



Fertility and Family Planning Uses in Assam: A Secondary Data Level Analysis

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Abstract: This paper examines the socio-economic factors inhibiting fertility. Fertility level measured by Child Ever Born (CEB) also accounts very high and present similar district wise variation. The fertility level among ever married woman varies by various characteristics like age of the ever married women, place of residence, educational attainment, religions, social groups, and wealth quintiles. In general, CEB is found to be varying negatively with socio-economic status and positively with age of a woman. The paper also examined pattern of contraceptive uses and the factors affecting its uses. Knowledge about family planning method is found almost universal. The percentage of women knowing any type of contraceptive method account 98.6 percent. There were only some districts like Dhubri, Sibsagar and Golaghat lags marginally with accounting rates of 94.4, 95 and 95.5 percent correspondingly. However, contraceptive prevalence rate (CPR)-the percentage of currently married women using any type of contraceptive method is found low.

Keywords : fertility, family planning, contraceptive, multiple regressions, logistic regression

1. Introduction

1.1 Background of the study

India is the second largest country accounting 1.2 billion populations as per Census 2011 after China. It is again estimated that the number for India is going to take over China by 2050 at the present pace of population growth. In the last 100 years population in India has multiplied by around 5 times. It has increase from 23.83 cores in 1901 census to around 121 cores in 2011 census. At the initial decades growth rates were low mainly for both high fertility and mortality rates. It was even recorded negative for the period 1911-21. The year 1921 is often referred to as the “Year of the Great Divide,” because it marked the shift from a pattern of relatively static population size to one of steady increase.

Along with rapid decline of mortality and simultaneous slow decline of fertility being the important cause of high population growth, high share of young population happen to other important cause of population explosion which is referred as population momentum. Nearly half of the population in Census 2011 accounted below age 25. The young population virtually guarantees

further growth. The last three decades, however, witness decline in the population growth. The annual growth rate of population has declined from 2.2 in 1981 to 2.1 in 1991; 2.0 in 2001 to 1.6 in 2011.

It was undoubtedly the commensurate decline of mortality and fertility that has been the factor for steady decline of population growth since the year 1981. Since 1950, fertility in India has decreased by about half, from a total fertility rate (TFR) of just under six children per woman to about 2.34 in 2013. And India may reach its replacement level of fertility i.e. about 2.23. Given the distorted sex ratio and high mortality rate India’s replacement level of fertility is estimated 2.23 higher than 2.1. Higher estimation is required for somewhat larger proportions of women than in developed countries do not survive to the end of their childbearing years due to lower life expectancy at birth. Replacement level of fertility means that each couple simply “replaces” itself in the population, not increasing the size of each subsequent generation.

Main reason for impressive decline of fertility in the last four decades has been introduction of family planning policies. When the country was experiencing accelerated population growth from declining death rates and high birth rates India was the first country to adopt an official policy to slow population growth with its first Five Year Plan in 1952.(Economic Survey, 2012). The program stated with setting up Family planning clinics. It was extend during the second five year plan (1956-61). The government increased expenditures for family planning, introduced the idea of incorporating family planning into community-based development programs, and expanded home visits. The population program was brought under the new Ministry of Health and Family Planning in India in 1966 (Economic Survey, 2012).

In 1975, a national emergency was declared, many states adopted coercive measures to check high fertility. Following quota systems sterilization camps were established. About 8.3 million sterilizations were performed in one year, 1976 to 1977. However, government were forced to withdraw the programme due to coercive implementation, poor popularity and peoples’



protest. The very next soon after withdrawal has witness steady fall in the number of sterilization. By the 1977-1978 program years, only 900,000 sterilizations were reported. Therefore, slow decline of fertility again resumed.

1.2 Rationale and Utility of the Study

While main aim of the study is to understand underlining factors of prevailing high fertility of some of the states or area. It is very important from the overall development prescriptive to know why some states or areas lag behind of regions which have even reached to the below replacement level of fertility, other importance include several issues. At first, the majority of the fertility studies are in descriptive rather than analytical. Many also deal only with aggregate data and are unable to arrive at causal explanations.

Second, even some researchers offer some statistical explanation of fertility trends with remarkable lack of conceptual clarity. This study focuses on the micro as well as macro level issues relating female fertility behaviour. As a result, it seeks to offer a conceptual framework for various aspects of fertility behaviour.

Third, this study attempts to focus specifically on the relation between the various levels of educational attainment and fertility preference to identify more precisely the changing pattern of family composition and sex preference. Also it puts attention to other demographic parameters age at marriage, migration etc. Further, this study tool attempts to have fertility analysis with the combined methodology of both quantitative and qualitative aspects.

Hence, the study aspires to measure influence of perceived key variables affecting fertility attitude and fertility outcome. The theoretical importance of the research, therefore, lies only in the fact that it incorporates social, cultural and economic issues in a comprehensive analysis of fertility but it also provides an avenue for other researchers to explore the underpinning of the relationships.

