

EDUCATIONAL GENDER GAP IN ASSAM: A STATISTICAL ANALYSIS

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ABSTRACT

In the division of gender roles at the household and societal levels the gender gap has been situated as one of the most powerful factors underlying educational disparities. Gender-based family socialization processes appear to play an important role in creating the gender gaps in various socio-demographic characteristics. The gender gap is an acute and persistent problem, especially in developing societies. In this paper an attempt has been made to highlight and analyse the various aspects of gender gaps pertaining to education more specifically in respect of literacy rate in Assam. Here, Gender Crude Literacy Rate, Gender Education Index, Gender Equity Education Index etc have been calculated using secondary information from census 2001 and 2011 to find out how gender gaps exist in literacy in Assam. Besides, a prediction has been made on gender gap in literacy rate for the year 2051 and the study reveals that the gap in literacy will attain zero differences by 2091. Finally the statistical relationship between gender gap in literacy and sex ratio in Assam since 1951 to 2011 have been studied and found almost perfect negative correlation. It means that as gender gap increases in the literacy rate the sex ratio decreases proportionately.

KEYWORDS: Gender Gap, Gender Crude Literacy Rate, Gender Equity Education Index, Prediction, Correlation etc

INTRODUCTION

The fundamental definition of gender system within demographic study largely stems from Mason's [1997] concept of gender system. He describes gender system as "gender systems prescribe a division of labour and responsibilities between men and women and grant different rights and obligations to them". Gender roles and gender equity are two folds of gender system. The second fold, gender equity inversely gender gap is the basic priority of our study.

The gender gap is the level of institutionalized inequality between men and women at the individual and societal level. Gender-based family socialization processes appear to play an important role in creating the gender gap. Entwisle et al. [1994, 1997] argue that families typically give young boys more independence than young girls. Nancy Lopez's [2003] ethnographical study of low-income, second generation Dominican, West Indian and Haitians similarly produced evidence that parents give more independence to boys and exert more social control on girls. According to Das and Pathak [2012] gender disparities in India deserve a serious study and discussion among media, academia, researchers and policy maker of country. The Economic Survey [2011-12] has emphasized that much needs to be done to reduce disparities between men and women. Thus the gender gap is being an acute and persistent problem, especially in developing societies like Assam.

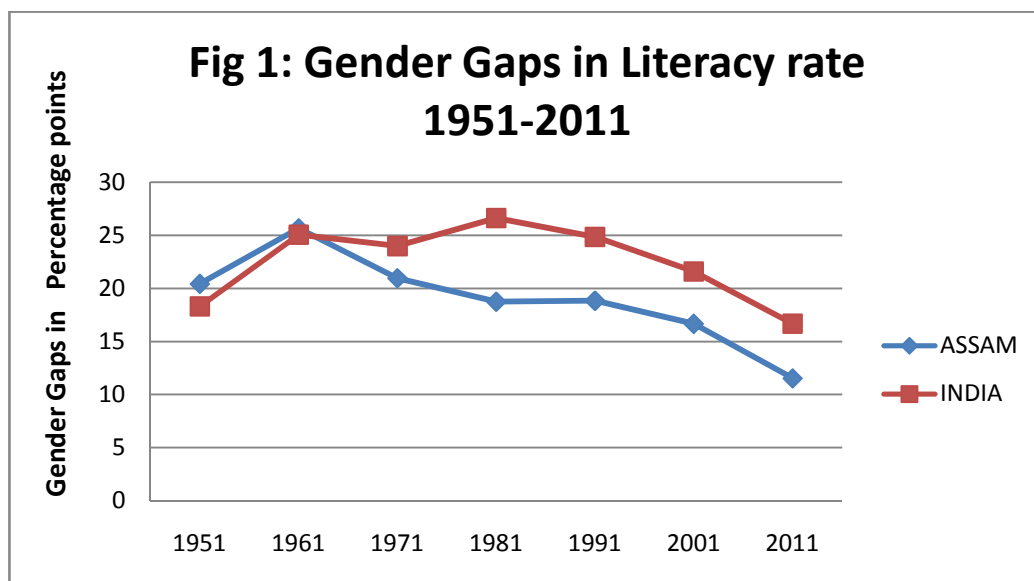
In this paper, an attempt has been made to find out the gender gaps in Assam consisting in educational level. As education is an essential social element to eliminate gender discrimination and bring women in parity with men in the

