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SAURASHTRA UNIVERSITY, RAJKOT

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UNDER THE FACULTY OF ARTS

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A STUDY ON DEMOGRAPHIC TRENDS IN GUJARAT

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DECLARATION

I hereby declare that the research work incorporated in the present Thesis entitled 'A Study on Demographic Trends in Gujarat' is original and has not been submitted either partially or wholly to any University/Institution for the award of any Diploma or Degree

I further declare that the content and the result presented in the thesis are in view of the advancement of the knowledge in Economics in general and in the area of Demographic Trends in the State of Gujarat in particular.

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Thankachan K.J

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CONTENTS

Declaration	
Guide Certificate	
Acknowledgement	
List of Tables	i - xiii
List of Graphs	xiv-xvi
List of Maps	xvii
I INTRODUCTION	01 -05
o 1.1 The Problem	
o 1.2 Scope of Enquiry	
o 1.3 Objectives of the Study	
o 1.4 Need for the Study	
o 1.5 Research Methodology	
o 1.6 Sources of Data	
o 1.7 Statistical Methods	
o 1.8 Time Period of Study	
o 1.9 Limitations of this Study	
o 1.10 Expected Contribution from the Study	
II REVIEW OF LITERATURE	06 - 34
III GUJARAT STATE - FEATURES	35 – 45
o 3.1 Introduction	
o 3.2 Gujarat History	
o 3.3 Religion	
o 3.4 Area	
o 3.5 Geographical Location	
o 3.6 Geographical Regions	
o 3.7 Climate	
o 3.8 People	
o 3.9 Education	
o 3.10 Agriculture	

○ 3.11	Industries	
○ 3.12	Tertiary Sector	
○ 3.13	Political Gujarat	
○ 3.14	Tourist Centres	
○ 3.15	Major Cities	
IV	TRENDS IN INDIAN DEMOGRAPHY	46 – 159
○ 4.1	Introduction	
○ 4.2	The Theory of Demographic Transition	
○ 4.3	Size and Growth of population in India	
○ 4.4.	Density of Population in India	
○ 4.5	Sex Composition of Population	
○ 4.6	Age Composition of Population	
○ 4.7	Literacy	
○ 4.8	Birth Rate, Death Rate and Infant Mortality Rate	
○ 4.9	Nature of the Population Problem	
V	POPULATION GROWTH IN GUJARAT STATE	160 – 237
○ 5.1	Introduction	
○ 5.2	Demographic Profile of Gujarat	
○ 5.3	Trends in Population Growth	
○ 5.4	Density of Population	
○ 5.5	Sex Composition of Population	
○ 5.6	Sex-Wise Change	
○ 5.7	Analysis of relationship of sex ratio with factors affecting it	
○ 5.8	Age Composition of Population	
○ 5.9	Literacy in Gujarat	
○ 5.10	Correlation Matrix	
○ 5.11	Nature of the Population in Gujarat	
VI	URBANISATION	238 – 332
○ 6.1	Introduction	
○ 6.2	Urbanisation in India: A Historical Perspective	

- 6.3 Trends of Urbanisation in India – The Contemporary Scene
- 6.4 Dynamics of Urban Population Growth
- 6.5 Urbanisation and Economic Development
- 6.6 Components of Urban Population Growth.
- 6.7 Urban Population Growth in Gujarat
- 6.8 Urbanisation Model
- 6.9 Social System Responses to Population Change
- 6.10 Population Processes and Social Disorganization
- 6.11 Consequences of Urbanisation
- 6.12 Sustainable Urban Systems

VII MIGRATION

333 – 403

- 7.1 Introduction
- 7.2 What is Migration?
- 7.3 Motives and Factors Encouraging Migration
- 7.4 Factors Discouraging Migration
- 7.5 General Effects of Migration
- 7.6 Migration and Population Growth
- 7.7 Migration as a Substitute for Birth Control
- 7.8 Internal Migration
- 7.9 Some Characteristics of Migrants
- 7.10 Migration Pattern in India
- 7.11 Migration Pattern in Gujarat
- 7.12 Migration Pattern at District Level : Gujarat
- 7.13 District-Wise Average Decadal Variation in Total Migrants
- 7.14 Pattern of Migration in terms of Reasons.
- 7.15 Pattern of Migration by Reasons in Gujarat.

VIII FERTILITY

404 – 459

- 8.1 Introduction
- 8.2 Factors Influencing Fertility

○ 8.3	Analysis of Relationship of Birth Rate with factors Affecting it	
○ 8.4	Multiple Regression Model on Fertility	
○ 8.5	Fertility in Gujarat	
○ 8.6	Birth Rate Model for Gujarat	
IX	MORTALITY	460 – 510
○ 9.1	Introduction	
○ 9.2	Mortality trends in India	
○ 9.3	Level of Infant Mortality Rate in India	
○ 9.4	Trends of Infant Mortality Rate in India	
○ 9.5	Causes of Infant Mortality	
○ 9.6	Trends of Maternal Mortality in India	
○ 9.7	Causes of Maternal Mortality	
○ 9.8	Mortality and Women's economic, social and health status	
○ 9.9	Trends of Mortality in Gujarat	
○ 9.10	Infant Mortality in Gujarat.	
○ 9.11	Death Rate in Districts of Gujarat	
○ 9.12	Factors determining mortality	
○ 9.13	Mortality Model	
X	TRENDS AND PROJECTIONS	511 – 548
○ 10.1	Introduction	
○ 10.2	Population Projections at National Level	
○ 10.3	Population Projections of Gujarat	
○ 10.4	District-wise Projected Population	
○ 10.5	Graphs of Trends on different demographic variables :Gujarat	
XI	SUMMARY	549 – 580
○ 11.1	Introduction	
○ 11.2	Nature of Indian Demography – Findings	
○ 11.3	Nature of Gujarat Demography – Findings	
○ 11.4	Urbanisation – Findings	

- 11.5 Migration – Findings
- 11.6 Fertility – Findings
- 11.7 Mortality – Findings
- 11.8 Suggestions
- 11.9 Policy implications
- 11.10 Hints to a rational population policy for Gujarat
- 11.11 Limitations of the study
- 11.12 Conclusion

Appendices

i - xxiv

- Appendix I – Some Definitions
- Appendix II – Gujarat Population Policy – A Glimpse
- Appendix III – The National Policy of Empowering Woman - A Glimpse
- Appendix IV – Gujarat Human Development Fact Sheet

Bibliography

i - xii

LIST OF TABLES

Table 4.1	Key Population Statistics	98
Table 4.2	Population of Ten Most Populous Countries of the World	99
Table 4.3	India's Population Size and Growth	100
Table 4.4	States And Union Territories By Population Size	101
Table 4.5	Percentage Decadal Growth Rate Of Population :1951 -2001	103
Table 4.6 A	State And Union Territories Arranged In Ascending Order Of Percentage Decadal Growth Of Population From 1951 -1961 To 1961-1971	105
Table 4.6 B	State And Union Territories Arranged In Ascending Order Of Percentage Decadal Growth Of Population From 1971 -1981 To 1981-1991	107
Table 4.6 C	State And Union Territories Arranged In Ascending Order Of Percentage Decadal Growth Of Population During 1991-2001 And Average Growth From 1951-61 To 1991-2001	109
Table 4.7	Growth Of Population : 1981-1991 & 1991-2001	111
Table 4.8	Distribution Of States/Union Territories By Range Of Percentage Decadal Growth :1981-1991 And 1991-2001	114
Table 4.9	Distribution Of States/Union Territories By Range Of Average Annual Exponential Growth : 1981-1991 And 1991-2001	114
Table 4.10	Average Annual Birth And Death Rates In India	115
Table 4.11	Density Of Population, India: 1901-2001	116
Table 4.12	Ranking Of States And Union Territories By Density - 1991 & 2001	117

Table 4.13	Distribution Of States And Union Territories By Density In Different Regions : 1991 And 2001 :	119
Table 4.14	Distribution Of States And Union Territories By Percentage Decadal Growth Of Density In Different Classes : 1991 And 2001 :	120
Table 4.15	Distribution Of States And Union Territories By Percentage Of Population And Average Density Of Population : 2001 :	122
Table 4.16	State-Wise Density Of Population In India (22 States) : 1901 To 2001	124
Table 4.16A	State-Wise Percentage Of Density Of Population In India (22 States) : 1901 To 2001	126
Table 4.17	Sex Ratio - India : 1901-2001:	128
Table 4.18	Sex Ratio Of Selected Countries : 2001	129
Table 4.19	Sex Ratio Of Total Population And Child Population In The Age Group 0-6 : 1991 And 2001	130
Table 4.20	Basic Population Of India, State & Union Territories By Size And Sex Ratio	132
Table 4.21	Sex Ratio – State, Rural & Urban	134
Table 4.22	Sex Ratio (Female Per 1,000 Males) : 1901-2001	136
Table 4.23	States And Union Territories Arranged In Descending Order Of Sex Ratio : 1961-2001	138
Table 4.24	Sex Ratio Variation – (Females Per 1000 Males) – 1961-2001	140
Table 4.25	Rural-Urban Distribution Of Population On The Basis Of Sex	141
Table 4.26	Sex Ratio – Females Per 1000 Males 1951-2001	143
Table 4.27	Percentage Distribution Of India's Population By Age Groups	145
Table 4.28	Literacy Rate In India : 1951-2001	146

