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Educational Attainment as Determinant of Fertility: a comparative study of two Minority Groups in Rural Darjeeling, West Bengal

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ABSTRACT

Fertility may be determined by several socio-economic (education and income), cultural, demographic and biological factors such as literacy, work participation ratio, female work participation ratio, female literacy, tertiary sex ratio and age at marriage etc. Since these are not uniform across the religious groups, there are differentials between communities in a society. Fertility is regarded as a good indicator of development of any social group or region. The current research focuses on the nature and extent of these differentials, and also on how far educational attainment plays role in controlling fertility.

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Introduction

Growth of population and replenishment of human society depends largely on human fertility i.e. biological replacement and therefore, plays a positive role in the population dynamics. It has been traditionally investigated in two separate disciplines — life science and social science. In social science, the study of human fertility is considered as one of the most important aspects of investigation. Total fertility rate (TFR) which is considered to be a good measure of reproductive performance is defined as “the total number of children that would ever be born to a (hypothetical) group of women, if the group passed through its reproductive span of life with

these rates in each year” (Communication Action Research Centre, ISI, Calcutta, p. 34). In the population dynamics fertility plays both positive and negative roles. Very low fertility, particularly below the replacement level may threaten the society by extinction as question raised by Morgan (2003) “Is low fertility a twenty-first century demographic crisis?” On the other hand high fertility may create several economic, social and political problems of varied nature. This replacement is a very delicate at the same time complicated process. “Within the biological limits of human fertility, several social, cultural, psychological, as well as economic and political

factors are found to operate, and these are responsible for determining the level of differentials of fertility” (Bhende and Kanitkar, 2003).

Survey of Literatures

Human fertility has been a very interesting issue of discussion and research among the demographers in particular and social scientists in general. Among the western researchers Kingsley Davis, Judith Blake, John Bongaarts and Robert Potter are some of the noteworthy contemporary researchers in the field of demography. From the studies conducted by the different scholars, it is clear that fertility primarily depends on some physiological factors such as (i) adolescent sterility, (ii) post-partum sterility and average interval between successive births, (iii) primary and secondary sterility, (iv) reproductive wastage as well as some social and cultural factors termed by Davis and Blake as intermediate variables (Bhende and Kanitkar, 2003). Davis and Blake (1956) had convincingly deliberated that socio-economic variables could not have a direct effect on fertility, and they have to operate through other variables which they termed ‘intermediate variables’.

Bongaarts and Potter (1983) identified independent variables of fertility which they called ‘Proximate Determinants’. To put in their words, “the biological and behavioral dimensions of human fertility are linked through a set of ‘Proximate Determinants’ or ‘intermediate fertility variables’. Age at the first marriage, the use of contraception, and the breast feeding duration and pattern are some of the Proximate Determinants”. Socio-economic factors and health and nutrition are the determinants of proximate variables but “...health and nutrition are, in general, relatively unimportant determinants of fertility. Socio-economic factors must therefore be the principal causes of fertility trends and differentials”.

Bhagat (2001) tries to see ill design in creating confusion by presenting data on births in a misleading manner: “Census in independent India until 1991 hides more than it reveals. It is now obvious that the census of 2001 is more conscious of this fact and intends to publish the socio-economic data along with demographic data on religion”.

Basu (1997) argues that it is the hidden agenda of the hard line Hindu communalists and their cohort so called ‘expert demographer’ who take shelter to demographic argument to initiate intervention in Muslim life through pressurizing government and policy makers. She adds further that they do not even extend the demographic argument to consider other concomitants of religion-fertility relationship in the country, poverty and education in particular. If they did, the policy would be for increased resource into the socio-economic development of the Muslim minority. Instead the entire emphasis is on interventions in Muslim life which have at best a tenuous relationship with fertility.

McClamroch (1996) tries to identify the role of women’s education and work participation ratio on reducing TFR. Dixon Mueller (1993) found increasing the number of years that women remain in school delays marriage and reduces the time duration that women are exposed to the possibility of conception. Education creates aspiration for higher standard of living, thereby decreasing the desired number of children in a family. Education exposes women to knowledge, attitudes and practices favourable to birth control that would enable women to have their desired number of children.

Study Area

The present study area comprises the entire district i.e. Darjeeling hills and the adjoining sub-Himalayan areas of Darjeeling district. The district has four sub-divisions, 17 Police Stations and 12 Community Development Blocks, out of

which 4 are in the Sub-Himalayan region of Darjeeling district and the remaining eight blocks are in hilly region.

