

Gender Disparity in Literacy: A Macro Level Spatio-Temporal Account of India

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Abstract: *Literacy implies the ability to read and write as well as understand. But practically it involves a broader aspect. Literacy is the sole input for human resource development. It also helps in overcoming the hurdles of life. Education is one of the foremost necessities for all round development of human being. It ensures long and prosperous living. Literacy feeds in being educated. For a country or state a better literacy rate helps to improve the performance in the context of a number of socio-economic indicators. A better literacy facilitates low infant mortality, low maternal mortality, low rates of fertility, better life expectation, better human capital formation, better standard of living etc. Historically there exist wide gape in literacy rate and educational attainment between the male and female. The male always being dominating tend to overshadow their counterparts in the society. As a result women become the deprived section of the society in almost each and every component of socio-economic development. Increase in literacy facilitates increasing knowledge which ultimately enlightens the numerous paths of human life. Right of being literate is fundamental for all. But women are always lagging behind the men. In a developing third world country like India this problems is even more acute. Hence this paper attempts to identify the regional variation in disparity in literacy among male and female of India over the last five decades. For this purpose the modified Disparity Index as put forward by Kundu and Rao (1986) is followed. The study indicates that, since independence though the overall literacy rate has improved by many folds, still considerable gap exist in the extent of literacy between men and women. There are a general tendency among the states and union territories of improvement in the context of minimizing gender gap in literacy. The states like Punjab and Kerala at the same time union territory like Andaman and Nicobar Islands traditionally performed well, having low rate of gender disparity in literacy. But the states like Rajasthan, Jharkhand and Bihar historically performed poorly. This study also identifies the impact of increasing literacy upon the declining gender inequality in literacy.*

Keywords: *Education, Gender gap in literacy, Knowledge, Literacy, Women.*

I. Introduction

Literacy is the gateway towards the treasury of knowledge. Literacy is assumed to appear first with the emergence of numeracy and computational inventions. Literacy helps to improve the social status. Literacy also presents reliable information about educational development [1] of any area. Especially, female education is acknowledged for its strong correlation with other dimensions of social and human development [2]. Raising literacy rate accelerate the rate of human capital formation [3]. Literacy and education is also one of the main components of Human Development Index [4]. It provide a person self sufficiency, helps to establish self esteem. It helps a people to take decision and fulfill aspiration. Although there was always a keen appreciation of education [5] but it is not equally enjoyed by all. India is a country where a large number of disparities exist; be it in terms of religion, culture, language, caste etc. The 12th Five Year Plan underlines wide disparities on the basis of a number of criteria [6]. But the most wide spread is the one on the basis of gender. Disparity refers to difference in the outcome [7]. Disparity among male and female in the aspect of literacy is a sensitive indicator of gender discrimination [8]. In Indian society women are traditionally regarded as home maker only. They were always kept away from the touch of literacy and education. They were recognized as a machine to cook food, serve the family and reproduce off springs. This scenario remained almost similar irrespective of caste and religion. They were victim of *pardha* system. Their exposure to outer society was restricted. At the same time there was no such awareness or provision for giving education even within the house. After independence through planning interventions the literacy rate of both male and female have improved consistently. Though the Constitution of India gave equal civil rights to both men and women but still in each and every corner of state and society of the country male dominates their counterpart [9]. In such a context women empowerment is the most desired aspect. Women can most effectively be empowered through education. Education provides them muscle, money and mobility [10]. Women education lubricates a healthy generation building too. Another noteworthy thing is that the rate of disparity is not equal throughout the country. There are few states where near about half of the female population are still illiterate. Therefore, Government of India focused upon universalization of elementary education and reducing inequality in education [11]. India is a country with

quasi-federal politico-administrative system. The country having 29 states and 7 union territories and containing more than 17% of global population has passed more than 60 years of independence. But gender biasness is not been eliminated from the society completely. Still, boys are more preferred than the girls. Although incidence of new technologies and expansion of science changing the scenario gradually. Women are coming out of their houses; female literacy rate and school enrolment & retention are increasing; female work participation rate is growing. But the condition is yet to change considerably.

