SPATIO-TEMPORAL PATTERN OF RURAL SEX RATIO IN KOLHAPUR DISTRICT

Dr. Navnath K. Bansode,

Assistant professor in Geography,

Bhogawati Mahavidyalaya, Kurukuli, Dist. Kolhapur.

Abstract:

The sex ratio is usually defined as the number of females per thousand males. The sex ratio is a function of three basic factors, i.e. sex ratio at birth, differentials in mortality between sexes at different stages of life and sex selective migration. Sex ratio is an index of the socio-economic conditions prevailing in an area and is a useful tool for regional analysis. The knowledge of sex ratio is essential for understanding the employment and consumption patterns and social needs of a community. The separate data for male and female are important for various types of planning and for the analysis of other demographic characteristics, such as natality, mortality, migration, marital status and economic etc. Therefore an attempt is made here to study spatio-temporal pattern of sex ratio in Kolhapur district. The paper is based on secondary data. To analyze spatial pattern of sex ratio the tahsils of Kolhapur district are grouped into four categories on the basis of mean and standard deviation. The study reveals that the very low rural sex ratio is recorded in Karvir and Panhala tahsils due to urbanization and in migration.

Key wards: *Pattern, Rural sex ratio, mean, standard deviation*.

1.0 Introduction:

The concept of sex ratio is not in uniform all over the world and calculated differently in different countries In U.S.A, the sex ratio is expressed in terms of number of males per hundred females. In New Zealand, sex ratio is expressed in terms of number of females per hundred males. In India, however, the sex ratio is expressed in terms of number of females per thousand males (Roy, 2015).   The sex ratio is usually defined as the number of females per thousand males. The sex ratio is a function of three basic factors, i.e. sex ratio at birth, differentials in mortality between sexes at different stages of life and sex selective migration

(Clarke, 1960). The migration rate and occupational structure exerts influence on sex ratio, in its own turn, sex ratio has a profound effect on other demographic element like growth of population, marriage rates, occupational structure, etc. (Shyrock, 1976). The sex ratio may vary widely from one area to another and one age-group to another depending upon the age-specific mortality rates and sex-specific net migration rate.

In view of the partly contrasting and partly complementary roles of the two sexes in the economy and society, the study of their ratio to each other becomes great interest of population geographer. Sex ratio is an important demographic indicator reflecting the socio-economic structure of any society. It is one of the best indicators of status of women in the society. Sex ratio is an index of the socio-economic conditions prevailing in an area and is a useful tool for regional analysis (Faranklin, 1956). Sex ratio of human population is one of the basic demographic characteristic, which is extremely vital for any meaningful demographic analysis. It is an index of existing socio-economic conditions of a female in any region. The knowledge of sex ratio is essential for understanding the employment and consumption patterns and social needs of a community (Trewartha, 1953). The separate data for male and female are important for various types of planning and for the analysis of other demographic characteristics, such as natality, mortality, migration, marital status and economic etc. The balance between the two sexes affects the social and economic relationship within a community (Nandihalli and Hurakadli, 2014).The proportions of men and women in total of a society have essential bearings in as far as it affects the labour provides through marriage and fecundity. It is usually believed that if the proportion of males is higher than that of females more workers will be available. However, in relation to the sexual status of population in country, the ratio of male and female of the study region play very important role in economic development. Therefore attempt is made here to study spatio temporal pattern of sex ratio in Kolhapur district.