Table 4.29	Number Of Literates And Illiterates Among Population Aged 7 Years And Above And Their Change-India [1991 And 2001]	147
Table 4.30	State And Union Territories Arranged In Descending Order Of Literacy Rate By Sex – 2001	148
Table 4.31	Population Aged 7 And Above, Literates In 1991 And Their Decadal Difference And Percentage Decadal Difference During 1991-2001	151
Table 4.32	Crude Literacy Rate In India By Sex : 1901 – 2001	154
Table 4.33	Crude Birth, Death And Infant Mortality Rates In Some Selected Countries	155
Table 4.34	Birth, Death And Infant Mortality Rates And Mean Age At Marriage For 14 Major States Of India-2001	156
Table 4.35	Estimated Birth, Death, Infant Mortality And Natural Growth Rates, 2005 For Some Selected States	156
Table 4.36	Rural – Urban Distribution Of Birth And Death Rates	158
Table 4.37	State-Wise Birth Rates Of 14 Major States Of India From 1980 To 2001	159
Table 5.1	Gujarat – Demographic Profile At A Glance	188
Table 5.2	Ranking Of Districts By Population Size In 1991 And 2001	189
Table 5.2(A)	District-Wise Population In The State Of Gujarat (In '0000)	191
Table-5.3	Percentage Decadal Variation In Population Since 1901 For State And Districts	193
Table-5.4	Population Distribution, Percentage Decadal Growth Rate, Sex-Ratio And Population Density : 1991-2001	196
Table 5.5	Decadal Growth Rate Of Population From 1901 To 2001	199
Table 5.6	Decadal Growth Rate 1901-2001	200
Table 5.7	Population Growth In The Decade 1991-2001 Among The Districts	201

Table 5.8	District-Wise Density : 1901-2001	202
Table 5.9	District-Wise Density Of Population And Population Index (Base Year 1901=100)	204
Table 5.10	Density Of The Districts Arranged In Order Of Below And High From The State Average Of 2001 Census	205
Table 5.11	Sex-Ratio Of Gujarat And India 1901-2001	206
Table-5.12	Sex-Ratio Since 1901 For State And Districts	207
Table 5.13	Rural-Urban Distribution Of Sex Ratio In Gujarat : 1901-2001	209
Table 5.14	Sex Ratio : 2001 Children Between 0-6 Years Age And All Ages	210
Table 5.15	Index Number Of Sex Ratio In Gujarat : Base Year 1901	211
Table 5.16	Ranking Of Districts By Sex-Ratio	212
Table 5.17	District-Wise Sex Ratio And Factors Influencing Sex Ratio : Gujarat – 2001	213
Table 5.18	District-Wise Sex Ratio And Factors Influencing Sex Ratio : Gujarat – 2001	214
Table 5.19	Analysis Of Sex Ratio And Factors Influencing Sex Ratio Of 14 Selected States In India: 2001	215
Table 5.20	Correlation Chart : District-wise analysis in Gujarat	216
Table-5.21	Total Population And Per Cent Population In The Age Group 0-6 By Sex For State And Districts : 2001	217
Table 5.22	Rural-Urban Distribution Of Population On The Basis Of Age Group And Sex In Gujarat	220
Table 5.23	Rural-Urban Distribution Of Population On The Basis Of Age Group And Sex As A Percentage Of Total Population In Gujarat	222
Table 5.24	Rural-Urban Distribution of Population on the basis of Sex as a Percentage of Age Group in Gujarat	223

Table 5.25	District-Wise Percent Of Population According To Age Group	224
Table 5.26	Literacy Rate Of Gujarat (1951-2001)	225
Table 5.27	State And Union Territories Arranged In Descending Order Of Literacy Rate By Sex :2001	226
Table 5.28	District-Wise Percent Of Literate Population In Gujarat From 1961 To 2001	229
Table 5.29	Literacy Rates By Sex For State And Districts:1991-2001	230
Table 5.30	Districts Arranged According To Literacy Rate Below And Higher Than The State Average.	232
Table-5.31	Total Population, Number Of Literates And Literacy Rates By Sex For State And Districts	233
Table 5.32	Birth Rates And Literacy Rate Of 12 Major States Of India	236
Table 5.33	Total Fertility By Women's Educational Level In India (1998-1999) (India)	237
Table 5.34	Correlation Matrix – Gujarat	237
Table 6.1	Population, Urban Population, Rural Population And Degree Of Urbanization, India 1901-2001	291
Table 6.2	Decadal Increase In Urban Population	292
Table 6.3	Percentage Decadal Growth And Average Annual Exponential Growth In Urban Agglomerations And Towns	293
Table 6.4	Rural-Urban Distribution Of Population-India, State And Union Territories – 2001	294
Table 6.5	Rural-Urban Distribution Of Population India And State/Union Territories 2001	299
Table 6.6	Trend Of Urbanisation In India	304
Table 6.7	Number Of Population In Million ⁺ Cities* In India** As Well As Percentage Of Urban Population	305

In That Cities : 1901 -1991

Table 6.8	Average Size Of Villages And Towns By Population – 2001 Census (Provisional)	306
Table 6.9	Degree Of Urbanization World, Regions, Continents And Selected Countries – 2000	308
Table 6.10	Twenty Largest Urban Agglomerations Ranked By Population Size In 2000: World	309
Table 6.11	Number Of Mega Cities In 1950, 1975, 2000 And 2015: World	310
Table 6.12	Share Of Urban Population In States And Union Territories Of India – 2001 Census (Arranged In Descending Order)	311
Table 6.13	Distribution Of Districts And Their Urban Population By Different Ranges Of Percentage Of Urban Population In Districts, India, 1991-2001	312
Table 6.14	Distribution Of Districts And Their Rural Population By Different Ranges Of Percentage Of Rural Population In Districts, India, 1991-2001	313
Table 6.15	Degree Of Urbanisation, Per Capita Income, Rates Of Unemployment And Population Below Poverty Line	314
Table 6.16	Correlation Chart For Table 6.15	315
Table 6.17	Degree Of Urbanisation, Birth Rate, Infant Mortality Rate, And Natural Growth Rate	316
Table 6.18	Correlation Chart For Table 6.17	317
Table 6.19	Degree Of Urbanisation And Human Development Index	318
Table 6.20	Estimates Of Relative Share On Natural Increase, Net Migration And Area Reclassification In The Decadal Urban Growth Of India, 1961-1991	319
Table 6.21	Percentage Share Of Natural Increase, Net Migration (Internal) And Areal Reclassification In The Decadal Urban Population Growth In India And Its Major	320

States During 1961-71** , 1971-81 And 1981-91

Table 6.22	Percentage Of Urban Population To Total Population In Gujarat 1901-2001	321
Table 6.23	Percentage Of Urban Population Residing In Class I Cities 1901-2001	322
Table 6.24	District-Wise Number Of Cities: 1901-1981	323
Table 6.25	District-Wise Urban Population – Gujarat : 1901- 2001 (In 000's)	324
Table 6.26	District-Wise Percentage Of Urban Population To Total Population: 1901- 2001	326
Table 6.27	Percentage Of Working Population To Total Population In The Districts With Rank	328
Table 6.28	Percentage Of Working Population To Total Population In The Districts With Rank	329
Table 6.29	Relation Ship Of Urbanisation With Some Factors Influencing Urbanisation : Gujarat	330
Table 6.30	Correlation Chart Of Table 6.29	331
Table 6.31	Correlation Matrix - Relationship Of Factors With Urbanisation	331
Table 6.32	Contribution Of Urban Areas To Economic Growth	332
Table 6.33	Exposure To Mass Media In Rural And Urban Areas 1990 (In Per Cent)	332
Table 7.1	Total Population Of Enumerated Outside The State Of Birth And Percentage Of The Total Population	370
Table 7.2	Absolute Change In Migrant Population	371
Table 7.3	In-Migration By Place Of Birth And Sex: India* - 2001	372
Table 7.4	Migrants By Place Of Birth: 1991-2001 (In Millions)	373
Table 7.5	Migration By Place Of Last Residence According To Duration: India 2001	373

Table 7.6	Migration By Place Of Last Residence With Reasons India 2001	374
Table 7.7	Migration Streams: India 1991-2001	374
Table 7.8	Sex-Wise Migration Pattern In India: 1961,1971 And 1981(In Percentages)	375
Table 7.9	Sex And Place-Wise Migration Pattern In India: 1961, 1971 And 1981 (In Percentages)	376
Table 7.10	Migrants By Place Of Last Residence Indicating Migration Streams (Duration 0-9 Years) India 2001	377
Table 7.11	Migration Streams For Top Ten States For Intra-State Migration By Last Residence (Duration 0 To 9 Years) India 2001 (Excludes Union Territories)	378
Table 7.12	Percentage Distribution Of Population By Migration Status In Gujarat, With Corresponding Distribution For The Country As Whole, 1961,1971 & 1981 Census (Birthplace Criterion)	379
Table 7.13	Percentage Distribution Of Migrants By Type Of Migration In Gujarat, With Corresponding Distribution For The Country As A Whole, 1961,1971 And 1981 Census (Birthplace Criterion)	380
Table 7.14	Gujarat: Percentage Distribution Of Total Lifetime Migrants By Migration Stream, 1961.1971,1981	381
Table 7.15	Gujarat: A District-Wise Pattern Of Migration, 1961 & 1971 Census	382
Table 7.16	Distribution Of Total Migrants On The Basis Of Type Of Migration : Gujarat :2001	385
Table 7.17	District-Wise Distribution Of Migrants As A Percentage Of The Total Migrants In Each Migrant Type Of Gujarat– 2001	387
Table 7.18	District-Wise Distribution Of Total Migrants As A Percentage Of The Total Population Of The District On The Basis Of Type Of Migration – 2001	388