II. The Study Area

India, the 7th largest country of our planet covering only 2.4% of earth's surface is the home for 17% of global population. Covering 3,287,263 km² area India extends from latitude North 6° 44' to 37° 06' and longitude East 68° 07' to 97° 25'. As per census of 2011, population of this country reached 1.221 billion, accounting for 940 female per 1000 of male population. At present the overall literacy rate just crossed the 70% mark to reach 74.04%. Female literacy rate i.e. 65.46% is considerably lower than that of male literacy rate 82.14%. This large and diverse country is presently composed of 29 states and 7 union territories, but since the state Telangana formed during mid 2014, for the convenience of study the undivided Andhra Pradesh is taken into account. Thus this paper deals with 28 states and 7 union territories of India.

III. Objectives of The Study

The major objectives of this study are ----

- To identify the nature of gender gap in literacy in India
- To evaluate the spatial pattern of gender disparity in literacy over the last five decades.
- To investigate the present status of gender disparity in literacy throughout the 28 states and 7 union territories of the country.
- To determine the relationship between literacy rate and gender disparity in literacy.

IV. Methodology

This study is quantitative and exploratory in nature and based mainly on secondary information. This paper is focused upon the macro level study. The entire study can be divided into three consecutive and interlinked phases. In *First Phase* detailed literature survey was done upon the present status of literacy, importance of literacy, deprivation of women in this context, gender gap in literacy and educational attainment, socio-economic backwardness of women, determinants of literacy in Indian society etc. Data were collected from Census of India documents about male and female literacy state and union territory wise for the last six decadal censuses. In the *Second Phase* data were analyzed. For determining the disparity among male and female literacy, the modified form of D.V. Sopher's index (1974). This was modified by Kundu and Rao (1986):

$$\text{Disparity Index (DI)} = \log (X_2/X_1) + \log \{(Q-X_1) / (Q-X_2)\}$$

Where,

X₂ > or = X₁

X₂ = Male literacy rate,

X₁ = Female literacy rate,

Q = 200.

Here, the values of Disparity Index (ranges between 0.00 and 1.00) exhibit a positive correlation with gender gap in literacy, greater the value of DI higher the rate of disparity between male and female literacy rate. If there is no disparity then the value of DI would be zero. In the *Third Phase* detailed analysis and interpretation of DI was done. Maps displaying zoning of Indian states and union territories were prepared. Descriptive and Inferential statistical diagrams were also constructed.

V. Major Findings

At the time of independence the literacy rate of India was very low. It was only 18.33% accounting 27.16% and 8.86 % for male and female respectively. There was also lack of awareness about the importance of literacy and education. In subsequent years, as a fruit of planning process literacy goes on increasing gradually for the individual states as well as the overall country. Like the gradually decreasing trend of decadal growth of population since 1971, the gender gap in literacy is also experiencing a gradual decline in the post independence era. During the last seven decades, the literacy rate of the country India increased by more than four folds.

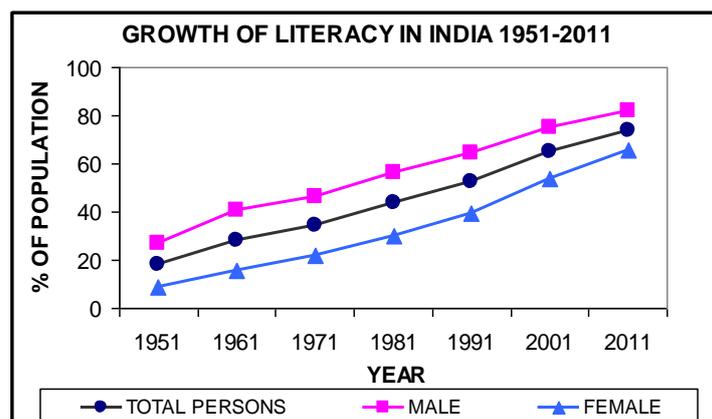


Fig: 1 Growth of Literacy in India (1951-2011)

Source: Computed from Census of India documents.

