

CHAPTER V

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CHANGING NATURE OF SEX-RATIO

5.1 INTRODUCTION: ‘

Fertility, Mortality and Migration are the three basic components of population composition. Sex composition, age composition and economic composition hold a prime role for population geographer. For the analysis of Fertility, Mortality, Migration, Marital status and Economic characteristics separate data of male-female is important. The balance of sexes affects the social and economic relationship within a community.

Sex-ratio is the ratio of the males to females in a population. The Primary Sex-ratio is the ratio at the time of conception. Secondary Sex-ratio is the ratio at time of birth and tertiary sex-ratio is the ratio of mature organisms. The sex-ratio varies according to the age profile of the population. It is generally derived in four types.

Primary Sex-Ratio (Ratio of fertilization), Secondary Sex ratio (Ratio of the birth), Tertiary Sex-Ratio (Ratio in sexually active organisms) and quaternary sex-ratio (Ratio in post reproductive organisms). Measuring these is a problem. Since these are no clear boundaries between them.

Sex-ratio is the most important population characteristic which highlights social & medical attention provided to women. These have been a continuous drop in sex-ratio in India during 1901 to 1991, but in 2001 and 2011 it was increasing.

The sex-ratio affects the social and economic conditions in variety of ways. The marital status and marriage ability, the strength of man power availability and different types of labour force the death rate and vital statistics, the school going population the extent of employment of women outside the home, the status of women in the community and the many other social condition are more or less directly related to the sex-ratio of population.

Sex-ratio is a significant demographic and cultural index and can be of value to the population geographer in a discussion of regional characteristics. The

ratio can reflect the biological, social, economic and emigrational characteristics of population. Social Economics and community life are affected in many by a large imbalance in sex composition. A great imbalance in the sex-ratio originates from various social and demographic factors (Maya Banerjee 1977).

Sex composition is an index of economy prevailing in an area and is a useful tool for regional analysis (franklin, 1956). Sex-ratio is fundamental to geographic study of an area because it is not only an important feature of the landscape, but it also influence other demographic elements (Trewartha, 1953) thus, this chapter analyses detailed survey and changing nature of sex-ratio over a period of five decades (1961-2011).

5.2 CHANGING NATURE OF SEX-RATIO IN KOLHAPUR DISTRICT:

Table-5.1

Kolhapur District: Sex-Ratio (1961-2011)

Years	1961	1971	1981	1991	2001	2011
Sex-ratio	997	994	1037	995	949	953

Source: District Census Handbook of Kolhapur, (1961 -2011).

According to the Census of 1961-2011, the Kolhapur district has experienced great variations in the distribution of sex-ratio. Within the district sex- ratio differs from tehsil to tehsil. Classifying sex-ratio into the three categories does the analysis of Spatio-temporal patterns of the distribution of sex- ratio, in the Census year 2011. Twelve tehsils came into existence. i.e. Ajara, Bhudargad, Gadhinglaj, Chandgad, Shahuwadi, Panhala, Karveer, Hatkanangale, Shirol, Radhanagari, Kagal and Gaganbavada.

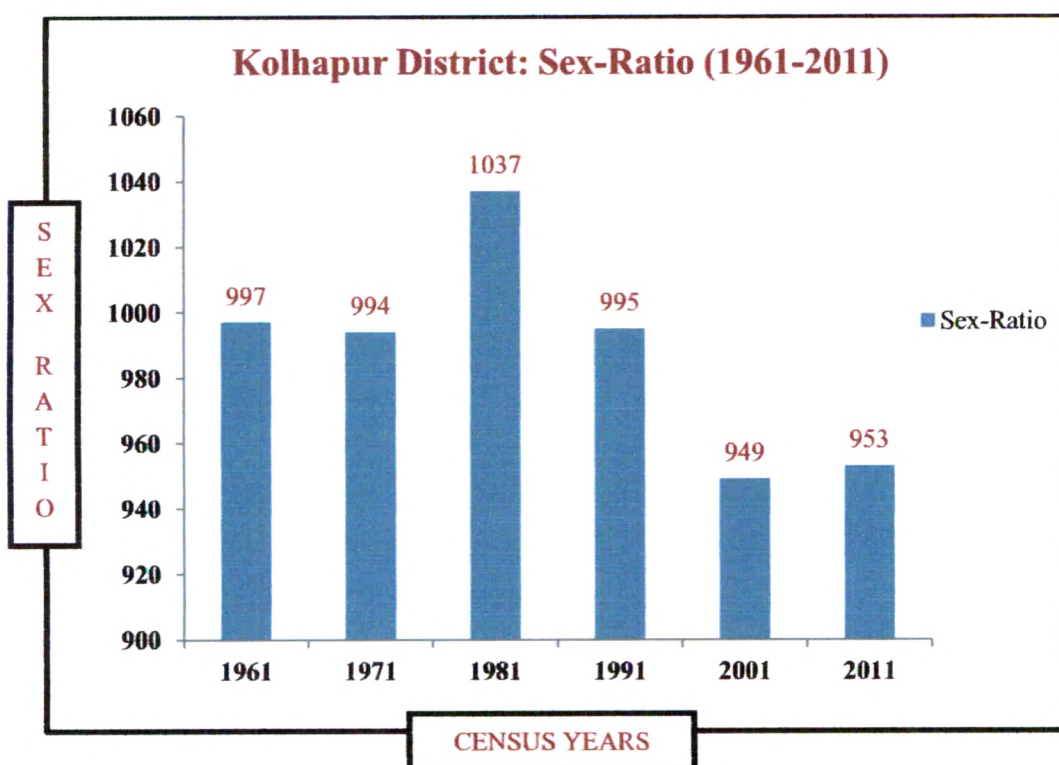


Figure 5.1

5.3 CHANGING NATURE OF SEX-RATIO IN BHUDARGAD

TEHSIL:

According to the Census of 1961-2011, the study area experienced great variations in the distribution of sex-ratio. Within the tehsil sex-ratio differs from circle to circle. Classifying sex-ratio into the three categories does the analysis of Spatio-temporal patterns of the distribution of sex-ratio, in the Census year 2011 five revenue circles came into existence. i.e. Koor, Gargoti, Karadwadi, Kadgaon and Pimpalgaon.

All the circle of Bhudargad tehsil having great variations in the sex-ratio. The sex-ratios of circles are different from each other. Karadwadi, Kadgaon and Pimpalgaon circle have highest sex-ratio and Koor and Gargoti circle having low sex-ratio as compare to sex-ratio of Karadwadi, Kadgaon and Pimpalgaon circle. Pimpalgaon circle have recorded highest sex-ratio as compare to other circles, it recorded 1158 females per thousand males in the Census year 1991, and lowest sex-ratio was recorded in 915 females per thousand males in the Census year 1961.