Review of Literature

2.1. Introduction

There are numerous literatures to explain variation in fertility performance as well as adaptation to family planning methods to control fertility motivation. Studies across the globe again and again have proved that fertility behaviour is very complex. Quite often social, cultural and religious perspectives dominate over and interact with socio-economic and demographic factors. Also evidences are ample showing its consequences over many

development parameters, say mortality, health etc. The reduction of fertility with the increase of education has been observed across the globe, from developed to less developing nations (Bonge, 1967; Caldwell, 1981; Jain and Nag, 1985, Birdsell, 1977). Similarly, Gulati (1989) reiterates the importance of female education. He observed that the female literacy, educational levels leads to reduction in fertility. Majority of studies show negative relationship, a significant number show opposite or no relationship. Duza and Balwin (1977) found that fertility decline during the 1950-70 in Sri Lanka and Malaysia could be attributed to increase age of marriage caused by higher education and female employment. Harshman (1982) estimated 1.5 to 2 years of delay in age marriage as result of women employment. Malathi (1991) estimated the fertility function for the married women of Rural Pondicherry Region. Fertility reduction is observed to have worked through higher acceptance of contraceptives with high employment. In Philippines Shah and Smith (1981) observed that use of contraceptives is significantly higher among working women as compared to non-working counterparts. The contraceptive has the highest impact on reducing fertility among all factors. Mari Bhat .P.M and Frances, A.J (2005), by using multivariate analysis of regression, observed that in rural areas. Asha Bhende, Minga Kim Chaoe, Rele, James Palmore (1980) analyzed the use of contraception among religious groups and sub group and by applying multinomial logit regression coefficients it was observed that the Muslim and Hindu scheduled caste show significantly lower contraceptive use than the majority group comprising 75 percent of the population.

1.3 The objectives of the study:

The broad aim of this study is to analyze the inter-relationship between Fertility and Family Planning in Assam. It intends to examine the level of female marital fertility among various income groups. Further, the study attempts to examine role family planning acceptance to fertility control.

a) To analyse the socio-economic determinants of fertility in the state of Assam

b) To assess the pattern of Contraceptive uses as a measure of family planning.

2. Methodology and Data Source:

To analyse the socio-economic determinants of fertility both Bivariate (rate and percentage distribution) and Multi-Variate (Multiple Regression) techniques have been applied. But, for



assessing the pattern of contraceptive uses, Logistic regression model has been used, keeping in view its binary character.

The study has been undertaken on the basis of secondary data collected from mainly two different sources. These two main secondary data sources are NFHS-2006-07, NFHS-2012-13 and DLHS-3. The author has used some other secondary data sources as World Bank Report, 2016, Census Survey, 2011 and Annual Health Survey-2013.

3. Analyses and Discussion

3.1 Socio-economic Profile of the State

Assam situated in the North East region of India has drawn attention for its rich culture, abundant natural resources, and political importance. Its geographic location is also unique. It has common borders with six states and two countries.

Covering 2.4 percent of the country's geographical area, Assam inhabits total population of 31169272 people (2011 Census) i.e. around 2.6 percent of the country's population. The state is predominantly rural base having share of 87 percent rural population. It has 23 districts those vary widely in terms of socio-economic-demographic characteristics. This section gives a comparative presentation of socio-economic-demographic characteristics between whole Assam.

As Table 3.1.1 shows the statistics account 51.2 for male and 48.8 for females. Marginal difference only observed for rural-urban divide although rural domination prevails in state. The percentage of rural population accounts for Assam is 85.9 percent.

Table 3.1.1: Total Population by Male and Female, Census 2011

	Assam		
	Rural	Urban	Total
Males	1,36,78,989	22,60,454	15939443
Females	1,31,28,045	21,38,088	15266133
Persons	2,68,07,034	43,98,542	31205576

Source: Census of India, 2011.

The state also differs in terms of category of workforce participation between male and female. And, more is so in types of works (Table 3.1.2). The percentage of main workers accounts 27.84 for Assam. The difference mainly appeared for the difference observed among males and females. The rates for females are 22.46% while male participation is 53.59%. Owing to Assam's

agricultural based economy expectedly major share of workers remain engaged as cultivators: 33.93 percent for Assam. This perhaps indicates relatively poor economic status of people living in the state of Assam. Having marginal landholding which is expected for very high population density (Assam: 398) people are forced to work as agricultural worker for their livelihood.

Table 3.1.2: Patterns of Workforce Participation

Source: Census of India, 2011.

	Assam		
	Total Worker	Cultivator	Agri. Labour
Person	38.36	33.93	15.42
Male	53.59	36.29	13.22
Female	22.46	28.06	20.89

The poor socio-economic status of the state is reiterated in terms of Human Development Index (HDI). The HDI list of Assam shows the disadvantage prevails for all components of human

development i.e. Education, Income and Health (Table 1.4.3). The very poor income index for Assam is reflected by the gross unemployment scenario of the state.