society, we concentrate only on education among the social variables. To measure the actual disparities in gender related indices for educational level in Assam, the Gender Education Index, Gender Crude Literacy Rate, Education Equity Index etc have been calculated. Besides, a prediction has been made on gender gap in literacy rate for the year 2051 and the study reveals that the gap in literacy will attain zero differences by 2091. Finally the statistical relationship between gender gap in literacy and sex ratio in Assam since 1951 to 2011 have been studied and found almost perfect negative correlation. It means that as gender gap increases in the literacy rate the sex ratio decreases proportionately.

GENDER GAP IN EDUCATION IN ASSAM

Education leads to change the social values, perceptions, thinking, increases earnings, eliminates social discrimination and eradicates poverty and all these are essential for sustainable and balanced development of a society or a nation. Therefore, education is essential to eliminate gender gap and bring women in parity with men in the society. As a result the Assam C.M's vision 2016 for women and children lays emphasis on education. In this section of the paper we made a numerical discussion to scratch the gender gap in literacy in Assam. Gosh [2013] argues that the progress of education in the North-Eastern Region of the nation is not satisfactory. Inequalities in literacy between male and female population are prevailing in the region. Also the study of Nath [2013] on women status in Assam based on gender related indicators established that number of child ever born to an illiterate women much higher than that of literate.

The gender gap in literacy rate in Assam during 1951 to 2011 is shown in the following figure1 comparing these values with national figures.



The figure 1: shows a huge disparity in literacy rate between men and women in Assam since 1951 to 2011. The gender gap in literacy has been reduced to great extent in Assam but still not attaining zero gap or equal literacy. The gender gap in literacy in Assam was maximum with 25.66 percentage points in the year 1961 and then has been reducing slightly with present gap 11.54 which is 5.14 percentage points less than the current national figure 16.68. The line for Assam is found discrete because in 1981 census was not conducted in Assam due to insurgency of Assam movement.

Crude Female Literacy Rate 2011 for Assam

$$CFLR \text{ for Assam } 2011 = \frac{\text{Number of female literate}}{\text{Total female}} \times 100 = 57.51$$

Crude Male Literacy Rate 2011 for Assam

$$CMLR \text{ for Assam 2011} = \frac{\text{Number of male literate}}{\text{Total male}} \times 100 = 67.42$$

From the above two literacy indices for male and female we have observed that there is a 9.91 percentage point gender gap in the crude literacy rate in Assam according to census 2011.

GENDER EDUCATION INDEX

In this subsection of the study we have calculated two education indices separately for male and female. These education indices measure the state's achievement in both literacy and gross enrolment rate.

- Female Education Index:

This education index is the two third of female literacy index plus one third of female gross enrolment index. The calculated figure of this index for Assam is

$$\frac{2}{3}(0.6727) + \frac{1}{3}(0.7400) = 0.6952$$

- Male Education Index:

This education index is the two third of male literacy index plus one third of male gross enrolment index. The calculated figure of this index for Assam is

$$\frac{2}{3}(0.7881) + \frac{1}{3}(0.7000) = 0.7587$$

Here we have observed that the female education index is smaller than the male counterpart. It is estimated that gender gap in education index is 0.0635. This reveals that women education in the state is still not accelerating as male education.

GENDER EQUITY EDUCATION INDEX

This measure of education index is the sub index of gender-related development index (GDI) which measures the average achievement to reflect the inequalities in literacy between men and women. The value of gender equity education index (GEEI) is lies between 0 and 1. If its value is zero then we say there is maximum inequality between men and women and if 1 then there is no inequality that is equal education achieved for men and women.

Gender Equity Education Index is given by

$$GEEI = \left[\left\{ \text{female population share (female education index)}^{-1} \right\} + \left\{ \text{male population share (male education index)}^{-1} \right\} \right]^{-1}$$

We have GEEI for Assam according to census 2011 as

$$GEEI = \left[\left\{ 0.4881 (0.6952)^{-1} \right\} + \left\{ 0.5119 (0.7587)^{-1} \right\} \right]^{-1} = 0.7263$$

This reveals that the literacy in Assam is not still equally distributed irrespective of men and women. The equal education for men and women will be achieved only when gender equity education index approaches to unity.

