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Golden Research Thoughts

IMPACT OF LITERACY ON SEX RATIO IN KOLHAPUR DISTRICT: A GEOGRAPHICAL ANALYSIS

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ABSTRACT

The separate data for male and females are important for various types of planning and for analysis of other demographic characteristics such as natality, mortality, migration, marital status, economic characteristics etc. In India sex ratio is expressed as the number of females per thousand males. The rate of literacy influences on sex ratio considerably. The literate people can be trained less expensively than illiterate people, generally has a higher socio-economic status. Therefore they can't neglect women, which resulted into high sex ratio. So present paper attempt to analyze the impact of literacy rate on sex ratio. Entire paper is based on the Secondary Sources. To examine the impact of literacy on sex ratio the Pearson's Coefficient of Correlation technique has been utilized. The rate of change in dependent variable has been estimated with the help of 'b' coefficient. The study reveals that there is medium negative correlation between percentage of literacy and sex ratio in the Kolhapur district.

KEYWORDS :Literacy, Sex ratio, Correlation, Regression.

1.0 INTRODUCTION

Prior to the advent of the skills of reading and writing, society could be classified as being in the pre-literate cultural stage. The change from pre-literate to literate society is said to have begun somewhere during the forth millennium B. C. through a gradual transition from pictography to use of

an alphabet. (Golden, 1968) The concept of literacy that varies from country to country generally refers to the minimum level of literacy skills. Literacy has traditionally been described as the ability to read and write (Nanaware 7 other etc.2012). 'A person aged 7 years and above who can both read and write with understanding in any language has taken as literate' (Census if India, 2001). Literacy is essential for eradicating poverty and mental isolation, for cultivating peaceful and friendly international relations and for promoting the free ply demographic process (Chandana, 2007). Literacy influences such attributes of population as marriage, fertility, mortality, mobility and occupations etc. A certain level of literacy is, therefore, a basic requirement for people to get out of ignorance and backwardness (Gosal and Chandna, 1972). The study of the structure and characteristics of population is an important aspect of the population Geography. The sex ratio of a population may either be expressed as the number of males per 100 females or as the number of females per 100 males (Bhende & Kanitkar, 2006). In India sex ratio is expressed as the number of females per thousand males. Among various elements of population composition, sex composition age composition and economic composition hold a prime place for population geographers. The separate data for male and females are important for various types of planning and for analysis of other demographic characteristics such as natality, mortality, migration, marital status, economic characteristics etc. (Chandana, 2014). Sex ratio is an important indicator of gender relations within the society and varies from one social group to another sex ratio is an index of the Socio-economic conditions prevailing in an area and useful tool for regional analysis (Franklin, (1956). Sex ratio is one of the important social indices to measure the prevailing inequality between males and females and regional imbalances in the status of women. (Ramotra & others, 2011). The biological fact is that more male babies are born than female babies. More birth of male babies is not significant cause of for the low females per 1000 male, but neglect of females, vitamin deficiency, social tradition, death in reproductive age group are the important cause. There are fewer girls than boys in India and sex ratio has because more skewed toward males in recent decades (Rajesh kumar, 2006). Declining of sex ratio is a burning problem in India. The health of human society depends on sex ratio. India, the developing countries are experiencing an extremely rapid decline of sex ratio and it is harmful to health of society. The balance in sex ratio is very important for the healthy atmosphere in society and better development. The rate of literacy influences on sex ratio considerably. The literate people can be trained less expensively than illiterate people, generally has a higher socio-economic status (Nanaware & et. all, 2012). Therefore literate people can't neglect women, which resulted into high sex ratio. So it is hypotheses that higher the literacy more is the sex ratio, therefore attempt is made here to analyze the impact of literacy rate on sex ratio.

2.0 THE STUDY REGION:

Kolhapur district is the most developed district of Southern-western part of Maharashtra. The absolute location of district is 15° 43' to 17° 17' North Latitude and 73° 40'and 74° 42' East Longitude.