Table 3.1.3: Human Development Index, Assam

	HDI INDEX	INCOME INDEX	EDUCATION INDEX	HEALTH INDEX
Assam	0.407	0.286	0.596	0.343

Source: HDR, 2003



3.2 Mean Children Ever Born

Mean child ever born (CEB) of ever married women aged 15-49 is considered to be one of the very important indicator of fertility. This is often used in the analysis of survey data and offers current level of fertility performance. Table 3.2a presents mean CEB by districts. It varies from 3.2

children in Karimganj district to 2.1 children in Kamrup, while the state average is 2.6 children as per DLHS-3. And as per AHS, CEB varies from 3.4 children in Hailakandi district to 2.2 children in Kamrup, and the state average accounts 2.7 children.

Table 3.2a: Mean CEB by districts of Assam

Districts	AHS			DLHS-3
	Total	Rural	Urban	
Barpeta	2.7	2.8	2.2	2.8
Bongaigaon	2.6	2.8	1.9	2.5
Cachar	3.1	3.2	2.6	2.9
Darrang	2.8	2.8	-	2.6
Dhemaji	2.8	2.8	2.5	2.7
Dhubri	3	3.1	2.1	2.8
Dibrugarh	2.4	2.6	2.1	2.4
Goalpara	2.9	2.9	2.5	2.7
Golaghat	2.5	2.6	2	2.6
Hailakandi	3.4	3.6	-	3.1
Jorhat	2.4	2.5	2.1	2.2
Kamrup	2.2	2.5	1.9	2.1
Karbi angling	3	3.2	2.5	2.5
Karimganj	3.1	3.1	-	3.2
Korajhar	2.7	2.7		2.6
Lakhimpur	2.6	2.6		2.6
Marigaon	2.7	2.8	2.1	2.6
Nagaon	2.9	3	2.3	2.7
Nalbari	2.4	2.4		2.4
North cachar hills	2.6	2.9	2.4	2.7
Sibsagar	2.3	2.4	1.9	2.4
Sonitpur	2.6	2.7	2	2.6
Tinsukia	2.7	2.8	2.2	2.6
Assam	2.7	2.8	2.1	2.6

Source: Annual Health Survey, 2012 and DLHS-3

3.2.1 Mean Child Ever Born by Background Characteristics of Women

The variation of child ever born to an ever married woman by various characteristics like age of the ever married women, place of residence, educational attainment, religions, social groups, and wealth quintiles is presented in Table 3.2.1a. Expectedly a marked variation is observed by age, religion, educational level, social groups, and place of residence and wealth of a household. In general, CEB is found to be varying negatively with socio-

economic status and positively with age of a woman. It increases from 0.54 for the age group 15-19 to 4.05 for the age group 45-49 for Assam. By education, it extends from 3.44 of illiterate women to 1.67 of women having education of 10 and above. Similarly, CEB decreases from 3.22 of lowest wealth quintile households to 1.90 of highest quintiles households. Besides, variation is observed by place of residence, social group and religious group. Muslims and people living in rural areas have higher number of CEB. CEB for Hindus



and Muslims accounts 2.46 and 3.1 in Assam. Therefore, the pattern of variation by various background characteristics remains almost similar for the districts of Assam.

Table 3.2.1a: Mean Child Ever Born by Background Characteristics of Ever Married Women aged 15-49, Assam, 2007-08.

Background Characteristics	Assam
Age group	
15-19	0.54
20-24	1.26
25-29	2.13
30-34	2.84
35-39	3.33
40-44	3.77
45-49	4.05
Rural	2.70
Urban	2.22
Illiterate	3.44
Less than 5	2.94
5-9 Years	2.23
10+ Years	1.67
Hindu	2.46
Muslims	3.1
Others	2.42
SC	2.71
ST	2.61
OBC	2.8
Lowest	3.22
Second	2.92
Middle	2.63
Fourth	2.35
Highest	1.90
All	2.64
N	30243

Source: Authors calculation based on DLHS-3 data.

3.3 Socio-economic determinants of fertility and family planning: Multivariate Analysis

The preceding sections have shown wide disparity across various socio-economic-demographic

characteristics of a woman as well as households. However, there is expected to be co-variation across several factors. And it is important to know which factors are most important in determining fertility or family planning adaptation while other variants are taken into controlled. To accomplish the objective multiple regression analysis has been adopted. This section presents results of two regression analysis. One is for Child Ever Born (CEB) which represents fertility performance. The other one is whether women are currently using any contraceptive for spacing or limiting family size (CP). Therefore, CEB and CP are different from each other. While CEB is continuous variable, CP is binary variable (Yes=1, No=2). Having this in the backdrop, multiple linear regressions has been adopted for understanding determinants of CEB and Logistic regression analysis has been adopted for contraceptive prevalence. Results of both the models are discussed separately below.