Table-5.2

Bhudargad Tehsil: Circle wise Sex-ratio (1961-2011)

Sr. No	Circle	Sex-Ratio (No. of females per thousand males)					
		Census Years					
		1961	1971	1981	1991	2001	2011
1	Koor	1017	1012	1008	996	955	942
2	Gargoti	915	950	960	923	955	952
3	Karadwadi	1022	1014	1043	1029	992	992
4	Kadgaon	1066	1063	1099	1095	1037	1016
5	Pimpalgaon	1057	1076	1126	1158	1074	1048
Tehsil Sex-Ratio		1008	1017	1038	1024	995	983

Source: District Census Handbook of Kolhapur (1961-2011).

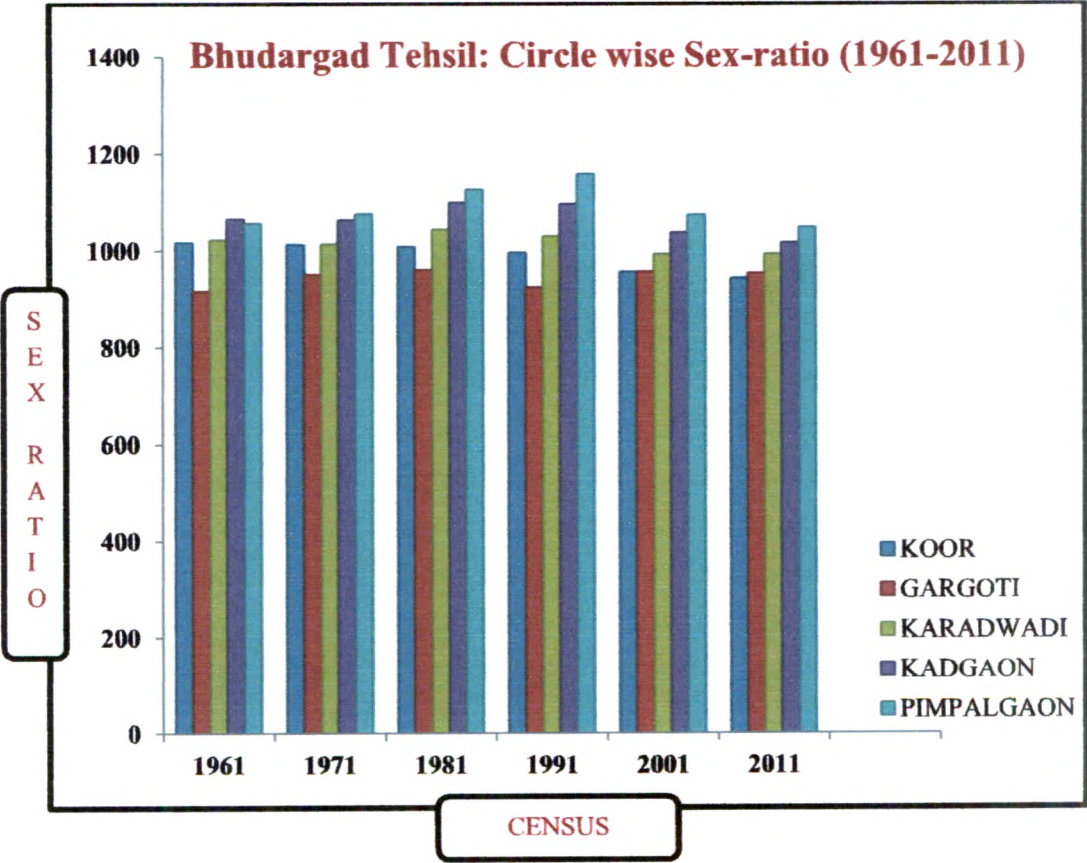


Figure 5.2

5.3.1 AREA OF LOW SEX COMPOSITION (950-1000 females per

thousand males):

In the Census year 1961 lowest sex-ratio was observed in Gargoti circle, it was only 915 females per thousand males. In this period 11 villages were including in Gargoti circle viz. Madilage Bk., Madilage Kh., Kalanakwadi, Ambavane, Hanbarwadi, Khanapur, Gargoti, Shindewadi, Salpewadi, Phanaswadi, Pushpnagar, Gangapur and Palshivane. In 1971 lowest sex-ratio observed in Gargoti circle, it was 950 females per thousand males in these period 11 villages were including in this circle. This sex-ratio was increase as compare to Census of 1961 (915). In the Census year 1981, there was observed absence of low sex-ratio in any circle of Bhudargad tehsil.

In the Census year 1991, lowest sex-ratio observed in Gargoti circle, it was 923 females per thousand males; in this period 13 villages were including in this circle. This sex-ratio was decreased as compare to Census of 1981 (960). In the Census year 2001, there was not observed low sex-ratio in any circle of Bhudargad tehsil. In the Census year 2011, lowest sex-ratio observed in Koor circle, it was 942 females per thousand males, in this period 18 villages were including in this Circle Viz. Mudal, Adamapur, Waghapur, Vhangutti, Koor, Konawade, Nadhawade, Tikkewadi, Pandiware, Minche Bk., Nawaraswadi, Lotewadi, Bhatiwade, Minche Kh., Pachawade, Basarewadi, Nilpan and Darwad. This sex-ratio was decreased as compare to Census of 1961 (1017), 1971 (1012), 1981 (960), 1991 (996) and 2001 (955).

5.3.2 AREA OF MODERATE SEX COMPOSITION (1001-105 females

per thousand males):

In the Census year 1961, composition of moderate sex-ratio was observed in Koor and Karadwadi circle, it was 1017 and 1022 females per thousand males respectively. In this period 17 villages were including in Koor circle and 21 villages were including in Karadwadi circle. In the Census year 1971 composition of moderate sex-ratio was also observed in Koor and Karadwadi circle, it was 1012 and 1014 females per thousand males respectively. It was decreased as compare to the Census of 1961. In the Census year 1981, composition of moderate sex-ratio was also

observed in Koor and Karadwadi circle; it was 1008 and 1043 females per thousand males respectively. Sex-ratio of Koor circle was decreased and sex-ratio of Karadwadi circle was increased as compare to the Census of 1971.

In the Census year 1991, composition of moderate sex-ratio was also observed in Koor and Karadwadi circle, it was 1008 and 1043 females per thousand males respectively. Sex-ratio of Koor circle was decreased and sex-ratio of Karadwadi circle was increased as compare to the Census of 1981. In the Census year 2001, composition of moderate sex-ratio was also observed in Koor, Gargoti, Karadwadi and Kadgaon circle, it was 955, 955, 992 and 1037 females per thousand males respectively. Sex-ratio of Koor, Karadwadi and Kadgaon circle was decreased and sex-ratio of Gargoti circle was increased as compare to the Census of 1991. In the Census year 2011, composition of moderate sex-ratio was also observed in Koor, Gargoti, Karadwadi, Kadgaon and Pimpalgaon circle, it was 942, 952, 992, 1016 and 1048 females per thousand males respectively. All of the five circles were included in composition of moderate sex-ratio. The sex-ratio of all the five circles was observed in decreasing trend.

