

Fertility Differential Between Tribal and Non-Tribal Population of Tripura

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Introduction

Tripura is one of the seven northeastern states of Indian Union. According to 2001 census the total population of the state is around 31.91 lakh with density of 304 persons per square kilometer. About 83 percent of the total population of the state lives in rural areas. The tribal population of the state comprising of 19 different groups constitute around 31 percent of the state's population (1991 census). In 2001 the tribal population of the state has been estimated as 33.49 percent of the total population of the state (Das, A.K.; Chakraborty, K.S., 2003). The decadal growth rate of the tribal people during 1981-91 being observed as 46.18 percent which was significantly above the state level (34.30 percent) as well as the national level (23.86 percent). The female literacy of the state during 2001-census was recorded as 65.41 percent, which is much above the female literacy rate of the whole country. The economy of the state is basically agrarian and more than 61 percent of the total workers are engaged in agricultural activities. In rural areas majorities of Tribal and non-tribal groups lead their life in different physiographical

settings. However most of the rural people of the state are faced with similar health conditions accentuated by widespread poverty, illiteracy, under-nutrition, poor environmental and personal hygiene etc.

A number of studies on Indian tribal population reported that fertility among tribal is usually high in comparison to non-tribal (Majumdar, 1947; Bhowmik et al, 1971; Verma, 1977; Sharma, 1978; Sinha and Pal, 1983; Ray and Roth, 1984; Singh et al, 1987; Basu et al, 1988; Basu and Kshatriya, 1989; Satish et al, 1991; Mutharayappa, 1994; Basu and Kshatriya, 1997). In Tripura, review of literature stand to confirm that there is no study as such concerning the issue. The issue of fertility differential between Tribal and non-tribal of Tripura has escaped the attention of experts in spite of the fact that the tribal population constitutes a significant proportion of state's population. The present paper is an attempt to fill this gap. The object of the paper is, therefore, to report and analyze the fertility differential if any, between Tribal and non-tribal population of Tripura. As the majority of the tribal population of the state (presently more than 95 percent) lives in rural areas the study deals with the rural population only.

Material and Methods

The data for the present study have been collected from randomly selected 1200 households from the rural areas of Tripura by multistage stratified random sampling method. From the selected households 1350 currently married women under reproductive span of life were studied. The fertility data were collected using scheduled questionnaire method. Primarily the data were collected in connection with the author's Ph.D. research project. The data have been further divided into age-specific events. Age-specific fertility rates, average parity, etc., have been calculated in 5-year age interval for the women in fertile period. The fertility levels have been adjusted by a method suggested by Brass (1964) using statistics on current and past fertility. The method involves calculation of

(I) Cumulative age-specific fertility rates to age i , i.e. $\sum_{j=0}^{i-1} f_j$ denotes the ASFR of the women in the age groups i , $i = 1, 2, 3, \dots, 7$ correspond to the age intervals 15-19, 20-24, ..., 45-49.

(II) The average parity equivalent (synthetic average parity) F_i where

$$F_i = \phi_{(i-1)} + a_{(0)} f_i + b_{(0)} f_{(i+1)} + c_{(0)} \phi_{(7)} \dots \dots \dots (1)$$

a, b, c's are estimated by applying least squares regression to fit equation (1) to a large number of model cases constructed using the Coale-Trussell (1974) fertility model (UN, 1983).

(III) The fertility rate for conventional 5-year age group $f_{(i)}^+$ where

$$f_{(i)}^+ = (1 - W_{(i-1)}) f_{(i)} + W_{(i)} f_{(i+1)} \text{ and}$$

$$W_{(i)} = x_{(i)} + y_{(i)} f_{(i)} \leq \phi_{(i)} + z_{(i)} f_{(i+1)} \leq \phi_{(i+1)} \dots (2)$$

x, y and z values are obtained by using least squares regression to fit (2) to the same model cases mentioned earlier.