Result of Linear Regression Model: CEB

Following literature on the determinants of fertility independent variables have been chosen. Independent variables include type of locality (rural or urban), religion (Hindu or Muslim), Women's education (year of schooling), workforce participation (whether a woman engaged in paid work in the last 1 year), age of the respondent, age at marriage, husband's year of education, household wealth presented through wealth index and social group. The model has been executed for the state of Assam. The results presented in Table 3.3.1 shows that all included variables appears significant at 5 per cent significance level except the place of locality while analysing aggregate data of Assam. As far as magnitude of coefficient is concerned religion is found to be most important determinant for Assam. The coefficients are found greatest accounting .616 for Assam. It means the number of child ever born to ever married women in the reproductive age group is higher by .62 units for Assam among Muslims as compared to Hindu woman. Woman's workforce participation is also found as another important determinant of CEB besides age of the women and household's economic status measured by wealth index. It is found that a woman who is engaged in workforce is likely to have less numbers children by 0.135 units for Assam as compared to none workforce counterparts. The coefficient for wealth index accounts 0.19 for Assam.

Table 3.3.1: Determinants of child ever born

	Assam		
	B	t	Sig.
Type of locality	-.027	-.83	.41



Religion (Hindu and Muslim)	.616	19.46	.00
Women's Education	-.077	-18.94	.00
Workforce Participation	-.135	-2.36	.02
Age of respondent	.111	83.37	.00
Husband's education	-.005	-2.12	.03
Wealth index score	-.199	-12.19	.00
Age at Marriage	.055	4.98	.00
(Constant)	-.849	-6.25	.00

Note: Social group is taken into control

3.4 Contraceptive awareness and prevalence:

Following the International Conference on Population and Development (ICPD) at Cairo in September 1994, much concern has been expressed on fertility control. Measures were also taken to increase awareness and reduce the unmet need of contraception.

The use of family planning programmes have been on the rise despite of its obstacles, such as a lack of knowledge of contraception. It has increased from 13 percent of couples using contraceptives in 1970 to 54 percent in 2007/2008. Women's knowledge of contraception also improved tremendously. With the having knowledge of traditional methods such as rhythm and withdrawal a large proportion of Indian women started adopting female sterilization and other modern methods, such as the IUD, pill, or injectable, are much less well known. The percentage of using any method of contraception increased from 40.6 in 1992-93 to 54.8 percent in 2007-8 (NFHS-1 and NFHS-3).

Nevertheless, main concern remains its interstate; inter regional and rural-urban differences for controlling fertility vis-à-vis family planning use. Based on estimates for the three-year period before NFHS-3, the CBR was 23.1 births per 1,000 populations and the TFR was 2.7 births per woman. The CBR differed 25.0 in rural areas and 18.8 in urban areas. The total fertility rate in rural areas was 3.0 and 2.1 in urban areas, i.e. one child was higher in rural areas than the urban areas. The cause of rural-urban difference lies mainly in differences in age specific fertility rates which are lower at all ages in urban areas than in rural areas. Majority of child birth takes place during the ages 20-29 accounting 63 percent of rural and 70 percent of urban areas. In rural areas, fertility starts early. Fertility accounts at age 15-19 for 14 percent of total fertility in urban areas as compared to 18 percent in rural areas. Fertility at ages 35 and older accounts for 4 percent of total fertility in urban areas and 7 percent in rural areas.

Fertility performances expectedly vary by several background characteristics of women. As per NFHS-3 survey, TFR for India is 1.8 children higher for women with no education than for women with 12 or more years of education. By caste/tribe, the TFR is 0.6 children higher for scheduled-caste women, 0.8 children higher for scheduled-tribe women, and 0.4 children higher for women belonging to other backward classes (OBC) than for women who do not belong to any of these groups. Religious variation is also observed. The TFR is almost half a child higher for Muslims than for Hindus. Stark gradients also observed by economic status of a women measured by wealth index. TFR decreases steeply by the household's wealth index, from 3.9 children for women living in households in the lowest wealth quintile to 1.8 children for women living in households in the highest wealth quintile.

One of the main reasons as mentioned above of fertility decline in India as well as interstate variation is acceptance of family planning. Due to complexity in the social fabrication it defers by socio-economic status vis-à-vis by states, regions. Although knowledge about contraception is universal (98 percent), it varies widely when it comes to use of contraceptives. In NFHS-3, all ever-married and never married women who ever had sex were asked whether they had ever used each method that they had heard about. Almost two-thirds of currently married women have used a family planning method at some time in their lives. Women were much more likely to have used a modern method (58 percent) than a traditional method (19 percent). Female sterilization was by far the most commonly used modern method (37 percent) among currently married women. The three modern spacing methods (pill, IUD, and condom) have ever been used by 11, 6, and 14 percent of women, respectively.

The contraceptive prevalence rate (CPR), percentage of currently married women age 15-49 years who are currently using a contraceptive method or whose husbands are using a



contraceptive method, is one of the principal determinants of fertility and an indicator of the success of family planning programmes. The contraceptive prevalence rate in India was 56 percent (NFHS-3). Eighty-six percent of current users were using modern methods and the remaining 14 percent were using traditional methods. Female sterilization accounted for two-thirds of total contraceptive use and 77 percent of modern method used. The use of the family planning programme's three modern spacing methods together accounts for 18 percent of the CPR.