Objectives

The present study primarily aims at identifying the determinants of differentials in fertility in the study area. However, the extent to which these determinants control fertility is a basic question which needs to be investigated further in this direction. The objectives of the present study are therefore – to evaluate the extent of differentials in fertility by religions in the study area, and to evaluate the impact of educational attainment of respondents, their husbands and parents.

Sampling and Survey Process

Primary data has been collected from the field adopting sample survey. Sample respondents in this study are the married females in the age group of 15-49 years (which have been considered as childbearing age group). The sample respondents have been selected / drawn out of the universe primarily following multi-stage random sampling. But at the first stage six blocks have been selected using clustered random sampling.

At the second stage a number of mouzas (revenue villages) have been selected using random sampling with the help of random table from out of the list of villages/mouzas available in the census publication of C. D. Block-wise list of villages from the village and town directory of Census of India. At the third stage the list of households with currently married female in the age group of 15-49 years have been collected from Integrated Child Development Scheme (ICDS) Centres i.e. Anganwari Centres and also from the ASHA workers. Using random table the respondents were selected randomly. Following the sampling method a good number of respondents were selected from the religious groups i.e. Buddhists (100) and Christians (100)

under study. The sample respondents have been interviewed with a pre-designed schedule.

Methodology

TFR and CBR have been calculated from the data collected from different primary and secondary sources. Descriptive statistics of TFR and CBR have been calculated to examine the variation in fertility between different religious groups, for one religious group with different socio-economic background and also, for the same socio-economic strata of a population group with different religious background. Correlation Coefficient has been calculated between different educational attainment levels of the respondents, their parents and also husbands to ascertain the relationship. Test of significance of the relation has been ascertained by Tau (τ) test (as the sample size is large).

Fertility among the Buddhists and the Christians

The analysis of TFR and CBR among all the four religious groups reveals that both CBR and TFR are higher among the Christians compared to Buddhists (Table-1). It appears that over all socio-economic condition of the Buddhists being weak has lead to such a situation. There exists wide variation in the crude birth rates among the religious groups. Buddhists (26.25) once again hold the bottom position in the list of crude birth rates and Christians (47.72) has quite high CBR.

Fertility and Education:

Education has been considered as one of the most important determinants of fertility. It is not only the educational attainment of the respondents but also the educational attainment of the husbands and the parents has also been considered. Table-2 presents fertility, both TFR and CBR, and average number of years spent in school. It is observed that the educational scenario is very poor.

Among the respondents only Buddhists have completed nearly 10 years of education. All other respondents belonging Christian community have completed only about five years and four months of education. As a matter of fact the lowest fertility is observed among the Buddhists. It is not only the educational achievement of the respondents which is relatively higher in case of Buddhists but also the education of husbands as well as education of their parents too.

In order to ascertain further the extent of association of fertility to educational attainment, statistical tools have been employed. The correlation analysis (Karl Pearson's) shows that negative correlation exists between the variables and are true in case of all the religious groups. However, the degree of correlation differs to a great extent as far as the different religious groups are concerned. As for example, the correlation coefficient between education and number of pregnancies is higher (i.e. -0.49) in case of the Buddhists and lower i.e. -0.32 in case of the Christians. When we take the case of number of births and education it is found that the higher coefficient (i.e. -0.46) is found among the Christians and lowest (i.e. -0.44) among the Buddhists (Table-3). It is true that it is not only the educational attainment of the respondents that is important but also the educational background of the husbands with whom the fate of the respondent is firmly tied up. Apparently husbands are the most influencing person in the life of a prospecting mother.

However, the relationship is found to be relatively stronger in case of Christians with coefficient being -0.20 . Buddhists show a weak negative correlation (-0.13) between the variables (fertility and husband's educational attainment). An effort has also been made to find out the influence of mother's educational background on her daughter's fertility. It's clear that there exists a negative relationship between the two. But the

extent of influence is not uniform across the religious groups. Relatively higher correlation coefficient is found among the Buddhists with a coefficient of -0.19 and the lower is among the Christians i.e. -0.19 . In order to find the influence of educational attainment of a father on the fertility of the daughter correlation coefficient has been computed. It is negative for all the religious groups which means daughters of educated father are less susceptible to high fertility. However, the influence does not seem to be consistent for all the religious groups. It is thus found that the correlation coefficient is higher among the Christians i.e. -0.12 and lower among the Buddhists i.e. -0.10 .