Table 7.19	Inter-District Migration Rates According To The Birth Place Criterion, 1971	389
Table 7.20	Ranking Of Districts Based On Their Share Among Migrant Of Specified Category, 1971	390
Table 7.21	District-Wise Average Decadal Variation In Percentage Of Migrants To Total Population Of Gujarat-1971-2001	391
Table 7.22	Migration By Place Of Last Residence With Reasons (Excluding Jammu & Kashmir)	392
Table 7.23	Migration By Place Of Last Residence With Reasons (Excluding Jammu & Kashmir)	393
Table 7.24	Total Migrants By Place Of Last Residence Under Different Migration Types : Gujarat -2001	394
Table 7.25	Migrants By Place Of Last Residence By Different Migration Types For Work/Employment As Reason : Gujarat -2001	395
Table 7.26	Migrants By Place Of Last Residence By Different Migration Types For Business As Reason : Gujarat -2001:	396
Table 7.27	Migrants By Place Of Last Residence By Different Migration Types For Education As Reason : Gujarat -2001	397
Table 7.28	Migrants By Place Of Last Residence By Different Migration Types For Marriage As Reason : Gujarat -2001	398
Table 7.29	Migrants By Place Of Last Residence By Different Migration Types For Moved After Birth As Reason : Gujarat -2001	399
Table 7.30	Migrants By Place Of Last Residence By Different Migration Types For Moved With Households As Reason : Gujarat -2001	400
Table 7.31	Migrants By Place Of Last Residence By Different Migration Types For Other Reasons : Gujarat – 2001	401

Table 7.32	Migrants For Different Reasons With Migration Type : Gujarat – 2001 (In '000)	402
Table 7.33	Variation In Migration Profile Between 1991 – 2001 For The State Of Gujarat Based On Migrants By Last Residence (Duration 0-9 Years)	403
Table 8.1	Provisional Estimate Of Birth Rate, Death Rate, Natural Growth Rate And Infant Mortality Rate – 2001	430
Table 8.2	Provisional Estimate Of Rural-Urban Distribution Of Birth Rate, Death Rate, Natural Growth Rate And Infant Mortality Rate – 2001	432
Table 8.3	Mean Number Of Children Per Women In Age-Group 45 - 49 Years And Percentage Change During 1991-2001: India	434
Table 8.4	Total Fertility Rates By Residence And Social Group-India ; 2001	435
Table 8.5	State-Wise Data Regarding Relationship Of Different Variables With Birth Rate Of 14 Major States In India	436
Table 8.6	Correlation Chart Of Table 8.5	439
Table 8.7	State-Wise Data Regarding Relationship Of Different Variables With Total Fertility Rate Of Some Selected States In India	440
Table 8.8	Correlation Chart Of Table 8.	443
Table 8.9	Correlation Matrix Fertility Model	444
Table 8.10	Schematic Chart	445
Table 8.11	General And Total Fertility Rates And Gross Reproduction Rate For Selected Years, Gujarat And India	446
Table 8.12	Age -Specific Fertility Rate In Gujarat And India	447
Table 8.13	Age -Specific Fertility Rate In Gujarat: Rural-Urban	447
Table 8.14	Number Of Women And Ever Married Women By Present Age, Religion, Total Children Ever Born	448

By Sex: Gujarat – 2001

Table 8.15	Number Of Women And Ever Married Women By Present Educational Level And Total Children Ever Born By Sex:2001-Gujarat	449
Table 8.16	Number Of Women And Ever Married Women By Present And Total Children Ever Born By Sex : Gujarat : 2001	450
Table 8.17	Number Of Women And Currently Married Women By Sex And Number Of Births Last Year	452
Table 8.18	Crude Birth Rate And Different Factors Influencing Fertility Gujarat 2001	454
Table 8.19	Correlation Chart Of Table 8.18	458
Table 8.20	Correlation Matrix Birth Rate Model : Gujarat	459
Table 9.1	Birth, Death And Infant Mortality Rates And Mean Age At Marriage For 14 Major States Of India-2001	487
Table 9.2	Provisional Estimate Of Rural-Urban Distribution Of Death Rate, Natural Growth Rate And Infant Mortality Rate – 2001	488
Table 9.3	Infant Mortality Rate For Registration In India	490
Table 9.4	Death Rate Of 14 Selected States In India From 1972-74 To 2001	491
Table 9.5	Trends In Mortality Level Different States: 1975-90	492
Table 9.6	Trends In Mortality Level In Rural Areas Of Different States: 1975-90	493
Table 9.7	Trends In Mortality Level In Urban Areas Of Different States: 1975-90	494
Table 9.8	Trends In Mortality Level, India: 1971-90 Live Births, Maternal Deaths, Maternal Mortality Ratio In India By State From 1999-2001 SRS Prospective Household Reports	495

Table 9.9	Live Births, Maternal Deaths, Maternal Mortality Ratio In India By State From 1999-2001 SRS Prospective Household Reports	496
Table 9.10	Age Distribution Of Maternal Deaths From 2001-03 Special Survey Of Deaths	497
Table 9.11	Causes Of Maternal Deaths From 2001-03 Special Survey Of Deaths	498
Table 9.12	Type Of Medical Attention At Birth (Institutional), 1991-2001	499
Table 9.13	Analysis Of Maternal Mortality Rate And Factors influencing MMR Of 14 Selected States In India: 2001	500
Table 9.14	Analysis Of Correlation Of Maternal Mortality Rate And Maternal Mortality Ratio Between Various Factors	501
Table 9.15	Infant Mortality Rate And Maternal Mortality Rate In India And Gujarat -2001	502
Table 9.16	Crude Death Rate In Gujarat 1901 To 2001	503
Table 9.17	Death Rate In Gujarat From 1980 To 2000	504
Table 9.18	Infant Mortality Rate In Gujarat From 1980 To 2000	505
Table 9.19	District-Wise Death Rate Of Gujarat According To Registration 1961-71 And 1971-81	506
Table 9.20	Analysis Of Maternal Mortality Rate And Factors Influencing MMR Of 14 Selected States In India: 2001	507
Table 9.21	Correlation Chart Of Table 9.20	508
Table 9.22	Correlation Matrix	509
Table 9.23	Socio-Economic Variation in MMR	510
Table 10.1	Projected Population Characteristics As On 1 st March 2001-2026 : India	541
Table 10.2	Demographic Indicators: 2001-2025 – India	542
Table 10.3	Projected Population Characteristics As On 1 st March 2001-2026 : Gujarat	543

Table 10.4	Demographic Indicators: 2001-2025 – Gujarat	544
Table 10.5	Projected Population Under The Age Group Of 0-4 By Sex : India And Gujarat	545
Table 10.6	Projected Population Under The Age Group Of 5-14 By Sex : India And Gujarat	545
Table 10.7	Projected Population Under The Age Group Of 15-24 By Sex : India And Gujarat	546
Table 10.8	Projected Population Under The Age Group Of 15-59 By Sex : India And Gujarat	546
Table 10.9	Percent Of Projected Urban Population To Total Population By Sex As On 1st March - 2001-2026: India And Gujarat	547
Table 10.10	District-Wise Population Projections	548

LIST OF GRAPHS

Graphs 4.1	Average Annual Birth Rate and Death Rate in India 1891-1900 to 2002	62
Graphs 4.2	Sex Ratio – India 1901-2001	71
Graphs 4.3	Sex Ratio of Selected Countries	72
Graphs 4.4	Rural-Urban Distribution of Sex Ratio –2001	75
Graphs 4.5	Sex Ratio 1961-2001	78
Graphs 4.6	Variation in Sex Ratio in all Ages and 0-6 Years from 1961-2001	79
Graphs 4.7	Distribution of Population on the basis of Age group : 1911 -2001	80
Graphs 4.8	Literacy in India : 1951-2001	82
Graphs 4.9	Crude Literacy Rate in India by Sex : 1901-2001	89
Graphs 4.10	Crude Birth Rate in some Selected Countries	90
Graphs 4.11	Crude Birth Rate and Crude Death Rate in some Selected Countries : 2000	91
Graphs 4.12	Crude Birth Rate and Crude Death Rate and Infant Mortality Rate Selected Countries : 2000	92
Graphs 4.13	Crude Birth Rate and Crude Death Rate in some Selected States in India: 2001	93
Graphs 4.14	Crude Birth Rate and Crude Death Rate and Infant Mortality Rate and Mean Age at Marriage (Female) in some Selected States in India : 2001	94
Graphs 5.1	Decadal Growth of Population – Gujarat : 1901-2001	164
Graphs 5.2	Sex Ratio of India and Gujarat : 1901-2001	170
Graphs-5.3	Sex Ratio – Gujarat : 1901-2001	171
Graphs-5.4	Rural-Urban Distribution of Sex Ratio – Gujarat :	172

