# Fertility and Population Growth in Assam

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**Abstract - Fertility trends in Assam constitute an important component of global demographic change. In view of rapid population growth of Assam, this study contributing to high fertility and age wise fertility differences between two major religious groups mainly Hindu and Muslim. Based on Statistical data available in Census Report, it is observed that the demography, i.e. the population structure of Assam is changing very fast. Also, the results indicate that religion has a significant effect on fertility analysis in Assam.**

**Keywords- Fertility, Religion, Demographic changes.**

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## I. INTRODUCTION

Fertility is the actual number of children born alive to women. Only a particular section of the females has the capacity to bear children viz. females belonging to the age group 15 to 49. Further, it is to be noted that only live births are to be taken into account while measuring fertility as it is only a live birth which accounts for increase in population. Fertility is the single most important determinant of population dynamics and growth. Fertility control is the most important way to check high population growth. Fertility is directly influence by a set of sociology and biological factors.

In India the share of Hindus population came down marginally from 80.5 percent in 2001 to 79.8 percent in 2011. In 2001, Muslims constituted 13.4 percent of the country's population but this went up marginally to 14.2 percent in 2011[1, 5]. Religious profile of the populace is an important demographic feature noticeable from the first Census in 1872 till now.

The growth rate has also been consistently higher for Muslims than for Hindus in all intercensal decades. During the last several decades, the proportion of Muslims in India's population has been steadily increasing and the proportion of Hindus steadily falling.

Demographically, the state Assam is characterized by with her population, which is 31 million compare to all India total 1210 million as per 2011 census. Population density of Assam is calculated as 397 per sq. km which is little high compare to national figure 382 per sq. km. The Table-I shows religion wise percentage of two major and other communities in Assam from 1901 to 2011.

Table-I: Religion-wise Population of Assam (in percent)

| Year | Hindus | Muslims | Others |
|------|--------|---------|--------|
| 1901 | 71.03  | 12.40   | 16.57  |
| 1911 | 67.95  | 16.69   | 15.36  |
| 1921 | 67.33  | 19.41   | 13.26  |
| 1931 | 70.09  | 23.41   | 6.50   |
| 1941 | 46.84  | 25.72   | 27.44  |
| 1951 | 72.01  | 24.68   | 3.31   |
| 1961 | 71.33  | 25.26   | 3.41   |
| 1971 | 72.51  | 24.56   | 2.93   |
| 1991 | 67.13  | 28.43   | 4.44   |
| 2001 | 64.89  | 30.92   | 4.19   |
| 2011 | 61.46  | 34.22   | 4.14   |

Source: Census of India.

From the above table it is observed most of the decades that percentage of Muslim population increases but for Hindu community it is not same. Hence, for population growth women's education is the most important factor explaining fertility differences [2]. The other important piece of data is sex ratio, which is the number of women per 1,000 men. Also, sex ratio among Muslims improved significantly over the decade from 936 in 2001 to 951 in 2011. The improvement was smaller among Hindus from 931 in 2001 to 939 in 2011. Thus, population growth slowing for all; on sex ratio, Muslims better than Hindus [4,6]. In the Census report of 2011, it is seen that the highest growth of population at the district level is Dhuburi which is 24.40[7]. The Figure-1 shows the percentage of Muslim in the total population and Figure-II represents the from population growth rates of Hindu and Muslim from 1901 to 2011 of Assam respectively.

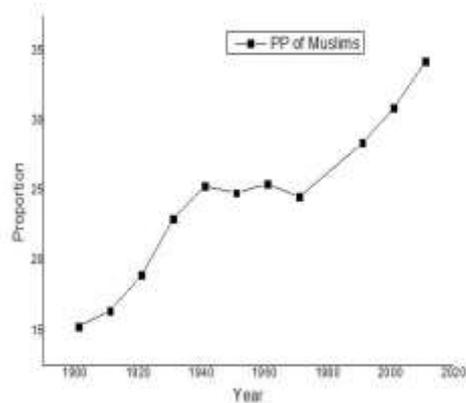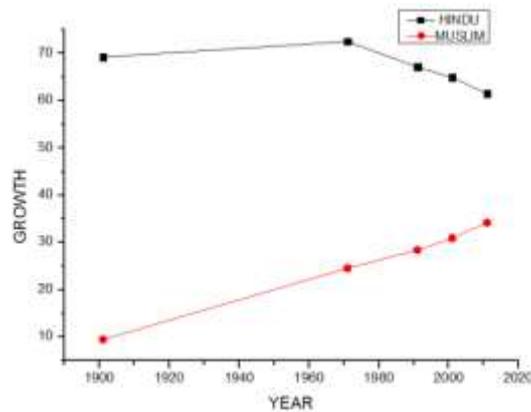Fig.1: Percentage of Muslim in the total population in Assam

Fig. 2: Population Growth Rates of Hindu and Muslim



## II. METHODOLOGY

For estimating the number of births during a given period, we need the information on the fertility behavior of the population as reflected by Age specific Fertility Rates (ASFR) of the female population. Assumptions about ASFR are made in terms of Total Fertility Rate (TFR). TFR is a measure showing the average number of babies born to a couple during their whole span of reproductive period.

