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Regional Inequality in Education in Punjab

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ABSTRACT: Education forms the base of human resource development, which in turn is quintessential for the economic development of a nation. Also, education is a basic right and every individual should have access to it. But, there are wide gaps in the provision of education all over the world. India is no different, as there are noteworthy fissures in the quantity and quality of education with regard to gender, region, religion, caste, etc. Some of its states excel in terms of education and some are just mediocre while still others are laggards. Punjab is one such state, which has shown mere average performance over the years. Though the overall literacy rates have improved over time, but wide discrepancies are still prevalent across the state. Districts in the Doaba region of the state have outperformed districts in the Majha and Malwa regions. This paper attempts to highlight and measure the regional disparities in education in the state of Punjab during 1991 and 2011. The technique of Gini coefficient has been deployed to measure the regional disparity in education. The results show that regional inequality in education is falling in case of male and female (and therefore, total) literacy. But, regional inequality in education is still present and is higher in case of female literacy.

Keywords: Regional inequality, education, Gini coefficient, Lorenz Curve, Punjab

1. INTRODUCTION

Education is the transfer of information from one person to the other though spoken words, gestures, audio or visual medium. According to EU Commission (2016), education refers to any act or experience that has a formative effect on an individual's mind, character, or physical ability. In its technical sense, education is the formal process by which society, through schools, colleges, universities and other institutions, deliberately transmits its cultural heritage and its accumulated knowledge, values and skills to the next generation (UNESCO). It is vital for the overall well being of the people as it makes one knowledgeable, independent and capable of taking care of oneself. Not only at the individual level, but it also plays a dominant role in laying down the foundation of a society and in determining economic development of an economy. Education increases stock of skills and productive knowledge embodied in people, and educated people create new ideas. There is wide acceptance in the literature that education contributes considerably to economic growth and development of nations (DiCorrado et al., 2015; Pegkas, 2014; and Hanushek, 2013). Thus, importance of education can be more highlighted for developing countries like India, where dearth of skilled human resource is still a major obstacle in the path of accelerated growth of the economy. Besides, equal access to education is one of the basic human rights,which everyone should get. But,it is shown by many studies that educational gaps between various groups of people (categorised on the basis of area, gender, religion, caste, etc.) in some countries are astounding.

Even after more than 70 years of independence, India is still educationally backward. No doubt, we are moving in right direction, but this is insufficient as there are wide variations and discriminations present in the field of education. Literacy rates are also not uniform across Indian states as some states boost of high literacy rates (like Kerala, Maharashtra, etc.) others have low rates (like Bihar, Rajasthan, etc.) while some others have managed to achieve mediocre levels (like Punjab, Haryana, etc.).India can learn as much from itself as it can from other countries because there are a wide variety of performances in educational development among the Indian states. States doing better did early promotion of education and maintained educational equity, while others failed. Punjab is one such state that has failed to uphold equality in educational opportunities to its residents, and result is for all to see. Failure of education system and dearth of employment opportunities have brought the state to the situation of mass exodus of young minds to foreign lands. Youth of Punjab has lost its faith in the states' administration and institutions. This is utterly disappointing and absolutely unhealthy for the society and economy of the state. Massive inequalities exist in the state with regard to education, both gender-wise and region-wise.Though there is improvement in literacy in all the districts across the state, yet there is a clear north-south divide. Districts in the northern part of the state have an edge in terms of literate population over the areas in the southern part. This gap has been impressed upon by other researchers also (e.g., Pushkarna, 2017; and Singh, 2017). This gap has remained there, though somewhat reduced, throughout the period spanning two decadesi.e. from 1991 to 2011. It means some extra efforts are required on the part of the government and society to bring these areas at par with those that are better placed, so that there is more equality in the society. Lost opportunities lead to loss of welfare and demographic dividend. Thus, there is a dire need to reduce gaps in provision of resources and opportunities. For this, it is necessary to know as to where the gaps exist and how much.