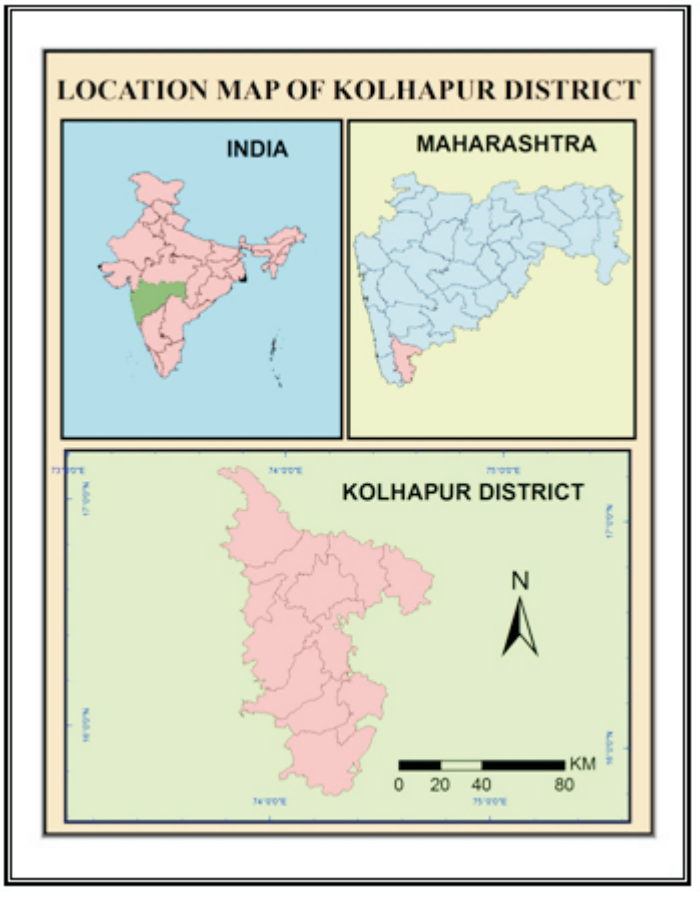

Figure-1

It is surrounded by Sangli district to its North and East, Belgaum district of Karnataka to its South and Sindhudurg district to the West. The Sahyadri ranges to the west and Warana River to the North forms the natural boundaries. The geographical area of districts 7685 square kilometers, for the administrative purpose the district is divided into 12 Tehsils. The population of the study region is 38, 76, 001 persons, according to 2011 census. The maximum and minimum temperature ranges in between 38oC and 14oC with annual average precipitation 115 cm.

3.0 OBJECTIVES:

The main objectives of this paper are as following.

1) To examine the impact of literacy on sex ratio in Kolhapur district

2) To estimate the rate of change in sex ratio in relation to literacy.

4.0 DATA COLLECTION AND METHODOLOGY

In order to meet these objectives the relevant information and data regarding literacy and sex ratio are collected and used for the year of 2011 are based on the Secondary Sources. The information and data was collected from census of Kolhapur district, 2011 and Socio Economic Review and District Statistical Abstracts of Kolhapur District, 2012.

Collected rough data are processed. To examine the impact of literacy on sex ratio the Pearson's Coefficient of Correlation technique has been utilized. The degree of relationship by considering

percentage of literacy as an independent variable 'X' and sex ratio as dependent variable 'Y' is measured.

The functional form of linear relationship has been measured by using regression equation Y on X i.e. y = a + bx. The rate of change in dependent variable has been estimated with the help of 'b' coefficient, which is the line of best fit. Analysis of the study has been made with help of the statistical techniques and on the basis of this results and conclusion are drawn.

5.0 RESULT AND DISCUSSION

Percentage of literacy and Child sex ratio:

The table-1 indicates that on an average the district as a whole has 68.40 per cent literacy in 2011. The table also indicates that literacy of Tehsils of Kolhapur district is ranging in between 53.52 per cent and 81.50 per cent. The high literacy is found only in Karvir, Hatkangle and Shirol Tehshil i.e. >72 per cent. It is high in Karvir because of dstrict head quarter lies in this tehshil which resulted into higher number of schools, high urban population and high parental income, it is hgh in Hat;angle due to development of cotton textile and agricultural development, while it is high in Shirol due to development of agriculture and agro base industry which resulted into better parents income. The moderate literacy rate is recorded in Shahuwadi, Panhala, Radhanagari, Kagal, Bhudargad, Ajra and Gadhinglaj tehshils i.e. 63-72 per cent, while it is low in Chandgad and Bavda below than 63 per cent because these Tehsils are situated in hilly area of Sahyadri ranges, resulted into lower educational development and low parental income.