### 2.1 Age Specific Fertility Rates (ASFR)

It is defined as the number of live birth in a specific age-group of women per thousand female population of that age-group. Age - Specific fertility rate is adjusted for age and determines the fertility rate of women in each age-group, usually in 5 years interval. The following seven five-years age groups are presented in the data base like: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49.The age specific fertility curve is closed to be a bell shaped curve. From that it is observed that ASFR's are higher for Muslim community than Hindu in all the age groups.

### 2.2 Total Fertility Rate (TFR)

Demographically speaking, the Total Fertility Rate is a summary measure of fertility based on age specific fertility rates (ASFR).Total fertility rate is the most popular index of fertility.TFR gives the expected number of children that a group of 1000 women beginning their life together will bear in their life time if none of them dies before crossing reproductive age period. It is an index of overall fertility of a community.

### 2.3 The Independent-Samples t-Test

It compares the means between two unrelated groups on the same continuous, dependent variable. We can use an independent t-test to understand whether first ASFR (i.e. dependent variable and our independent variable would be "Community", which has two groups: "Hindu" and "Muslim"). Here dependent variable ASFR and independent variable Community.

## III. DISCUSSION

The figures for age specific fertility rate (ASFR) reveals that the fertility rate in 15 to 19 years age group has moderately decline as compared to others age group. The age group 20-24, 25-29 continued to have peak fertility rates for Hindu and Muslim, but both these indicators are lower in Hindu community in some districts compared to Muslim community districts. The following figures represented the age wise fertility rate for two communities of Assam.

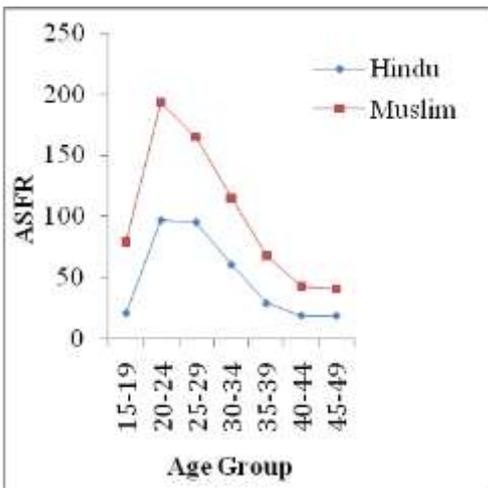Fig. 3: Goalpara district ASFR                    Fig. 4: Dhuburi district ASFR