2. REVIEW OF LITERATURE

Though literacy level in Punjab has increased to 75.8 percent in 2011, it slipped from 16th rank among all Indian states in 2001 to 21st rank in 2011. Thus, it is lagging in the education sector in comparison to other states. Also, there are significant disparities in literacy across the state. Lal (2019) conducted a spatial study on urban-rural differentials in literacy rates in Punjab at district level and found that districts in the northern and north-eastern regions were way ahead than the districts in southern and south-western part of the state. Also, it was observed that there existed a wide gap in literacy rates in urban and rural areas. In a similar study by Kaushik (2018), it was asserted that only four districts, namely Amritsar, Jalandhar, Ludhiana and Patiala, have good levels of literacy due to higher rate of urbanization and better accessibility of education in these areas. In an another study, Pushkarna (2017) also points out that though overall literacy rate in Punjab is rising, but the rate of increase is decreasing over the time. Also, there were vast urban-rural and male-female differentials in literacy rates in the state.Districts in the eastern part of Punjab were having more rural literacy rate than districts in the western part.Further, urban-rural differentials were highly pronounced in Amritsar, Ferozepur, Faridkot, Muktsar, Moga, Bathinda, Mansa and Patiala and lower in Gurdaspur, Kapurthala, Jalandhar, SBS Nagar, Hoshiarpur, Rupnagar, SAS Nagar, Ludhiana and Fatehgarh Sahib. The areas where differential index equalled that to the state averagewere Tarn-Taran, Sangrur and Barnala.Sharmila (2019) on the other hand, did a similar analysis for the state of Haryana and brought to fore the occurrence of towering male-female differentials in literacy rates. Moreover, district-wise differentials in female literacy rates were stunningly higher than the differentials in male literacy rates. It was asserted that

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this was due the patriarchal nature of the society and high discrimination against women in the state. Also, there were much higher differentials in rural literacy levels across the districts in the state as compared to urban literacy levels. Singh (2017) in a study comparing literacy levels in Punjab and Haryana pointed out that both the states had shown good leap in literacy rates over the decades and were comparable in terms of literacy rates in 2011. Also, both were similar in aspect of significant prevalence of spatial and male-female literacy differentials. But, it was found that male-female literacy differential index in Haryana was almost double as compared to that in Punjab.

Thus, the existing literature suggests that regional disparity in literacy in Punjab has not vanished with augmenting literacy rates and this issue needs further probing. This paper attempts to examine the extent of regional inequality in the state of Punjab.

3. RESEARCH METHODOLOGY

Research methodology is a well laid out plan to find a solution to the research problem. It includes all the steps that are associated with research, i.e.defining a research problem, statement of research gap and research questions, formulation of research objectives and hypothesis, describing the type of research, types and sources of research data, data collection method and instrument, scope of the study, technique for data analysis, etc. It is, no doubt, a very detailed and cumbersome procedure, but is of high importance as it forms the foundation of the entire work. A clear-cut and strong methodology makes research incredibly smooth and reliable. There are ample techniques to carry out data analysis and there are numerous measures to know deviations in the data, Gini Index measures relative inequality. Relative inequality is also important and needs to be measured as it fosters violent crimes because it is associated with social strains and the feeling of relative deprivation (Goda, 2016). In this paper, the Gini coefficient has been applied in context of education. Scope of study is the state of Punjab and secondary data for the years 1991, 2001 and 2011 have been taken from various Population Censuses.

Objectives

The main objectives of the study are as follows:

1. To check whether regional disparity in literacy rates in Punjab is time invariant or not
2. To examine the difference in the regional disparity in male and female literacy rates in Punjab

Hypothesis

H_{0A} : Regional disparity in literacy rates in Punjab is time invariant

H_{0B} : There is no significant difference in the regional disparity in male and female literacy rates in Punjab

Gini Co-efficient: Meaning& Calculation

Gini Index is a principal measure of statistical dispersion. It was developed by Corrado Gini in 1912 to measure income inequality in the economy. But, in modern times it is being used to measure various types of inequalities in the society and the economy, like inequality in use of natural resources, inequality in opportunity; to measure the impact of tax-rate, welfare schemes, etc. (Greselin and Zitikis, 2018). Also, this is being commonly used to measure inequalities in the field of education (e.g., Thomas et.al. 2001; Digdowiseiso, 2010; and Cuaresma et. al. 2012). Inequality in education has measured through different indicators by

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different researcher. Some have used years of schooling (Digdowiseiso, 2010; Cuaresma et. al. 2012; Ziesemer, 2015), enrolment ratios and quality of schooling (Thomas et al. 2001), and literacy rates (Bhakta, 2015).

The computation of the Gini index is based on the Lorenz Curve as its graphical representation. Lorenz curve is a continuous function which results from plotting the cumulative percentage of the population against the cumulative percentage of population with desired characteristic. Area between the forty five-degree line, which is the line of equality and the Lorenz curve, determines the degree of inequality in the distribution. The larger the area the higher is the inequality; and conversely. Gini Coefficient is then calculatedas the ratio between this area and the area of the whole triangle below the "line of equality" (Cuaresma, 2012). Lorenz curve is generally defined for quintiles or deciles (Fellman, 2012). But, in case of large population, any proportion between 0 and 1 can be made andit can be assumedthat the Lorenz curve is continuous and apply calculus to calculate the Gini coefficient (Catalano et. al. 2009). Formula for computing Gini co-efficient is given as:

$$\textit{Gini Co-efficient} = 1 - 2\{{}_0^1\textstyle\int F(X)\,dx\}$$

4. RESULTS & INTERPRETATION

In this section Gini Coefficient has been calculated for total literacy, male literacy and female literacy in the state of Punjab for the years 1991, 2001 and 2011. First of all cumulative percentages of total population and literate population for all the districts in the state have been computed. Then line of equality and Lorenz curve have been plotted by taking cumulative percentage of literate population on vertical axis and cumulative percentage of total population on horizontal axis. Then area under the Lorenz curve has been calculated by the technique of integration: Gini Coefficient $= 1 - 2\{{}_0^1\int F(X)\,dx\}$ (Catalano et al., 2009). Gini value closer to zero means higher equality in the distribution whereas, Gini value closer to one implies higher inequality in the distribution. In terms of Lorenz curve, farther the curve from the line of equality, higher is the inequality, and conversely. Similar calculations were then performed for female literacy and male literacy.

Table 1: Gini Coefficient for Total, Female & Male Literacy in Punjab (1991-2011)

Gini Coefficient for:	**1991**	**2001**	**2011**
Total Literacy	.33	.1104	.0684
Female Literacy	.273	.1374	.0904
Male Literacy	.4514	.0886	.0545

Source: Self Calculation

The table indicates that Gini co-efficient for literacy has been declining for all the three variables i.e. total, female and male literacy levels in Punjab during 1991 and 2011. This means that inequality is reducing among different districts of the state in terms of literacy. In 1991, inequality in male literacy levels was higher than in female literacy levels. But, in 2011, inequality in female literacy rate is higher than that in male literacy. Thus, disparities still persist in the state in terms of literacy rates, especially in case of its female population.

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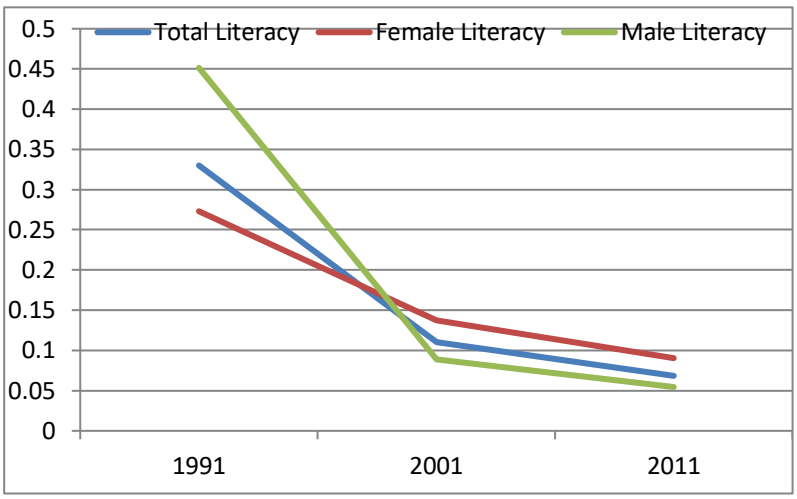
Figure 1: Trends in Gini Coefficient for Total, Female and Male Literacy in Punjab (1991-2011)



It is clear from the figure that Gini coefficient had been falling both for male as well as for female literacy in Punjab during the period 1991 to 2011. Thus, the first hypothesis has been rejected and therefore, regional disparity in literacy rates in Punjab is time variant. But, the rate of fall has slowed down for both. Moreover, the second hypothesis has also been rejected as the rate of fall had been much slower in case of female literacy than in the case of male literacy, thereby leading to educational inequality still higher among female population in different districts of the state than among the male population.

5. CONCLUSION

Thus, it can be concluded that regional inequalities in context of literacy still persist in Punjab, and more so in case of female population. Similar results were propounded by Lal (2019), Kaushik (2018) and Pushkarna (2017) in studies related to rural-urban divide in Punjab in terms of literacy rate. Further, the fall in regional inequality in literacy is in consonance with the studies at national level (e.g., Bhakta, 2015), which asserted that though regional gaps still existed in India, those were reducing with time.

The above analysis indicates that though the literacy levels have increased in Punjab during 1991 to 2011, but the discriminations still subsist many are still deprived of their basic right of education. This is not a healthy state of affairs as such inequities brew tensions and clashes in the society and harm its harmony, which is sin-qua-non for economic advancement. Therefore,the goal of universal education should be pursued ever aggressively. Under-performing districts should be identified andexcessive stress be laidon improvement of literacy rates in laggard areas and districts in the state. Even when the school education has been made free, the poor send their children to work rather than schools so as to earn money. Extra financial assistance can be given to such weaker sections of the society. But, most importantly an attitudinal change is urgently and seriously called for to transform the existing state of affairs. Only a change in outlook towards education can bring the desired improvement in literacy rates in general and female literacy rates in particular.

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