5.3.3 AREAS OF HIGH SEX COMPOSITION (Above 1050 females per thousand males):

In the Census year 1961, composition of highest sex-ratio was observed in Kadgaon and Pimpalgaon circle, it was 1066 and 1057 females per thousand males respectively. In this period 31 villages were including in Kadgaon circle and 15 villages were including in Pimpalgaon circle. Highest sex-ratio of the decade 1951-61 was observed in Kadgaon circle (1066). In the Census year 1971, composition of highest sex-ratio was also observed in Kadgaon and Pimpalgaon circle, it was 1063 and 1076 females per thousand males respectively. As compare to the Census of 1961, sex-ratio of Kadgaon circle was decreased and sex-ratio of Pimpalgaon circle was increased. Highest sex-ratio of the decade 1961-71 was observed in Pimpalgaon circle (1076). In the Census year 1981 composition of highest sex-ratio was also observed in Kadgaon and Pimpalgaon circle, it was 1099 and 1126 females per thousand males respectively. As compare to the Census of 1971 sex-ratio of Kadgaon circle was increased with 63 points and sex-ratio of Pimpalgaon

circle was increased with 50 points. Highest sex-ratio of the decade 1971-81 was observed in Pimpalgaon circle (1126).

In the Census year 1991, composition of highest sex-ratio was also observed in Kadgaon and Pimpalgaon circle, it was 1095 and 1158 females per thousand males respectively. As compare to the Census of 1981 sex-ratio of Kadgaon circle was decreased with 4 points (1095) and sex-ratio of Pimpalgaon circle was increased with 32 points. Highest sex-ratio of the decade 1981-91 was observed in Pimpalgaon circle (1158); this sex-ratio is highest in all decades and in all the five circles of Bhudargad tehsil. In the Census year 2001, composition of highest sex-ratio was observed in Pimpalgaon circle, it was 1074 females per thousand males. As compare to the Census of 1991 sex-ratio of Pimpalgaon circle was decreased with 84 points. Highest sex-ratio of the decade 1991-2001 was observed in Pimpalgaon circle (1074). In the Census year 2011, composition of highest sex-ratio was not observed in any of circle in Bhudargad tehsil. The sex-ratio of all circles is below 1050 females per thousand males.

5.4 OVER ALL CHANGES IN SEX-RATIO (1961-11):

For the analysis of decadal change the decadal arithmetic growth rate has been calculated. For measuring the growth in sex-ratio following formulas have been used.

$$\text{Decadal growth rate} = S_2 - S_1 / S_1 * 100$$

Where,

S₁, is the sex-ratio of initial period of time

S₂, is the sex-ratio of later period of time

For this, growth rate is measured by keeping 1961 as base year during 1961-2011.

Table-5.3

**Bhudargad Tehsil: Decadal Growth rate of Sex-Ratio
(1961-2011)**

Decadal Arithmetic Growth rate (in %)							
Sr. No.	Circle	Census Years					Description
		1961-71	1971-81	1981-91	1991-01	2001-11	
1	Koor	-0.5	-0.40	-1.19	-4.12	-1.36	Decreasing
2	Gargoti	+3.83	+1.05	-3.85	+3.47	-0.31	Fluctuating
3	Karadwadi	-0.78	+2.86	-1.34	-3.60	0.00	Stable
4	Kadgaon	-0.28	+3.39	-0.36	-5.30	-2.03	Decreasing
5	Pimpalgaon	+1.80	+4.65	+2.84	-7.25	-2.42	Decreasing
Bhudargad		+0.89	+2.06	-1.35	-2.83	-1.21	Decreasing

Source: Based on District Census Handbook of Kolhapur (1961-2011).

Note: + positive growth - Negative growth

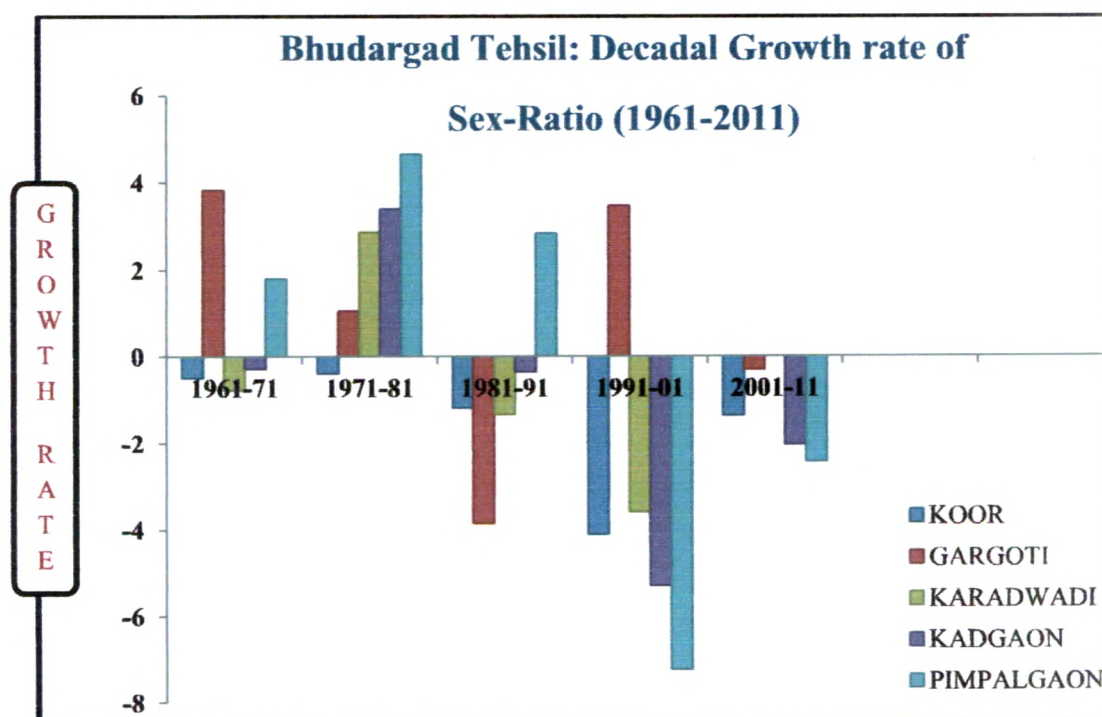


Figure 5.3

For comprehensive study of growth in sex-ratio a distinctive division can easily be recognized i.e. 1) Positive growth (1961-81). 2) Negative growth (1981-2011).

5.5 CIRCLEWISE CHANGE IN SEX-RATIO:

KOOR CIRCLE:

Koor is one of revenue circle of Bhudargad tehsil. As per the Census of 2011, 18 villages were including in Koor circle. In this circle decreasing trend of sex composition was found from the decade 1961-71 to 2001-2011. In the decade of 1961-1971 the growth rate was decreased with -0.5% and growth rate was decreased with -0.40 % in 1971-1981, it was -1.19%, in 1981-1991 and in 1991-2001, it was highly decreased with -4.12 %. Recent last decade growth rate was decreased with -1.36%, so negative growth of sex- ratio was observed in Koor circle from decade of 1961-71to2001-2011.