	1901-2001	
Graphs 5.5	Literacy Rate in Gujarat: 1951-2001	178
Graphs 5.6	Total Fertility by Woman's Educational Level in India 1998-1999	181
Graphs 6.1	Percentage Increase in Urban Population: 1901-2001	244
Graphs 6.2	Share of Country's Urban Population in States	255
Graphs 6.3	Estimated Percentage Share of Natural Increase, Net Migration and Reclassification in the Decadal Urban Growth: 1961-71 to 1981-91	265
Graphs 6.4	Percentage Of Urban Population To Total Population In Gujarat 1901-2001	268
Graphs 6.5	Percentage Of Urban Population Residing In Class I Cities - Gujarat - 1901-2001	269
Graphs 6.6	Contribution Of Urban Areas to Economic Growth	276
Graphs 6.7	Exposure To Mass Media In Rural And Urban Areas 1990 (In Per Cent)	277
Graphs 7.1	Migration By Place Residence on the basis of Years In India : 2001	348
Graphs 7.2	Migration By Place Of Last Residence of Duration 0-9 years in India by Reason : 2001	349
Graphs 7.3	Migration Streams: India 1991-2001	350
Graphs 8.1	Schematic Chart	423
Graphs 9.1	Causes Of Maternal Deaths in India	476
Graphs 9.2	Death Rate In Gujarat From 1980 To 2000	481
Graphs 9.3	Infant Mortality Rate In Gujarat From 1980 To 2000	482
Graphs 10.1	Trends in Gujarat Population	520
Graphs 10.2	Trends in Decadal Variation of Population In Gujarat	521

Graphs 10.3	Trends in Density of Population in Gujarat	522
Graphs 10.4	Trends in Sex Ratio in Gujarat	523
Graphs 10.5	Trends in Sex Ratio in Rural Gujarat	524
Graphs 10.6	Trends in Sex Ratio in Urban Gujarat	525
Graphs 10.7	Trends in Literacy Rate in Gujarat	526
Graphs 10.8	Trends in Male Literacy Rate in Gujarat	527
Graphs 10.9	Trends in Female Literacy Rate in Gujarat	528
Graphs 10.10	Trends in Urbanisation in Gujarat	529
Graphs 10.11	Trends in Growth of Number of Towns in Gujarat	530
Graphs 10.12	Trends of Fertility in Gujarat	531
Graphs 10.13	Trends of Birth Rate in Gujarat	532
Graphs 10.14	Trends of Birth Rate in Rural Gujarat	533
Graphs 10.15	Trends of Birth Rate in Urban Gujarat	534
Graphs 10.16	Trends of Death Rate in Gujarat	535
Graphs 10.17	Trends of Death Rate in Rural Gujarat	536
Graphs 10.18	Trends of Death Rate in Urban Gujarat	537
Graphs 10.19	Trends of Infant Mortality Rate in Gujarat	538
Graphs 10.20	Trends of Infant Mortality Rate in Rural Gujarat	539
Graphs 10.21	Trends of Infant Mortality Rate in Urban Gujarat	540

LIST OF MAPS

Chapter 3	Gujarat Map	35
Chapter 4	Population Map of India	46
Chapter 4	Percentage Decadal Growth of Population Map India	57
Chapter 4	Population Density Map of India	64
Chapter 4	Map of Percentage of Male Children in Age 0-6 : 2001	74
Chapter 4	Map of Percentage of Female Children in Age 0-6 : 2001	77
Chapter 4	India Literacy Rate Map: 2001	81
Chapter 4	India Female Literacy Rate Map	85
Chapter 5	Population Map of Gujarat	160
Chapter 5	Sex Ratio Map of Gujarat	169

CHAPTER I

INTRODUCTION

1. The Problem

Population study always has an important place in the study of any economy because human beings are both ends and means for economic activities. Since population growth and economic development are closely related, an analytical study may put in to light many issues which are crucial to the economic and political view point. Even after 50 years of planning, problem of unemployment still persists in our economy. A notable part of population is still under the clutches of poverty. There is wide disparity between the stages of economic development of different states of our country. Compared to developed countries the literacy rate of our country is still not appreciable. Even after having done very many developmental programmes throughout 50 years of economic planning the per capita income remains still at the premature level. A high increase in population means higher rate of growth of labour force. All these issues have serious socio-economic and political implications and at the same time a matter of government policy and therefore it become imperative to have a serious analysis in this respect.

Despite of sincere efforts made by various Governments to control the population growth and consequent socio-economic and political problems and giving top priority to these issues in planning programmes, the country could not reach up to the expected level of aspiration. When population is in right number, they are asset, if not so they become a liability. Hence an analytical study in the demographic trends and the factors influencing demographic structure is necessary to give some light on these burning issues and to sort out some probable solutions.

Through this analysis, an attempt is made in this direction.

2. Scope of Enquiry

The demographic variables which influence the population growth are affected by geographical, climatic, cultural, social and economic factors and their interaction. Through this study, these variables and their influence upon population growth are discussed in an economic point of view to understand the nature and direction of casual relationship underlying population growth.

The researcher limited the scope of this study to only to the state of Gujarat as an all India level study population is too big to the problem. Further he has carried out a district-wise analysis in order to have a proper and a better understanding of micro level population trends.

3. Objectives of the Study

An extensive and sincere effort was put under this study: -

1. to know the size of population at different census years
2. to analyse the changes in density of population in each district of the state of Gujarat and the factors responsible for them
3. to analyse the population growth in each districts of the state of Gujarat in terms of size-class composition of population and structure of population
4. to understand properly the levels and trends of urbanisation and dynamics of urban population growth
5. to acquire more understanding of migration, mortality, fertility and literacy in the districts of the state
6. to analyse district-wise trends in sex-ratio and the factors responsible for it and the need for women empowerment
7. to understand the relationship and trends in urbanisation, industrial development, agriculture development, sex-ratio, literacy, education, health, women empowerment etc.

8. to analyse whether the availability of jobs, education and health to the poverty groups and women in particular will help to reduce the population growth rates through well-executed family planning programs
9. to understand the whether the prevailing caste system in the state of Gujarat influences the Sex-ratio
10. to make projections of population growth in Gujarat.

4. Need for the Study

Though the variations in the above mentioned factors are well known, the state models do not take into account the possible inter regional variations within the state or similarities between neighbouring regions across states. Policy makers often plead for data at the district or at least at the regional levels. Some studies have been conducted to understand the variation in patriarchy, development and the family welfare programme at macro and micro levels to explain the demographic diversity in India, but so far no notable study has captured the inter and intra regional variation and its interrelationship with demographic diversity in India, which appears to be important considering the vast diversity spreading across the length and breadth of the country. In most of the micro and macro level studies these “pockets” which are at odds with the overall pattern of that region, are overlooked or not captured fully.

Analysis of the census figures up to 2001 shows a downward trend in the sex-ratio in the State of Gujarat. Even after having intensive health care programmes and literacy programmes, why this defective sex-ratio prevails in Gujarat is matter of concern. This study tried to put some light on this fact.

The researcher has tried to compare the demographic trends of Gujarat with one or two of the neighbouring states like the State of Maharashtra and also compare the demographic trends in the variables like health and nutrition, fertility, sex-ratio, urbanization, sex-ratio, literacy, women empowerment etc. with the southern State of Kerala which is considered as an ideal state in terms of literacy and sex-ratio, women empowerment etc.

A number of studies have already been undertaken by various scholars and researchers on the above stated areas . Some of the titles, articles and research publications are given at the end.

5. Research Methodology

The size of population of a country is influenced by very many factors which are, at the same time, closely related to each other. Therefore a serious analysis of these relationship are very much required for the present study is concerned. Each factor which affects the population growth has to be carefully analysed with the existing social, economical and cultural set up of each district as well as from different view points. For this purpose, in this study extensive use of census data is required for an intended thorough analysis.

6. Sources of Data

The **Basic Sources of Data** for this study are:

1. Census data published by the Directorate of Census, Government of India and Directorate of Census, Government of Gujarat and some other states.
2. Records of local Government offices and journals
3. Research publications, Conference Papers and other Publications

7. Statistical Methods

The **Statistical Methods** required to be used in this study for making inter-census, inter-state and inter-district comparison and projections are (1) Rate, Ratio & Percentage (2) Averages (3) Correlation Analysis and Regression Analysis (4) Analysis of Time Series – Trend Analysis etc.

8. Time Period of Study

The present study tries to analyse the demographic trends which have been occurred over a period of 1991 to 2001 in the state of Gujarat in comparison with the national demographic trends of the same time period.

9. Limitations of this Study

The following are the main limitations of this study

1. This study is restricted to only one state of the country, viz. the State of Gujarat
2. The limitations of secondary data may affect the study
3. Non-availability of required data for some of the parameters
4. The data for entire Kutch district , Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district and Jodiya taluka of Jamnagar district are not available where the population enumeration of Census of India 2001 could not be conducted due to natural calamity. Hence for these places only estimated population figures are available.

10. Expected Contribution from the Study

Since this is a multi-dimensional study involving various aspect of demographic trends in connection with the socio-economic and cultural set up in the districts of the state of Gujarat and tries to understand nature and direction of the casual relationship underlying population growth a complete and dynamic population policy can be formulated according to the need of the time.

Unfavourable sex-ratio is one of the burning problems of the state of Gujarat. The possibility of making favourable changes in the sex-ratio through women empowerment will be analysed through this study based on which the Government can take effective measures to empower the women.