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. 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 38^oC and 14^oC with annual average precipitation 115 cm.
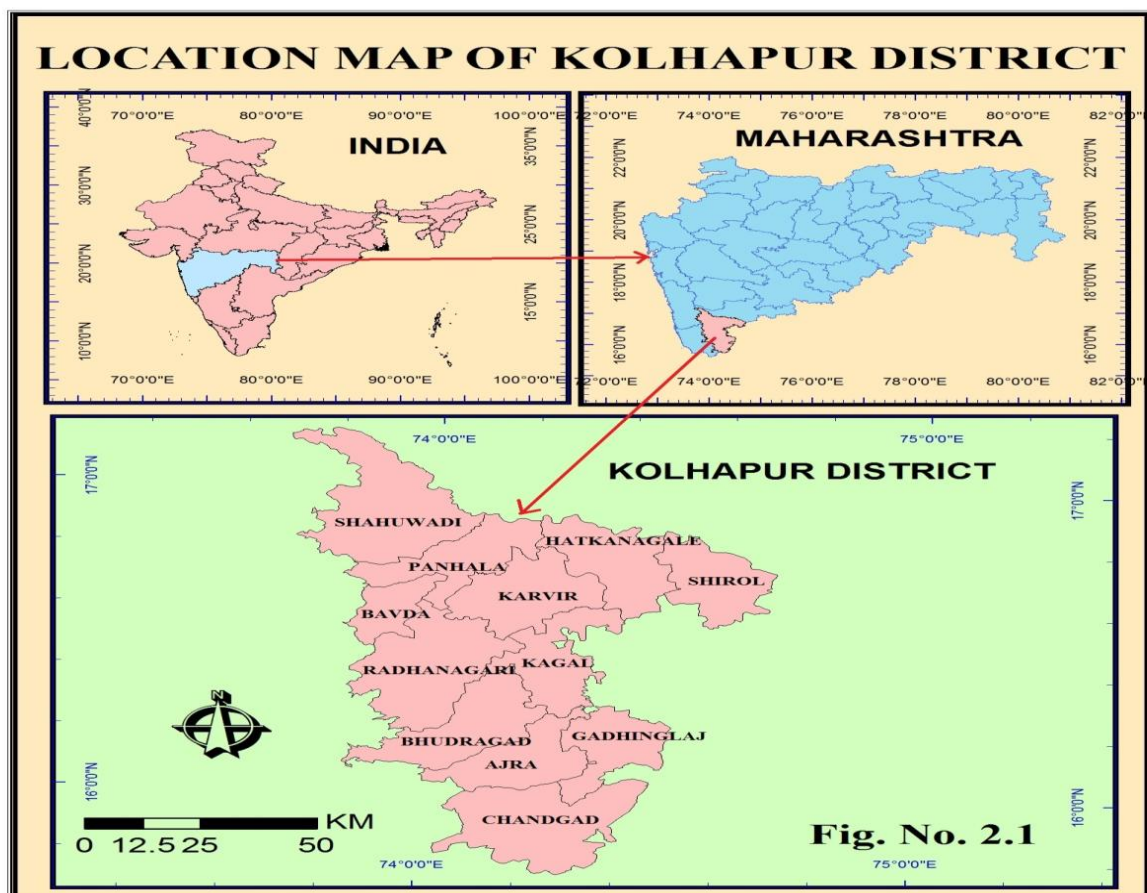

Figure-1

3.0 Objectives:

The main objectives of this paper are as following.

1) To study spatio-temporal pattern of sex ratio in Kolhapur district

2) To analyze change in sex ratio during 1961 to 2011.

4.0 Data collection and Methodology:

In order to meet these objectives the relevant information and data of male and female population are collected and used for the period of 1961 to 2011 are based on the secondary sources. The information and data was collected from census of Kolhapur district 1961-2011, Socio Economic Review and District Statistical Abstracts of Kolhapur District 1962 - 2012.

Collected rough data are processed. To calculate sex ratio following equation is employed

$$SR = \frac{Pf}{Pm} \times 1000$$

Where,

Pf represent number of female

Pm represents number of males

To analyze spatial pattern of sex ratio the tahsils of Kolhapur district are grouped into four categories on the basis of mean and standard deviation. 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:

5.1 Spatio-Temporal Pattern of Rural Sex Ratio

The sex ratio reflects the general tempo of life, nature of life and nature of sex selectivity in rural urban flow of population (Bhende and Kanitkar, 1978). There is regional disparity in rural sex ratio within study region. Table 1indicates that the spatial pattern of rural sex ratio in Kolhapur district during 1961-2011.