V. I High level of disparity:

It is evidently true that in the ground of gender disparity in literacy the BIMAROU states i.e. Bihar, Madhya Pradesh, Rajasthan, Orissa and Uttar Pradesh always exhibits a significantly poor performance. Performance of Jammu & Kashmir also remained poor chronically. After the formation of Jharkhand, Uttarakhand and Chhattisgarh, the aerial coverage of Bihar, Uttar Pradesh and Madhya Pradesh were reduced considerably but the older states along with the newer one remained in the poorer side (except Uttarakhand). Although the rate of gender disparity in literacy of these states declined gradually, still it remained considerably higher than the other states and union territories. Not only had that it remained higher than the national average too. The Disparity Index of Bihar in 1961 i.e. 0.70, remained all time highest in the country since 1961. In 1961 NEFA and Himachal Pradesh & in 1981 Arunachal Pradesh were also in this category. The present scenario exhibits that 3 out of the 35 spatial units i.e. only 0.9% remained in this group which is satisfactorily lower than that of 1961 i.e. 30%.

Table: 1 States & Union Territories in Different Categories With Respect To Disparity Index

YEAR	HIGH	MODERATE	LOW
1961	Bihar, Himachal Pradesh, Orissa, Rajasthan, Madhya Pradesh, Uttar Pradesh, Jammu and Kashmir.	Lakshadweep, Dadra and Nagar Haveli, Manipur, Tripura, Tamil Nadu, Maharashtra, Karnataka, Andhra Pradesh, West Bengal, Assam, Gujarat.	Pondicherry, Punjab, Andaman and Nicobar, Kerala, Delhi.
1971	NEFA, Bihar, Rajasthan, Madhya Pradesh, Uttar Pradesh, Orissa, Jammu and Kashmir.	Dadra and Nagar Haveli, Haryana, Manipur, Himachal Pradesh, Andhra Pradesh, Tamil Nadu, Lakshadweep , Maharashtra, Karnataka, Gujarat, Tripura, West Bengal, Assam.	Pondicherry, Nagaland, Goa, Andaman and Nicobar, Punjab, Delhi, Kerala, Chandigarh.

1981	Delhi, Rajasthan, Bihar, Uttar Pradesh, Madhya Pradesh, Arunachal Pradesh.	Orissa, Haryana, Jammu and Kashmir, Dadra and Nagar Haveli, Sikkim, Manipur, Andhra Pradesh, Karnataka, Maharashtra, Himachal Pradesh, Tamil Nadu, Gujarat, Daman and Diu, West Bengal, Tripura, Lakshadweep.	Pondicherry, Nagaland, Goa, Punjab, Andaman and Nicobar, Meghalaya, Kerala, Mizoram, Chandigarh.
1991	Rajasthan, Bihar, Uttar Pradesh, Madhya Pradesh, Dadra and Nagar Haveli.	Orissa, Haryana, Arunachal Pradesh, Andhra Pradesh, Gujarat, Manipur, Karnataka, Maharashtra, Himachal Pradesh, Tamil Nadu, West Bengal, Daman & Diu, Tripura, Assam, Sikkim.	Pondicherry, Punjab, Lakshadweep , Goa, Delhi, Nagaland, Andaman and Nicobar, Meghalaya, Chandigarh, Kerala, Mizoram.
2001	Dadra and Nagar Haveli Rajasthan Uttar Pradesh Madhya Pradesh Jammu and Kashmir Chhattisgarh Orissa.	Arunachal Pradesh Uttarakhand, Haryana, Gujarat, Andhra Pradesh, Daman and Diu Karnataka, Manipur, Maharashtra, Tamil Nadu, Assam, West Bengal, Himachal Pradesh.	Tripura, Sikkim, Pondicherry, Goa, Delhi, Punjab, Lakshadweep , Andaman and Nicobar, Nagaland, Chandigarh, Meghalaya, Kerala, Mizoram.
2011	Rajasthan, Jharkhand, Bihar.	Chhattisgarh, Jammu and Kashmir, Madhya Pradesh, Uttar Pradesh, Dadra and Nagar Haveli, Haryana, Orissa, Uttarakhand, Gujarat, Arunachal Pradesh Karnataka, Maharashtra, Himachal Pradesh, Manipur, Daman and Diu, West Bengal.	Sikkim, Goa, Pondicherry, Punjab, Delhi, Chandigarh, Tripura, Andaman and Nicobar, Lakshadweep , Nagaland, Mizoram, Kerala, Meghalaya.