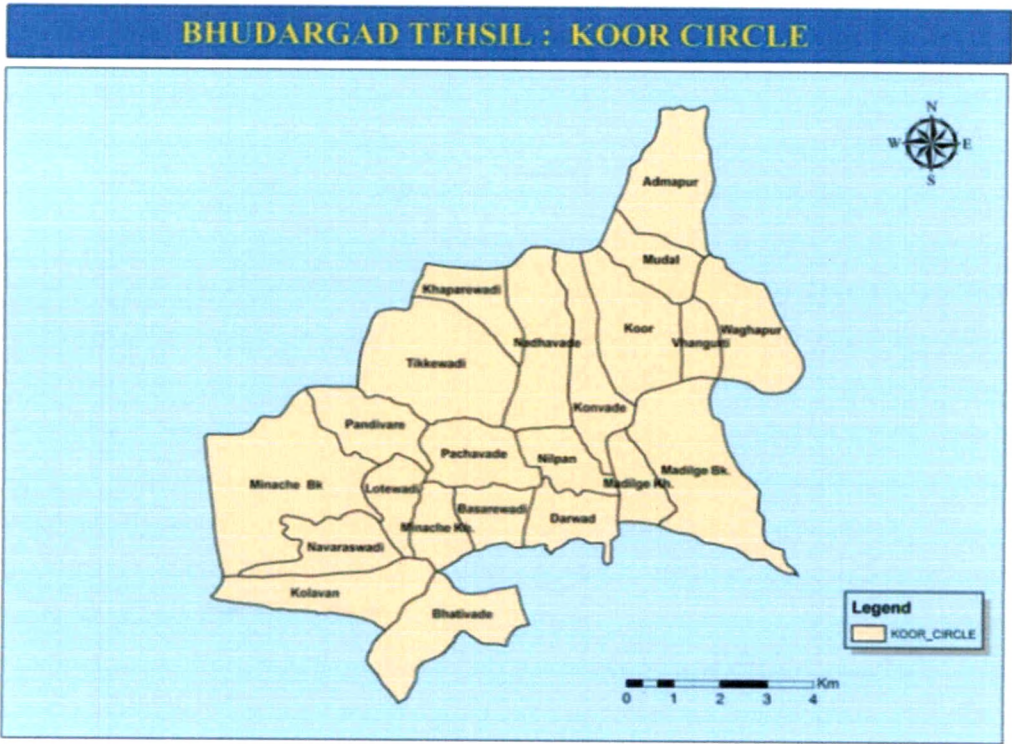


Figure 5.4

GARGOTI CIRCLE:

Gargoti is the second revenue circle of Bhudargad tehsil. As per the Census 2011, 13 villages are including in this circle. In 1961-71 decade growth rate of sex composition was increased with +3.83%, in 1971-81 decade it also increased with +1.05 %, but in 1981-91 decade growth of sex-ratio was highly decrease with -3.85%. After that in 1991-01 growth rate of sex-ratio was increased with +3.47 % and in 2001-2011 the growth rate of sex-ratio was again decreased with -0.31%. In 1961-81 and 1991-01 growth rate of sex-ratio was positive and negative growth rate observed in the decades of 1981-91 and 2001-2011. Great fluctuations in growth rate of sex-ratio was observed in Gargoti circle.

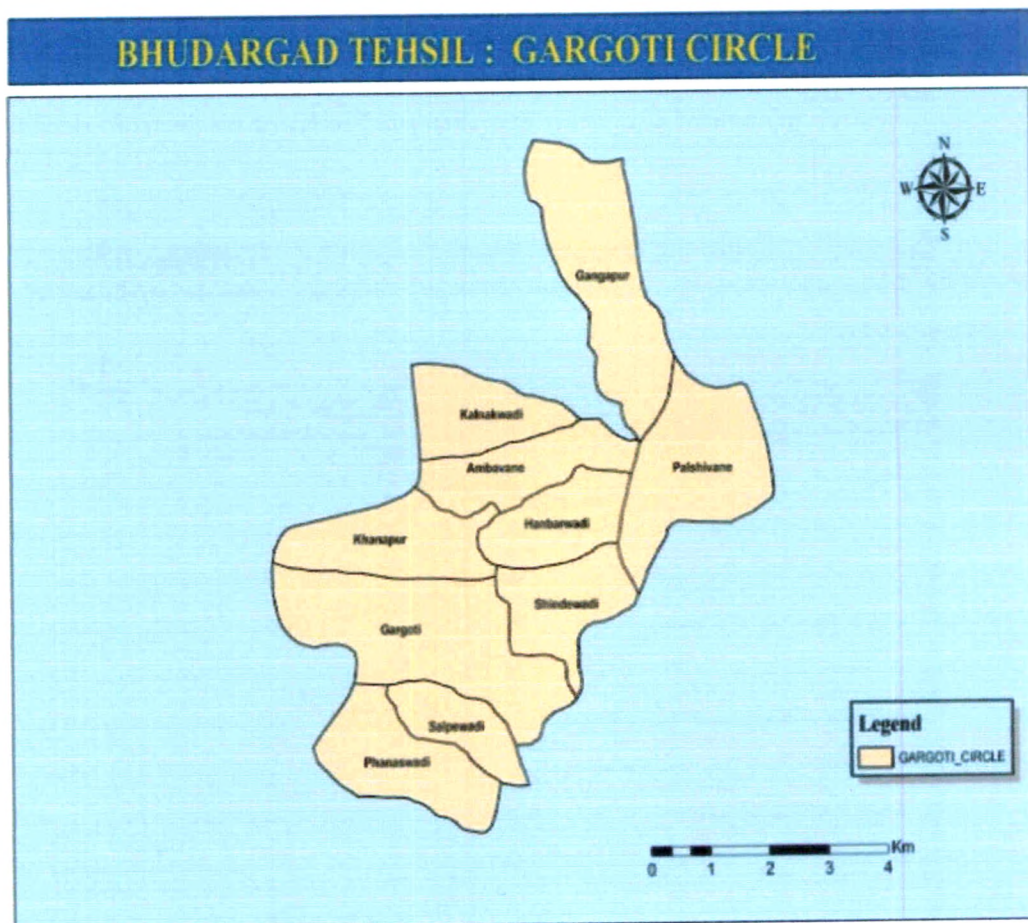


Figure 5.5

KARADWADI CIRCLE:

Karadwadi is the third revenue circle of Bhudargad tehsil. As per the Census 2011, 24 villages were including in this circle. In 1961-71 decade growth rate of sex composition was decreased with -0.78% , in 1971-81 decade it also increased with $+2.86\%$, but in 1981-91 decade growth of sex-ratio was decrease with -1.34% . After that in 1991-01 growth rate of sex-ratio was highly decreased with -3.60% and in 2001-2011 the growth rate of sex-ratio was stable, there was no change. Only in 1971-81 growth rate of sex-ratio was positive and negative growth rate observed in the decades of 1961-71, 1981-91 and 1991-01. In 2001-2011 growth rate of sex-ratio was stable as compare to the decade of 1991-01. A great fluctuation in growth rate of sex-ratio was observed in Karadwadi circle. Majorly negative growth was observed in this circle from 1961-71 to 2001-11.