This study also analyses how far the provision job opportunities, education facilities and health facilities to the poverty groups and women in particular work as motivating factors to control the population and how far it helps for well-executed family planning programs. This analysis will provide valuable objective information to the planners which can be used to have an effective family planning program.

CHAPTER II

REVIEW OF LITERATURE

A number of studies have already been conducted in the context of demography and on various variables which control the demographic trends in different countries of the world, in India and in different states. A number of institutions have been set up in world countries which are constantly conducting researches. Many Universities and institutions offer demography or population studies as a post graduate level course. Though the present study, the researcher intend to explore recent trends on the basis of the 2001 Census figures and try to reveal some facts with respect to the demography of the State of Gujarat comparing its demographic trends to that of the country.

Population problems remain always one of the burning issues in the context of economic development of any country. A number of theories of population have been developed right from the beginning of 17th and 18th century. Views on population are not of a recent origin. Even in The Holy Bible (Old Testament), before thousands of years ago, there are some comments and views on population. Some of the theories developed during 17th and 18th century and their views on variables like urbanization, migration, fertility, mortality, income, social status etc. have relevance on present day demographic trends. B.N. Gosh (1993), in his 'Population Economics' gives theoretical background for population growth, Urbanisation, migration, fertility, mortality etc. and tries to answer what, why, how, how much, when questions on demographic variable.

During 17th and 18th Century, the then prevailed under-population in some countries like Germany and Spain induced all the states to favour increasing population. Mercantilists advocated for high population for war and increasing production. Davenant said, 'People were a real strength of a community; a dense population made inventions; it also developed industries

which brought riches to the nations. Child wrote, 'It is in multitude of people, and good laws such as cause an increase of population which principally enrich any country'. The physiocrats thought that men constituted the power of the state. According to Quesnay, population increases in the same proportion in which the revenue of the state increases. However, the physiocrats did not work out any theory of population. Some thought of the possibility of over-population, although they were not afraid of it. In course of time, anti-populationist sentiment grew in England, although England was having the opposite type of things. The anti-populationist mood produced a set of analytic propositions which came to be known in the 19th century as the Malthusian theory of population.

Only in the first decade of the 19th century, the data about population became available at regular interval. The earlier writers were ignorant of statistical facts. They simply depended on local observation. William Petty's Political Arithmetic laid the foundation of the later theory of population. Petty's Essays Concerning the Multiplication of Mankind is the standard example of the 17th century speculation about population. Hume offered reasons against Montesquieu's view that the ancient world was more populous than was western world of his time. Robert Wallace in 1753 supported factually Montesquieu's statement. Mr. W. Beil presented the theory that the development of manufacture and trade tends to produce a decrease in population. The work of R. Price suggested that population had decreased by one-fourth in England since the revolution of 1688 and that urban agglomeration was responsible for it. Hewlett pointed out that the enclosure was a consequence of the increasing population and was a cause of some improvements in agriculture.

The Malthusian theory of population was developed from the brain of Botero of 1589: populations tend to increase, beyond any assignable limit, to the full extent made possible by human fecundity— the means of subsistence are definitely limited, and will impose a limit to the excessive growth of population. The work of Botero was the only performance in the whole history of the theory of

population to deserve all credit. Malthus really did no more than repeat the work of Bolero. The law of geometric progression was suggested by Felly's Essays Concerning the Multiplication of Mankind (1686). Among other, Franklin Mirabeau stated that population will always increase to the limit set by the supply of means of subsistence. Mirabeau particularly pointed out: men will multiply to the limits of subsistence like rats in a barn. Bolero associated the increase of population with the actual or potential misery. Bolero was as pessimist as Malthus was. The fact that the pressure of population was actually present around 1750 and is in ever present phenomenon, was presented by Quesnay. Quesnay pointed out that over-population was due to poverty.

Adam Smith summed up the position of population theory up to his lime thus: every species of animals naturally multiplies in proportion to the means of iheir subsistence and no species can ever multiply beyond it. Smith observed that the mark of prosperity of any country is the increase of the number of its inhabitants. Baccaria pointed out that increase in population was not always a blessing, nor was, it something lo be afraid of always, Genovesi observed that a given population may either be too small or too great in the sense that increase or decrease would produce greater happiness. Genovesi's idea was the starting point of the modern optimum theory of production.

Thereafter different views have been given by many economic thinkers. Thomas Robert Malthus, 'Population grows in geometric progression while food production in arithmetic progression'. Prof. Sidwick, Dalton and Robbins connected size of population with production of wealth through Optimum Theory Carr Saunder's optimum population is the number which gives the highest average return per head.

In Natural Theories of Population, M.T. Sadler's Density and Fecundity Theory says that the growth of population stops at a point where maximum happiness is attained. Doubleday's Theory of Diet states that the increase in

population is inversely related to food supply. The greater the food supply, the slower would be the rate of growth of population. When food supply is sufficient, fertility decreases, when food is scarce, fertility increases. Herbert Spencer is of a different opinion. In his Biological theory he points out that as the complexity of life increases, a reduction in fecundity takes place. Gini points out that different rates of increase in different classes or groups of the population may change the biological features of population. Castro's theory of protein consumption points out that fertility has a negative relationship with protein consumption. Fertility increases if less protein is consumed and vice versa. Kuczynsky's Theory of Net Reproduction Rate pointed out that the growth rate of population does not depend on the difference between birth rate and death rate, but on the number of women of the child-bearing age. Raymond Pearl's Logistic Theory of population states, 'Population wanes and waxes, rises and falls and increases rapidly or slowly but on the whole it is rising'.

Yet in another school of thought of population – The Socio-Cultural Theories – Karl Marx states the theory of Surplus Population. According to him, every particular mode of production has its own special law of population which is historically valid within its limit alone. Increase in population in a country is not due to the increase in fertility rate, but it is due to the capitalistic economic system. Dumont's Theory of Social Capillarity According to this theory there is an inverse relationship between birth rate and social capillarity. Uncivilized people have a higher birth rate, and civilized people have a lower birth rate. Henry George's Social Maladjustment Theory points out that 'Law of population accords with and is subordinate to the law of intellectual developments and any danger that human beings may have brought into the world where they cannot be provided for, arises not from the ordinances of nature but from the social maladjustments that in the midst of wealth condemn men to want.' F.S. Nitti's Principle of Individuality proclaims that population growth is not always bad; civilization has become progressive due to population growth. Ungern-Sternberg's Theory of Rationalism points out that fertility rate is not merely influenced by biological

factors, but it is also influenced, to a significant extent, by the psychological factor. It is not necessary that fertility rate would be lower in town or city areas. Urbanisation does not automatically reduce fertility. Sometimes fertility is found to be lower in villages as compared to towns. Fertility, in fact, depends on mental make-up and psychological attitudes. If the village people want to make progress and modernize themselves, their fertility decline. Frank Fetter's Theory of Voluntarism states that the fertilities of rich people and poor people are different in character and trend. Rich people give birth to lesser number while poor people give birth to large number of children as the cost of rearing the children in rich family is higher and in poor family it is less. L. Brento's Theory of Increasing Prosperity and Pleasure points that the population growth is less in richer sections than that of the poor. The reason is that rich people have many alternative means to pleasure and recreation while the poor people do not have alternative means of getting pleasure excepting sex. Arthur T. Hadley's Intelligence, Prudence and Comforts Theory has found a correlation between happy life and low birth rate. Prudent people can enjoy a happy life, and they practice family planning.

The next set is Economic Theories of Population. Leibenstein's Economic Theory of Population points out that any factor that increases income, will at first increase the rate growth of population. But population growth in turn will reduce per capita income, which depresses the induced rate of population growth. Gary Becker's Economic Analysis of Fertility claims that the demand for children is dependent on the potential income of the family and the price or cost of child. The higher the cost of children, the lower would be their demand, and the higher the income of the parents, the higher would be the demand for children. Richard Easterlin's Relative Income Hypothesis of Fertility maintains that fertility behaviour is influenced by the interplay between the aspirations of the parents and the resources to satisfy their aspirations. It is not the absolute income but the income relative to aspirations is mainly responsible for a particular type of fertility behaviour.

The relevance of the views as found in the theories of 17th and 18th century can be seen in 19th and 20th century population analysis of many economists. S. Rajaram (2000), in his work of 'Fertility and Child Mortality in India: A District Level Analysis Using Simultaneous Equations' utilises simultaneous equations for examining the demographic divergence in India by using district level data from 1991 Census of India and various other sources. Particular attention is paid to female literacy, female age at marriage, family planning, availability of health services, urbanization, economic structure and other related socio-economic variables. His analysis confines to 384 districts in India for which detailed information is available from the census and other sources. He has quoted views and opinions of many 20th century thinkers on various demographic variables in his study. Some of those views are quoted below in next few paragraphs which help us to establish the similarity of ancient thought on population to the current thinking.

- In the theories of fertility, economists, utilizing various economic concepts, viewed fertility performance simply "as economic behaviour" with the exclusion of well known sociological importance of reproductive behaviour, is has apparently led Easterlin (1975, 1985 with Crimmins) to propose a frame work combining sociology and economics of human fertility. Easterlin's approach is a recognition it although the process of child bearing is biological in nature, it is affected by social, rural and economic factors. Earlier Davis and Blake (1956) have deliberated convincingly it socio-economic variables could not have a direct effect on fertility, rather socio-economic effects had to operate through other variables which they termed "intermediate"— ranging from permanent celibacy to contraception, and induced abortion. Subsequently, Bongaarts (1978) argued that among other intermediate variables, the four most important proximate variables are marriage, postpartum infecundability due to variations in breastfeeding, contraception, and induced abortion. The aggregate analysis of Bongaarts (1982) though has further reinforced the

importance of these four proximate variables, is not methodologically appropriate in certain respects (Wilmsen. 1986).

