'FERTILITY AND FERTILITY DIFFERENTIAL AMONG INDIAN STATES'

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ABSTRACT

The 2008 revision of the United nations ' Population estimates and Projection reveals that world population is projected to reach 7 billon early in 2012 up from the current 6.8bn and surplus 9 billon people by 2050 most of the additional 2.3,The population of developing countries is projected to rise from 5.6bn in 2009 to 7.9bn in 2050. India's population of approximately 1.17 billon people estimated for 2009 consists of more than one sixth of the world population. During the decade of 1991-2001 India's annual population growth rate has slowed down from 2.14 percent to 1.93 percent while 15 states and UTs have registered growth rates below 2 per thousand during the last decade, the remaining states have registered rates that are greater than the national average. In such a scenario, it becomes important to analyze the state-wise trends in fertility so that the relatively poorly performing states can improve by learning from the experience of the better performing ones. The taxonomic method has been used in this paper, for constructing the Composite Performance Index (i.e. fertility index in this case) which is based on women's education, wealth , women's employment, use of contraceptives, age at first marriage, son preference, women's health and women's empowerment. This index helps capture not only relevant performance of states, but also the relative importance of the aforementioned factors in causing the variation in this performance among states.

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LITERATURE REVIEW:

The size of the population of country depends upon variables like fertility, mortality and migration, with a decline in the mortality rate, fertility has assumed the role of the main determinant of population growth, Fertility differs from state to state depending upon the demographic as well as socio economic, religious characteristics of the regional population. It is influenced by factors such as women education, wealth, age at marriage, women health,son preference and women empowerment.Female education is stronger determinant of age at marriage and early fertility than male education. However, female and male education seem equally important factors in reducing fertility and child mortality.Lucio Breierouva & Esther Duflo Many 2002 studies have found a significant correlation between education and fertility, and literacy improves, fertility rates tend to decline, other studies show that fertility rates tend to be lower in countries where women have access to decent jobs, good health care and family planning resources. There can be large disparities in fertility and literacy rates between developed and developing countries. In many rural and urban areas of less developed countries child labour is essential for supporting the households and farmers. Further more in countries that have no pension plans the retirement incomes parents see children as their only resources of economic security. A world bank study in 1984 revealed that 80% of the surveyed parents in India and Thailand expected to be supported in their old age by children. Almost 20 years later, this expectation has not changed. An analysis by Qystein Kravdal(2000) found no significant influence of aggregate education on fertility. However in this study fertility reduction desires contraceptive use among women with at least one child.

An analysis (McNay, K. Arokiasomy P. Canen R, 2003) reveals that an important feature of India'a currently fertility transition is the spread of contraceptive use among uneducated women. Indeed, changes in their fertility are now making the major contribution to the country's overall fertility decline.P Atrokiasamy (2009) indicates that major fertility decline between 1992-93 and 2005-06 more than two fifth reduction in TFR was contributed by illiterate women. Concomitantly the increase in contraceptive prevalence rate amog uneducated women has been larger and faster among uneducated than educated women. This remarkable

demographic behaviour change has conclusively contributed significant direct health benefits for uneducated women and their children.

Peng Yu(2006) focuses that higher education does not lower people's fertility expectation while the more educated tend to defer their fertility and may end up with fewer children due to same unexpected constraints such as deterioration or break down relationship and fecundity problems at later stage. Chaudhary, RH (1996) examines differential fertility among states in India based on data from the 1992-93 India NHFS. It is argued that fertility will be lower among states with more women working outside the home with more formally educated women and with lower child mortality. There was a strong significant positive relationship between fertility and child mortality. Multivariate findings indicate that the child mortality rate was the strongest factor affecting fertility followed by work status and education. Economic activity outside the house evokes and enlightening and increased awareness among women which results in healthy lifestyle behaviour as observed by Najman (1989). It also increases the desire and responsibility to limit the size of family, women participation in non-agricultural economic activities outside houses has been shown to reduce fertility mainly by increasing opportunity cost of children. Their participation in white collar and technical occupation is likely to exert a strong negative influence on fertility observed by Srivastava J.N (1991).The paper (Tarujam, 2009) proposed an explanation where bequest motives drive fertility behaviour that generation sex bared differences in outcomes even where parents do not explicitly prefer boys over girls.