The contraceptive prevalence rate is 11 percentage points higher in urban areas than in rural areas. The use of modern spacing methods (pill, IUD, and condom) was also higher in urban areas than in rural areas. Condom use is three times as high in urban areas as in rural areas. There are marked differences in the use of different contraceptive methods among currently married women by background characterises. Expectedly educated and among working women it was higher. The contraceptive prevalence rate among women who were employed for cash (64 percent) is 10-11 percentage points higher than that among women who were not employed (54 percent) or those who were employed but did not earn cash (53 percent).

Contraceptive prevalence rate also varies by religion. It was found to be highest among Jains (75 percent), followed by Buddhists/Neo-Buddhists (68 percent) and Sikhs (67 percent). The contraceptive prevalence rate is 58 percent (each) among Hindu and Christian women and 46 percent among Muslim women. By caste or tribe, contraceptive prevalence was; highest among scheduled castes, scheduled tribes, or other backward classes women (62 percent), followed by women from scheduled castes (55 percent) and other backward classes (54 percent).

Wealth is found to be important determinant of usage of contraceptive. The usage increases from 42 percent among currently married women in households in the lowest wealth quintile to 68 percent among those in households in the highest wealth quintile. When it comes to use of any spacing methods (pill, IUD, and condom), the rate increases sharply from 4 percent of lowest wealth quintile's women to 22 percent among women in the highest wealth quintile.

3.4.1 Family planning and contraceptive use

Awareness about contraceptives and its using pattern is very important in order to study fertility preferences. Also it is important to know how

contraceptive use varies by various socio-economic characteristics of a woman. Socio-economic characteristics do not have direct impact on fertility. These alter fertility through nurturing awareness about family planning methods followed by actual practice of family planning. Again it is important to know unmet need of contractive for policy makers and program implementers. Unmet need measures the gap between desire for using contraceptives and actual practice of contractive. It appears very prominent for various reasons like lack of awareness about contraceptive methods, lack of accessibility or cost of contraceptives.

There are mainly two types of family planning methods: traditional and modern. Traditional methods are rhythm and withdrawal methods. Modern methods include female and male sterilisation, the contraceptive pill, intra-uterine device (IUD), post-partum IUD (Intra Uterine Devices), injectable, male and female condoms, and emergency contraceptive. Contraceptive prevalence rate indicates the percentage of currently married women in the reproductive age group who are using any kind of contraceptive methods at the time of survey.

Table 3.4.1a presents percentage of ever married women having knowledge about any contraceptive method and contractive prevalence rate by districts of Assam. It can be seen that awareness is almost universal, almost 98-100 percent. Only Dhubri, Sibsagar and Golaghat districts lags marginally with accounting rates of 94.4, 95 and 95.5 percent correspondingly. Similar district wise pattern is observed for contraceptive prevalence rate (CPR). Golaghat and Dhubri districts are placed as two bottom districts. The CPR accounts 26.8 and 32.7 per cent respectively. One point is required to be noted that there is wide gap observed between awareness and practice of contraceptive method. This gap perhaps is explained by desire for children, unmet need of contraceptives or other social and religious taboos that discourage women to use contraceptives.

Table 3.4.1a: Contraceptive awareness and contraceptive prevalence rate by districts in Assam

	Awareness of any method	CPR
Kokrajhar	97.6	43.0
Dhubri	94.4	32.7
Goalpara	99.8	57.9
Bongaigaon	98.3	39.8
Barpeta	99.6	51.1
Kamrup	99.6	51.0

