

Impact Of Female Literacy On Population Growth-A Study In Assam

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Abstract

Education has an important role to play in the improvement of the economic and social status of women. It influences the number and spacing of children desired and eventually attained. This role has been recognized and emphasized at the United Nations conferences on population, notably at the International Conference on Population and Development held in Cairo in 1994. As observed from recent survey data education continues to exert a significant influence on fertility levels, preferences and regulation. At the aggregate level, countries with higher literacy rates and overall educational attainment have lower total fertility rates (TFRs) than countries whose population have lower education levels. The effect of a country's overall level of education on its TFR exists in both developing and developed countries.

Among the eight north eastern states Assam has the highest population. As per the 2011 Census, the total population of Assam is 3.12 crores and it forms 2.58 percent of India's population. In Assam, out of the total population of 3.12 crores, 1.59 crores are males while 1.53 crores are females. The total population of the state has increased from 2.67 crores in 2001 to 3.12 crores in 2011. The total population of Assam is expected to reach 3.42 crores in 2021 and 3.56 crores by 2026. Among the 27 districts, as per 2011 census, Kamrup, Nagaon, Sonitpur, Barpeta, Dhubri, Darrang and Cachar are with higher concentration of population. . According to the 2011 census study, the total literacy rate of Assam is 72.19 percent. The male literacy rate in the state being 77.85 percent and the female literacy rate being 66.27 percent Population growth and female literacy rate are two very important aspects for a developing country like India. The study related to the relationship between population growth and female literacy rate are few and far between in the state of Assam. To fill this research gap this study has been undertaken. The researchers have also made an effort to recommend certain policy prescription to combat the high growth of population in Assam.

Key words: Female Literacy Rate, Population Growth, Crude Birth Rate, Infant Mortality Rate

Introduction

The state of Assam is situated in the North-East of India. Assam is bordered by Bhutan and the state of Arunachal Pradesh to the north; Nagaland, Arunachal Pradesh and Manipur to the east; Meghalaya, Tripura, Mizoram, and Bangladesh to the south; and West Bengal to the west. Geographically, the present Assam is much different from her former self. In the year 1948, the North East Frontier Agency (NEFA) had been separated from Assam. In 1957, Nagaland was carved out of Assam as a centrally administered area and was accorded the statehood in 1961. In the year 1970 Meghalaya was made an autonomous state and in 1972 it was recognized as a full-fledged state. In the same year, Mizoram became a Union Territory and was conferred the statehood in 1987.

Among the eight north eastern states Assam has the highest population. As per the 2011 Census, the total population of Assam is 3.12 crores and it forms 2.58 percent of India's population. In Assam, out of the total population of 3.12 crores, 1.59 crores are males while 1.53 crores are females. The total population of the state has increased from 2.67 crores in 2001 to 3.12 crores in 2011. The total population of Assam is expected to reach 3.42 crores in 2021 and 3.56 crores by 2026. Among the 27 districts, as per 2011 census, Kamrup, Nagaon, Sonitpur, Barpeta, Dhubri, Darrang and Cachar are with higher concentration of population. The state of Assam has an area of 78,438 square km (30,285 sq miles). Thus the population density of Assam is 398 per square km which is higher than the national average of 382 per square km. According to the 2011 census study, the total literacy rate of Assam is 72.19 percent. The male literacy rate in the state being 77.85 percent and the female literacy rate being 66.27 percent. Population growth and female literacy rate are two very important aspects for a developing country like India. Although India had introduced the National Family Planning Program way back in the 1950s it is disheartening to see that India is still the second most populous country in the world. An inverse relationship between female literacy and population growth can be witnessed while studying the data of population growth and female literacy rate for the state of Assam. The literacy rate for Assam as per 2011 census is 72.19 percent; 77.85 percent for males and 66.27 percent for females. In 2001 census, literacy rate for the total population of Assam was 63.25 percent with 71.28 percent for males and 54.61 percent for females. The highest literacy rate at the district level is observed in the district of Kamrup (Metro) followed by Jorhat and Sivasagar while the lowest rate is recorded by the District of Dhubri. It is interesting to note here that female literacy rate appears to have increased at a faster rate than that of male literacy rate during 2001-2011, from 54.61 percent in 2001 to 66.27 percent in 2011 showing a spectacular rise of about 12 percentage point. The decadal growth of the State's population works out at 17.07 percent during 2001-2011 as against 18.85 percent during the previous decade.