There is a difference of approximately two births in the total fertility rate between low status and high status groups of women and there is an inverse relationship between the autonomy in decision making and the level of fertility (KNS Yadav & S.S. Yadav, 1999). The factors that most influence a women's use of contraception include her age. The number of living sons she has and her religion affiliation. The study also shows that availability and quality of permanent village based Government Health care affects the use of modern contraception. The use of temporary family planning methods is negligible in the

area.Chakra(2001) Himanshu Dhawan(2009) observes that a study has found an increase in contraceptive up to 4.8% in high fertility states like UP and Jharkhand over a three year period from 2003-06. A research paper (SK Bhasin, M Pant, M Metha S. Kumar 2006) finds that in East Delhi seventy five percent of the couples were ever user of any contraceptive method, 59.8% were currently using any contraceptive method. Condom was the most common method (33.4%) of contraception followed by tubectomy (27.3%), or at pills (16.1%) and intra urine device (15.7%). Amongst the couples who were not using contraceptives, the most common reason was the desire for more children. For this paper 764 eligible couples from 250 families were randomly selected.

Two components of educational composition of a population are potentially relevant to fertility, the composition of school age population and the composition of the population in the reproductive ages, considering the first of these, school enrolments may transform intergenerational relationship by raising the direct cost of child bearing reducing their availability for household production and allowing parents to invest in the quality of offspring at the expense of quantity (Becher 1991, caldwell 1982). The effects of children's schooling on the reproductive aspiration and behaviour of parents has been neglected by researchers. Some of the rather meagre evidence is positive Caldwell, Reddy and Caldwell 1985 Axinn 1993, but one cross-national study failed to find any link between primary school enrolment and fertility (Tom and Haires 1984) and demographic trends in such countries such as Bengladesh and Nepal show that high or even (moderate) enrolments are not a necessary precondition for fertility decline. Three state (Bihar, Rajasthan, and Tamilnadu) study Bhawna Chawla (2007) reveals that education has a positive link with a women's health and a negative correlation with fertility.the study uses data from nfhs-2(1998-1999) and about 90000 ever married women aged 15-49, were interviewed.

Fertility decline in developing countries may have unexpected demographic consequences. Although lower fertility improves nutrition health and human capital investment for surviving children is known about the relationship between fertility outcomes and make

female offspring sex-ratio particularly in countries with a cultural preference for sons like India and china fertility decline may deteriorate the already imbalanced sex ratio (Rubiono chamorbargwala and

Martin Ranger 2007).The research paper (Anuja Jayaraman Vinod Mishra and Fred Arnold 2009) using the latest Demographic and Health survey data available for Nepal, India and Bangladesh finds that a strong preference for sons exists in all three countries. The results suggest that family size and sex composition strongly influence fertility desires and contraceptive behaviour in South Asia. The data for analysis for India are collected from the 2005-06 NFHS. The analysis, here is restricted to currently married non-pregnant women aged 15-49 with at least one living chile -75,162 in India.

There is no statistically significant difference between Hindus and Muslims in effect of religion on contraceptive adoption, after controlling for socio-economic characteristics

(Iyer 2002).

Various studies have shown that fertility and fertility differential is influenced by a number of factors such as education, working outside of women. Child mortality, contraceptive use etc. The present study constructs a composite performance index by selecting eight factors simultaneously. These factors include women education, wealth index, women employment, current use of contraceptives. Age at first marriage, son preference, women health and women empowerment index. Data from NHFS -3(2005-2006) have been used for various states to construct combined performance index.In order to deduce the effect of education on fertility,the data for the percentage of women who have completed 12 or more years of schooling has been taken.It can be observed that nfhs-3 data indicates higher level of education brings down the fertility level.This percentage is highest for Delhi and lowest for Rajasthan. The wealth index has been developed and tested in a large developed and tested in a large number of countries in relation to inequalities in household income, use of health services and health our comes. The poorest quintile (one fifth or 20% of the population) is estimated to have 2.5 times more incidence of infant mortality, double the fertility level and 75 percent higher rate of child malnutrition than the average figures of India. The South and West of India have traditionally

been better off relative to North and East. For the construction of combined performance index middle wealth quintile has been selected.Wealth is negatively correlated to fertility.In almost all the states female sterilization is by for the dominant contraceptive method. For the combined performance index (CPI) the percentage of currently married women who are using any method,has been selected.The use of family planning method reduces the level of fertility.