(IV) The adjusted fertility rate $f_{(i)}^*$ where $f_{(i)}^* = K f_{(i)}^+$ and K = adjustment factor obtained from the ratio of the actual to synthetic parity ($P_{(i)} / F_{(i)}$)

Further various fertility indicators e.g. General fertility rate (GFR), General marital fertility rate (GMFR), Total fertility rate (TFR), Gross reproduction rate (GRR) and also their adjusted estimates have been calculated.

Result and Discussion

Table-1 presents the age-specific fertility rates (ASFRs) and the estimated ASFRs of the women residing in rural areas of the state of Tripura during 1996-97. ASFRs are based on births during last one year preceding the survey.

Table 1

Age-Specific fertility rate of rural population of Tripura

Age group	Number of Female	Number of Live Birth	ASFR	ASFR (Adjusted)
15-19	227	16	0.07048	0.10251
20-24	290	60	0.20690	0.22600
25-29	411	50	0.12165	0.12678
30-34	294	20	0.06803	0.07121
35-39	244	8	0.03279	0.03366
40-44	105	1	0.00952	0.01011
45-49	61	-	0.00476*	0.00402
Total	1632	155	0.51413	0.57429

Source: Field Survey, 1996-97

* By interpolation

The numerator of an ASFR is the live births in a five-year age group of the woman in the reproductive span of life and the denominator is the number of woman-years lived in the same five-year age interval. It is observed from the Table that the ASFR of woman of rural Tripura was 0.07048 in the younger age group 15-19. This suggests that 1000 women in the age group had produced on an average 70 children in the rural areas of Tripura state during the surveyed period 1996-97. In the next higher age group (20-24) the ASFR being 0.2069 indicating on an average 207 childbirths had been occurred to 1000 women in the said age interval. The ASFR of 0.12165 describes that around 122 births per 1000 women took place in the age group (24-29). Thereafter the ASFRs declined steadily with the increase of the age of women. Lastly, very low birth rate i.e 5 per 1000 women has been noticed in the last age group (45-49). It appears that in rural Tripura the women attain the high birth rate in the reproductive age interval (20-24).

Further the age-specific fertility rates conform the low rate of child bearing in the younger age group. The contribution of births to women aged below 20 (referred as teenage) to total fertility is around 14 percent in rural Tripura. It confirms that early child bearing is not very common in rural areas of the state. Again the contribution of births to women aged between 20 and 29 (be termed as peak age) to total fertility is 64 percent. It indicates that the rate of child bearing reached its peaked position at ages between 20 and 30 when majority of women are married and the fecundity is at its maximum level. After that the rate of child bearing decreases steadily before reaching the zero mark at the age of 50 years. The adjusted ASFRs show almost the similar pattern of child bearing of women of rural Tripura. It has been revealed that low rate of child bearing of women occurs in teenage (about 18 percent of total fertility), peaking at peak age (about 61 percent of total fertility) and thereafter declines sharply as old age (30+) fertility rate contributes only 21 percent of total fertility rate of rural Tripura.

The ASFRs of tribal as well as non-tribal communities are shown in Table-2. The ASFRs of tribal and non-tribal show the similar pattern but in a different fashion of low rate of child bearing at the younger age groups (15-19), peaking between 20 and 24 and then declining with the increase of the age of the woman before reaching zero mark at the age 50. Now comparing the ASFRs of tribal and non-tribal women in the younger age groups (15-19) it appears that tribal women had on average more childbirths (91 births per 1000 women) than their counterpart

Table - 2

Age-Specific Fertility Rate by Ethnicity

Age Group	Tribal		Non-Tribal	
	ASFR	ASFR (Adjusted)	ASFR	ASFR (Adjusted)
15-19	0.09091	0.12202	0.05469	0.08123
20-24	0.24074	0.24302	0.18681	0.20818
25-29	0.12510	0.12497	0.11837	0.12307
30-34	0.08696	0.08643	0.05587	0.05781
34-39	0.04425	0.04389	0.02290	0.02499
40-44	0.02128	0.02111	0.01534*	0.01644
45-49	0.01064*	0.00869	0.00756*	0.00660
Total	0.62129	0.65013	0.46154	0.51832