By means of econometric analysis, when a linear regression was studied keeping the population growth as the dependent variable and the female literacy as the independent variable, a significant negative relationship was noted between the two, which confirmed that a growth in female literacy keeps a check on population.

The problem of over population

The term 'over population' is relative. In the primitive rural economy people wanted children in order to have more hands to work on the fields. The larger the numbers, the greater the production, and more the earning for having enough food for all; a large population was not a problem. It is also not a problem

if there are sufficient living space and supply of food. But where there is dearth of space and food, increase in population is certainly a burden on those who have to deal with these matters.

Today, overpopulation is a major reason for most of the world's problems. The rapid growth of population today has become a great challenge for the policy makers in India. This burning issue has hampered the overall growth of our state Assam along with the nation. The problem of poverty, unemployment, inflation, dearth of capital, insurgencies etc. are all the result of over population. The influx of population from the neighbouring countries of Bangladesh and Myanmar has further aggravated this problem.

Female Literacy and population growth

In India as well as in Assam the females especially the illiterate ones are married at a very young age and begin giving birth to children at a very tender age. Education can play a very important role in delaying the marriageable age and creating awareness amongst the females regarding the harmful impact of early child birth to health and mortality of the mother and the child. Literate women become aware of family planning and willingly use the various birth control measures. Besides their child bearing role the educated women are also interested in their careers and social activities. Although there are various factors affecting the population growth, female literacy can be regarded as one of the most significant one. In case of Assam, if the female literacy rate rises rapidly it can play a significant role in lowering the fertility rate and also attaining various goals of development which have been obstructed by the high population growth of the state. It has been observed around the world that as compared to women with no formal education women who have had the opportunity of attaining primary education and especially women who have been given secondary education have a lower total fertility rate (Jain 1981). In addition to lower fertility rates female education often also leads to better child health outcomes. In order to analyse the effect of mothers' education on their children's outcomes, Currie and Moretti (2003) used Vital Statistics Natality data in the United States for 1970 to 1999. Education also affects the women's decision regarding the number of children. Though both income and education have significant impact on women's fertility, the impact of education is comparatively greater (Handa, 2000). Female education has a great impact on determining the age at marriage and number of children (Breierva and Duflo, 2002). Education can raise a woman's permanent income through her earnings, and can motivate her to have few healthy children. Education can also lead to an improvement of an individual's knowledge and awareness of, and ability to process information with regard to fertility options and healthy pregnancy behaviors (Grossman 1972).

Education has an important role to play in the improvement of the economic and social status of women. It influences the number and spacing of children desired and eventually attained. This role has been recognized and emphasized at the United Nations conferences on population, notably at the International Conference on Population and Development held in Cairo in 1994. As observed from recent survey data education continues to exert a significant influence on fertility levels, preferences and regulation. At the aggregate level, countries with higher literacy rates and overall educational attainment have lower total fertility rates (TFRs) than countries whose populations have lower

education levels. The effect of a country's overall level of education on its TFR exists in both developing and developed countries.

According to the World Population Report, "A mother's education is the single most important factor keeping her family small and her children alive. Education is the first line of defence for women faced with the life-threatening situations that traditional life styles perpetuate. It encourages a sense of control over personal destiny. With an education, the women's status steps beyond the confines of motherhood. Further, the quality of life in the family of an educated woman becomes a priority."