Source: Computed from Census of India documents.

V. II Moderate level of disparity

On the other hand the performance of Maharashtra, Tamil Nadu, Andhra Pradesh, West Bengal, Karnataka, Manipur and Assam remained satisfactory in this context. Tripura during the period 1961-1991, Haryana during 1971-2011, Uttarakhand 2001-2011 and Himachal Pradesh during 1971-1981, 2001-2011 and Jammu & Kashmir In 1981 & 2011 remained in this category. The union territories like Dadra & Nagar Haveli and Daman & Diu historically remained in this group. Lakshadweep during the period 1961-81 also performed satisfactorily, later on performance of these islands improved and elevated to the higher category. A few states like Tripura, Assam, Tamil Nadu, and West Bengal performed better than the national average. The notable fact is that almost each and every territorial units of this category has experienced a gradual declining tendency of gender disparity in literacy. The latest scenario exhibits that 19 out of the 35 spatial units i.e. 54.29% remained in this group. Among the states and union territories of this category performance of West Bengal and Chhattisgarh is best and worst respectively.

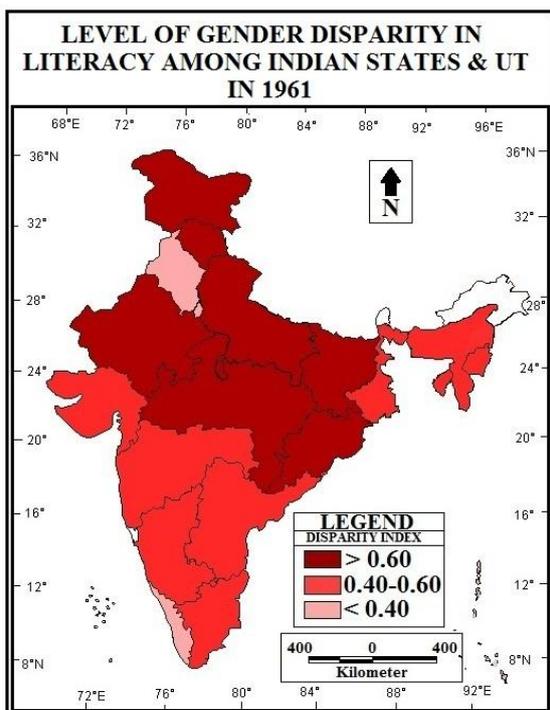


Fig: 2 Spatial Level of Gender Disparity, 1961

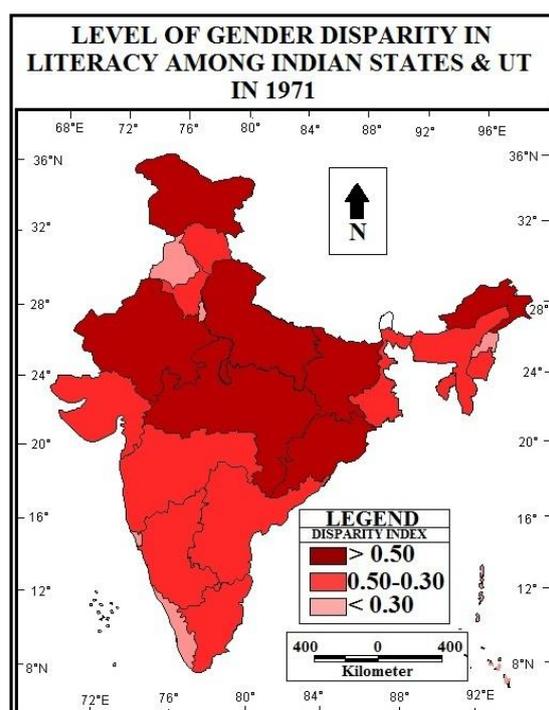


Fig: 3 Spatial Level of Gender Disparity, 1971

Source: Computed from Census of India documents.

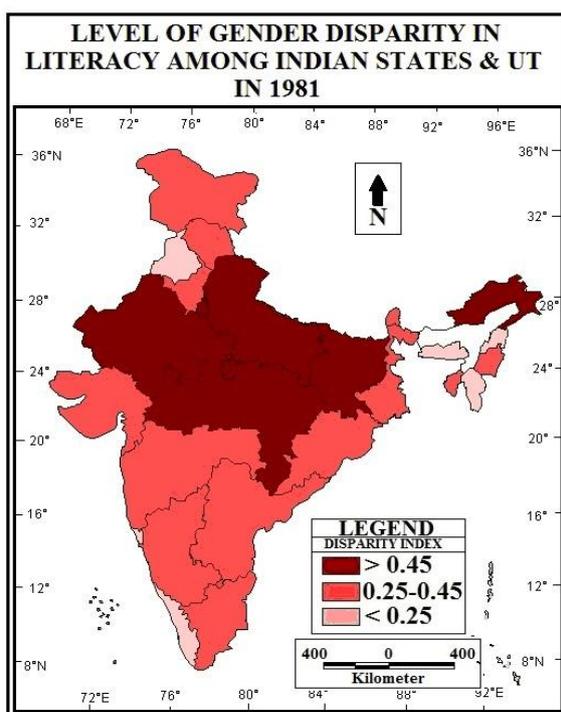


Fig: 4 Spatial Level of Gender Disparity, 1981

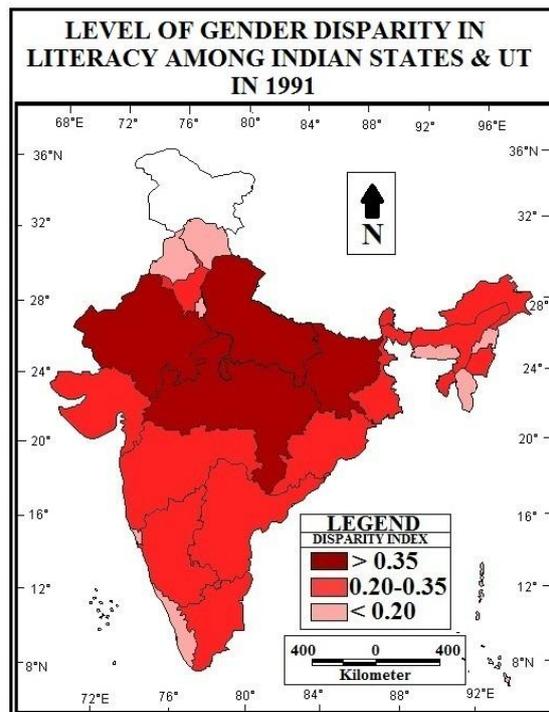


Fig: 5 Spatial Level of Gender Disparity, 1991

Source: Computed from Census of India documents.