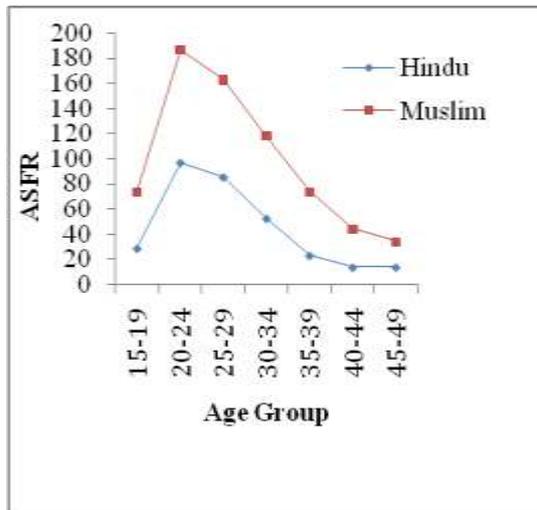Fig. 5: Nagaon district ASFR



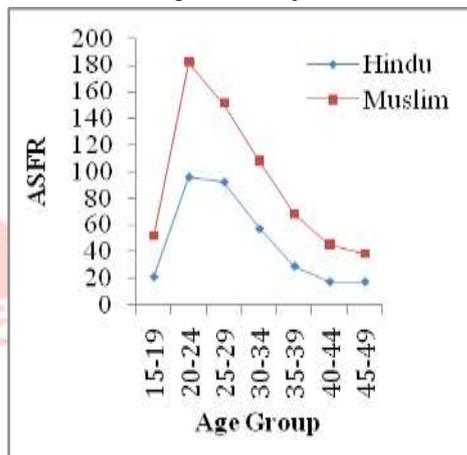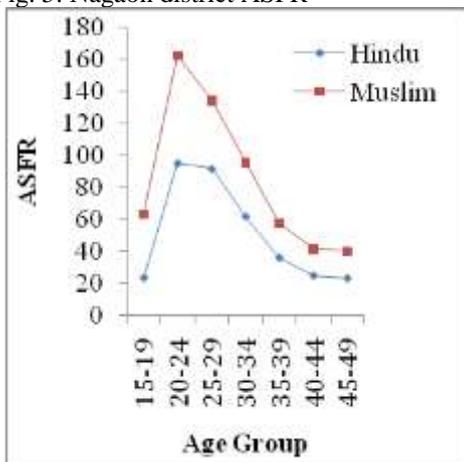Fig. 6: Kokrajhar district ASFR



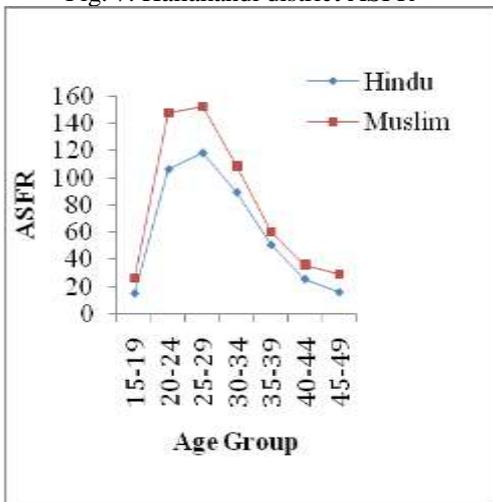Fig. 7: Hailakandi district ASFR



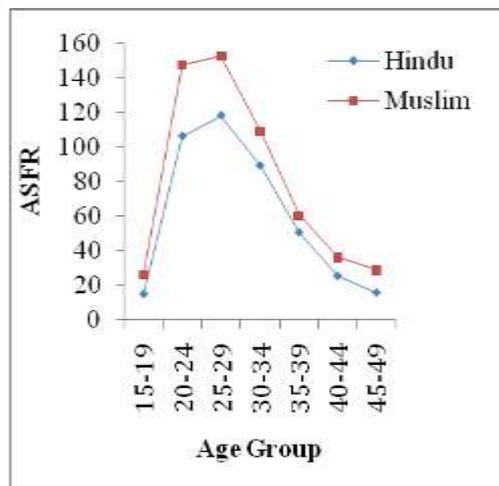Fig. 8:  Karimganj district ASFR

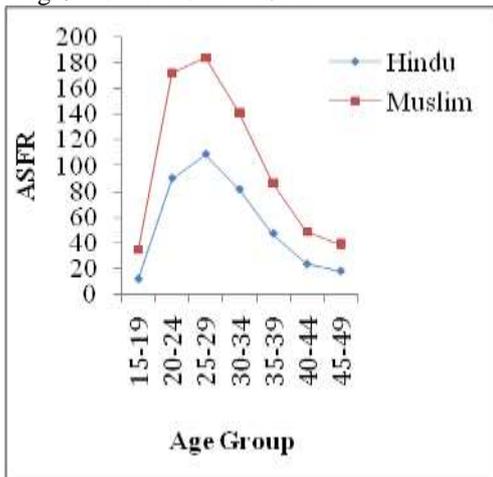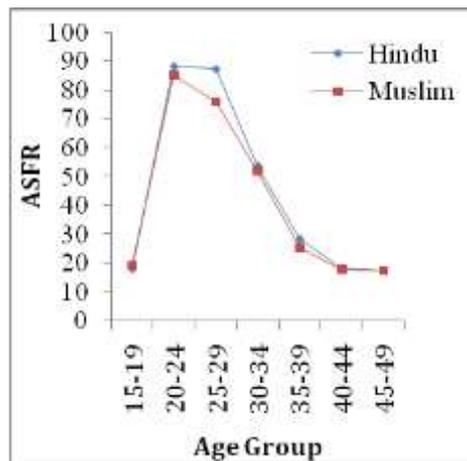Fig. 9: Jorhat district ASFR                    Fig. 10: Dhemaji district ASFR