- Female mean age at marriage and couple protection rate due to sterilization are the proximate variables used in the present analysis. In the Indian society where the birth occurs within wedlock and thus the timing of marriage has a direct influence on fertility. The age at marriage has a biological component too, as Jain (1969) and James (1973) have suggested that mean marital fecundability increases upto the age 22 year after which it shows a decline—and plays a crucial intervening role in the explanation of differences in average risk of conception among women. Female age at marriage is regarded as a powerful indicator of status of women, with early marrying population characterised by low female autonomy (Mason, 1984).
- The levels of child mortality also has been found to have influence the fertility levels. There are behavioural and physiological effects which link the death of a child. The death of a child may elicit a desire to have another one soon. In populations where breastfeeding is practised widely, a biological phenomenon reinforces this influence. It is well documented that breastfeeding prolongs the sterile period following child death. By interrupting breastfeeding, the death of a young child leads to moving forward the arrival of the next. However, fertility levels may also influence child mortality levels.
- Several research studies have identified that among the factors basic education— especially female education—is one of the most powerful. Several reasons have been advanced for the influence of female education on fertility and child mortality. Usually, a negative relationship is found between female education and these demographic outcomes. It is generally believed that education of women may affect child spacing

pattern because education facilitates the acquisition of information about family planning, and encourages attempts to control child bearing. It has been established that relatively large and significant rates of childlessness are found among ever-married women with higher levels of education (Jacobson et al, 1988). Educational attainment is increasingly important to women as a means of achieving financial independence, enhanced social status and great personal freedom. Specifically, educational attainment may be increasingly important in determining the timing of motherhood as it affects the attitude towards marriage and more educated women are presumably better able to assess the advantages and disadvantages of rapid child bearing. Psychologically, education may further facilitate the fulfillment of individual aspirations with development of a heightened sense of personal efficacy in matters pertaining to family and child bearing. Biologically, educated women are often associated with lower prevalence of disease affecting fecundability with better health and nutrition. Coital frequency may also vary by education but the relationship is not clear. Namboodiri (1974) has shown that at lower parities, very little influence is apparent for mothers education and at parities higher than three, the higher the mother's education the greater the pull towards no more births. Similarly, educated women are more frequently members of labour force and begin child bearing later than theirs, these factors results in an over all lower level of child bearing (Hoem and Hoem,1989).

- Occupational prestige, which is an important consequence of education, has been found to be related to fertility. Potential causal linkages between work and fertility elude the incompatibility of child-care and work, exposure to different attitude towards women's role and greater access to information particularly concerning family planning, is a premise that in order to combine child bearing with employment, women increasingly space their births. There are two competing hypotheses: one contends that women lengthen their birth intervals in order to minimize interruption to their

careers, the other suggests that they reduce their child spacing in order to minimize the time spent outside the labour force. Work is not likely to displace births of lower order together, but that is the main factor in the postponement of births of third or higher orders.

- It is also evident from different studies that the demographic outcomes vary between different social groups. A religion of some kind is constitutive of people's reproductive behaviour as a form of religious practice. In India majority of Hindus are found to be 'observing sexual abstinence during certain occasions such as religious festivals, new moon days and full moon days (Samuel, 1971). In India, it is believed that Muslims have higher fertility due to minority status, illiteracy and religious practice. The significance of other social groups namely "scheduled caste and tribe" population is also of particular interest for studying the regional variations in these demographic outcomes in India. This section of the population is considered to be socially and economically backward and has a higher proportion of such population likely to affect the demographic outcomes.
- The advocates of demographic transition theory considered urbanization as an essential pre-requisite for fertility decline. As a result of development the urban population benefit from improved health services and have an increased knowledge and accessibility to family planning programmes. Also, urban areas are associated with better education and employment opportunities for women. So a higher proportion of urban population is thought to influence the demographic outcomes.
- However, in the rural areas the availability of medical facilities tends to increase the knowledge and accessibility of family planning programmes and thus influence fertility levels. Thus the proportion of villages having medical facilities is also an important variable in explaining the regional variations in fertility.

- The percentage of agricultural labourer to total working population is considered be a measure of development and thus thought to influence the demographic outcomes. However the influence of this variable on fertility and child mortality is not well established.

The selection of variables which are analyzed in this study is based on a review of previous search that has been conducted using data from various countries.

According to United Nations (1987) development is " a multi- dimensional phenomenon, which includes level of economic production, education, provision of health services, status of women, nutritional status of population, quality of housing, distributions of goods and services, transport system and access to communication network", and numerous studies have attempted to examine the relationship of social, economic and cultural factors with the population.

Several micro and macro level studies have appraised that demographic transition is a by-product of economic development. However, scholars have all along differed in opinion on the decline in fertility and as well as on the impact of its determinants, and no single theoretical model has yet been developed which captures all aspects of fertility behaviour. Empirical research conducted in developing countries has suggested that the key variables that explain variations in fertility at the aggregate or individual level are education and labour force participation of women, marital patterns, the fertility reducing Feet of prolonged breastfeeding, the link between high mortality and high fertility and impact of a population's age structure on birth rates. Some researchers argue that; transition in fertility patterns has been widely linked with socio-economic development and the process of industrialization.

Dr. B.H.Joshi had conducted a similar research on Gujarat's Population Growth. He has used district wise data for his study and analysed various variable like sex-ratio, literacy, urbanisation, Migration, fertility, mortality etc. taking 1991 census data for analysis. He has developed models on urbanisation, fertility, mortality correlating these demographic variables to the factors affecting them positively and negatively.

Similar study had been conducted by M.K.Jain, Ninati Ghosh and Won Bae Kim on trends in urbanisation in India in their book titled 'Emerging Trends of Urbanisation based upon 1991 Census figures'. Elaborate study has been done by them on multi-various aspects of urbanisation in India on the basis of 1991 census figures.

'The End of World Population in the 21st Century' - Wolfgang Lutz, Warren C.S & Sergei Scherbov,(2004)- deals with the anticipated population trends of the 21st century in a comprehensive manner. It highlights the population dimension that matters most in the context of sustainable development, namely, human capital, which is usually approximated here by level of education. 1.1 also attempts to combine methodological innovations (in probabilistic forecasting, multi-state projections, and dynamic modeling) with a locus on the most relevant population-related challenges of the century ahead. New forecasts of world and regional populations are presented here and are combined with an outlook for future human capital in different parts of the world. The picture is complemented by a series of more specific chapters that deal with the key elements of population change in (the context of sustainable development, which include studies on the

- interactions between population growth, education, and food security in Ethiopia;
- interactions between HIV prevalence and education in Botswana:

- interactions between urbanisation and education in China's population outlook; and
- the impact of population trends on greenhouse-gas emissions and climate change.

R. Scott Moreland (1984) in 'Population, Development and Income Distribution – A modeling Approach' , attempts to develop simulating economic-demographic relationships through economic-demographic models for different demographic variables like fertility, mortality, migration etc. Judah Matras (1977) made a comprehensive study on various aspects of fertility trends and differentials, mortality, individual and community consequences of migration, the impact of population changes on social systems etc. in his book 'Introduction to Population – A Sociological Approach' . One of the specifying factor of social structure is the composition of population with respect to social roles and to subsystems of social roles.

Asoka Bandarage (1997), in 'Women, Population and Global Crisis – A Political-Economic Analysis' author develops an alternative analysis of 'overpopulation' - exploring the roots of the environmental crisis, violence and inequality en route.' Critiquing capitalism, industrialism, patriarchy and white supremacy, she shows how population control acts as another dimension of our essentially hierarchical world order — and one that is moving us inexorably towards violence and destruction. She explores new global visions and efforts towards peace, justice and ecology – efforts that place human and planetary reproduction above economic production. Arguing for a new partnership paradigm which stresses the interconnectedness of life, the book's political significance lies in the synthesis of third world, feminist, socialist and ecological thinking and solutions.

Julian L. Simon (1986), says a faster growing population implies a larger proportion of children, which means that a larger proportion of the population is

too young to work. This smaller proportion of workers must mean a smaller output per capita, all else being equal. Therefore, the effect of sheer numbers of people, and the age distribution that occurs in the process of getting to the higher numbers, both work in the same direction, causing a smaller per capita product. When one also takes women's labour into account, the effect of having a higher proportion of children is even greater. The more children that are born per woman, the less chance she has to work outside the home. There is a counterbalancing effect from the father's work, however; a wide variety of studies show that an additional child causes fathers to work additional hours, the equivalent of two to six extra weeks of work a year. The main corpus of growth theory with respect to population growth can fairly be summarized as a no-complications dynamization of Malthus' capital dilution with a simple conclusion: more people imply lower income. He has found the same line of thought is found both in works on population growth such as those of Phelps (1972) or Pitchford (1974), as well as in such general studies of growth as those of Solow (1970), Brems (1973) and Dixit (1976). Indeed, none mention any models of endogenous technical progress. The only exception I have found is Wan (1973), who discusses Arrow's and Phelps's models of endogenous technical progress, but does not connect them to population growth. Furthermore, it is amply clear that this main stream of growth theory has had influence on the policies of nations and on public opinion; the former is well documented in Piotrow (1973).