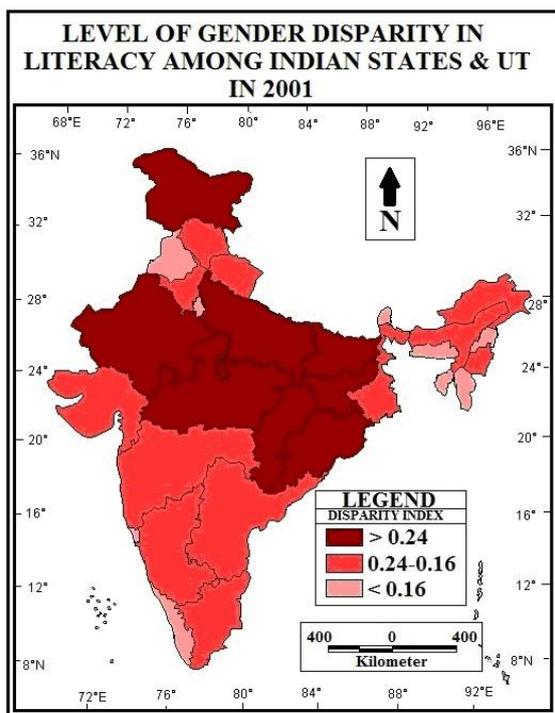


Fig: 6 Spatial Level of Gender Disparity, 2001

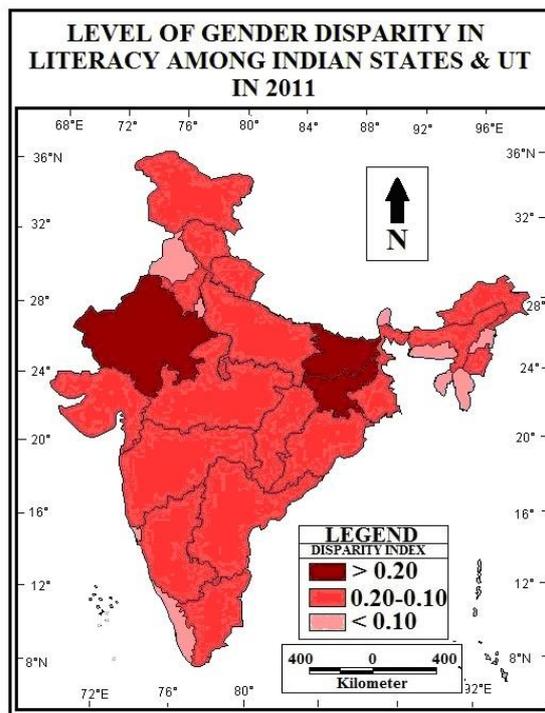


Fig: 7 Spatial Level of Gender Disparity, 2011

Source: Computed from Census of India documents.

V. III Low level of disparity

On the contrary, in the context of gender disparity in literacy the states like Punjab, and Kerala always performed better than the others. Performance of the union territories like Andaman & Nicobar Island, Delhi and Pondicherry remained always better, as having comparatively lower score in Disparity Index. The present scenario of 2011 states that there are 13 out of 35 states and union territories of Indian union lies in this category. Thus they comprise 37.14% of the territorial units which is comparatively higher than that of 1961, i.e. 21.74%. The spatial units of this group always experienced a significantly lower score in Disparity Index than the national average. After the formation of Nagaland, Meghalaya, Mizoram, Chandigarh and inclusion of Sikkim and Goa to the Indian union, always remained in this category. In 1991 Himachal Pradesh was also in this category. In light of this parameter performance of Meghalaya is best. Performance of Kerala also remained consistent in this parameter. Not only that the overall literacy rate of Kerala remained also highest for the period under consideration.

