

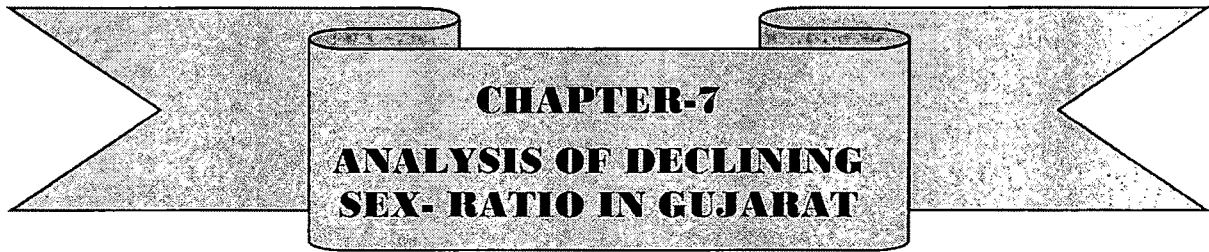
**PART- III**

**SOME STUDIES RELATED TO  
SEX RATIO**

## **CHAPTER 7**

### **ANALYSIS OF DECLINING SEX RATIO IN GUJARAT**

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**CHAPTER-7**  
**ANALYSIS OF DECLINING**  
**SEX- RATIO IN GUJARAT**

## 7.1 Introduction

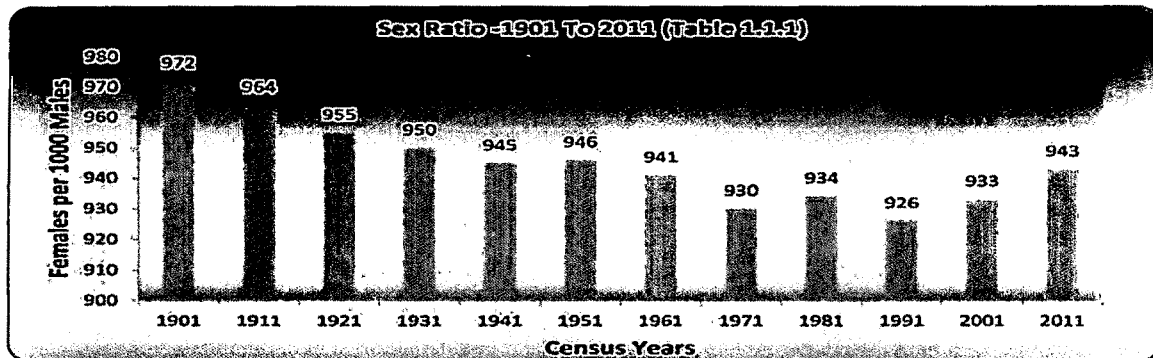
Population census (2011) reflexes a skewed sex ratio in Gujarat. One of the top economically and industrially progressive state in the country is facing scarcity of girls. Brides are to import from other parts of the country like Kerala is really an alerting sign for Gujarat. Gujarat ranks 22<sup>nd</sup> among the states of India in sex-ratio showing a declining trend. An attempt is made here to analyze the sex-ratio with respect to some demographic and socio economic parameters. In this chapter the study of correlation of sex-ratio with decadal growth rate, literacy rate and with SC and ST population has been done.

Sex Ratio is an index of male - female (im) balance in population. Sex ratio, in India, is defined as the number of females per 1000 males in the population. At the Census 2011, sex ratio of population stood at 940 females per 1000 males a marginal increase from 933 recorded at the 2001 Census

- Sex Ratio is a powerful indicator to examine the SOCIAL RESPONSE and ATTITUDE towards the GIRL CHILD in recent past. The presentation of data on sex ratio has shown a grim picture of the status of female population in states of the country as per the Census of India 2011.

It is clear that the sex ratio has decreased at a much faster pace than the overall sex ratio of the country after 1981. The decreasing sex ratio perhaps has a

cascading effect on the population over a period of time leading to diminishing sex ratio in the country.



