.03	8.52	22.08	11.18	29.58	14.73	36.59	17.92	50.61	26.16	71.49	41.01	47.51	37.39	34.48	18.66

Source: Government of India, *Census Report, 2011*

Note: ANS, M and F represents age not stated, Male and Female respectively

Appendix 3
GG in Literacy Rate and GDPPC in India

Year	GG in Literacy Rate	GDPPC (current prices, US dollar)
<i>1</i>	<i>2</i>	<i>3</i>
1951	18.3	NA
1961	25.05	87.03116614
1971	23.99	120.952379
1981	26.62	275.9166525
1991	24.8	309.3279361
2001	21.6	460.8261999
2011	16.25	1471.658439

Note: NA represents not available

Sources:

1. data.worldbank.org
2. Government of India, various census reports