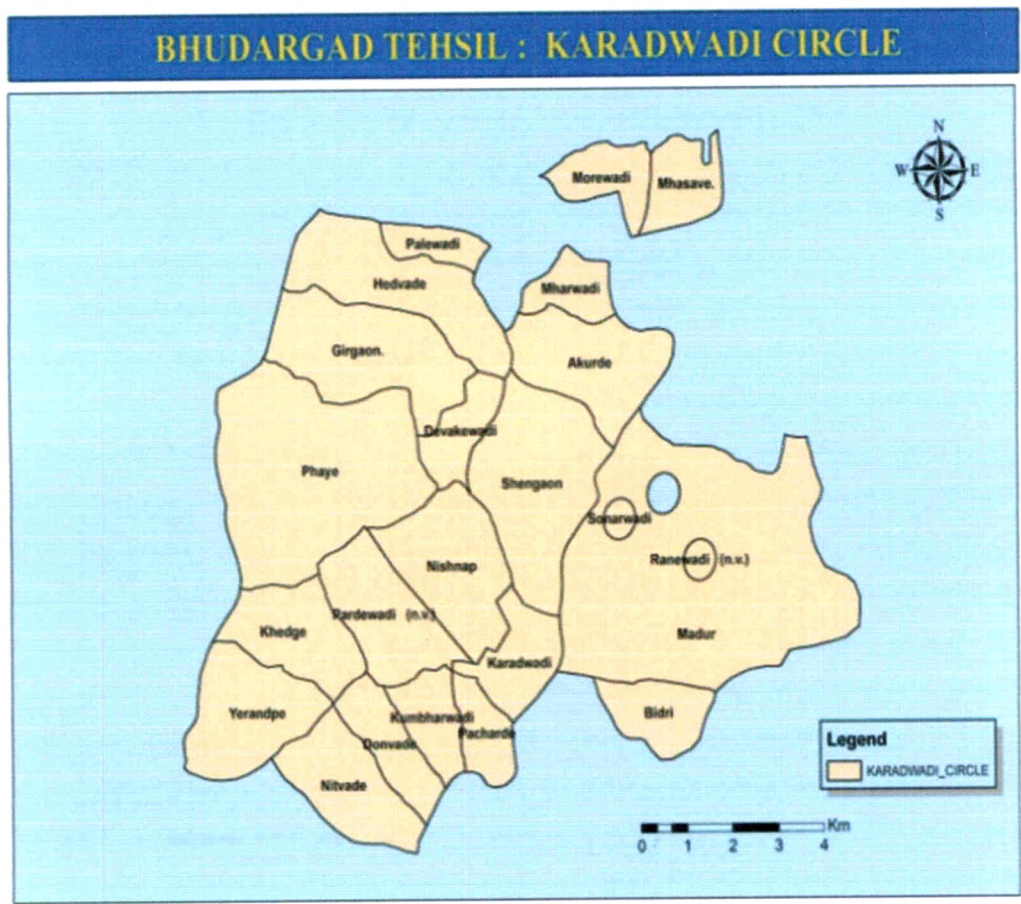


Figure 5.6

KADGAON CIRCLE:

Kadgaon is the fourth revenue circle of Bhudargad tehsil. As per the Census 2011, 42 villages were including in this circle. In 1961-71 decade growth rate of sex-ratio was decreased with -0.28 %, in 1971-81 decade it also increased with +3.39 %, but in 1981-91 decade growth of sex-ratio was slightly decrease with -0.36%. After that in 1991-01 growth rate of sex-ratio was highly decreased with -5.30 % and in the decade 2001-2011 the growth rate of sex-ratio was again decreased with -2.42%. Only in 1971-81 growth rate of sex-ratio was positive otherwise negative growth rate observed in the decades of 1961-71, 1981-91, 1991-01 and 2001-2011. In 1971-81 only positive growth of sex-ratio was observed and negative growth rate was observed in the decades of 1961-71, 1981-91, 1991-01 and 2001-11. Negative growth was mostly observed in this circle.



Figure 5.7

PIMPALGAON CIRCLE:

Pimpalgaon is the fifth revenue circle of Bhudargad tehsil. As per the Census 2011, 17 villages were including in this circle. In 1961-71 decadal growth rate of sex-ratio was increased with +1.80%, in 1971-81 decade growth rate of sex-ratio was highly increased with +4.65 %, but in 1981-91 decade growth of sex-ratio was increase with +2.84%. After that in 1991-01 growth rate of sex-ratio was highly decreased with -7.25 %. And in the decade 2001-2011 the growth rate of sex-ratio was again decreased with -2.42%. In 1961-71 and 1971-81 decades growth rate of sex-ratio was positive otherwise negative growth rate observed in the decades of 1981-91, 1991-01 and 2001-2011. In 1971-81 decadal growth rate of sex-ratio was high and it was highly decreased in 1991-01, decreasing trend of sex-ratio was observed in Pimpalgaon circle.