Education through a set of intervening variables helps in reducing the fertility rate. An educated woman is very likely to delay her marriage and postpone childbearing. As compared to women without formal education, the level of contraceptive use among educated women is considerably higher. Educated women are often found to use health services. Literate women are healthier themselves and are less vulnerable to the risks of childbirth. The children of educated women are also found to be healthy. Educated women are often empowered and tend to communicate more with their husbands and have a healthy relationship with them. They involve themselves in family matters and participate in family decisions including decision with regard to the number of children they should have. They also have high chances for employment, raising their productivity and self-esteem. An educated woman is self confident and participates in community activities. She is more open to new practices and changes, want more things in life and is well aware of the value of education for her children. All these results in a desire to have fewer children.

Rationale of the Study

Here in this study an attempt has been made to discuss the population scenario in Assam. Since it has been observed that the educated mothers are more likely to use better health services and are less prone to risks of childbirth, the researchers have tried to find out the linkage between the population growth and the education of mothers. Thus this study entitled "Impact of Female Literacy on Population Growth-A study in Assam" is undertaken with the following objectives

Objectives:

The broad objective of the study is to analyze the impact of female literacy on crude birth rate (CBR) which in turn increases the natural population growth.

Its specific objectives are

- To understand the affect of Infant Mortality rate (IMR) on CBR.
- To suggest measures to control the high growth of population in Assam

Population Growth in Assam

Assam is situated in the North-Eastern Himalayan sub-region of India. The total geographical area of Assam is 78438 sq km. According to 2011 census, the total population of Assam is 3.12 crores which is

expected to reach 3.56 crores by 2026. According to 2011 census the decadal growth rate of population in the state is 17.07 percent which is slightly lower than the national decadal growth rate (17.7).

Of the 27 districts of Assam, eight districts registered rise in the decadal population growth rate. Interestingly, religious minority dominated districts like Dhubri, Goalpara, Barpeta, Nagaon, Hailakandi, Karimganj, Morigaon etc. recorded growth rates ranging from 20 percent to 24 percent. On the other hand, eastern Assam districts like Sivasagar, Jorhat, Dibrugarh, Golaghat etc registered around 9 percent to 12 percent population growth and these districts do not share any international border.

The highest annual growth of population is observed in Dhubri (2.44) followed by Morigaon (2.339), Goalpara (2.274), Nagaon(2.209). On the other hand the lowest growth of population is observed in Kokrajhar(.519) followed by Jorhat(.921),Sivasagar (.937) and Udalguri (.976).

The population, its decadal growth rate along with density of population in some selected districts in Assam are shown in the following table.

Table-1 Population Statistics in Assam

Sl. no	Districts	Population 2011	Population Density	Decadal Growth Rate
1	Dhubri	1948632	1171	24.40
2	Nagaon	2826006	618	22.09
3	Barpeta	1693190	521	21.40
4	Morigaon	957853	632	23.39
5	Kamrup(M)	1260419	2010	18.95
6	Dibrugarh	1327748	393	12.04
7	Jorhat	1091295	383	9.21
8	Karimganj	1217002	673	20.74
9	Goalpara	1008959	553	22.74
10	Udalguri	832769	497	9.76
11	Kokrajhar	843243	280	5.19
12	Cachar	1736319	459	20.17
13	Dima Hasao	213529	44	13.53
	Assam	31169272	397	16.93

Source: Statistical Handbook Assam 2011

The density of population is highest in Kamrup (Metro) followed by Dhubri. Similarly the Dhubri district recorded the highest decadal growth rate of population followed by Morigaon, Goalpara, Nagaon and Barpeta districts. The density of population is lowest in Dima Hasao. The districts like Kokrajhar, Jorhat, Dibrugarh have recorded density of population which are lower than the State population density. The decadal growth rate too are quite less in these three districts.

Population Growth and Women Literacy- The model

In order to find out how the growth rate of population of Assam has been affected by the level of female literacy rate a model has been constructed as follows. Population is being affected by many factors such as CBR, IMR, female literacy rate and so on. Here in this study we are considering female literacy rate as the sole determinant of population growth rate. Hence in this study we form a simple linear regression model considering crude birth rate (CBR) as a dependent variable (Y) and female literacy rate (X) as an independent variable.