Thus, among others the impact of educational attainment of the respondents is much more effective (strong) than the husbands and the parents. Among the educational variables, the strongest relation of fertility is found with respondent's education among both the communities e.g. Buddhists and among the Christians. Among the educational variables, the weakest relation of fertility is found with father's education both among the Buddhists and among the Christians.

Educational attainment of the respondent has significant negative relationship with fertility both at 5 % and 1% level of confidence irrespective of religious groups (Table – 4). It could be said that educational improvement of the respondent of all religious affiliation can reasonably control fertility as it is expected to improve their sense of social responsibilities. Father's educational attainment of the respondent has no significant relationship for both religious groups.

It is also interesting to note that mother's educational achievement has almost no significant influence on the fertility of their daughters. As it has been found from the test of significance that among the Christians, mother's educational attainment has no significant relation with fertility of their daughters both at 5% and 1%

level of confidence. It is only among the Buddhists where we find marginally significant negative relationship between mother's educational attainment and their daughters' fertility found only at 5 % level of confidence. Husband's educational attainment presents a varied kind of

relationship with their wives' fertility. Among the Buddhists, the variable has no significant relationship both at 5 % and 1% level of confidence where as among the Christians it is found to be significantly related, though negatively only at 5 % level of confidence.

Table 1: Crude Birth Rates (CBR) by Religious Groups, 2007- 08

Religious groups	Total Fertility Rates (2007-08)	No. of live births during 2007-08	Population (2007-08) during enumeration	Mid-year population (2007-08)	Crude Birth Rates (CBR)
Buddhist	2.44	11	430	419	26.25
Christian	4.89	23	505	482	47.72
Total/Average	3.67	34	935	901	73.97
Over all for all the religions	3.67	CBR = $(34 \div 901) \times 1000 = 37.74$			

Source: Calculated by the researcher from the data collected from field work, 2007-2008.

Table 2: Fertility and Schooling by Religion

Religious groups	Fertility Rates		No. of years of schooling@			
	TFR	CBR	Respondent's	Husband's	Father's	Mother's
Buddhist	2.44	26.25	9.73	10.82	5.99	3.86
Christian	4.89	47.72	5.28	7.12	3.74	0.72
Average/ Over all	3.67	36.99	7.51	8.97	4.87	2.29

Source: Calculated by the researcher on the basis of the data collected from the field during 2007-2008.

@ No. of years of schooling including the years for which the students were detained in the same class for consecutive two or more than two years.

Table 3: Correlation Coefficient of Birth with Selected Variables by Religion

Variables	Correlation Coefficient of Birth to selected variables with respect to the religious group	
	Buddhists	Christians
Educational attainment (Self)	- 0.44	- 0.46
Father's education	- 0.10	- 0.12
Mother's education	- 0.19	- 0.19
Husband education	- 0.13	- 0.20

Source: Calculated by the researcher on the basis of the data collected from the field during 2007-2008.

Table 4: Test of Significance of Correlation Coefficient using Standard Normal Distribution Values of T_α

Variables	Religious Groups			
	Buddhist	Christian	Hindu	Muslim
Educational attainment (Self)	4.92635*	5.08613*	7.57477*	5.73197*
Father's education	1.03653	1.21703	3.20376*	3.50228*
Mother's education	1.97994**	1.95424	2.42745**	1.36363
Husband's education	1.34848	2.07026**	2.63408*	2.40052**
Age at the first marriage	2.8685*	2.80327*	3.43268*	3.67926*
Per capita monthly income	3.15494*	3.38506*	2.44215**	0.69838

Source: Calculated by the researcher on the basis of the data collected from the field during 2007-2008.

* Means significant at both 1 % (tabulated value 2.576) as well as 5 % (1.960) level of confidence and ** means significant only at 5 % level of confidence.

Conclusion

Educational attainment has negative impact on fertility but the extent of influence varies from one religious community to the other as their socio-economic conditions vary. It is also observed that the impact of educational attainment of the respondents, among others, seems to be much more effective (strong) than the husbands and the parents as it is clear from the correlation coefficients. Working females have relatively less number of children as compared to the housewives but the difference is not significant. It may be, therefore, concluded with the words that the controlling fertility and bridging the gap between the communities lies in the improvement of education of females. Therefore, all the policy making agencies working in the field of fertility should formulate their programmes oriented towards checking drop out of girl children particularly in the areas where large concentration of minorities and backward communities are living.

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