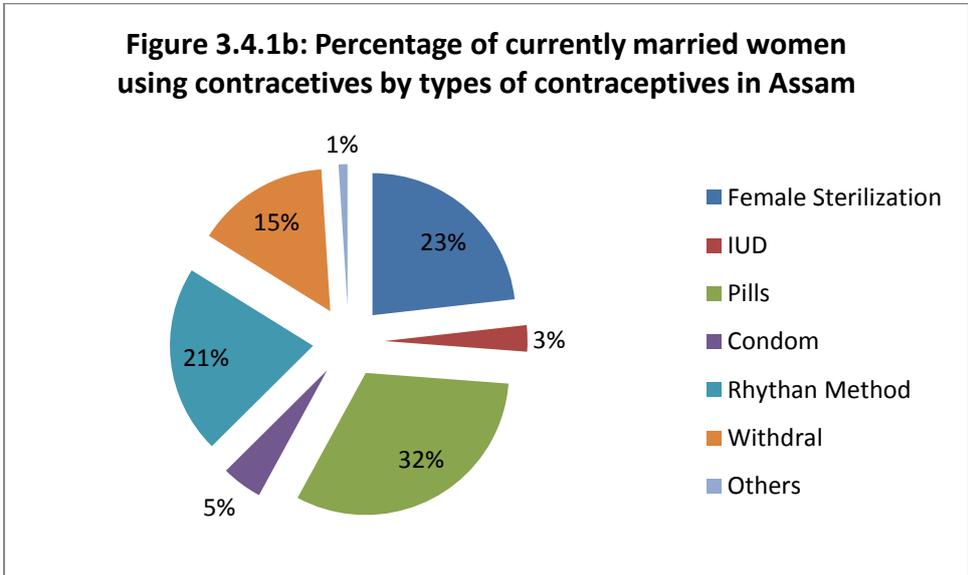


Nalbari	99.8	55.9
Darrang	99.3	61.9
Marigaon	99.2	36.4
Nagaon	100	56.1
Sonitpur	99.6	45.0
Lakhimpur	95.5	43.4
Dhemaji	96.6	54.7
Tinsukia	95.0	48.4
Dibrugarh	98.3	50.9
Sibsagar	99.7	49.1
Jorhat	99.9	55.3
Golaghat	95.5	26.8
Karbi Anglong	99.8	48.6
North Cachar Hills	99.6	47.4
Cachar	99.6	50.3
Karimganj	99.2	43.3
Hailakandi	99.4	47.9
Chirang	96.4	47.0
Baska	99.7	53.6
Kamrup Metro	99.5	44.1

Udalguri	99.7	61.3
Assam	98.6	48.6

Source: Annual Health Survey 2012-13

As far as distribution of currently using contraceptive methods in Assam is concerned majority of women (32 percent) reported of using pills. Other methods include female sterilization (23 per cent), Rhytham method (21 per cent), and withdrawal (15 percent). The use of condom and IUD account 5 and 3 per cent respectively. The sequence of percentage distribution of currently using contraceptive methods for Dhubri district accounts pills (57 per cent), Rhytham (24 per cent), female sterilization (7 percent), and condom (5.2 percent). The percentage distribution by various methods of contraceptives for Assam and Dhubri district are presented in the Figure 3.4.1b. The graph indicates that the use of contraceptive method is biased towards females for Assam. This observation brings out the issue of male involvement in reproductive health in general and controlling family size in particular. Besides lack of awareness and other supply related issues on family planning lack of male involvement in family planning seems to be one another factor which explains occurrence of relatively high fertility of the state of Assam.



The expected socio-demographic-economic variation in awareness of contraceptive method and in contraceptive prevalence rate (CPR) is presented in Table 3.4.1c. This table again shows high awareness about contraceptive methods and it does not vary much by background characteristics of a woman. However, variation is observed when it

comes to CPR. The rate of CPR increases among higher aged women. It increases substantially with the higher surviving children. Similarly CPR increases among educated women and as one move to higher wealth quintiles. Rural-urban divide is also very prominent: urban women use more family planning method.



**Table 3.4.1c: Contraceptive awareness and contraceptive prevalence rate by socio-economic characteristics**

Assam		
Age group	Awareness of any method	CPR
15-24	98.0	27.4
25-29	98.8	48.7
30-34	99.0	60.6
35-39	98.9	62.9
40-49	98.4	42.2
No. of living children		
0	97.6	10.6
1	98.7	40.0
2	99.1	59.2
3	99.0	61.6
4+	98.0	50.2
Residence		
Rural	98.5	47.4
Urban	99.7	57.3
Education		
Non-literate	97.3	45.3
Less than five years	98.7	46.7
5-9 years	99.2	50.0
10 or more years	99.8	53.2
Religion		
Hindu	98.7	50.3
Muslim	98.3	44.5
Others	98.4	46.1
Castes/Tribes		
Scheduled Castes	98.7	49.4
Scheduled Tribes	98.0	49.4
Others	99.0	49.2
Wealth index		
Lowest	96.5	42.2
Second	98.0	45.4
Middle	98.9	48.5
Fourth	99.4	51.8
Highest	99.8	56.1
All	98.6	48.6

3.5 Unmet need of family planning services

It can be reiterated again that unmet need of contraceptive is very important as an input towards programme preparedness and evaluating its effectiveness. It indicates potential demand and gap

between demand and supply. The lower unmet need for family planning services indicates higher effectiveness of a particular programme.

Based on DLHS-3 data two types of unmet need is measured-unmet need for spacing and limiting