Purujit Praharaj (2003), in 'Trend in work participation Rates: A Comparative Study of Punjab, Gujarat and Orissa' have developed a correlation matrix for the state of Gujarat establishing the relationship between work participation rate, literacy, sex ratio, density, percentage of child population below 6 years and percentage of urban population to total population.

P. Singha, (1975) in his work on 'Infant Mortality and the Level of Fertility in India: A Review' , views the relationship between the fertility and infant mortality in socio-psychological context in which decline in infant mortality is

regarded as one of the factors responsible for creating a climate favourable to the development of family limitation. It is argued that survival of children would be an incentive for the practice of family planning in order to avoid heavier economic burden with the increased number of children. On the contrary, the prevailing high infant mortality fosters a feeling of insecurity of life at early age in which more births are favoured to make up the loss. In his work he has mentioned about the report of the Special Committee for review of Maternity and Child Health Welfare Work in India and its observation that during 1932-36 prematurity, malnutrition, high maternal mortality were the causes for high mortality in neo-natal period, whereas the respiratory diseases were the leading causes in post neo-natal period. He has also mentioned about Dasgupta's (1951) analysis of infant deaths in Bombay which threw up the same conclusions for 1946-48 and observations of Rao (1972) who analyzed by age and cause infant deaths registered in the city of Madras during 1964. His observations did not deviate from those of the above Special Committee. He found that the infantile debility, malnutrition and premature births accounted for the largest number of deaths during neo-natal period and the respiratory diseases in the post neo-natal. Likewise, Chandrasekhar pronounced immaturity, congenital malformation and respiratory diseases as the major causes of infant deaths in India. He contends that "the basic causes of excess of infant mortality in India are poor nutritional status of infants and their over exposure to the large doses of pathogenic and micro-organism and the community's excessive fertility."

Ali Ahmed Howlader, M. Kabir and Md. Monir Uddin Bhuiyan (1999) in their article, 'Health-Seeking Behavior of Mothers and Factors Affecting Infant and Child Mortality' revealed that the variables which have significant influence on child mortality are level of education of the mothers, antenatal care, survival status of the previous child, sex of the child, immunization, age at birth of the mothers, birth order and birth interval. The coefficients indicate that if the previous child is died then it increases the risk of death by almost six times compared to those mothers who experienced no death of their children.

The importance maternal education has been reinstated by them by mentioning in their article the analysis made by Caldwell and Reddy (1983) who found that maternal education is an important determinant of child survival. They mentioned that it is related to the greater role of an educated mother in family decision-making about allocation of resources, distribution of food among its members and recourse to modern medicine despite traditional beliefs about procreation and the causes of illness and their treatment. Education may affect access to health facilities at the community level, thereby improve the health of children of educated as well as uneducated mothers in the communities where literacy level is high (Kabir et al, 1993). Caldwell (1979) demonstrated that mother's education was a more decisive determinant of child survival than other family characteristics such as husband's occupation and education.

Jain's (1985) research in rural India identifies that mother's education as an important determinant of the use of medical services, together with the availability of those services. The effect of maternal education may increase with the age of child (Caldwell and P. Caldwell, 1993).

Female education is expected to have a negative relation with fertility due to multiple reasons. First, educated women are more likely to voice resentment against the repeated burden of pregnancies because they have other sources of prestige and fulfillment than reproductive performance, more control over household resources and personal behaviour, and greater involvement in reproductive decisions (Dyson and Moore, 1983). Second, educated women are less dependent on their sons for old age security and social status, which may lead to some reduction in desired family size. Third, such women have higher aspiration for their children and lower expectations from them (UN, 1993). Fourth, opportunity cost is higher for educated women, which creates problems in time intensive activities such as child bearing and rearing (Becker, 1960; Olsen, 1994). Again maternal education reduces infant and child mortality which means educated mothers need to plan fewer births in order to achieve desired family

size and they can do this efficiently when they have better knowledge about modern contraceptives. There are arguments in the opposite direction also. For instance, maternal education is often associated with reduced duration of breast-feeding which lowers post-partum amenorrhea. But such kinds of relationships are not likely to dominate the negative relationship between fertility and female education.

Subhra Dutta, (2003) in the paper 'Development, Patriarchy and Demographic Diversity in India: A Study of North-South Dichotomy', correlates female literacy, woman's status with fertility and infant mortality. A number of studies have been conducted on female inequality and her status and its consequences in the society. This paper discusses in greater detail the cause and consequences of female inequality in society in tune with the previous studies. As stated in the paper

- Demographers have used a variety of terms more or less synonymously including "status of women", "Female autonomy" (Dixon 1978, Dyson and Moore 1983), "Patriarchy" (Cain et al 1978), "Sex stratification" (Safilious- Rothschild, 1980), "Women's rights"(Dixon 1975) and "Men's situational advantage" (Caldwell 1985). All of these definitions implicitly refer to gender inequality or status of women vis a vis men, holding all other factors constant (Mason, 1978). Similarly female autonomy usually refers to the extent to which women's are free of men's control and so on. Autonomy has been variously defined as "the ability... to obtain information and to use it as the basis for making decisions about one's private concerns and those of one's intimates" (Dyson and Moore 1983: 45); and the degree of women's access to (and control over) material resources (including food, income, land and other forms of wealth), and to social resources (including knowledge, power and practice) within the family, in the community and in the society at large" (Dixon 1978: 6). Jeejebhoy and Sathar has defined autonomy as " the control women have over their own lives, the extent to which they have an equal voice

with their husband's in matters affecting themselves and their families, control over families, control over material and other resources, access to knowledge and information, the authority to make independent decisions, freedom from constraints on physical mobility and the ability to forge equitable power relationships within families". There is considerable evidence of regional differences in the status of women in India, female powerlessness is much more acute in north India than in south India (Karve 1965, Atlekar 1962). Women in the north have relatively little autonomy or freedom of movement, limited inheritance rights in practice, and limited opportunities for control over economic resources. After marriage a young woman is expected to remain largely invisible to outsiders and under the authority of her husband's family. She has little say in domestic decisions and little freedom of movement. The only means by which a woman can enhance her prestige and security in her husband's home is through her fertility and particularly the number of sons she bears. The situation in Punjab is similar and well documented (Sathar and Kazi 2000). In contrast women in south India have more autonomy in all of these respects: they have greater decision making authority, are less secluded and more likely to work outside the home and control resources, and are less likely to perceive sons as their only source of prestige. Gender preference for children is widely prevalent in societies of south, east and west Asia and North Africa and Middle East (Arnold, 1996,97; Cleland, Verall and Vaessen 1983; UN, 1981,85; Williamson 1976). A number of studies have documented a preference for sons in Indian society and the degree of this preference is very strong in the northern, north central and western regions of India (Lahiri, 1974; Bhatia, 1978; Das, 1987; Mutharayappa et al. 1997; Arnold et al. 1998). Son preference is supported in some societies by expressions such as:

a) Bringing up a daughter is watering your neighbour's garden.

- b) A woman has to depend upon her father before her marriage, upon her husband during her married life and upon her son in widowhood.
 - c) Even the beams of the house shed tears when a girl is born.
- Children of a particular sex are often desired because they provide certain utilities or minimize various financial costs. Parent's preference for sons may have a significant impact on children's welfare and may affect demographic behaviour as well. India being so diverse physically, economically and culturally, large differentials in the degree of son preference and in demographic behaviour have been noted among the Indian regions (Arnold, Choe and Roy 1996). Previous studies have shown that a number of cultural, social economic factors influence the relative benefits and costs of sons and daughters and ultimately choice of gender preferences of the parents (Arnold et al. 1975; Bulatao 1981; Espanshade 1977; Friedman Hechter and Kanazawa 1994; C. Vlasoff 1990; M Nlasoff 1979).
- The relative survival of sons and daughters is a good indicator of gender discrimination in access to the right to live (Kishore, 1993). As a result of the social and economic advantages attached to sons, gender discrimination in nutrition and healthcare manifests itself in higher female than male child mortality (Miller, 1981; Basu, 1989). The preference for sons and the advantages attached to them also result in discrimination against the daughters who do survive. Such discrimination affects women's access to social resources such as education. Fertility is expected to be higher in areas where gender discrimination is more because women are less likely to be innovative and assertive in reproductive control due to their lack of resources, and also in those areas daughters are likely to be married earlier and thus start child bearing sooner (Malhotra et. al 1995).

Debarati Sarkar, (2006) in the paper 'The Relationship Between Fertility and Socio-Economic Development in Selected States of India', revealed that Fertility decline is not just a by-product of economic growth, it depends on improvement in the specific conditions that are conducive to change the fertility and that help parents to realize these goals. Similarly, the negative relationship between fertility and female work participation rate indicates the requirement of programmes that controls the condition of labour force market. The message seems to be quite surprising ,but it is important to note that variables related to status of women have a significant influence on fertility

Nag (1980) has described modernization and fertility is well sphere in population dynamics. He has pointed out modernization, spread of education, improvement in health and nutrition the emergence of secular norms and beliefs can reduce fertility. More specifically the reduction in mortality has been measured as leading agents in the rising natural fertility in several populations (Chandrasekaran, 1955; Srinivasan and Jejeebhoy, 1980; Nag, 1985; Srinivasan et. al., 1985; Easterlin, 1985).Cain (1983) has shown the onset of fertility transition and land use pattern indicates a clear correlation.