5.1.1Rural Sex Ratio in 1961:-

The table 1 indicates that the district as a whole as 980 sex ratio that of state was 995, it means that the study region had lower sex ratio than the state. But spatial distribution varies from tahsil to tahsil. The 1 indicates that the very high rural sex ratio i.e.1140 females per 1000 males (above Mean plus 2 standard deviation) is found in Bavda tahsil due to the rugged topography, lower agricultural development leat to out migration of males. The high rural sex ratio i.e.1074 females per 1000 males (above Mean plus 1 standard deviation to Mean plus 2 standard deviation) is recorded in Ajra tahsil and causes are same as mentioned earlier. The moderate rural sex ratio i.e. above Mean to Mean plus 1standard deviation is observed in Shahuwadi, Bhudhargad and Chandgad tahsil ranging from 1003 to 1063 females per 1000 males. The low rural sex ratio i.e. Mean minus 1 standard deviation to Mean is recorded in Panhala, Karvir, Radhanagari, Kagal and Gadhinglaj ranging from 943 to 1003 females per 1000 males. The very low sex ratio i.e. below 943 females per 1000 males (below Mean minus 1 standard deviation) is recorded in Hatkanangale and Shirol tahsils due to agricultural development resulted into in-migration and negligence of female child.

Table 1 Rural Sex Ratio in the Kolhapur District During, 1961-2011

Tahsils ↓Year→	Females per 1000 Males						Change in 1961-2011
	1961	1971	1981	1991	2001	2011	
Shahuwadi	1035	1055	1108	1082	1052	1022	-13
Panhala	987	953	967	949	924	914	-73
Hatkanangale	916	909	923	925	924	937	21
Shirol	941	926	919	928	938	949	8
Karvir	956	936	916	921	905	912	-44
Bavda	1140	1157	1169	982	969	937	-203
Radhanagari	990	953	980	972	946	935	-55

Kagal	975	957	982	972	947	951	-24
Bhudargad	1008	1017	1279	1024	995	983	-25
Ajra	1074	1108	1171	1143	1102	1121	47
Gadhinglaj	1000	1009	1049	1032	1025	1045	45
Chandgad	1013	1005	1040	1045	1033	1019	6
District	980	973	986	978	962	959	-21
Maharashtra	995	985	987	972	960	952	-43