The district as a whole has 977.5 sex ratio during the 2011, but spatial distribution varies from Tehsil to Tehsil. Sex ratio is ranging from 915 to 1095 in the 2011. The highest sex ratio is found only in Ajra tehshil i.e. 1095.

Table-1 Literacy and Sex ratio in Kolhapur District (2011)

Sr. No	Tehsils	Literacy in %	Sex Ratio
1	Shahuwadi	63.68	1021.00
2	Panhala	70.73	915
3	Hatkangle	78.41	932
4	Shirol	76.83	957
5	Karcir	81.50	937
6	Bavada	58.83	937
7	Radhnagari	66.00	935
8	Kagal	69.96	948
9	Bhudargad	**67.57**	983.00
10	Ajra	**65.23**	1095.00
11	Gadhinglaj	68.49	1039
12	Chandgad	53.52	1019.00
	Dist average	68.40	976.50
	R =		-0.42319
	r^2 =		0.179087

Source: Census of Kolhapur District 2011,Socio Economic review and District Statistical Abstract of Kolhapur District 2012.

The moderate sex ratio is recorded in Shahuwadi , Bhudargad, Gadhingalaj and Chandgad

tehshil i.e. 981 to 1047, it is low in Karvir, Panhala, Hatkangle, Shiral, Bavada, Radhnagar and Kagal tehshjil i.e. below 981. On an average in developed countries litracy leads the sex ratio but it is not in case of Kolhapur district. The table 1 indicates that there is moderate negative correlation in between literacy and sex ratio, but there are some exceptions that have low percentage of literacy and sex ratio.

Impact of Literacy on Sex ratio in Kolhapur District

In the context of objective the following findings have come to light.

1. It is notable thing that the moderate negative correlation is observed in between literacy and sex ratio in Tehsils of Kolhapur District. The coefficient of correlation in this regard is -0.42319. The degree of linear association between these two variable obtained by using the coefficient of determination (r2) is found to be at 0.179087, which reveals that the independent variable (X) i.e. literacy is explaining 17.90 per cent of the total variations in dependant variable (Y) i.e. sex ratio in Tehsils of Kolhapur District.

Literacy explaining 17.90 per cent of variation in 'Y' sex ratio in Tehsils of Kolhapur District to be influenced by the variable 'X' i.e. literacy and about 82.10 percent of variation is left to be influenced by other variables.

2) The functional form of linear relationship of 'Y' on 'X' found to be at y = 1187 + -2.925x. The line of best fist is shown in figure 2. The regression coefficient indicates that increase of one percent literacy causes for decrease of 2.925 female in Tehsils of Kolhapur District. By testing the significance of regression coefficient (a test of significance), the validity of this causal relationship has been confirmed.

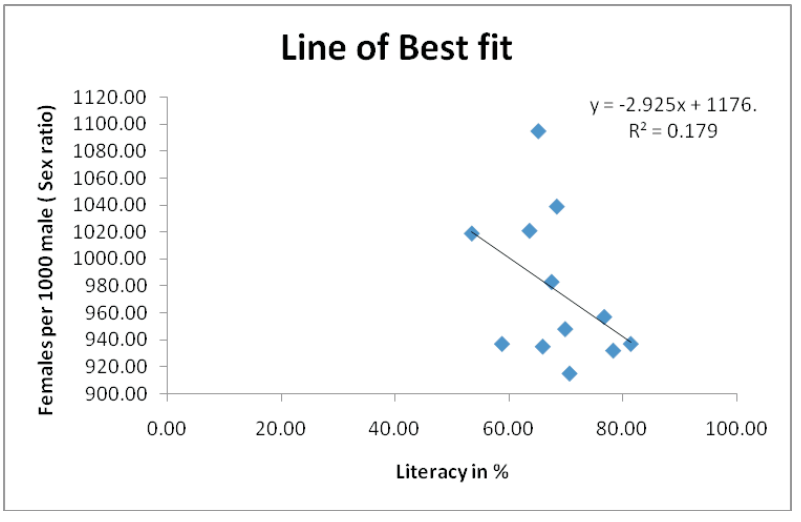

Figure 2

The calculated value of 't' in this exercise is found at 1.4766. It is observed that this calculated value is higher than the tabulated value of 't' (3.17) at the 10 degree of freedom (df = n –2, where 'n' is 12) at 1 per cent level of significance.