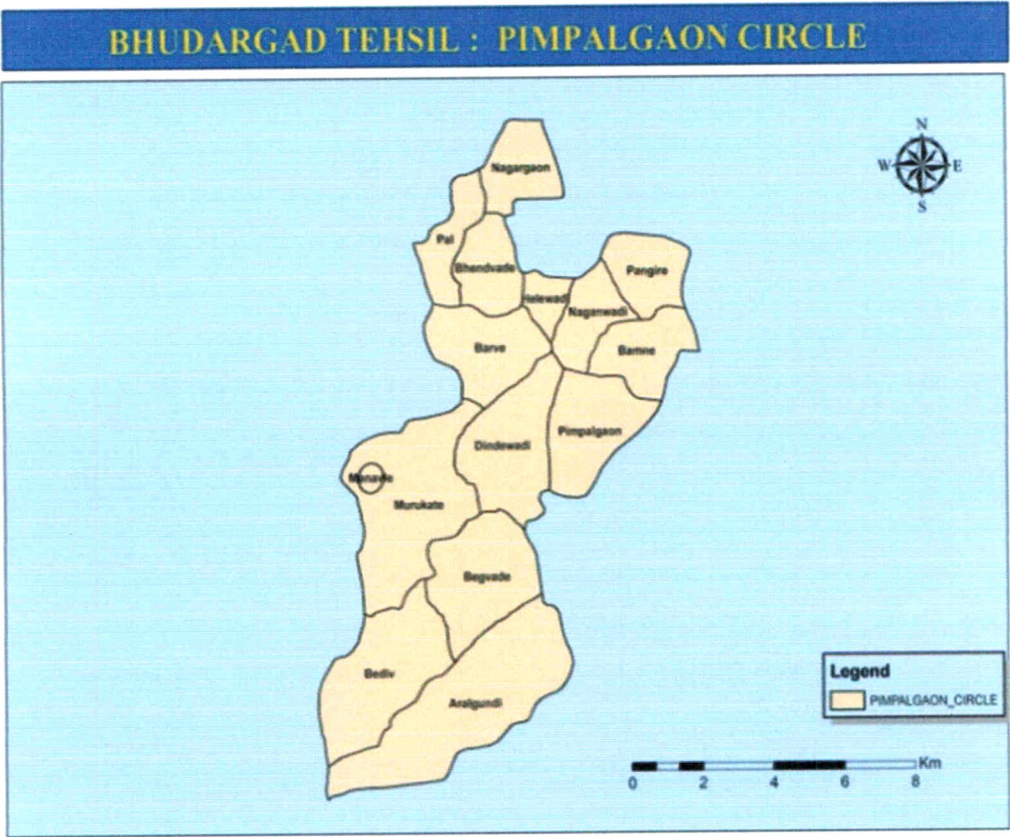


Figure 5.8

In the decade of 1961-71 and 1971-81 Bhudargad tehsil have observed the Positive growth in sex-ratio in that decades growth rate was observed +0.89 % in 1961-71 and +2.06 in 1971-81. Otherwise in the decade of 1981-91, 1991-01 and 2001-11 Bhudargad tehsil have observed the Negative growth in sex-ratio. It was -1.35 % in 1981-91, -2.83% in 1991-01 and -1.21% sex-ratio was observed in 2011.

5.6 CHANGING NATURE OF CHILD SEX-RATIO:

Table-5.4

Bhudargad Tehsil: Child Sex-Ratio (1991-2011)

Sr. No.	Circle	Sex-Ratio(No. of females per thousand males)		
		Years		
		1991	2001	2011
1	Koor	943	814	795
2	Gargoti	908	856	791
3	Karadwadi	972	873	859
4	Kadgaon	995	932	882
5	Pimpalgaon	923	895	905
Tehsil Sex-Ratio		951	874	838

Source: District Census Handbook of Kolhapur (1991 -2011).

Koor, Gargoti, Karadwadi, Kadgaon and Pimpalgaon are the five revenue circles in Bhudargad tehsil. In 1991 Child sex-ratio was 951 females per thousand males; than in 2001 it decreases it was 874, after that it again decreased in 2011, it was only 838 females per thousand males.