Our model is

$$Y = \alpha + \beta X + U$$

Where 'Y' is the dependent variable which means the CBR and

X= Female Literacy Rate

Table: 2 Population Statistics in Assam

Districts	Population 2011	Female literacy rate	CBR	Decadal Growth	IMR
Dhubri	1949258	77.30	22.1	24.40	72
Nagaon	2823768	83.76	24.6	22.09	66
Barpeta	1693622	81.94	20.8	21.40	48
Dhemaji	686133	79.31	23	23.39	44
Kamrup(M)	1253938	88.09	16.3	18.95	45
Dibrugarh	1326335	87.03	20.1	12.04	55
Jorhat	1092256	87.72	20	9.21	57
Karbi Anglong	956313	72.94	21.2	22.74	59
Darang	928500	81.60	20.8	9.76	69
Tinisukia	1327929	83.17	21.1	5.19	55
Morigaon	957423	64.04	23.5	23.33	72
Goalpara	1008183	63.13	22.5	22.64	56
Kokrajhar	887142	58.27	23.1	5.21	76
Karimganj	1228686	72.09	25.8	21.90	69
Hailakandi	659296	67.60	32.1	21.44	55
Assam	31205576	66.27	21.9	17.07	60

Source: Statistical Handbook Assam 2011, Census report of Assam,2011, Assam health survey 2010-11

The results and findings:

Using Regression Technique we find

F=4.93, and it is seen that over all, the model is significant at 5% level of significance.

Table: 3 Results of simple regression analysis of the population growth in some selected districts of Assam.

Model	Beta	t , df=1	sig
Constant	35.86	5.885873	3.96E-05
Female LR	-0.17703	-2.22153	0.043314

From the model it is seen that CBR is negatively affected by female literacy rate. It has also been observed that female literacy rate has significant impact on CBR .

From our analysis we can conclude that the growth rate of population in Assam is affected by female literacy rate. It has been observed from table-2 that in the districts like Jorhat, Dibrugarh and Kamrup (Metro) the female literacy rates are around 87 to 88 percent and these districts experience lower CBR. On the other hand, the districts like Dhubri, Karimganj, Morigaon, Goalpara and Hilakandi experience higher CBR and their female literacy rates are around 58 to 77 percent. The district Nagaon is an exception in this case which experiences a high CBR in spite of having high female literacy rate (83.76). This may be due to the distinct population composition of the district. But it should be noted that the districts like Dhubri, Karimganj experience high growth rate of population not only due to low female literacy but also due to the influx of people from neighbouring countries as observed by various studies.

Table-2 also indicates that the districts having high IMR recorded high CBR except Hilakandi district where CBR is found to be 32.1 and IMR is 55. The correlation coefficient between IMR and CBR is 0.258, hence both the variables have low degree positive correlation. Thus it may be concluded that besides female literacy rate and IMR, population growth in the state of Assam is affected by various other factors.

POLICY PRESCRIPTIONS:

The rise in female literacy rate has a direct effect on the total fertility rate and this fact has important implications for India's national policy. In case of Assam too it has been observed that a strong link exists between increased levels of education for females and lower fertility rates. Assam would be highly benefitted from higher female literacy rates as it would improve the productivity of the labour force

and the ability of women to participate in the modern sector of the economy. This would further help to solve the problem of rapid population growth.

Again, high female literacy rates would not only lower the fertility rates but would also help in achieving the other development goals that are often hindered by rapid population growth. It may thus be concluded that fertility reduction and improvement in female literacy rate are complementary to one another and the achievement of one helps in achieving the other. Thus, government should formulate policy to achieve these two objectives in great earnest. The Government should reach out to the rural areas with the female literacy and family planning programmes. In order for the state of Assam to achieve its aim of reducing population and achieving economic growth, the policy of encouraging more girls in school should be continued and expanded to all parts of the state.

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