The Mean and Standard Deviations of the two communities is presented in the following table.
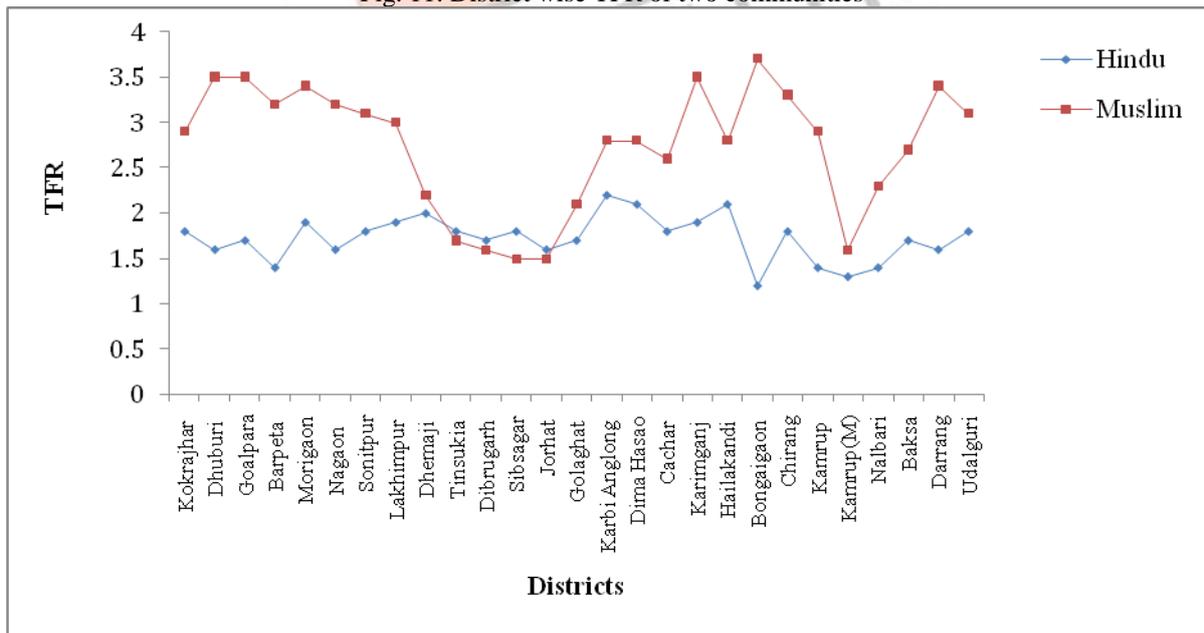
Table-II: Age wise Mean and Standard Deviation of fertility rate of Hindu and Muslim of Assam

| Age-Groups | Means | | S.D. | |
|---|---|---|---|---|
| | Hindu | Muslim | Hindu | Muslim |
| **15-19** | 18.44 | 43.41 | 5.01 | 20.12 |
| **20-24** | 93.47 | 149.2 | 16.81 | 38.43 |
| **25-29** | 95.84 | 132.88 | 14.30 | 31.5 |
| **30-34** | 61.35 | 86.73 | 2.43 | 4.83 |
| **35-39** | 31.52 | 54.35 | 8.94 | 16.10 |
| **40-44** | 20.23 | 40.13 | 5.89 | 13.19 |
| **45-49** | 22.89 | 41.11 | 6.92 | 13.83 |

It is seen that the average fertility rate of Muslims is always higher than the Hindus. It is also observed that for both the community the fertility is the highest in the age group 20-24 and 25-29. The p-values for all the age groups are less than 0.05. Hence, we may conclude that there is a significant difference in fertility rate between two communities for the all specified age-groups. Again, district wise Total Fertility Rate (TFR) of Assam has been represented in the Figure-11.

In the Census report of 2011, it is seen that in Dhuburi district the female literacy rate is poor i.e., 54.26 percent. Also, in the lower Assam districts like Goalpara, Dhuburi, Barpata, etc. the TFR of Muslim community is higher than Hindu.

Fig. 11: District wise TFR of two communities



**IV. CONCLUSION**

From what has been discussed above we have observed that Assam as a whole has fairly large fertility differentials. Hindus are declining significantly and Muslim population increases. One of the main reasons behind the higher growth of the Muslim population in Assam is due to below the higher birth rate, illiteracy and alarmingly higher fertility rate, religious conversion and aggressive behavior of a particular community [3]. To find the root cause we need more analysis on the complex interaction between religions, reproduction, and fertility differential in Assam. It is worthwhile to note that the Age Specific Fertility Rate in terms of religion, mainly Hindu and Muslim of Assam is significant than rest of the country. Demographic imbalance of Assam has not only challenged its identity, but has also posed a threat to its existence.

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