Paid employment of women has been recognized as important for achieving the goal of population stabilization in India.Employment of women declines sharply with the wealth index from 48 % among women in lowest wealth quintile to 21% among women in the highest wealth quintile. Percentage of employed women age 15-49 in the 12 months preceding the survey 2005-06 according to state has been used for the combined performance index.The level of fertility declines with the women employment.

Age at marriage in another important factor to affect fertility,higher the age at marriage lower the fertility rate.The proportion of women who marry before the legal minimum age at marriage are considerably higher among rural area that among urban areas.For the CPF the percentage of women age 18-29 who were first married by exact age by state has been taken.

Women health is also an alarming factor to affect fertility.In this study prevalence of anemia in women has been taken as an indicator of women's poor health. The prevalence of anemia for women is very high in all of the states in East region especially Jharkhand and Bihar where more than 2/3 of women are anaemic.Severe anaemia is most prevalent in Assam.Poor health of women increases the fertility.The research(Bentley ME and Griffiths Pl,2003) investigates prevelance of anemia was among all women in Andhra Pradesh.In all 32.4% of women had mild,14.19% moderate and 7.2% severe anaemia.Protective factors include muslim religion,reported consumption of alcohol or pulses and socio-economic status particularly in urban area,poor women had the highest rate.The data have been collected for 4032 married

women aged 15-49 from nfhs(1998-1999) on women's haemoglobin,status,body weight,diet,social,demographic and other household factors.

A strong preference for sons been found to be pervasive in Indian society. Son preference is relatively among younger women those in urban area, those with more education and those in the highest wealth quintiles. For constructing combined performance index percentage of women who want more sons than daughters age 15-49 has been selected.Son preference increases the level of fertility.The research paper (Anuja Jayaraman Vinod Misra and Fred Arnold 2009) using the latest demographic nad health survey data avalaaible for Nepal,India and Bangladesh finds that a strong preference for sons exsists in all three countries.The results suggest that family size and sex composition strongly influence fertility desires abd contraceptive behavior in S.Aisia.The data for analysis for India are collected from the 2005-2006 nfhs.The analysis,here is restricted to currently married non-pregnant women aged 15-49 with atleast one living child.

Women empowerment is the prime target to influence the fertility NFHS-3 (2005-06) collected data on a large number of indicators of women's empowerment. Information was collected on the marriage of a wife's earning relative to their husband's earning, control over the use of ones own earnings and those of the spouse a wife's participation in household decision making women's control over resources, knowledge and use of micro credit programme, freedom of movement and gender role attitude.

In this study a women empowerment index is constructed by giving the appropriate weights to giving the different indicators in women empowerment such as percentage of currently married women who alone or jointly with their husbands decide how their husbands earnings are used (0.4), [percentage of women's participation in decision making (0.5 percentage) women who health care (0.2) percentage of women who make major household purchases (0.2) and percentage of women who visit to her family or her relative (0.1) and

percentage of women who have bank or saving accounts that they themselves use (0.1)] the present combined performance index to measure fertility by state also uses the women empowerment index as a prime factor influencing fertility.

WOMEN EMPOWERMENT INDEX

State	Percentage of currently married women who alone or jointly with their husband decide how their husband's earning are used	Percentage of women who usually make specific decision alone or jointly with their husbands.			Percentage who have a bank of saving account that they themselves use	
		Own health care	Making kajor household purchase	Visit to her family or relatives		
Delhi	83.8	74.2	67.3	74.9	30.3	72.1
Haryana	72.1	71.7	54.7	69.2	12.4	64.8
HP	79.0	66.5	56.5	58.3	22.2	64.3
J &K	59.7	43.5	44.9	43.4	21.9	49.1
Punjab	70.2	76.8	48.2	68.5	14.6	69.2
Rajasthan	58.9	51.9	40.0	44.6	7.5	47.6
Uttaranchal	66.9	60.8	49.4	56.0	20.1	56.4
Chhattisgarh	77.2	47.9	50.9	61.2	8.1	57.6
MP	70.6	51.7	48.3	50.2	8.9	54.2
U.P.	71.3	64.2	52.9	50.3	13.2	58.3
Bihar	63.7	53.4	50.6	54.4	8.2	52.6
Jharkhand	78.2	61.2	59.8	65.5	14.4	62.5
Orissa	68.0	64.7	57.8	63.6	9.8	54.0
West Bengal	57.0	59.6	37.5	48.4	14.1	48.5
Arunachal	85.3	68.7	74.1	90.4	19.0	73.7