Source: Registrar General of India

If it is accepted that the impact of differential sex selective undercount, age reporting and migration is negligible then, the sex ratio will be principally influenced by: literacy rate, socio-economic background, caste & religion and declining Child Sex Ratio are may be some factors that effects Sex Ratio or the combined effect of all these factors can also be seen in declining trend.

## 7.2 Analysis and Discussion on Present Scenario

For the analysis of the sex-ratio, Correlation between decadal growth rates of District of Gujarat and Sex-ratio, Correlation between literacy rate and sex-ratio and Correlation between SC & ST population and Sex-ratio has been calculated to find out the effect of various factors affecting the sex-ratio of Gujarat.

6 States/Ut's registered decline in Sex Ratio during 2011 including Gujarat. Alarming trend seen since 1981 in Gujarat State as Sex ratio turned from bad to worse. On other hand Kerala and Pondicherry have shown increasing trends between 2001-2011. This can be seen from Table-1

Table – 1							
Sex Ratio of Total Population and child population in the age group 0-6 and 7+ years 2001 & 2011							
Sr. No.	India/ States /Uts	Sex Ratio ( Females per 1,000 Male)					
		Total Population		Child Population In the age-group 0 - 6		Population aged 7 and above (P)	
		2001	2011	2001	2011	2001	2011
	<b>INDIA</b>	<b>933</b>	<b>943</b>	<b>927</b>	<b>919</b>	<b>934</b>	<b>944</b>
1	Jammu & Kashmir	892	889	941	862	884	887
2	Himachal Pradesh	968	972	896	909	980	983
3	Punjab	876	895	798	846	888	899
4	Chandigarh	777	818	845	880	767	812
5	Uttarakhand	962	963	908	890	973	975
6	Haryana	861	879	819	834	869	885
7	NCT of Delhi	821	866	868	871	813	866
8	Rajasthan	921	928	909	888	923	935
9	Utter Pradesh	898	912	916	902	894	910
10	Bihar	919	918	942	935	914	912
11	Sikkim	875	890	963	957	861	883
12	Arunachal Pradesh	893	938	964	972	878	913
13	Nagaland	900	931	964	943	890	929
14	Manipur	974	992	957	936	977	995
15	Mizoram	935	976	964	970	930	976
16	Tripura	948	960	966	957	945	962
17	Meghalaya	972	989	973	970	971	989
18	Assam	935	958	965	962	929	953
19	West Bengal	934	950	960	956	929	946
20	Jarkhand	941	949	965	948	935	948
21	Orissa	972	979	953	941	976	985
22	Chhatisgarh	989	991	975	969	992	995
23	Madhya Pradesh	919	931	932	918	916	933
24	Guajrat	920	919	883	890	927	923
25	Daman & Diu	710	618	926	904	682	589
26	Dadar and Nagar Haveli	812	774	979	926	779	752
27	Maharashtra	922	929	913	894	924	931
28	Andhra Pradesh	978	993	961	939	981	997
29	Karnataka	965	973	946	948	968	971
30	Goa	961	973	938	942	964	973
31	Lakshadweep	948	947	959	911	946	951
32	Kerala	1058	1084	960	964	1072	1099
33	Tamil Nadu	987	996	942	943	993	1000
34	Pundicherry	1001	1037	967	967	1006	1047
35	Andaman & Nicobar Islands	846	876	957	968	831	868

Source: Census of India, 2011.

According to the final results of Population Census 2011, the population of Gujarat State is reported at 6.04 crore. Though the growth rate of the decade 2001-2011 has decreased to 19.28 percent from 22.66 percent of the decade 1991-2001, decadal growth rate of Gujarat is more than overall growth rate of 17.64 percent of India. This can be seen from table-2.