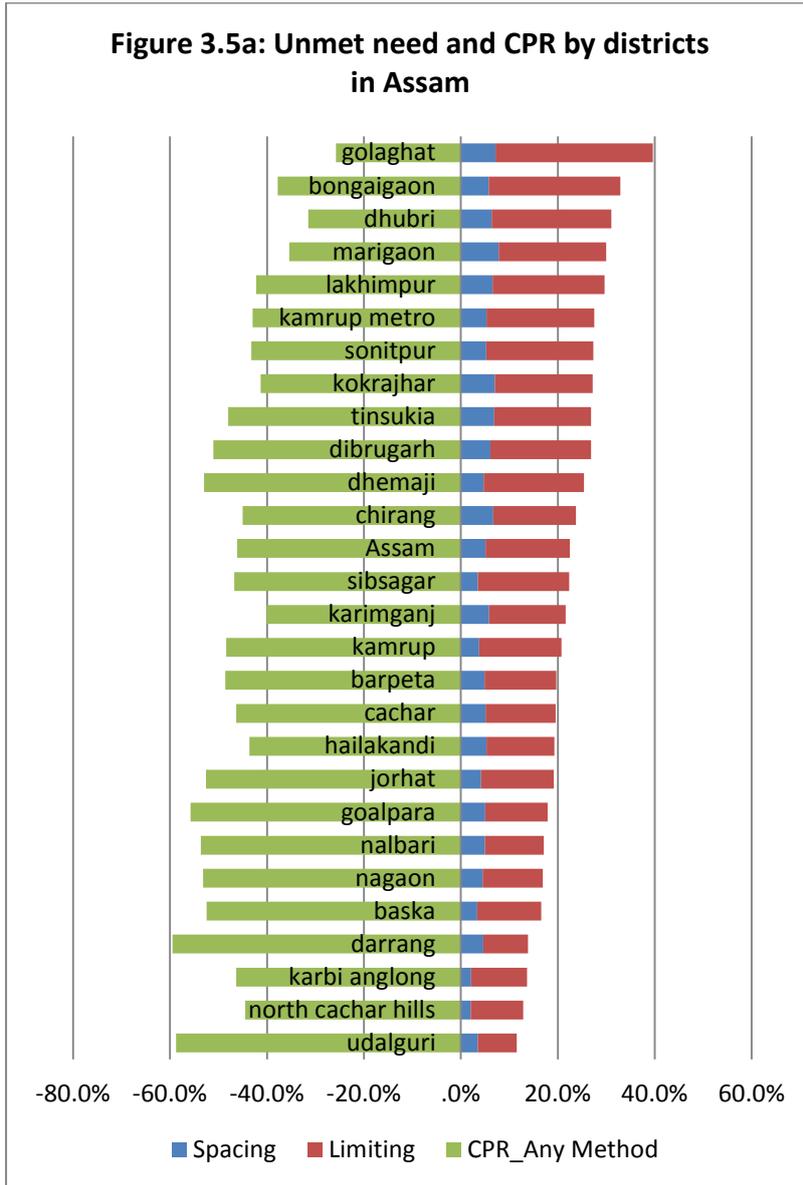


method. Unmet need for spacing is measured by the proportion of currently married women who did not have menopause, or a hysterectomy or were not currently pregnant, or who were not sure about when to have the next child and who wanted more children after two years or later, and who were not using any family planning method. The Unmet need for limiting is measured by the proportion of women those were currently married and did not have menopause, or a hysterectomy or were not currently pregnant and did not want any more children, but were currently not using any family planning method. Total unmet need is the sum of unmet need for limiting and spacing (DLHS-3, 2010).

The estimate of unmet need for family planning using DLHS-3 data is presented in Figure 4.2.7. The same figure also presents CPR to get a sense of association between unmet need of contraception and contraceptive prevalence rate. The total unmet

need records 22.5 percent for Assam comprising 17.4 percent for limiting and 5.1 percent for the spacing method of family planning. Across districts it varies from least 11.5 percent in Udalguri to highest 39.6 per cent in Golaghat district. Top five districts in terms of high unmet need of contraceptives are Golaghat (39.6 percent), Bongaigaon (32.9 per cent), Dhubri (31 per cent), Morigaon (30 per cent) and Lakhimpur (29.6 per cent). And some districts with low unmet need include Nagaon (16.9 per cent), Baska (16.6 per cent), Darrang (13.8 per cent), Karbi Anglong (13.6 per cent), North Cachar Hills (12.8 per cent) etc.

Plotting CPR in the same figure depicts that there is negative relationship between unmet need of contraceptive and CPR. As an example it can be mentioned that Udalguri having least unmet needs with highest CPR. In contrary Golaghat shows highest prevalence of unmet need against showing lowest contraceptive prevalence rate.



The socioeconomic and demographic differentials in unmet need for family planning services were found to be very marked by women’s age, living number of children and wealth quintiles. The general observation is at the early age of reproductive period women experience higher unmet need for spacing and later aged women face for limiting. Women aged 15-19 accounts unmet need of 19 percent against literally no unmet need for the women belonging to age group 45-49. In

aggregate it is found that unmet reduces with the increase of age. Similar result is observed for education of women and household wealth status. For both the factors unmet need reduces with moving to higher order. There is marginal gap observed between Hindu and Muslim women. The percentage of unmet need account 23.9 and 21.9 percent for Muslim and Hindus respectively for Assam.

Table 3.5b: Unmet need for family planning services by background characteristics

		Assam	
Age group	spacing	limiting	Total

		Assam	
Age group	spacing	limiting	Total
15-19	19.1	4.1	23.2
20-24	15.0	11.8	26.8
25-29	6.3	17.6	23.9



		Assam	
Age group	spacing	limiting	Total
30-34	2.1	19.5	21.6
35-39	0.5	22.2	22.7
40-44	0.2	21.9	22.1
45-49	0.0	13.1	13.1
Residence		0.0	0.0
Rural	5.4	17.6	23.0
Urban	3.3	15.6	18.9
Education		0.0	0.0
Illiterate	4.0	21.5	25.4
Less than 5	4.2	17.6	21.8
5-9 Years	6.2	15.2	21.4
10+ Years	6.1	13.5	19.5
Religious		0.0	0.0
Hindu	4.8	17.1	21.9
Muslims	5.8	18.1	23.9
Others		0.0	0.0
Castes		0.0	0.0
SC	5.9	16.2	22.1
ST	4.9	16.6	21.5
OBC	5.0	18.5	23.5
Wealth Index			
Lowest	5.5	22.5	28.0
Second	5.6	19.1	24.7