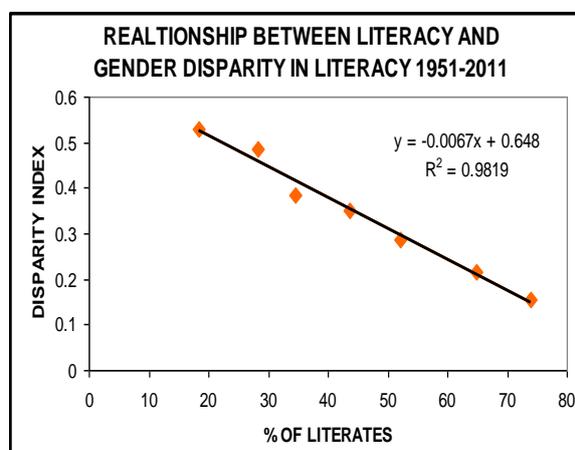
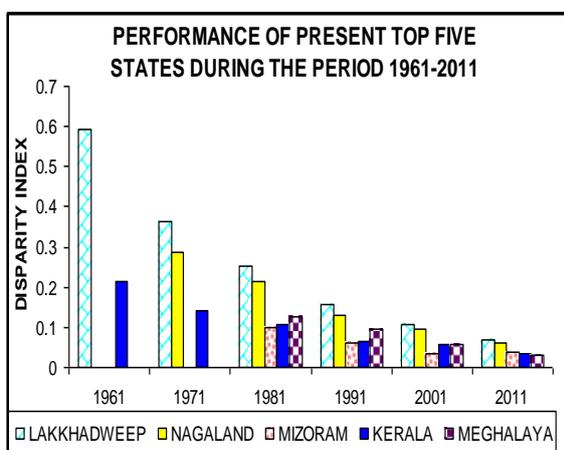


Fig: 8 Performance of top Five States (1961-2011) Fig: 9 Relationship of Literacy and Gender Gap in Literacy

Source: Computed from Census of India documents.

V. IV The present scenario

The present (2011) top five spatial units having the lower scores of Disparity Index are Meghalaya, Kerala, Mizoram, Nagaland and Lakshadweep. These spatial units have a continuous record of lower score, especially in case of Meghalaya, Mizoram and Kerala. These three states always remained among the top five states. Although Meghalaya and Mizoram came into existence since 1981 census, Kerala existed since 1961. Among the union territories beside Lakshadweep performance of Andaman & Nicobar Islands and Chandigarh is noteworthy. The above Figure (Fig: 9) exhibits that since independence the overall literacy rate of India has increased significantly, resulting into gradually dwindling gender disparity in literacy. Thus there prevail an inverse relationship between literacy rate and Disparity Index. Therefore, with the swelling literacy rate the gender disparity in literacy is expected to be reduced in future. Thus, providing a better circumstance to the female to come in the light of literacy.