- Out of all the districts of Gujarat, Surat and Kachchh has shown highest decadal population growth rate of 42.19 and 32.03 percent respectively, whereas Navsari and Amreli accounted the lowest growth rate of 8.24 and 8.59 percent respectively whereas three districts Kachchh, Amreli and Dahod have shown increasing trend in population growth.
- The sex ratio of Gujarat has continued reducing from 952 (1951) to 919 (2011). In Gujarat the Dangs and Tapi districts have the highest sex-ratio of 1007 and 1004 respectively, while Surat district has the lowest sex-ratio of 787 in 2011 census. Almost 9 districts shows declining trend.
- The density of Gujarat was 258 persons per sq.km. in 2001 which has increased to 308 persons per sq.km. in 2011. The highest density of 1376 persons per sq.km. has been observed in the district of Surat, while the least density of 46 persons per sq.km. has been reported for the Kachchh district.
- Nearly, 42.6 percent population of Gujarat resides in urban areas as per census 2011. This proportion of urbanization was 34.49 percent in 1991. The district of Ahmedabad is the most urbanized district in the state, while the district of The Dangs is a fully rural area having no urban population at all.

**Table-2 : Distribution of Population, Decadal Growth Rate, Sex-Ratio and Population Density**

Sr. No.	State/District	Population 2011			Percentage decadal growth rate of population		Sex- Ratio (Number of Females per 1000 Males)		Population density per sq. km.		Trend in sex Ratio
		Persons	Males	Females	1991-01	2001-11	2001	2011	2001	2011	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
	Gujarat	60439692	31491260	28948432	22.7	19.3	920	919	258	308	D
1	Kachchh	2092371	1096737	995634	25.4	32.2	942	908	35	46	D
2	Banaskantha	3120506	1610379	1510127	26.4	24.6	930	938	233	290	I
3	Patan	1343734	694397	649337	14.2	13.6	932	935	206	232	I
4	Mahesana	2035064	1056520	978544	12.1	10.3	927	926	421	462	D
5	Sabarkantha	2428589	1244231	1184358	18.3	16.6	947	952	282	328	I
6	Gandhinagar	1391753	723864	667889	23.9	12.5	913	923	589	650	I
7	Ahmadabad	7214225	3788051	3426174	26.8	22.4	892	904	727	890	I
8	Surendranagar	1756268	909917	846351	25.3	15.9	924	930	144	168	I
9	Rajkot	3804558	1974445	1830113	26.1	20.0	930	927	283	340	D
10	Jamnagar	2160119	1114192	1045927	21.8	13.4	941	939	135	152	D
11	Porbandar	585449	300209	285240	14.4	9.1	946	950	234	253	S
12	Junagadh	2743082	1404356	1338726	17.1	12.0	955	953	277	311	D
13	Amreli	1514190	771049	743141	6.5	8.6	987	964	188	205	D
14	Bhavnagar	2880365	1490201	1390164	19.3	16.6	937	933	247	287	D
15	Anand	2092745	1087224	1005521	13.0	12.7	910	925	631	653	I
16	Kheda	2299885	1185727	1114158	13.3	12.9	923	940	479	582	I
17	PanchMahals	2390776	1226961	1163815	20.4	18.0	938	949	389	457	I
18	Dohad	2127086	1068651	1058435	28.4	30.0	985	990	448	584	S
19	Vadodara	4165626	2153736	2011890	19.9	14.4	919	934	482	552	I
20	Narmada	590297	301086	289211	14.5	14.8	949	961	187	210	I
21	Bharuch	1551019	805707	745312	19.4	13.2	921	925	210	238	I
22	The Dangs	228291	113821	114470	29.6	22.3	987	1006	106	129	I
23	Navsari	1329672	678165	651507	13.2	8.2	955	961	557	592	I
24	Valsad	1705678	887222	818456	29.7	20.9	920	922	465	567	I
25	Surat	6081322	3402224	2679098	54.3	42.2	810	787	968	1337	D
26	Tapi	807022	402188	404834	14.8	12.1	996	1007	222	257	I

Source: Census of India 2011

D – Decreasing Trend; I – Increasing Trend; S – Steady Trend

The literacy rate in the State (excluding children in the age group 0-6 years) has increased from 69.14 percent in 2001 to 78.0 percent in 2011. Gujarat's literacy rate ranks 18<sup>th</sup> among the states of India.

Among males, it has increased from 79.66 percent in 2001 to 85.8 percent in 2011, whereas among females, it has increased from 57.80 percent in 2001 to 69.7 percent in 2011.