FORECASTING OF GENDER GAP IN ASSAM

Here the gender gap on the basis of the census data from 1951 to 2011 we have made an attempt to predict the existing gaps on educational level pertaining in Assam. The least square method applied to predict the gap and found the following forecasting model

$$\widehat{U}_t = 18.9786 - 0.1670t$$

Where \widehat{U}_t represent the estimated gap on education and t represents the time. For the year 2051 we have the gap $\widehat{U}_{2051} = 18.9786 - 0.1670 \times 70 = 7.2886$ and the study reveals that the gap in literacy will attain zero differences by 2091.

Statistical Relationship between Gender Gap in Literacy and Sex Ratio in Assam

In the study of relationship between gender gap in literacy and sex ratio in Assam for various census years we found negative correlation about -0.89. This establishes the fact that as gender gap in literacy increases sex ratio is decreased. The calculated value of t statistic and probable error for the observed correlation coefficient are summarized in the following table1.

Table 1: Statistical Relationship between Gender Gap in Literacy and Sex Ratio in Assam

Correlation Coefficient	t-statistic	Probable error
-0.89	$ t = 4.6343$	0.0530

From the table 1, the correlation coefficient reveals that there is an almost perfect negative correlation between gender gap in literacy and sex ratio in Assam. The calculated value of t-statistic and probable error shows that gender gap is significantly related to sex ratio.

DISCUSSIONS

Education leads to change the social values, perceptions, thinking, increases earnings, eliminates social discrimination and eradicates poverty and all these are essential for sustainable and balanced development of a society or a nation. Therefore, education is essential to eliminate gender gap and bring women in parity with men in the society. But in Assam according to census reports 2001 and 2011 we have observed a huge gender gap in education which reveals the educational disparities pertaining in Assam between men and women at individual and societal level. Social behavioral and religious skills are a prime suspect in producing gaps in educational outcomes.

In the study of relationship between gender gap in literacy and sex ratio in Assam for various census years we found negative correlation. This establishes the fact that as gender gap in literacy increases sex ratio is decreased. Which reflects that sex ratio is significantly correlated with the women's education.

CONCLUSIONS

Men and women are equal natural partners in evaluation, civilization and growth process of a community or a nation. Therefore, if the human eco-system is to function, it is necessary that, apart from the numbers (sex ratio), both men and women enjoy equal social, economic and political status and only such a society can be progressive, sustainable and considered developed. More attention to be paid on female education to brings them in parity in society in Assam. Strong son preference attitude that is gender biased attitude in child selection is found in the study and female child foeticed

incidents occurred in large scale resulting imbalanced child sex ratio and gender gap in IMR in Assam. Finally we conclude with the remarks that the gender gap will reduce in every aspect of the society in Assam if and only if men recognized and accept the fact that women are equal partners in life and gender gap is not women's issue only, it is an issue of society.

REFERENCES

1. Das, D and Pathak, Minakshee [2012]: Gender Equality: A core concept of Socio- Economic Development in India. *Assian Journal of Social Sciences & Humanities*. **1(4)**:257-264
2. Mason, K. Oppenheim [1997]: Gender and demographic change: What do we know? In the *Continuing Demographic Transitions* edited by G. W. Jones et al. Oxford Clarendon Press. 158-182
3. Entwisle, Doris R., Karl L. Alexander, and Linda Steffel. Olson [1994]: "The gender gap in math: it's possible origins in neighborhood effects." *American Sociological Review* **59**:822-838.
4. Entwisle, Doris R., Karl L. Alexander, and Linda Steffel. Olson [1997]: *Children, schools, and inequality*. Boulder, Colo.: Westview Press.
5. Lopez, Nancy [2003]: *Hopeful Girls, Troubled Boys: Race and Gender Disparity in Urban Education*. Routledge.
6. Gosh, B [2013]: Present Status of Literacy- A Cross Sectional Analysis (with special reference to N-E region in India. *Scholar's View*. **1(2)**:187-191
7. Nath, Ajanta [2013]: An Analysis on Status of Women in Assam Based on Gender Related Development Indicators. *ACTA Journal* **XXXV**, Session 2011-12