Table: 2 Scores of States and Union Territories in Disparity Index

STATE / UT	DISPARITY INDEX					
	1961	1971	1981	1991	2001	2011
Andhra Pradesh	0.45	0.37	0.34	0.28	0.20	0.15
Arunachal Pradesh	NA	0.75	0.45	0.29	0.22	0.14
Assam	0.42	0.33	NA	0.21	0.16	0.11
Bihar	0.70	0.61	0.53	0.44	0.33	0.20
Chhattisgarh	-	-	-	-	0.25	0.19
Goa	NA	0.26	0.21	0.15	0.11	0.09
Gujarat	0.40	0.34	0.31	0.25	0.21	0.16
Haryana	-	0.46	0.42	0.31	0.22	0.17
Himachal Pradesh	0.69	0.39	0.31	0.23	0.16	0.13
Jammu and Kashmir	0.63	0.50	0.42	NA	0.26	0.19
Jharkhand	-	-	-	-	0.32	0.22
Karnataka	0.47	0.36	0.32	0.25	0.18	0.14
Kerala	0.21	0.14	0.11	0.07	0.05	0.04
Madhya Pradesh	0.66	0.54	0.48	0.38	0.26	0.19
Maharashtra	0.47	0.36	0.32	0.24	0.17	0.13
Manipur	0.55	0.45	0.35	0.25	0.18	0.12
Meghalaya	-	-	0.12	0.09	0.05	0.03
Mizoram	-	-	0.10	0.06	0.03	0.04
Nagaland	-	0.29	0.21	0.13	0.09	0.05
Orissa	0.68	0.51	0.44	0.34	0.25	0.16
Punjab	0.35	0.23	0.19	0.16	0.11	0.09
Rajasthan	0.66	0.59	0.58	0.52	0.33	0.28
Sikkim	0.70	0.49	0.36	0.20	0.15	0.09
Tamil Nadu	0.48	0.37	0.31	0.22	0.16	0.12
Tripura	0.52	0.33	0.28	0.21	0.15	0.07
Uttar Pradesh	0.65	0.53	0.52	0.42	0.29	0.19
Uttarakhand	-	-	-	-	0.22	0.16
West Bengal	0.43	0.33	0.29	0.22	0.16	0.11
A & N Islands	0.24	0.25	0.17	0.12	0.10	0.08
Chandigarh	NA	0.12	0.09	0.08	0.08	0.08
D & N Haveli	0.58	0.49	0.40	0.37	0.34	0.18
Daman and Diu	-	-	0.29	0.22	0.19	0.11
Delhi	0.20	0.17	0.63	0.14	0.11	0.09
Lakshadweep	0.59	0.36	0.25	0.15	0.10	0.07
Pondicherry	0.40	0.29	0.24	0.16	0.13	0.09
INDIA	0.48	0.38	0.35	0.29	0.22	0.16

Source: Computed from Census of India documents.

VI. Conclusion

While literacy is the ability to read and write, education means the ability to understand. Literacy is an end in itself [12]. Literacy is a crucial indicator of education [13]. Education is essential for holistic progress of any nation. Education is a basic requirement of the citizens of a nation [14]. Literacy feeds into education, which ultimately enable people to take decision, participate in developmental activities and build their own future. Since literacy helps to acquire better social status through social mobility it is also recognized as an important indicator of social development [15]. Though sex is biologically constructed, gender is a social construct. Legally women are considered as the equal half of men, but even after sixty eight years of independence they are restrained by the patriarchy and traditionalism. These problems are acute in the poverty stricken areas of the country. It is commonly observed that owing to orthodoxy and poverty, parents prefer to send boy child school than the girls. As a result their scopes to flourish in life become suppressed and they become dependent upon other. The condition is much severe in the BIMAROU states of central India. In many cases poverty prevent people from sending their child to school. Poor people in order to secure two square of meal prefer to engage their child in wage earning. Generation after generation lack of education also affects the over all literacy rate. Female are worse victim of this situation. On the contrary, states like Kerala, Meghalaya, Mizoram and union territory like Andaman and Nicobar Islands performs continually well in the ground of both overall literacy and having low gender disparity in literacy. In order to increase the literacy rate and bring women at par with the men, government has taken initiatives like Sarba Siksha Abhyan, National Literacy Mission, Sakshaar Bharat Mission, Mahila Samakhya Programme, Kasturba Gandhi Balika Vidyalaya Scheme, providing Scholarships etc. The scenario is changing; increasing mass awareness is leading to women empowerment. They are participating in employment and income generating activities. Besides partaking in family matters, women are taking community based decisions too. But the optimum condition is yet to achieve. Illiterate aged women could be served through informal education systems. Parents could be encouraged to send their daughter to schools. This paper highlights the overall situation of gender discrimination of India, through the instance of literacy. The findings coming out of this spatio-temporal investigation seek attention from all the stakeholders. Governments both at the national, state and local level should focus on mass awareness generation about the importance of female in the society as a better half their male counterparts. Government authorities should try to develop comprehensive plans ensuring proper grass root level participation of individuals and organizations to eliminate the prevailing gender inequality in literacy from India.

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