## **Research Paper**

# **Statistics**



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

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ABSTRACT

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 22nd 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 paper the study of correlation of sex-ratio with decadal growth rate, literacy rate and with SC and ST population has been done.

### **KEYWORDS**

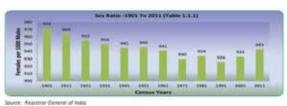
R.G.Bhatt

#### INTRODUCTION

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 933recorded at the 2001 Census

Sex Ratio is a powerful indicator to examine the SOCIAL RE-SPONSE 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.



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 and 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.

### **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 between2001-2011. This can be seen from Table-1

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 19.17 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 given bellow.

Table - 1
Sex Ratio of Total Population and child population in the age group 0-6 and 7+ years 2001 & 201

			Table -							
	Sex Ratio of Total Population	and child p				,	011			
Sr. No.	India/ States /Uts	Sex Ratio ( Females per 1,000 Male)								
No.		Total Child Population				Population aged				
		Popul	ation	In the agegr	oup 0 - 6	7 and above(P)				
		2001	2011	2001	2011	2001	201			
	INDIA	922	543	527	515	934	54			
•	Jammu & Kashmir	892	555	941	552	554				
2	Himachal Fradesh	960	972	896	909	900	20			
3	Purjab	875	895	796	545	500				
4	Chandigath	777	818	845	880	767	-			
5	Uttarakhand	962	963	905	890	973	2			
6	Hariyana	861	879	819	834	369	-			
7	NOT of Dahi	821	888	868	871	813	- 54			
•	Rajasthan	921	920	909	555	923	- 5			
,	Utter Pradesh	000	912	916	902	554	-			
10	Dhar	919	910	942	935	914	7			
11	5800m	875	890	963	957	551	- 0			
12	Arunachal Fradesh	893	935	954	972	878	3			
13	Nagaland	900	931	964	943	890	9			
14	Manipur	974	992	987	936	977	9			
15	Maoram	935	976	964	970	930	9			
16	Tripura	545	960	988	957	545	- 5			
17	Meghalaya	972	900	973	970	971	- 5			
10	Assam	935	950	965	962	929	7			
19	West Bangal	934	950	960	956	929	5			
20	Jankhand	941	949	965	948	935	5			
21	Orașa	972	979	953	941	976	9			
22	Chhatisgarh	909	991	975	989	992	9			
23	Madhya Pradesh	919	901	932	918	916	9			
24	Quayat	920	919	883	890	927	8			
25	Daman & Diu	710	618	926	904	682	- 5			
20	Dadar and Nagar Havel	812	774	979	820	779	- 7			
27	Maharashtra	922	929	913	894	924	9			
28	Andhra Pradesh	978	993	961	909	961	9			
29	Kamataka	968	973	948	943	960	9			
50	Goa	981	973	930	942	984	5			

31	Lakshadweep	940	947	950	911	946	951
32	Karala	1050	1084	960	984	1072	1099
33	Tamil Nadu	207	996	942	545	993	1000
34	Pundicherry	1001	1037	967	967	1006	1047
35	Andaman & Nicobar Islands	545	876	957	161	831	565

Source: Census of India, 2011.

· Out of all the districts of Gujarat, Surat and Kacch has

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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 three districts Kacch, Amreli and Dahod had shown increasing trend in population growth.

- The sex ratio of Gujarat has continued reducing from 952 (1951) to 918 (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 788 in 2011 census. Almost 9 districts shows declining trend.
- The density of Gujarat was 258 persons per sg.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
- Nearly, 37.36 percent population of Gujarat resides in urban areas. 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.
- This can be seen from TABLE 2 given below.

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

Sr. No.	State/District	Population 3011			Population Density  Fersenlage decatal growth rate of population		Sec Ratio (Number of Females per 1000 Males)		Population density per sq. um.		Trend in sex Ratio
		Persons	Males	Females	1991-01	2001-11	2001	2011	2001	2011	
		-3	-		_				10	_	- 12
	Gujaret	60430092	51491360	20545432	22.7	19.3	921	919	264	306	
	Kachchh	2092371	1096737	995034	25.4	32.2	HC	906	35	46	
2	Sanackantha	3120506	1610379	1510127	25.4	24.6	901	935	233	290	
3	Patan	1545734	694397	649037	142	13.6	902	935	206	202	
4	Mahasana	2035064	1000000	979544	12.1	10.3	907	105	421	452	
1	Sabarkamha	2421519	1244231	1184358	183	16.6	147	165	292	328	
5	Cand Pragar	1391753	723054	667999	233	12.5	913	923	509	650	
	Ahmalabad	7214025	3788061	3426174	26.0	22.4	890	904	727	890	
	Surer@anager	1756268	900917	\$46051	253	15.9	101	930	144	155	
,	Rapid	3804056	1974445	1600113	25.1	20.0	901	927	253	340	
10	Jamragar	2160119	1114192	1049927	21.8	13.4	141	939	135	152	
TT.	Potential	505449	300209	255240	144	9.1	145	150	234	253	-
	Junaşadh	2743082	1404356	1338726	17.1	12.0	955	953	277	311	
12	Amai	1514190	771049	743545	55	2.5	107	364	155	205	
61	Bhavnagar	2550065	1490201	1390164	19.3	16.6	907	103	247	297	
15	Anani	2092745	1067224	1005521	13.0	12.7	910	125	631	653	-
16	17mile	2299035	1105727	1114150	133	12.9	923	940	479	502	
1.7	PROMINE	2390775	1225961	1163615	22.€	18.0	978	243	359	457	-
15	Donas	2127985	1065651	1056435	25.4	30.0	965	990	445	554	
19	Vadodara	4165626	2150736	2011890	15.5	14.4	919	104	402	552	
70	Nameda	590297	301006	299211	145	14.5	543	961	187	210	_
21	Bharuth	1551019	808707	245012	19.4	13.2	921	105	210	258	
22	The Cargo	229291	113821	114470	29.6	22.3	107	1006	106	129	_
23	Never	1329612	679165	651507	13.2	87	153	361	557	552	_
24	Velsal	1705678	887222	111456	29.7	20.9	900	102	455	567	
3	Suret	6081322	35000000	2879085	54.5	42.2	810	787	1 568	1537	_
78	Tapi	807022	407150	494834	14.5	12.1	556	1007	222	297	+