Pradesh						
Assam	74.7	80.0	72.0	80.9	11.7	69.6
Manipur	91.6	87.4	81.4	86.0	8.0	79.8
Meghalaya	80.0	87.5	82.5	87.3	16.9	76.3
Mizoram	89.1	91.9	79.6	89.5	8.1	79.7
Nagaland	93.6	90.7	82.1	93.7	7.4	82.1
Sikkim	82.5	79.5	76.6	83.7	20.9	74.7
Tripura	50.3	59.7	48.1	60.4	18.7	48.6
Goa	73.7	67.5	67.3	84.5	42.3	69.1
Gujarat	66.4	63.2	53.3	70.4	19.9	58.9
Maharashtra	74.5	67.8	61.2	64.2	20.3	65.1
Andhra Pradesh	61.7	61.8	52.7	65.5	18.0	55.9
Karnataka	61.2	53.3	50.5	55.9	22.1	53.0
Kerala	65.2	75.3	61.8	78.4	27.0	64.0
Tamil Nadu	81.4	73.2	63.3	76.7	15.8	69.1

OBJECTIVES

1. To assess the impact of various factors on fertility in relation to better performing states.
2. To have an idea about the relative trend of fertility behaviour across the states.
3. To derive the suitable implication for policy formulation in poor performing region keeping in view the relative performance of somewhat better states in that particular group.

WHY IS TAXONOMIC METHOD USED TO CONSTRUCT COMPOSITEPERFORMANCE INDEX?

1. This method is used for a spatial studies where we compare the performance of different development profiles, culture and mechanism of delivery in the services.
2. Since we are comparing the groups geographical region, we want to derive the policy implication after analyzing the trends in their relative performance keeping in view indicators selecting in this study, using the method it is easier to construct the distance matrix indicating the relative related to others.

METHODOLOGY

Taxonomic Method of estimation of composite performance index. Although there are number of methods for estimating the CPI, the following statistical procedure is proposed.

Let Xij be the data matrix, where l = 1,2 ….. n (number of states)

J = 1,2 ….k (number of indicators)

Since (Xij) come from different unit of measurement , they are not quite suitable for simple addition for obtaining the composite index. Therefore, [Xij] are transformed into [Zij] as follows:-

$$[Zij] = \frac{Xij - Xj}{Sj}$$

Where Xj = mean of the jth indicator Sj = standard deviation of the jth indicator Zj = is the matrix of standardized indicator

From [Zj] the best value of each indicator is identified. In measurement of fertility the best value will be the minimum value of the indicator.

For obtaining the pattern of development of states Pij is calculated as follows

Pij = (Zij – Zij)2

Pattern of fertility of a state Cij is given as

$$Cij = [E\ Pij / CV]^{1/2}$$

k

1=1

Where C.V is the coefficient of variation of the jth indicator in Xij.

Police implication of CPI Analysis one of the implication of this method is the distance from each state to another state can be found for each of the standardized values of the selected indicators.

The distance between the state I and p is given by dip as

$$Dip = [E\ Zij – Zp2]^{1/2}$$

k

1=1

That is dip is the square root of the sum of the squares of the elements of pth row to the corresponding elements of the ith row. In each row there will be one point with the minimum mi(dp) which is not equal to zero.

When the values thus obtained are arranged in a matrix form we get a systematic matrix Dip where Dij = 0 and Dip is Dpi.

Matrix Dip can be written as :

O d ……d.

O

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d d - - o

The distance matrix is use for analysing inter state variation in the proven of measurement of fertility of different states and the factors leading to such differences.