Source: *Based on District Census Handbook, Kolhapur District, 1961 to 2011.*

5.1.2 Rural Sex Ratio in 1991:-

The table 1 designates that the district as a whole as 978 sex ratio that of state was 972 sex ratio it means that the study region had high sex ratio than the state. But spatial distribution varies from tahsil to tahsil. The very high rural sex ratio i.e.1136 females per 1000 males (above Mean plus 2 standard deviation) is found in Ajra tahsil. The high rural sex ratio ranging from 1067 to 1136 females per 1000 males (above Mean plus 1 standard deviation to Mean plus 2 standard deviation) is recorded in Shahuwadi tahsil. The moderate rural sex ratio i.e. above Mean to Mean plus 1standard deviation is observed in Bhudhargad, Gadhinglaj and Chandgad tahsil ranging from 998 to 1067 females per 1000 males. The low rural sex ratio i.e. Mean minus 1 standard deviation to Mean is recorded in Panhala, Bavda, Radhanagari and Kagal tahsil ranging from 929 to 998 females per 1000 males. The very low sex ratio i.e. below 929 females per 1000 males (below Mean minus 1 standard deviation) is recorded in Karvir, Hatkanangale and Shirol tahsils.
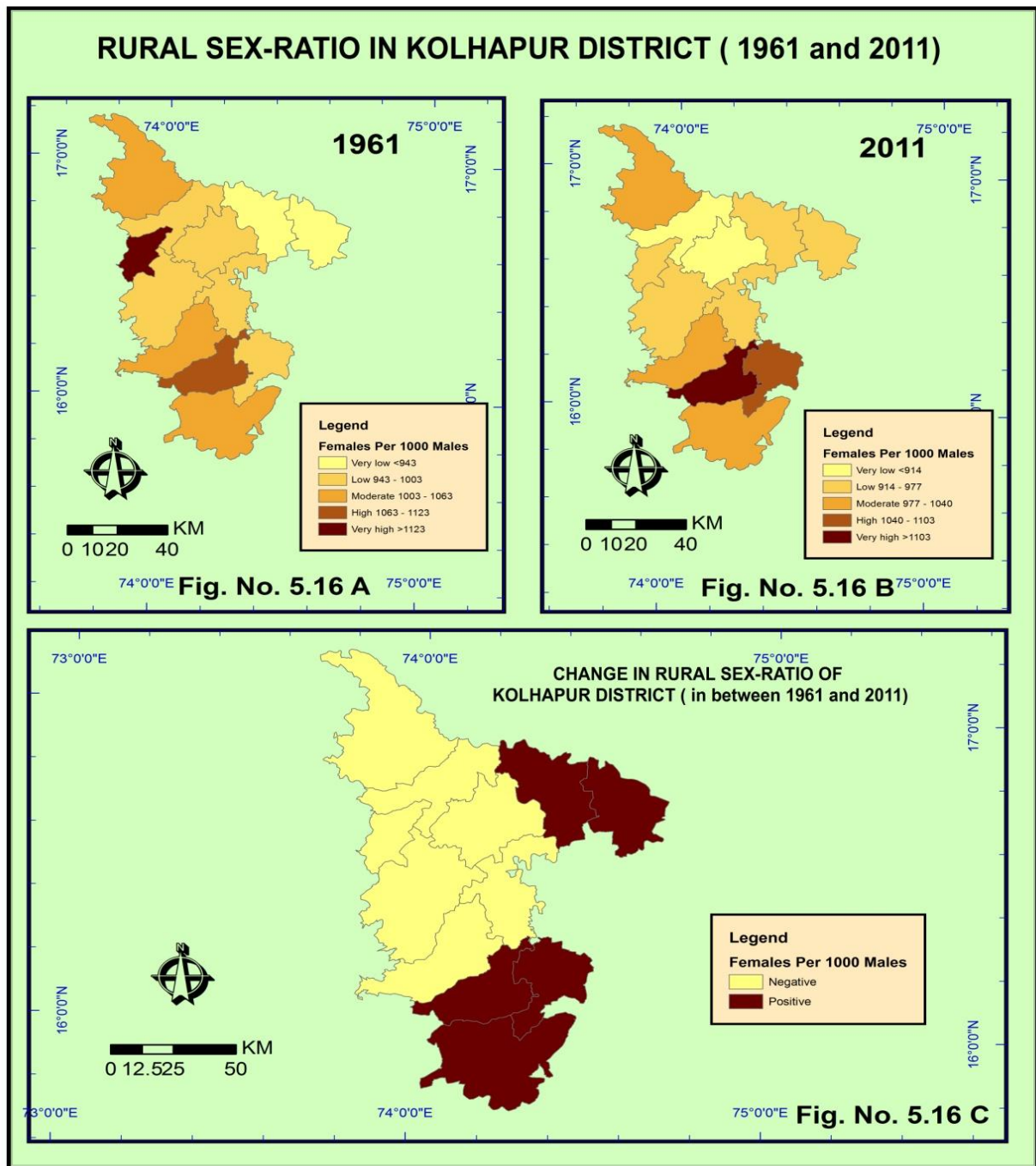
Figure-2