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 79.31 percent in 2011. Gujarat's literacy rate ranks 18th among the states of India.

Among males, it has increased from 79.66 percent in 2001to 87.23 percent in 2011, whereas among females, it has increased from 57.80 percent in 2001 to 70.73 percent in 2011

Out of the 26 districts where population enumeration was conducted, Ahmedabad and Surat has the highest literacy rate of 86.65 percent, while Dohad district accounted the lowest literacy rate of 60.60 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

	Sections	Test Page	-								(America)			
					10000	respect			(HIR NAT					
		Ference	Time.	Familie	Ference	17etes	America	Person	-	Female		17aban	-	
-		2				-					9	1		
-	Grand	BACKET.	2496	2046	THE REAL PROPERTY.	4154	W/O	4100	2475	reve	76.0	40.4	_	
	Caption	SEC.	1967	880	191	87	1007	- 36	196	81	718	76.0	_	
	Demonstration 1	1100	404	415	FBT	per se	F-48	179	194		80.0	41	_	
	Page.	202	907	HET	207	1.6	807	- 13	-	30	41	81		
	Telegraph	2200	OWICE	PROF	270	28	36	92	-	-	THE STREET	F-1	$\overline{}$	
	Secreta	POSS	946	1908	PRE	716	100	95	**	-	91	81	,	
•	Seriospe	37	700	***	807	200	971	-	- 10	-	87	E		
•	Direction.	17-28	PRO	1867	FBT	472	1079	128	100	FI	83	2.7	_	
	Letters	7908	KW7	HO	XIII	387	190	-	100	-	18.1	E1		
B.	Taple:	2048	Two	90.0	4000	200	2004	2.00	91	91	8.0	81		
•	arrage	240.0	198	1987	207	282	700	-	-		47	7.1		
11	Fermion	80-4	NAME OF TAXABLE PARTY.	864	868	144	1175	194	-	175	9.0	81	,	
4	(Analysis)	F-000	140408	1979	7.00	466	1406	190	- 10		9.0	914	,	
T.	Triple .	212	7756	100	798	100	788	-	-	-	92	81	_	
la	Fringe	88.98	1400	96.6	841	878	199	-	-	-	78.0	914	_	
4	ANN	20074	970	100	3608	940	199	-	F4	-	8.4	9.1	_	
•	Own	2000	187	1148	9.0	100	794	-	×	78	87	83		
٠	Percusa	ZEC*	200	1681	871	MIN	1911	-	-	100	712	10.1	-	
4	See:	11708	1880	1960	449	1 546	87.60	107	-	48	81	70		
•	Telepon .	1969	7578	2.00	- OF	200	2003	700	**	25	717	81	-	
	Terres	N/W	N-08	961	90	400	195	275	- 11	-	91	8.0	Η,	
r	Fee	1971	100	901	79.0	400	868	118	40	-	8.3	8.5	Ь,	
	Tra Days	200	190	197	676	274	-	-	-		92	E1	-	
	10.00	1001	FTR	8.07	97	100	MIT	102	-	-	81	87	-	
b	1000	1595	870	THE	198	1199	1000	105	- 100	88	31	8.0	$\vdash$	
	See.	88.00	Hills	870	7909	477	1947	40	-	1004	8.1	6.1	Ь.	
÷	Test	878	42.8	000	907	1007	0.00	-	-	-	87	70.0	-	

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+\*10

Source: Census of India 2011

Scheduled Caste and Scheduled Tribe Population Scenario

The population of Scheduled Castes and Scheduled Tribes in the State have been reported at 35.93 lakh (7.09 percent) and 74.81 lakh (14.76percent) respectively. About 60.69 percent of the Scheduled Castes population was enumerated in rural areas and the remaining 39.31 percent was enumerated in the urban areas. The corresponding proportions for Scheduled Tribes were 91.79 percent and 8.21 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 70.50 percent and 47.74 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 Bhambi, 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 74.81 lakhs accounts for 14.76% of the total population in the State and occupies the 4th position in terms of the concentration of STs in the country (8.9%).

This can be seen from TABLE - 4 given below.

Literacy Rate, Sex Ratio and SC - ST population (1951-2011)									
Year	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	30.6	61.62				
2001	920	69.14	22.66	35.93	74.81				
2011	919	78.0	19.3	40.74	89.17				

Note: Literacy rates for 1951, 1961 and 1971 related to pop-

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ulation 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

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 and 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. Effect of some of the factors are calculated in the following TABLE.

Table - 5							
Correlation between Sex Ratio and Affecting Factors							
r t <sub>os</sub> t <sub>os</sub> (1%) t <sub>os</sub> (5%)							

Correlation between sex ratio and decadal growth	0.15	0.34	4.00	2.571
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

#### 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 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. 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 in 2011 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