FF1 ED	FF2 EMPL	FF3 WEALTH	FF4 AAFM	FF5 ANMIA	FF6 CNTRCP	FF7 WPIDM	son pref
3.4991	-1.3169	-1.7523	-0.7620	-0.7783	0.9208	0.8936	-1.0295
-0.1067	-1.2249	0.4322	0.3777	0.3653	0.6475	0.1781	0.1227
0.7284	-0.7466	0.3639	-1.3319	-0.8752	1.3660	0.1291	-1.0184
0.0641	0.0444	1.1421	-1.2243	-0.0224	-0.1961	-1.3607	0.2793
0.6524	-1.4273	-0.8375	-0.8760	-1.3888	0.6397	-0.1551	-0.3584
-0.9037	0.8814	0.0499	1.4542	0.0745	-0.6178	-1.5666	1.4986
0.7473	0.5135	0.0909	-0.5974	0.2780	0.3272	-0.6452	-0.0228
-0.8848	1.4057	-0.9194	0.9540	0.5009	-0.1492	-0.5276	1.3308
-0.6950	0.3663	-1.1379	1.0870	0.3556	0.0617	-0.8609	1.1071
-0.5432	-0.7650	-0.2778	1.0616	-0.2356	-0.8990	-0.4590	1.4091
-1.2453	-1.1881	-0.3733	1.7898	1.4604	-1.6410	-1.0177	2.0467
-0.8658	-0.6638	-1.4110	1.5682	1.6639	-1.5160	-0.0571	0.8050
-0.8468	-0.7190	-0.5645	0.1308	0.8595	-0.3445	-0.4884	0.3688

-0.5811	-0.4247	-0.3733	1.1313	1.0533	1.2567	-1.4391	-0.4926
-0.6570	1.8012	-0.0866	0.3967	-0.1678	-0.9303	1.0505	0.8274
-0.5052	-1.2801	0.1591	0.1751	1.6639	0.1085	0.6486	0.3576
0.8422	2.0956	1.6336	-1.3573	-1.6117	-0.5007	1.6484	0.8498
-0.1446	-0.2499	0.6916	-0.7177	-0.4973	-2.4064	1.3053	-1.0072
-0.0687	0.3479	-0.3051	-1.0153	-1.3307	0.3741	1.6386	0.9057
-0.5432	0.4767	1.0193	-0.8254	-1.0012	-1.9847	1.8738	0.0555
-0.2395	-0.8846	0.2001	-0.4264	0.7432	0.1945	1.1485	-0.6045
-0.8278	-0.5627	2.8078	0.3651	1.2375	0.8271	-1.4097	-0.3584
1.8480	-0.1580	-0.9877	-1.5219	-1.3888	-0.5397	0.5996	-1.3651
-0.1256	1.1666	-0.3187	-0.0022	0.2877	0.8974	-0.4002	0.2010
0.2919	0.8354	-0.5508	0.3018	-0.3810	0.9208	0.2075	-0.7611
-0.6570	1.2126	1.0602	1.3149	1.0243	0.9755	-0.6942	-1.2980
-0.0497	0.3479	0.3503	0.3524	-0.0805	0.6631	-0.9785	-1.0407
1.3736	-0.7834	-1.2608	-1.1546	-1.8928	1.0536	0.1389	-1.1078
0.4437	0.8998	1.1558	-0.6481	0.0842	0.4913	0.5996	-1.7007