3) In order to understand the degree of fit of regression equation and the accuracy level of predicted values (y) sex ratio in Tehsils of Kolhapur District the standard error (SE) of estimate is being done with the equation SE (Y) = SY $\sqrt{1}$ r2, where SE (Y) is the standard deviation of residuals (Y-y); and 'SY' is the standard deviation of 'Y'.

The confidence intervals of the predicted values are worked out at Y ± SE (Y) (The SE (Y) for the

present exercise is 50.05547 and SY is the 55.247). Thus it is assumed that if the values of 'Y' (Y-y) lie within the range of Zero to ± SE, the prediction could be expected to be accurate. In other words, the role of independent variables in explaining the change in dependent variable can be accepted as correct.

The equation used $t = (b - \beta \sqrt{n(-2)} \Sigma X(i-X^{-})^{2} \div \Sigma Y(i-yi)^{2}$

Table -3: Residuals from Regression of sex ratio in the Tehsils of Kolhapur district

Sr. No,	Tehsils	yi	Yi-yi
1	Shahuwadi	989.74	31.26
2	Panhala	969.11	-54.11
3	Hatkangle	946.65	-14.65
4	Shirol	951.27	5.73
5	Karcir	937.61	-0.61
6	Bavada	1003.92	-66.92
7	Radhnagari	982.95	-47.95
8	Kagal	971.37	-23.37
9	Bhudargad	978.36	4.64
10	Ajra	985.20	109.80
11	Gadhinglaj	975.67	63.33
12	Chandgad	1019.45	-0.45

Source: compiled by researcher.

In this context it has been observed that the predicted values (given in table-) of 8 out of 12 Tehsil in the present study lie within the range of ± SE, 3 within ± SE to ± 2 SE and 1>± 2 SE.

Now the obvious inference is that the 66.66 per cent of the total number of observation (n is 12) the regression is a good indicator meaning thereby that the variations in sex ratio is the function of the variations in literacy. In the case of other Tehsils with residuals between > ± SE to ± 2 SE the situation is different because here the regression is a poor indicator. It clearly indicates that these are the Tehsils whom the influence of variables other than the independent one. The variations in sex ratio in the Tehsils of Kolhapur district in the latter case may be due to the variation in educational attainment, variation in Social tradition, variation in negligence of female child, variation in in-migration and out-migration.

6.0 CONCLUSIONS:

The foregoing analysis reveals that the high literacy in Karvir Tehsil is mainly due to head quarter lies in this Tehsil which resulted into higher number of schools, high urban population and high parental income. The highest sex ratio in Ajra Tehsil is result of rugged topography, high percentage of forest area , lower socio-economic development resulted into out migration. It is surprising that the moderate negative correlation instead of positive is observed in between literacy and sex ratio in Tehsils of Kolhapur District, it is mainly due to in-migration and out-migration. The coefficient of correlation in this regard is -0.42319. The coefficient of determination reveals that the independent variable (X) i.e. literacy is explaining 17.90 per cent of the total variations in dependant variable (Y) i.e. sex ratio in Tehsils of Kolhapur District. The confidence intervals of the predicted values, it has been observed that the predicted values (given in table-) of 8 out of 12 Tehsil in the present study lie within the range of ± SE,

which obviously indicates that the 66.66 per cent of the total number of observation (n is 12) the regression is a good indicator meaning thereby that the variations in sex ratio is the function of the variations in literacy.

The regression analysis reveals adverse impact of literacy on sex ratio mainly due to in-migration and out-migration therefore it is stated that to maintain sex balance there is dire need to develop natural resources in the hilly area and decentralization of secondary activities from Kolhapur and Hatkangle, which will be helpful to restrict migration. Furthermore make awareness in society about equality in male and female child.

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