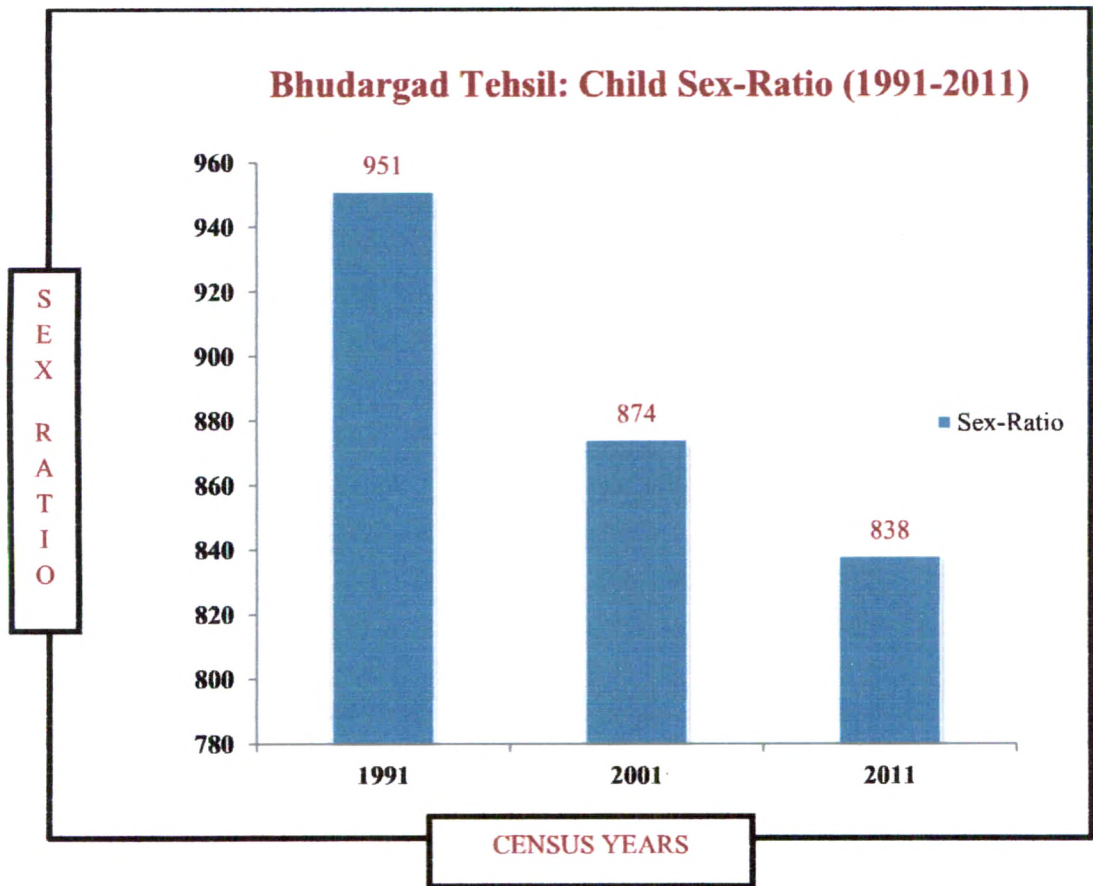


Figure 5.9

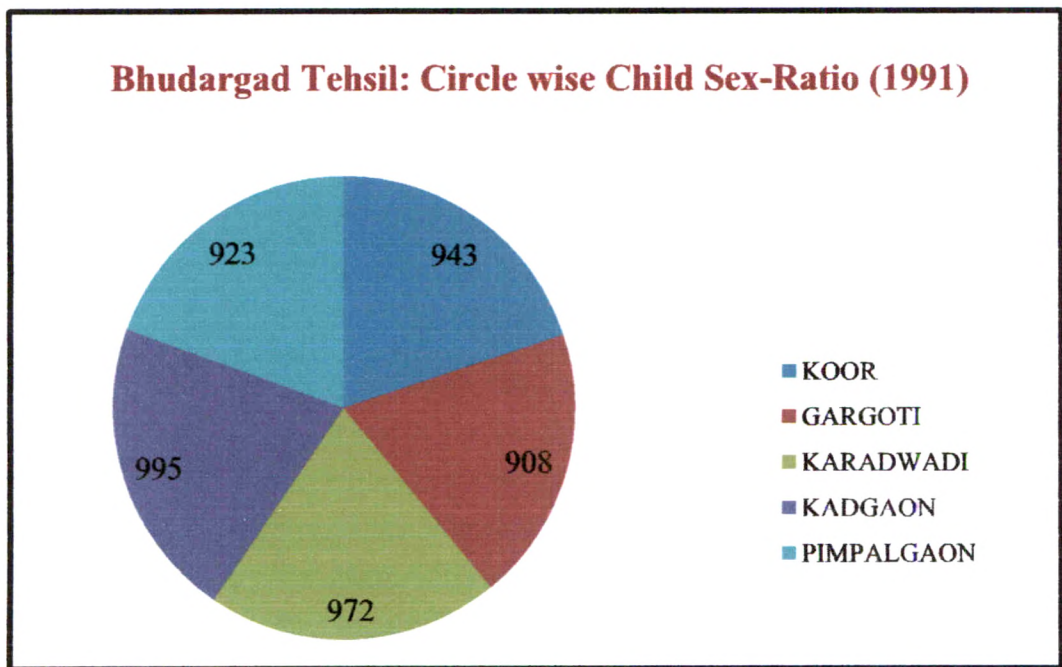


Figure 5.10

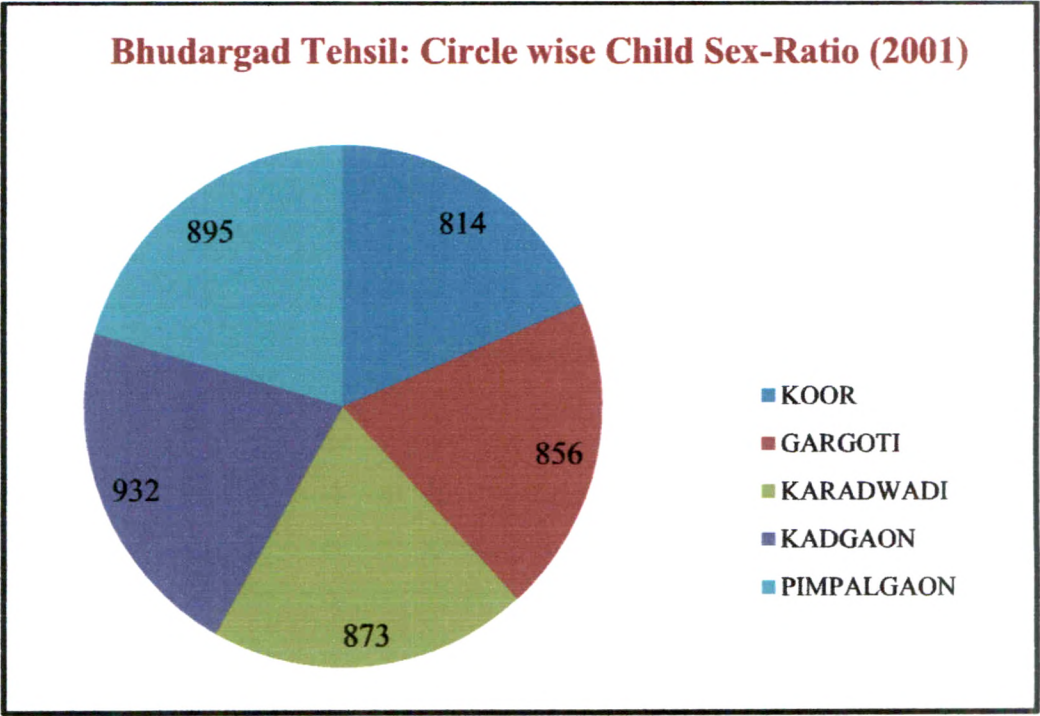


Figure 5.11

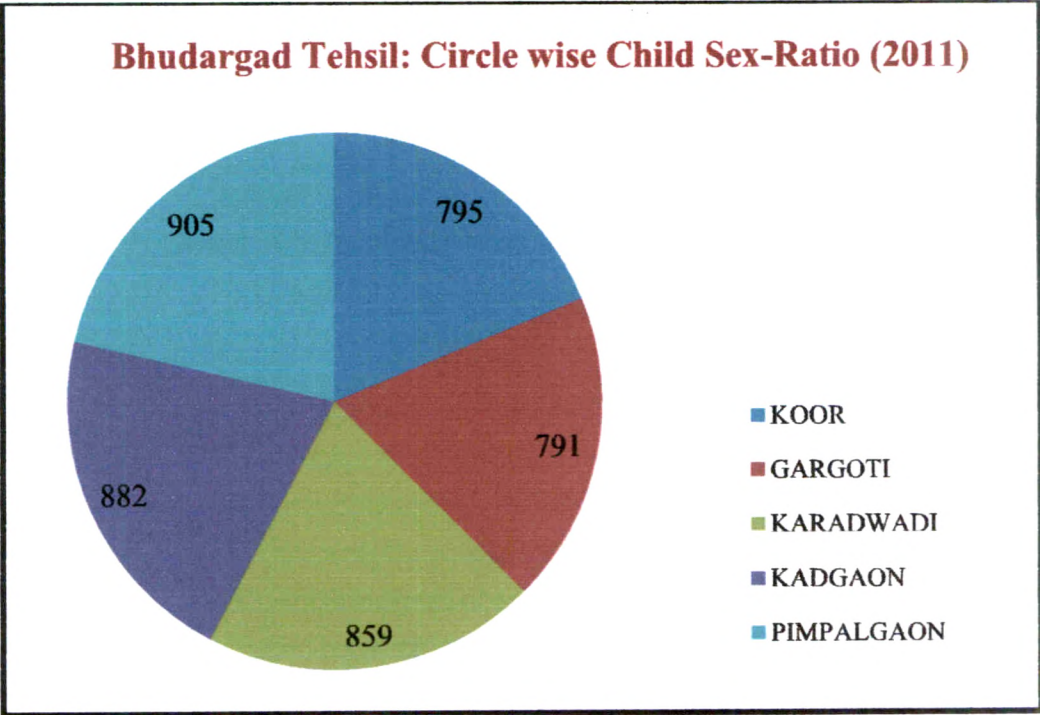


Figure 5.12

5.6.1 AREA OF LOW SEX COMPOSITION (Below 900 females per thousand males):

Lowest Child sex-ratio was not observed in the Census year 1991. The sex-ratio of all of the five circles Viz. Koor, Gargoti, Karadwadi, Kadgaon and Pimpalgaon were above 900 females per thousand males. In this decade of 2001 Koor, Gargoti, Karadwadi, and Pimpalgaon circles having lowest Child sex-ratio, it was 814, 856, 873 and 895 females per thousand males respectively. Lowest Child sex-ratio was observed in Koor circle (814). In this decade of 2011 Koor, Gargoti, Karadwadi and Kadgaon circles having lowest Child sex-ratio, it was 795, 791, 859 and 882 females per thousand males respectively. Lowest Child sex-ratio was observed in Gargoti circle, it was only 791 females per thousand males.

5.6.2 AREA OF MODERATE SEX COMPOSITION (901-950 females per thousand males):

In this decade of 1991, Koor, Gargoti and Pimpalgaon circles having moderate Child sex-ratio, it was 943, 908 and 923 females per thousand males respectively. In this decade of 2001 Kadgaon circle having moderate Child sex-ratio; it was 932 females per thousand males respectively. In this decade of 2011 Pimpalgaon circle having moderate Child sex-ratio; it was 905 females per thousand males respectively.