Source: Field Survey, 1996-97

* By interpolation

non-tribal (55 births per 1000 women). In the next age groups (20-24) women of the tribal community (ASFR 0.24014) had experienced about 29 percent more births than the non-tribal (ASFR 0.18681). Again increased rate of childbirth is observed among tribal (about 127 births per 1000 women) than non-tribal women (about 118 births per 1000 women) also in the age groups (25-29). From the Table it appears that in each 5-year age groups tribal women showed higher rate of child bearing than their counterpart non-tribal women in rural areas of the state of Tripura. The ASFRs of tribal and non-tribal women highlight the fact that among the tribal contribution of teenage (<20), peak age (20-29) and old age (30+) fertility to total fertility are 15 percent, 59 percent and 26 percent respectively whereas among non-tribal the corresponding percentages are 12, 66 and 22.

The general fertility rate (GFR), the general marital fertility rate (GMFR), the total fertility rate (TFR) and the gross reproduction rate (GRR) with their adjusted values obtained by using adjusted ASFRs are shown in Table-3. The upper panel of the Table presents the GFR of the tribal and non-tribal women as well as the GFR of women of rural Tripura. The GFR describes the number of live births occurring to 1000 women during their fertile period (15-49) years of ages in a given year. The GFR of 94.98 of rural Tripura indicates that during 1996-97 95 births per 1000 women took place in the childbearing age groups (15-49) in the rural areas of Tripura. It is almost in accordance with the GRR of 94 for the state of Tripura during 1990-92 (NFHS, 1993, Northeastern states, IIPS, 1995). The adjusted GFR of rural Tripura is calculated as 105. The GFR and its adjusted

value of rural Tripura are found to be much less than the GFR of rural India of 133 (NFHS, India, 1990-92, IIPS, 1995) or of 129 (SRS, 1990-92, Office of the Registrar General, 1994). Again comparing the GFR of tribal and non-tribal women of rural Tripura it is noted that GFR of the tribal women (107 per 1000 women) is much higher than that of the non-tribal women (87 per 1000 women). The adjusted GFR of both the communities also focus the similar pattern. The higher GFR of tribal women may be due to the increased incidence of childbirths among the tribal women in comparison to non-tribal in rural Tripura state.

Table-3

Differential Fertility by Ethnicity and by Various Indicators
Rural Population of Tripura

Fertility Indicator	Tribal	Non-Tribal	Tripura (Rural)
GFR	106.67	86.73	94.58
GFR (Adjusted)	111	96	105
GMFR	130.43	104.27	114.99
TFR	3.11	2.31	2.57
TFR (Adjusted)	3.25	2.59	2.87
GRR	1.52	1.13	1.25
GRR (Adjusted)	1.59	1.26	1.4

Source: Field Survey, 1996-67

*By interpolation

The GMFR by ethnicity and that of rural areas of the state are shown in the second panel of the Table-3. GMFR describes the number of live births per 1000 married women in the reproductive age groups (15-49) in a year. According to the present study the GMFR of rural Tripura is 115. It reveals that in the entire reproductive span of life 1000 women had produced on average 115 births in the rural areas of the state. The table also shows that the GMFR of tribal and non-tribal women in the rural areas are 130 and 104 respectively. It indicates that the married tribal women had experienced to produce more births than their counterpart non-tribal women.

The third panel of the Table-3 shows the TFR and the adjusted TFR of tribal, non-tribal and of rural Tripura for 1996-97. The Total Fertility Rate (TFR) is a summary measure. It is calculated as five times the sum of the ASFRs over five-year age interval of the entire fertile period of woman. It describes the total number of children that the average woman would have during her reproductive span of life i.e. (15-49) years. From the Table it is found that the TFR of rural Tripura

being 2.57 as against the national (rural) level of 3.67 (NFHS, India, 92-93, IIPS, 1995) or of 3.99 (SRS, 90-92). Thus the TFR of rural Tripura is about 30 percent or 36 percent below the national level. Again from the Table it appears that in rural areas the TFR of tribal women is above the state level (rural) by 0.54 children per woman. However their counterpart non tribal woman is below the state level by 0.26. The difference between tribal and non tribal fertility in respect of TFR is 0.8 child per woman. It indicates that an average tribal woman in her entire fertile period would have about one child (0.8) more than the average non tribal woman in rural Tripura.