sum of squares

STATE	Delhi	Haryana	HP	J&K	Punjab	Rajasthan	Uchal	Chhatisgarh	MP	UP	Bihar	J.khand	Orrisa	West Bengal	AP
Delhi															
Haryana	22.3029														
HP	13.5975	7.2131													
J &K	30.8574	7.9653	8.7551												
Punjab	10.9676	7.2207	3.4282	10.9780											
Rajasthan	47.9161	12.9996	27.2237	11.7212	23.1325										
Uttaranchal	19.1967	5.6281	6.2023	3.1523	7.9441	11.1702									
Chhattisgarh	40.6416	12.2953	24.2466	13.8244	20.9300	2.9742	9.0099								
MP	33.8869	8.2381	20.0847	12.3647	14.9986	3.0467	7.8484	1.4084							
UP	33.5272	6.1872	19.5360	10.8948	12.8496	4.5123	10.0407	6.3677	3.5686						
Bihar	55.6308	15.5091	39.5864	22.1434	30.8287	8.2607	22.4740	11.7537	8.8251	5.3570					
Jharkhand	41.1973	12.5935	32.2218	22.2442	24.5200	10.6286	17.2829	8.6207	6.3347	6.1701	4.0662				
Orissa	29.6009	3.5910	13.7238	7.7301	10.5009	7.8235	5.9873	6.4134	3.5469	3.6329	8.3056	5.1820			
West Bengal	32.1281	5.9208	14.8964	12.3513	14.7832	10.5464	8.1648	10.2096	6.0335	11.0168	16.6458	13.0604	5.4419		
AP	38.3854	13.7610	21.6313	14.4186	21.1369	9.4994	10.0284	5.0132	8.6310	9.6996	20.2251	14.1715	10.6636	19.7965	
Assam	29.1756	2.5309	14.3107	11.9829	14.2197	15.7416	9.1743	12.8771	9.8145	8.1991	12.1791	8.2531	3.1021	8.7077	14.
Manipur	37.3394	24.2969	19.5290	11.9829	24.8470	28.5490	15.7479	24.8715	29.5576	26.4129	48.3512	43.0307	28.7492	40.1239	10.
Meghalaya	31.7092	14.8367	17.2514	17.0709	17.0122	25.0378	14.6014	23.5961	23.2677	15.8218	28.6543	20.9410	14.2138	28.3935	12.
Mizoram	22.5637	10.6566	9.5530	14.4637	8.8635	20.7895	9.6926	14.5421	14.7344	13.2514	31.8256	24.9821	13.2503	23.3621	7.
Nagaland	37.8720	16.5534	19.2397	13.6727	19.8301	23.3739	15.9135	20.9227	22.9578	15.8237	30.5461	24.6524	16.7749	32.5852	7.
Sikkim	21.1766	2.6524	7.0049	15.3993	8.8727	20.0207	6.7594	15.5520	12.9875	11.3413	21.9487	14.2285	5.2217	11.0163	12.
Tripura	51.1836	10.1479	18.8653	10.2950	26.2740	17.7964	13.8147	23.2438	20.7825	19.3050	24.7943	28.1121	14.3448	11.0238	26.
Goa	7.9362	17.4616	7.7006	9.5077	6.4545	33.6272	10.5620	28.3102	25.2198	23.5410	45.5623	32.7617	19.7708	27.4978	21.
Gujarat	26.2639	6.8368	9.9628	16.3803	11.6164	8.3294	2.1459	4.3422	4.5580	10.0027	21.6193	15.7583	6.0587	6.3030	6.
Maharashtra	18.1948	6.7894	6.7140	7.1436	8.1079	13.9490	3.5903	9.1099	8.0671	12.3975	28.0420	18.5741	8.6429	8.0232	8.
Andhra Pradesh	41.7408	10.8381	17.7649	10.7903	24.1945	13.2334	9.6633	12.6158	12.6956	18.2630	26.7183	21.1809	12.3988	6.0587	15.
Karnataka	25.0868	5.3746	6.9936	13.7391	9.4201	10.7769	3.0209	10.6156	8.3496	11.1153	23.5959	18.3169	6.7853	4.1602	12.
Kerala	7.0335	14.3798	4.2299	5.8482	2.2649	32.8482	11.2440	28.0231	22.5851	22.8039	46.2736	35.4159	19.1750	21.5521	26.
Tamil Nadu	24.1846	9.9991	6.2593	17.4119	14.0477	23.6165	5.8076	19.9384	20.1272	21.5504	38.5932	28.8944	14.6180	15.4499	13.

To compare the fertility behaviour of the different states, these 29 Indian states have been categorized into four group.

First North state group includes Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan and Uttaranchal,.

States of Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Gujarat, Maharashtra and Goa have been included in second group.

Third group consists of North East States i.e. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

The last group includes southern states i.e. Andhra Pradesh, Karnataka Kerala, Tamil Nadu.

RESULTS, CONCLUSION AND POLICY IMPLICATIONS:

Himachal Pradesh has the lowest fertility Index(5.9) whereas Rajasthan has the highest one (.94) among the Northern States.