Out of the 26 districts where population enumeration was conducted, Ahmedabad and Surat has the highest literacy rate of 85.2 percent, while Dohad district accounted the lowest literacy rate of 58.8 percent. This can be seen from table-3 given below.

**Table 3 : Population in the Age Group 0-6, Number of Literates and Literacy Rate for State and Districts -2011.**

Sr. No.	State/District	Population in age group 0-6			Number of literates (In 000 Nos.)*			Literacy Rate #		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1.	2.	6	7	8	9	10	11	12	13	14
	Gujarat	7777262	4115384	3661878	41093	23475	17618	78.0	85.8	69.7
1	Kachchh	318412	165739	152673	1252	739	513	70.6	79.4	60.9
2	Banaskantha	510310	268858	241452	1705	1048	657	65.3	78.2	51.7
3	Patan	184779	97762	87017	838	495	343	72.3	82.9	61.0
4	Mahesana	237932	129169	108763	1503	847	655	83.6	91.4	75.3
5	Sabarkantha	345490	181529	163961	1579	919	660	75.8	86.4	64.7
6	Gandhinagar	167377	90604	76773	1030	583	448	84.2	92.0	75.8
7	Ahmadabad	842518	453790	388728	5436	3025	2410	85.3	90.7	79.4
8	Surendranagar	240011	126572	113439	1094	643	450	72.1	82.1	61.5
9	Rajkot	438580	235534	203046	2725	1514	1211	81.0	87.1	74.4
10	Jamnagar	263972	138608	125364	1397	795	601	73.7	81.5	65.3
11	Porbandar	65926	34648	31278	394	222	172	75.8	83.5	67.7
12	Junagadh	311930	163535	148395	1843	1047	796	75.8	84.4	66.9
13	Amreli	173555	92047	81508	995	558	437	74.3	82.2	66.1
14	Bhavnagar	381470	201720	179750	1887	1087	800	75.5	84.4	66.1
15	Anand	254008	134827	119181	1551	874	677	84.4	91.8	76.4
16	Kheda	291133	153591	137542	1660	942	718	82.7	91.3	73.5
17	PanchMahals	361311	186998	174313	1441	858	583	71.0	82.5	58.9
18	Dohad	414798	212968	201830	1007	599	408	58.8	70.0	47.6
19	Vadodara	499811	263506	236305	2893	1614	1279	78.9	85.4	72.0
20	Narmada	78123	40250	37873	370	212	159	72.3	81.2	63.1
21	Bharuch	179103	93265	85838	1118	623	495	81.5	87.5	75.1
22	The Dangs	40743	20743	20000	141	77	64	75.2	83.1	67.4
23	Navsari	135170	70298	64872	1002	539	462	83.9	88.7	78.8
24	Valsad	215439	111889	103550	1171	656	515	78.6	84.5	72.1
25	Surat	736286	401315	334971	4571	2687	1884	85.5	89.6	80.4
26	Tapi	89075	45619	43456	490	269	221	68.3	75.4	61.2

Note : \*Literates exclude children in the age group 0-6 years that were by definition treated as illiterate in the Census of India 2011.

#Literacy rate is the percentage of literates to total population aged 7 years and above.

Literacy rate=Number of Literates/Population of age 7+\*100

Source: Census of India 2011



### **7.3 Scheduled Caste and Scheduled Tribe Population Scenario**

The population of Scheduled Castes and Scheduled Tribes in the State have been reported at 40.74 lakh (6.7 percent) and 89.17 lakh (14.8 percent) respectively. About 56.0 percent of the Scheduled Castes population was enumerated in rural areas and the remaining 44.0 percent was enumerated in the urban areas. The corresponding proportions for Scheduled Tribes were 89.96 percent and 10.04 percent respectively. The literacy rate (excluding the population of 0-6 year's age group) for Scheduled Castes and Scheduled Tribes have been reported to 79.2 percent and 62.5 percent respectively.