The bottom panel of the same Table depicts the GRR by ethnicity as well as that of rural areas of the whole state. The GRR gives an idea of the capacity of a woman to produce the female children during her reproductive span of life. Here GRR has been calculated from TFR by $GRR = 0.4878 \times TFR$. As seen from the Table, Tripura (rural) had a lower GRR than the national level (GRR of rural India: 1.79 (NFHS, India, 92-93); 3.99 (SRS, 90-92)). It appears that in Tripura the GRR had declined by 0.54 to 0.70 points from the national level. Again the tribal - nontribal comparison revealed that the GRR of tribal woman was higher than that of non-tribal woman by 0.39 points (GRR Tribal: 1.52, Non tribal: 1.13). It indicates that an average tribal woman would bear 0.39 more daughter than the average non-tribal woman in her entire fertile period.

Conclusion

In conclusion it may be stated that in Rural Tripura the low rate of childbearing is observed among the women in the younger age group 15-19. Around 14 percent of the total fertility in the rural areas of the state is contributed by the births to women in this age group. It indicates that early childbearing is not very common practice among the women in rural Tripura. Besides high birth rate is noticed among the women aged 20-24 years in comparison to reproductive women of the others 5-year age intervals. About 64 percent of the total fertility is contributed by the births to women aged between 20 and 29 years indicating the rate of childbearing reached its peaked position at ages between 20 and 30 when a large number of women get married and the fecundity is at its maximum level. After 30 + the birth rate declines sharply.

The age-specific fertility rates and also the adjusted rates of the two

communities, tribal and non-tribal, indicate that in each 5-year age groups tribal women showed higher rate of childbearing than their counterpart non-tribal women. Again the analysis reveals that the general fertility rate (GFR) of rural Tripura is almost in accordance with the GFR of the state observed during 1990-92 by NFHS. It is significant to note here that the GFR and its adjusted value are much lower than the corresponding rates for rural India determined during 1990-92. However the GFR of the tribal women is much higher than that of the non-tribal women. Perhaps one of the main contributory factors behind it is the high incidence of childbirths among the tribal in rural areas of the state. Again the general marital fertility rates (GMFR) of tribal and non-tribal women of rural Tripura support the existence of differential fertility between the two communities. Here also the tribal fertility in rural areas occupies the higher level than their counterpart non-tribal.

The study also reveals that the total fertility rate (TFR) of the rural areas of the state is about 30-36 percent below the national level. The TFR of tribal and non-tribal communities indicate that in her entire reproductive span of life an average tribal woman would have about one child more than an average woman of the non-tribal community. The gross reproduction rates (GRR) also suggest that an average tribal woman would bear 0.39 daughters more than her counterpart non-tribal woman in the entire fertile period.

Finally the different fertility indicators involved in the study support the existence of high fertility among tribal community in rural Tripura in comparison to non-tribal section of the state. It perhaps require no mention that the socio-economic characteristics of two communities and the attitude of the communities towards modern family planning primarily be held responsible for the existence of fertility differential among tribal and non-tribal communities in the rural areas of the state of Tripura. It will not be out of context here to mention that the literacy rate of tribal women is much below the women literacy rate of the state.

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The six goals: a reminder

- Goal 1: Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.
- Goal 2: Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality.
- Goal 3: Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes.
- Goal 4: Achieving a 50% improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.
- Goal 5: Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality.
- Goal 6: Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

Source: The Dakar Framework for Action. Education for All: Meeting our Collective Commitments, adopted by the World Education Forum (Dakar, Senegal, 26-28 April 2000), para, 7, Paris, UNESCO, 2000.