It can be observed that low level of education (45 percent),the high proportion of women who marry before legal minimum age(58.4 percent), low level contraceptive use (47.2 percent) and strong son preference (34.3 percent) have contributed largely to higher level of fertility in Rajasthan. However proportion of working women is much higher in this state as compared to other states of this regions while in Haryana early marriage and prevalence of anernia are more responsible function for higher fertility. Himachal Pradesh low fertility can basically be explained by the factors of high contraceptive use (72.6 percent) women empowerment (64.3 percent) and weak son preference (11.8 percent) hence in order to reduce fertility in other States of this region policy concentrating on these factors must be implemented.

Table shows that in the second group Maharashtra (.65) and Gujarat (.72) have comparatively lower fertility indices, for the remaining states of this group the index value exceeds (0.90) Bihar has the highest fertility Index(1) in this region. It can be observed that this state has the lowest level of education (2.7 percent) among all Indian States highest proportion of women who many

before 18 years (63.7 percent) among all states of India and strongest son preference (39.2 percent) among all states of India. All the above factors play a significant role in keeping fertility level highest is Bihar.Similarly Uttar Pradesh and Madhya Pradesh have the higher Indies .92 and .91 respectively in this region. The factors of early age at marriage, prevalence of anemia and stronger son preference have largely contributed to higher level of fertility in these states.

In both states Orissa (61.2 percent) and West Bengal (63.7 percent) high prevalence of anemia is an important factor to contribute higher fertility . However the contraceptive prevalence rate is considerably higher in west Bengal (71.2 percent), but not outweighs the effects of other factors to reduce fertility. For Maharashtra's better performance, factors such as higher women employment (45.5 percent) high level of contraceptive use (66.9 percent) and weak son preference (14.1 percent) have contributed significantly to keep the fertility level low. Hence the other states of the second group can improve their fertility by implementing the policy adopted by Maharashtra.

Table shown that among the North eastern States fertility Index is lowest for Manipur (0.49) and highest for Assam (.87) In Assam high prevalence of anemia (69.5 percent) and higher proportion of early marriage (38.2 percent) have contributed significantly to keep fertility level high similarly early marriage (41.2 percent) high prevalence of anemia (65.7 percent) and weak level of women empowerment are responsible factors for higher fertility in tripura.From the table it can be seen that in spite of low level of education women are highly empowered in all North Eastern States except Tripura.

Manipur's low fertility Index can basically be explained by the factors of high level of women employment (59.2 percent) higher proportion of women in middle quintle of wealth (33.7 percent) and lower prevalence of anemia (35.7 percent) have contributed largely to low level of fertility in Manipur . Hence the Policy to tackle the problem of high fertility in North Eastern States must lay emphasis on the improvement of these three factors.

In the group or Southern States,Tamil Nadu has the lowest fertility Index (.52) whereas Andhra Pradesh has highest one (.76). In Andhra Pradesh the higher proportion of early marriage (56.2 percent) and high prevalence of anemia (62.9 percent) play significant role to keep fertility level high. It can be observed from the table that low level of women employment (27.9 percent) and

low level of wealth (12.2 percent) outweigh the positive effect of other factors to reduce fertility to some extent in Kerala.

In Tamil Nadu the factors of higher women employment (46.2 percent) high level of women empowerment (69.1 percent) and weak son preference (5.7 percent) play significant role to keep fertility level down, hence in the policy making of other Southern States it is very factors that must receive attention.

It is hypothesized that level of estimated fertility by using composite performance method is close to the total fertility rate given in nfhs-3(2005-2006).It can be observed from the table that that fertility level estimated by CPIis higher than TFR in West Bengal,Orrisa,Chattisgarh,Assam and Andra Pradesh.The common factor in all these states is that prevelance of anemia is very high.However women health is negatively related to the level of fertility but in these states women are not capable of reproducing children,hence total fertility rate is comparatively low.In some states like Manipur,Meghalaya and Nagaland fertility level estimated by CPI is lower than TFR.The contraceptive prevelance rate is very low in Meghalaya(24.3%) nad Nagaland (29.7%) whereas in both the states women are highly empowered.The positive impact of high empowerment has leesened the negative impact of contraceptive use.In Manipur the level of education,women employment and women empowerment are very strong indicators to keep fertility level down.Inspite of that these factors aare not effective to reduce TFR.

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