The SCs in Gujarat are dispersed in all the districts of the State unlike the STs and the bulk of them live in eight districts in the eastern part of the State. There are 30 notified SC committees in the State. Mahyavansi has the highest population (43%) followed by Bhambji, Bhangi, Meghval, Senva and Garoda.

Out of the 18,618 villages in the State, as many as 12,808 villages have SC population. There are 2,361 villages and towns which have SC population of 250 persons and above. These villages and towns contain about 50 percent of the total SC population of the State.

Scheduled Tribe (ST) population of 89.17 lakhs accounts for 14.8% of the total population in the State and occupies the 4th position in terms of the concentration of STs in the country (8.55%). This can be seen from table – 4 given below.

Table – 4 Literacy Rate, Sex Ratio and SC - ST population (1951-2011)					
	Sex Ratio	Literacy Rate	Decadal Growth	SC Population (In lacs)	ST Population (In lacs)
1951	952	21.82	18.69	10.73	21.79
1961	940	31.47	26.88	13.62	27.65
1971	934	36.95	29.39	18.25	37.34
1981	942	44.92	27.67	24.38	48.49
1991	934	61.29	21.19	30.60	61.62
2001	920	69.14	22.66	35.93	74.81
2011	919	78.00	19.30	40.74	89.17

**Note:** Literacy rates for 1951, 1961 and 1971 related to population aged five years and above. The rates for the years 1981 to 2011 related to the population aged seven years and above. SC & ST population for year 1951, 1961 & 2011 are estimated figures

Source: Census of India 2011

#### 7.4 Correlation between Sex-Ratio and different variables

If it is accepted that the impact of differential sex selective undercount, age reporting and migration is negligible then, the sex ratio will be principally influenced by: literacy rate, socio-economic background, caste & religion and declining Child Sex Ratio are probable some factors that effects Sex Ratio or the combined effect of all these factors can also be seen in declining trend. Effect of some of the factors are calculated in the following table-5.

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{[\sum (x - \bar{x})^2][\sum (y - \bar{y})^2]}}$$

$$t = \frac{r - 0}{\sigma_r} = \frac{r}{\sqrt{\frac{1 - r^2}{n - 2}}}$$

<b>Table – 5 Correlation between Sex Ratio and Affecting Factors</b>				
	<b>r</b>	<b>t<sub>cal</sub></b>	<b>t<sub>tab</sub> (1%)</b>	<b>t<sub>tab</sub> (5%)</b>
<b>Correlation between sex ratio and decadal growth</b>	<b>0.15</b>	<b>0.34</b>	<b>4.03</b>	<b>2.571</b>
Correlation between sex ratio and literacy rate	-0.91	4.917	4.03	2.571
Correlation between sex ratio & SC Popul.	-0.89	4.372	4.03	2.571
Correlation between sex ratio & ST Popul.	-0.9	4.625	4.03	2.571
Correlation between sex ratio & SC, ST Popul.	-0.9	4.625	4.03	2.571

## 7.5 Conclusion

From the above table we can see that the correlation between sex-ratio and literacy rate is -0.91, which shows significant correlation between the two variables at 5% and 1% LOS. We can say that as literacy rate increases the sex-ratio decreases. The reason behind it may be the trend of putting a full stop on another child after the birth of a boy and only going for a second child only if the first born is a girl child. Also we can notice that the number of families having a single child is increasing in this class of people.

The correlation between Sex-ratio and SC&ST population is also -0.90 but insignificant at 5% and 1% LOS. It means that population of this class increases then the Sex-ratio decreases. This can be because of they have adopted the same practice of going for a second child only if the first born is a girl, otherwise they are happy with a small family if the first child is a boy. Also, it can be the result of female feticide in the said population.

Can we wait for the next census to tell whether the sex ratio at birth have improved or further deteriorated? Definitely Not. The answer lies in monitoring sex ratio at birth from the Civil Registration Data, which gives monthly report for any administrative level. Instructions have been already issued in this regard by the Registrar General India, to all the CHIEF REGISTRARS OF BIRTHS AND DEATHS in the state for monitoring the monthly sex ratio at birth and disseminate this data back to the public and governments for timely intervention.