5.6.3 AREAS OF HIGH SEX COMPOSITION (Above 951 females per thousand males):

In this decade of 1991, Karadwadi and Kadgaon circles having highest Child sex ratio, it was 972 and 995 females per thousand males respectively. The highest Child sex-ratio was recorded in Kadgaon circle it was 995 females per thousand males. In this decade of 2001 absence of highest Child sex-ratio in all the circles. In this decade of 2011 absence of highest Child sex-ratio in all the circles.

5.7 OVER ALL CHANGES IN CHILD SEX-RATIO (1991-2011):

For the analysis of decadal change the decadal arithmetic growth rate has been calculated. For measuring the growth in Child sex-ratio following formula has been used.

Decadal growth rate = $S_2 - S_1 / S_1 * 100$

Where,

S₁, is the child sex-ratio of initial period of time

S₂, is the child sex-ratio of later period of time

For this, growth rate is measured by keeping 1991 as base year during 1991-2011.

In Bhudargad tehsil observed the very low child sex-ratio as compare to the general sex-ratio of tehsil. Child sex-ratio was decreasing rapidly. Some of the circles like Koor and Gargoti having low child sex-ratio were observed in the decades of 1991 to 2001-2011.

Table-5.5

**Bhudargad Tehsil: Decadal Growth rate of Child Sex-Ratio
(1991-2011)**

Decadal Arithmetic Growth rate (in %)				
Sr. No.	Circle	Census Years		Description
		1991-01	2001-11	
1	Koor	-13.68	-2.33	Decreasing
2	Gargoti	-5.73	-7.59	Decreasing
3	Karadwadi	-10.18	-1.60	Decreasing
4	Kadgaon	-6.33	-5.36	Decreasing
5	Pimpalgaon	-3.03	+1.12	Increasing
Bhudargad Tehsil		-8.09	-4.12	Decreasing

Source: Based on District Census Handbook of Kolhapur (1991 -2011).

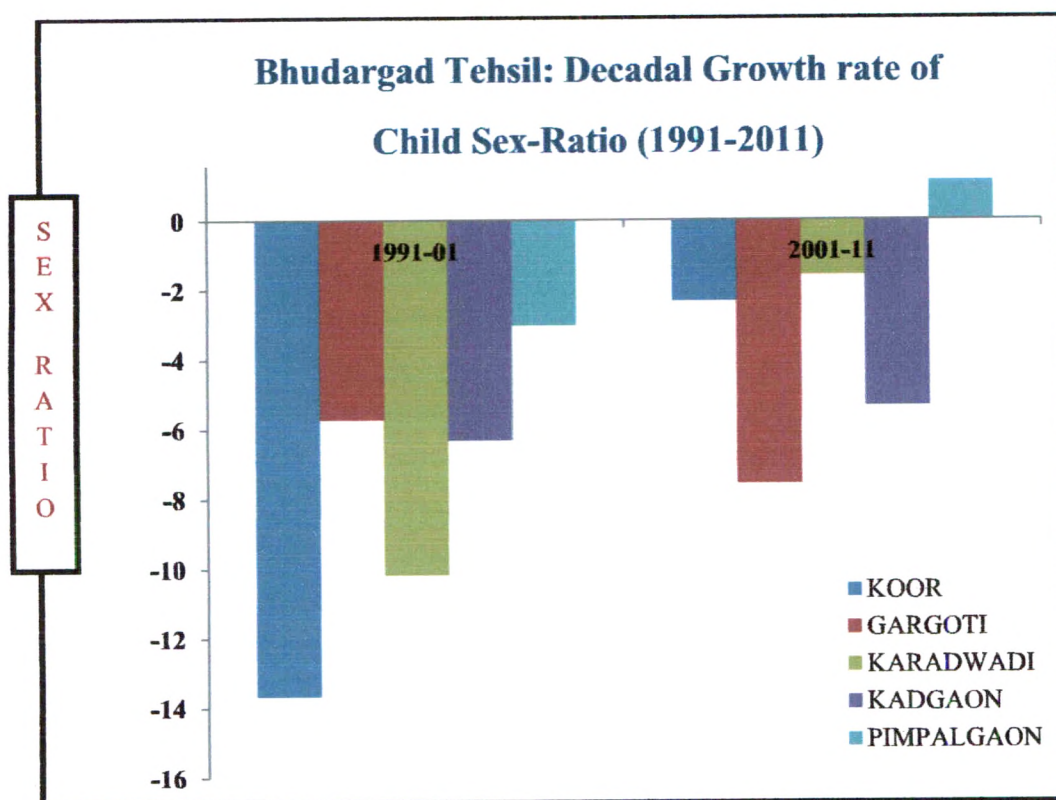


Figure 5.13

5.8 CIRCLEWISE CHANGE IN CHILD SEX-RATIO:

KOOR CIRCLE:

This circle having decreasing trend of Child sex composition was observed from the decade of 1991-01 to 2001-2011, in the decade of 1991-01 the growth rate was highly decreased with -13.68 % and growth rate was decreased with -2.33 % in 2001-2011. Negative growth of Child sex-ratio was observed in Koor circle in the decade of 1991-01 and 2001-2011.

GARGOTI CIRCLE:

Gargoti circle having decreasing trend of Child sex composition was observed from the decade of 1991-01 to 2001-2011, in the decade of 1991-01 the growth rate was decreased with -5.73 % and growth rate was decreased with -7.59 %

in 2001-2011. Negative growth of Child sex-ratio was observed in Gargoti circle in the decade of 1991-01 and 2001-2011.

KARADWADI CIRCLE:

Karadwadi circle having decreasing trend of Child sex composition was observed from the decade of 1991-01 to 2001-2011, in the decade of 1991-01 the growth rate was highly decreased with -10.18 % and growth rate was decreased with -1.60 % in 2001-2011. Negative growth of Child sex-ratio was observed in Karadwadi circle in the decade of 1991-01 and 2001-2011.

KADGAON CIRCLE:

Kadgaon circle having decreasing trend of Child sex composition was observed from the decade of 1991-01 to 2001-2011, in the decade of 1991-01 the growth rate was highly decreased with -6.33 % and growth rate was decreased with -5.36 % in 2001-2011. Negative growth of Child sex-ratio was observed in Karadwadi circle in the decade of 1991-01 and 2001-2011.

PIMPALGAON CIRCLE:

Pimpalgaon circle having decreasing trend of Child sex composition was observed in the decade of 1991-01 and in 2001-2011 increasing trend was observed, in the decade of 1991-01 the growth rate was decreased with -3.03 % and growth rate was increased with +1.12 % in 2001-2011. Negative growth of Child sex-ratio was observed in Karadwadi circle in the decade of 1991-01 and positive growth was observed in 2001-2011.

In Bhudargad tehsil have observed the Negative growth of Child sex-ratio. -8.09 % growth rate was observed in 1991-2001 and -4.12 % Child sex-ratios were observed in 2001-11.

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