5.1.3 Rural Sex Ratio in 2011:-

Table indicates that the district as a whole as 959 rural sex ratio that of state is 952. The study region has high rural sex ratio than the state. But spatial distribution of rural sex ratio varies from tahsil to tahsil. The very high rural sex ratio i.e.1121 females per 1000 males (above Mean plus 2standard deviation) is found in Ajra

tahsil due to the undulating topography, lack of education, poor agricultural practices and very low employment opportunities resulted in to out migration of male population. The high rural sex ratio i.e.1045 females per 1000 males (above Mean plus 1 standard deviation to Mean plus 2 standard deviation) is recorded only in Gadhinglaj tahsil due to absence of major industry leads out- migration of male for employment purpose. The moderate rural sex ratio i.e. above Mean to Mean plus 1standard deviation is observed in Shahuwadi, Bhudhargad and Chandgad tahsil ranging from 977 to 1040 females per 1000 males. The low rural sex ratio i.e. Mean minus 1 standard deviation to Mean is recorded in Hatkanangale, Shirol, Bavda, Radhanagari and Kagal tahsils ranging from 914 to 977 females per 1000 males. The very low rural sex ratio i.e. below 914 females per 1000 males (below Mean minus 1 standard deviation) is recorded in Karvir and Panhala tahsils due to urbanization and in migration.

5.2 Changes in Rural Sex Ratio in Between 1961 and 2011:

Change in rural sex ratio in between 1961 and 2011 shown in table 1 and fig.2. The district as whole has negative change in rural sex ratio i.e.-21 that of state is -43. But spatial distribution shows both positive and negative change in rural sex ratio. The positive change in rural sex ratio is recorded in 5 tahsils i.e. Ajra (47), Gadhinglaj (45) Hatkanangale (21), Shirol (8) and Chandgad (6). In Hatkanangale and Shirol positive change in sex ratio is mainly due to social awareness, because of development of educational institutes which leads to positive change in sex ratio. The positive change in Ajra, Gadhinglaj and Chandgad due to the improvement of women status and male out-migration. The negative change in rural sex ratio is found in 7 tahsils i.e. Shahuwadi (-13), Kagal (-24), Bhudargad (-25), Karvir (-44), Radhanagari (-55), Panhala (-73) and Bavda (-203). In Kagal and Panhala tahsil negative change in sex ratio is due to the selective male in migration for getting employment purpose. Shahuwadi, Bavda, Radhanagari and Bhudargad tahsils due to negligence of female child and sex determination.

Spatial distribution of rural sex ratio in Kolhapur district shows both positive and negative change during the period of fifty years. Among all tahsils only four tahsils namely Ajra, Gadhinglaj, Shirol and Hatkanangale recorded positive change i.e. high to very high in Ajra, low to high for Gadhinglaj and very low to low for Shirol and Hatkanangale. It reflects social awareness through print and electronic media among people. Bavda and Karvir have reported negative change in rural sex ratio i.e. very high to low and low to very low respectively. Majority tahsils namely Chandgad, Bhudargad, Shahuwadi, Panhala, Kagal and Radhanagari tahsils remained unenthusiastic in level of change in sex ratio.

6.0 Conclusions:

The forgoing analysis indicates that the very high rural sex ratio (2011) in Ajra tahsil is mainly due to the undulating topography, lack of education, agricultural practices and very low employment opportunities resulted in to out migration of male population. The very low rural sex ratio in Karvir and Panhala tahsils is result of urbanization and in migration. The positive change in rural sex ratio is recorded in 5 tahsils i.e. Ajra, Gadhinglaj, Hatkanangale, Shirol and Chandgad. In Hatkanangale and Shirol positive change in rural sex ratio is due to the social awareness, because of development of educational institutes which leads to positive change in sex ratio. The positive change in Ajra, Gadhinglaj and Chandgad due to the improvement of women status and male out-migration. The negative change in rural sex ratio in Kagal and Panhala tahsil is a result of selective male in migration for getting employment purpose, while in Shahuwadi, Bavda, Radhanagari and Bhudargad tahsils due to negligence of female child and sex determination.

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