		Assam	
Age group	spacing	limiting	Total
Middle	5.2	16.2	21.4
Fourth	5.0	15.2	20.2
Highest	4.0	14.7	18.7
All	5.1	17.4	22.5

Result of Binary Logistic Regression Model: Contraceptive Prevalence

Considering the binary nature of the dependent variable *i.e.* Contraceptive prevalence (1= using contraceptive and 2 = not using contraceptive) binary logistic regression model has been adopted for understanding the explanatory variables to the chances of using any kind of contraceptive method for spacing or limiting family size. Independent variables included in the models are place of residence (rural, urban), age of ever married women in the reproductive age group, women’s education, religion (Hindu and Muslim), husband’s education, women’s age at marriage, women’s work status (working, not working), wealth index, number of surviving children and social group. The model is run separately for whole Assam and for Dhubri district. It can be seen in Table 3.5c that place of residence, age, women’s education, religion, household wealth and numbers of surviving children are significant determinants of contraceptive use.

Table 3.5c: Determinants of using contraceptives

	Assam			
	B	S.E.	Sig.	Exp(B)
Place of residence	0.22	0.06	0.00	1.25
Age of woman	-0.01	0.00	0.00	0.99
Women’s education	0.05	0.01	0.00	1.05
Religion (Hindu and Muslim)	0.26	0.06	0.00	0.77
Husband’s Education	0.00	0.00	0.67	1.00
Age at Marriage	-0.01	0.01	0.20	0.99
Work Status	-0.05	0.10	0.66	0.96
Wealth Index	0.15	0.03	0.00	1.16
Number of surviving Children	0.34	0.02	0.00	1.41
Constant	-0.60	0.25	0.02	0.55

R² = 0.22 for Assam
 Note: Social group is taken into control





It is found that chances of using contraceptive is higher among urban women, among Hindu women, it increases with women's education, household wealth and numbers of surviving children. Age appears unexpectedly negatively associated with contraceptive use when other confounding factors are taken into controlled. Only women's education continues to remain significant. At this point it can only be hypothesized that there is almost uniform low usage pattern of family planning for women belonging to any socio-economic group. This uniformity perhaps remains the reasons for insignificant influence. Only educated women and belonging to higher economic group perhaps could able to beat all hurdles and comes out as significant determinants of family planning use for the state.

4. Summary and Conclusion:

- ❖ This study examined fertility dynamics in Assam with a view to knowing how socio-economic factors influence fertility and family planning. The population growth rate is recorded as highest among districts in Assam. Fertility level measured by Child Ever Born (CEB) also accounts very high and present similar district wise variation. CEB varies from 3.2 children in Karimganj district to 2.1 children in Kamrup, while the state average is 2.6 children.
- ❖ Within a particular state again there is wide socio-economic variation in the level of fertility. The fertility level among ever married woman varies by various characteristics like age of the ever married women, place of residence, educational attainment, religions, social groups, and wealth quintiles. In general, CEB is found to be varying negatively with socio-economic status and positively with age of a woman. Besides, variation is observed by place of residence, social group and religious group. Muslims living in rural areas have higher fertility. CEB for Hindus and Muslims accounts 2.46 and 3.1 in Assam. The state average therefore masks large variations in the fertility levels between subgroups in the state.
- ❖ Knowledge about family planning method is found almost universal. The percentage of women knowing any type of contraceptive method account 98.6 percent. There were only some districts like Dhubri, Sibsagar and Golaghat lags marginally with accounting rates of 94.4, 95 and 95.5 percent correspondingly.
- ❖ However, contraceptive prevalence rate (CPR)-the percentage of currently married women using any type of contraceptive method is found low. CPR for Assam recorded 48.6 percent.
- ❖ As far as distribution of currently using contraceptive methods is concerned majority of women (32 percent) reported of using pills followed by female sterilization (23 per cent), Rhythm method (21 per cent), and withdrawal (15 percent).
- ❖ Like fertility use of contraceptive also varies by socio-economic-demographic status of a woman. Through both bi-variant as well as multivariate it observed that place of residence, women's education, religion, household wealth and numbers of surviving children are significant determinants of contraceptive use.
- ❖ Unmet need of contraceptive varies by socio-demographic-economic status of a woman too. The general observation is at the early age of reproductive period women experience higher unmet need for spacing and later aged women face for limiting. In aggregate it is found that unmet need to be reduced with the increase of age. Similar result is observed for education of women and household wealth status.
- ❖ Beside lack of knowledge about contraceptive methods, availability of contraceptives is found to be another important hurdle to the use of contraceptives. It is found that knowledge about contraceptive is not universal. The knowledge is not universal. Only 90 percent of women reported of knowing any method of contraceptives. And those use contraceptives receive contraceptives from mainly private sources like private hospitals, doctors etc. The share accounts 83 percent. The government source accounts only 16 percent.

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