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On Population Dynamics: Differential Birth Rates And Human Fertility In An Urban Population

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ABSTRACT

In this paper, the differential birth rates due to different socio-econmic and demographic variables for an urban population are discussed. To find out the association between these independent variables and the dependent variables (fertility), X^2 (Chi-square) test was used.

Keywords: ***Urban population, socio-economic and demographic variables, fertility, X^2 (Chi-square) test***

INTRODUCTION

The persisting high level of fertility rates despite considerable decline in mortality rate is considered as the main root for the continuing high population growth rate in India. Fertility is affected by a number of socio-economic and demographic variables.[1] The knowledge of fertility correlation is essential for policy and programme considerations of fertility. Time to time, studies are done for obtaining current information on fertility measures and fertility differentials for an urban population.[2, 3, 4, 5, 6] In a recent study, India recorded a faster decline in fertility in recent years in all religious groups including muslims.[7] In another study of fertility defferential by religion, it was found that where Hindu fertility was high, Muslim fertility was also high and where Hindu fertility was low, Muslim ferility was also low[8].Thus a study of differential birth rates is need of today.

In the present paper, an attempt is made to study the existing relationship between some selected socio-cultural variables such as religion, caste, family type; socio-ecomice variables such as work status, educational status and demographic variables such as age of marriage, marriage duration and number of living sons (called independent variables) and fertility, that is, number of live births per female (called dependent variable). The statistical X^2 (Chi-square) test was used to find out if any relation exists between independent and dependent variables.

METHODOLOGY

To achieve the aim, the data on the number of live births of a woman were collected from 209 currently married women (called respondents) of 300 sample households of Azamgarh city situated in eastern part of state U.P. (India) with the help of an interview schedule during Jan. 2023 to June 2023. For the purpose, only those women were interviewed who had at least one living child at the time of survey. From the data obtained on fertility according to selected independent variables, chi-square test was used to find out the relationship between independent variables and fertility.

Survey Findings:
Survey revealed that sample respondents had an average of 3.19 live birth at the time of survey. To find out the variations in fertility level by selected eight independent variables, the data were analysed accordingly and discussed as follows :-

(1) Socio-cultural variables and fertility

Table-1: Percent distribution of married women by socio-cultural variables and fertility

Independent variables	Fertility			Total respondents	Average fertility
	1-2	3-4	5 +		
1. Religion :					
Hindu	39.1	52.9	7.9	151	2.97
Muslim	3.8	35.8	60.3	53	3.98

Christian	40.0	40.0	20.0	05	1.40
$X^2 = 72.24$; df = 4; highly significant at 0.05 level					
2. Caste :					
General	53.8	43.6	2.5	39	2.35
OBC	36.2	59.3	4.4	91	3.07
SC	23.8	42.8	33.3	21	3.66
$X^2 = 25.83$; df = 4; significant at 0.05 level					
3. Family type :					
Nuclear	20.3	50.0	29.6	118	3.73
Joint	42.8	46.2	10.9	91	2.48
$X^2 = 17.22$; df = 2; significant at 0.05 level					

From the table-1 it is evident that variables religion, caste and family type have significant association with fertility. Average fertility in muslims women is obtained higher (3.98) than others. Muslims on average had higher fertility 3.98 followed by Hindus 2.97. The proportion of respondents who had 5 live births and above was much higher among Muslims (60%). Classification by caste and family type showed that scheduled castes (SC) are more fertile (3.66) followed by OBC (3.07) and General (2.35) and in joint family system the women are obtained less fertile (2.48) in comparison to nuclear family. The X^2 results shows that fertility differentials by socio-cultural variables were significant. Several past studies on population indicated that religion (Visaria[9], Registrar General of India[10] and NFHS[11]), caste (Ram and Datta[12] and Singh[13]) and family type (Pakrasi and Malakar[14] affect the fertility rate.

(2) Socio-economicvariables and Fertility:

Table-2: Percent distribution of married women by socio-economic variables and fertility

Independent variables	Fertility			Total respondents	Average fertility
	1-2	3-4	5 +		
1. Work status :					
House wives	20.8	52.1	26.9	163	3.39
Working	63.0	34.7	2.1	46	2.45
$X^2 = 33.15$; df = 2; highly significant at 0.05 level					
2. Educational status :					
Illiterate	8.0	60.9	31.0	87	4.13
Primary	11.1	51.8	37.0	27	3.25
Higher secondary	53.9	37.1	8.9	89	2.31
College	83.3	16.6	--	06	2.16
$X^2 = 61.46$; df = 6; highly significant at 0.05 level					

From table-2 it is evident that working women have less fertility (2.45) and fertility decreases as the education of women increases. The lowest fertility level (2.16) is obtained in women who had college standard. They have nil 5 + births. Majority (83%) in this group had only 1-2 live births. Significant association between socio-economic variables and fertility is obtained. Similar results were obtained in (Ram and Datta[12] and Singh[13]).

(3) Demographic variables and fertility:

Table-3: Percent distribution of married women by demographic variables and fertility

Independent variables	Fertility			Total respondents	Average fertility
	1-2	3-4	5 +		
1. Age at marriage :					
< 18 years	11.2	56.3	32.4	71	4.09
18 - 21	28.3	51.5	20.2	99	3.20
21 +	69.2	25.6	5.1	39	1.50
$X^2 = 47.01$; df = 4; significant at 0.05 level					
2. Marriage duration :					
≤ 18 years	28.7	57.4	13.8	101	2.38
19 - 22	25.7	43.6	19.7	71	3.22
22 +	21.6	32.4	45.9	37	5.32
$X^2 = 21.79$; df = 4; significant at 0.05 level					
3. No. of living sons :					
0	17.4	43.4	39.1	23	4.08
1	50.6	39.5	9.8	81	1.96

2	14.0	49.1	36.8	57	3.31
3+	20.8	64.6	14.6	48	4.68
$X^2 = 38.68$; df = 6; significant at 0.05 level					

From the table-3 it is evident that as the age at marriage of female increased the fertility decreased and females with longer duration of marriage were obtained to have relatively higher fertility than with shorter duration. Similar results were obtained in (Rele and Kanitkar[15]).

Classification by number of living sons showed that there existed a positive relationship between the number of living sons and fertility except in the case of those with currently no living sons. The proportion of respondents giving birth to 5 + increases from 9 to 14 as their number of living sons increased from 1 to 3 +.

CONCLUSION

From the present study it was concluded that in general significant relation was obtained between each of the selected independent variables and fertility. X^2 (Chi-square) between independent and dependent variables were obtained significant. In conclusion, women of muslim religion, scheduled caste, nuclear family, no working, illiterate, marrying at age below 18 years, having longer marriage duration and having 3 + live sons were obtained to have high fertility.

SUGGESTION

In the light of survey findings it may be suggested that :-

- The females must be provoked to engage themselves in any job.
- The females must be encouraged for higher education, marrying late and thereby shortening the duration of married life.
- Fertility levels in future may be reduced if the married couples are persuaded or educated otherwise to produce only one son.

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