Khan (1991) has observed that urban areas accommodate the centers for educational, employment, transportation, better health services is seen as a silent features of fertility reduction. According to Dreze and Murthi in India female education can tune fertility levels and trends at distinct stages:

(1) Desired family size, (2) the relationship between desired family size and planned numbers of births, and (3) women's ability to achieve the planned number of births and other stages which indicates, the ability of educated women to translate their inspiration into reality.

In another studies P.N Mari Bhat and A J Francis Xavier(1995) had shown that the religious disparities has also plays an important role in decline or

increasing fertility means high fertility rate in the Muslim population compare to the Hindu population.

K. Krishnamoorthy (2006) asserts that education particularly woman's education spreads its light to the household and to the country. The level of economic production is likely to be higher , other things being equal, in a society where women are able to engage in a diverse range of activities compared with that in a society where their life is confined to domestic work. Economic independency is certainly an indispensable move towards achieving women empowerment. An employed women put in more than twice as much as an employed man. Therefore an effective social reform movement does need the help of law and a sympathetic judiciary to achieve the objective of equality to woman in the society.

Bikrama Singh and Nipender Kumar, (2006), argues for women empowerment by means of education, literacy or modest income-generating projects is clearly insufficient to ameliorate the prospects for a higher quality of life for women. Empowerment is process rather than an end point. The process should continue.

Biswajit Guha, (2006), explains the inter-state disparity in human development and gender related development. He concludes that the process of economic development in a country must accompany such a process of social transformation that is free from vices of serfdom, feudalism, religious fundamentalism, social conservatism and different other constraints of development . These processes can only ensure a consistently higher degree of gender-related development and thus a substantial reduction of gender disparity as far as practicable.

S.K.Mishra and P.K.Pandey, (2006), has made an analysis of correlating index of economic development of the state with woman's economic status

index, woman's social status index, woman's Health status index, Equal treatment to female child index and gross gender development index. Ha has arrived at the following conclusions:

(a) Currently married women have been benefited by the economic upliftment of the state concerned and economic upliftment of the state does not ensure equality in treatment to female children.

(b) The inequality in treatment to female children is more attributed to northern and western states and less to southern and eastern states of the country, irrespective of their economic status. It may be an outcome of patriarchic cultural context in northern and western states.

(c) The observation that reduction in poverty ratio improves child sex ratio reveals that female children are worst hit by the poverty of the state

(d) Female work force participation is not essentially culture contextualized but it may also be related to availability of institutional finance.

Md. Abdus Salam and Navendu Shekhar, (2006), has made a study of the major states of India in terms of gender gap in literacy and found that the gender disparity in literacy rate reveals widely differing trends. These trends conclude that with the greater increase in the literacy rate of females, the gender gap is fairly large since the number of non-literate females is greater than that of non-literate males.

Mrinal Kumar Dasgupta and Tathagata Dasgupta, (2006), has compared the human development index of some states in India and asserts that the social attitude and political turmoil often bring difficulties in achieving the target of improving human development index. Thus along with economic factors if those states try to remove the barrier of non-economic factors, the disparity may be reduced substantially.

Dalip Kumar and Surendar Kumar, (2006) have analysed education and health status of India and its emerging trends and issues and have concluded

that even after 60 years of thorough there is not heartening decrease in birth rate, death rate and infant mortality rate in the country. Still India remains as land of largest number illiterates. They have given some suggestions for improving further the health and education status of the country.

A number of studies have been carried out with respect to women empowerment highlighting the need for removing the gender disparity both in demographic and economic points of view. This itself reveals its importance. I. Sobha (2001) and B.S. Padmanabhan (2001) about women's position and empowerment through agriculture, Bharat Dogra (2002) about the need to organise the women Farm Workers, Sakuntala Narasimhan (2000), Harjeet Ahluwalia (2000) and C.Jayanti (2001) on the need for empowering women , Biplap Moitra (2001) about need for developing women entrepreneurs, Mohsin Ali Khan (2001) on the limitations of present female education, K.Sekhar & B.S. Vasudeva Rao (2001) gives another way for empowering women through Distance Education, Madhu R. Sekhar (2001) about the necessity of female education for opening the window on to the world, M.S. Malik (2001) reveals some fact in the with respect to human resource development in the context of globalisation,. Najma Heptulla (2000) reinstates the role of women in population stabilisation programmes of the country. B.K.Pattnaik (1995-96) argues that the social development can be achieved through woman welfare programmes.

In the filed of developing rural sector T.V.Satyanarayanan, (2001), explains the need for technology transfer for transformation of rural sector , C. Jayanti, (2002), has wrote on rural education and rural reconstruction.

Daljit Singh Bedi and Satyanarayana Pattnaik, (1998), in their article 'An Innovative Scheme for Population Control', explains the RCH (Reproductive Child Health) programme as a better device for controlling population growth. Shekhar Mukherji, (2000), in their 'Syndrome of Poverty and Fertility' argues that the alleviation of people's basic living condition and poverty eradication must precede all other efforts for the improvement of their

reproductive health. Without the fulfilment of the former condition, the motivation of adopting the small family norm is very difficult to come by.

K. Navaneefliam (1993), in 'Mortality Decline in India: An Analysis of Regional and Temporal Variations', The study reveals a stagflation in mortality in India and the significant causes for the stagflation of mortality in the adult ages are abuse of alcohol, smoking and increase of unhygienic conditions due to poor sanitation.

Alok Rienjan (1993), observes that differential mortality transition as revealed through this analysis is the differential impact of health policies and programmes not only in different parts of the country as well as in different sub-populations but also over time. Development of health policies and programmes in India has largely been an exercise at the national level Regional bias in health policies and programmes evolution is sadly lacking. There is a need to identify the reasons behind a typical type of mortality transition observed in specific population groups and regions.

R. P. Goyal (1994) Mortality in India has continued to steadily decline over the recent past. This trend has been well engrained in all segments of the population throughout the country. Although there is an evidence of divergence from this general behaviour in some urban population segments more recently it is not indicative of any firm trend that may recast in future. In all likelihood further decline in mortality would continue to occur in near future. There is no strong evidence to suggest reversal of declining trend. In spite of significant decline, the current mortality level is still high as compared to even several less developed regions of the world. Even with in the country there are pockets where the mortality is markedly high as compared to several other areas. The pace of increase in the expectation of life at birth appears to have decreased some what more recently. However there appears nothing to suggest that a stage has come on the Indian mortality scene where no more improvement is possible.

K. Venkatacharya and H. V. Muhsam (1982), in 'The Effect of Declining Mortality on Family' asserts that the value of children to parents is only one aspect in the complex decision making process of families to limit family size and on many other aspects our knowledge is weak (Hull, 1981, Simmons, 1977). As mortality declines the dependency burden increases, the magnitude varying between families. A realistic interpretation of the model results is severely hampered until knowledge accumulates on the mechanisms underlying the perception of couples their family dependency burden and the decision making processes leading to family limitation.

Soma Chaudhury Biswas*, Ibrahim Khalilur Rahman* and Md. Abdul Maleque*(2000), in their 'Impact of Some Biosocial Variables on Infant and Child Mortality' argues that the estimates for all the age groups show that the risk of dying decreases with increasing duration of breast feeding. The early cessation of breast feeding results in a considerably higher risk of dying for child even when the influences of a number of factors on mortality including birth intervals are controlled statistically. Breast feeding appeared to be a prime factor influencing infant, second year and early childhood. It was such a crucial determinant that its influence override the next pregnancy interval and preceding birth interval, the two repeatedly discussed factors explaining infant and child mortality differentials to a large extent This analysis suggests that the effect of preceding interval on mortality is not significant in the presence of breast feeding and next pregnancy interval although have expected sign. The effect of next pregnancy interval appeared to be one of the prime factor influencing mortality at ages 12-23 months. During infancy and early childhood this variable is not significant although it maintains the decreasing trend of mortality when pregnancy interval is greater than 9 months.

Prabir C. Bhattacharya (1999), Socio-Economic Determinants of Early Childhood Mortality - A Study of Three Indian States' shows that the scheduled tribe status, a high ratio of females to males in the population, availability of safe drinking water, and increased share of urban female to the total female population are each associated with lower levels of both male and female child mortality, and increased relative survival chances of female children. Female labour-force participation is also associated with increased relative survival chances of female children, but, in this case, mainly via an increase in male child mortality.

Female literacy and availability of medical facilities, on the other hand, are associated with increased female disadvantage in child survival, though these effects are not statistically significant. These results suggest that a multi-pronged strategy would be needed to reduce child mortality and gender bias in child survival in our three states. Urbanisation and provision of safe drinking water can be expected to increase over time. The infrastructural development which do not directly affect the variables with proximate influences on child survival, such as the provision of safe drinking water and availability of medical facilities, etc., may have little or no effect in reducing child mortality. Female labour force participation can also be expected to increase over time. However, if female labour-force participation is not to lead to an increase in male child mortality, we need to understand more fully the reason why female labour force participation is associated with increased male child mortality. If, as we have suggested above, this is due to a reduction in the time available for child-care activities, then clearly help needs to be provided to working mothers. Here targeted visits by health visitors from the community health centres may be helpful. Also, so far as the provision of medical facilities are concerned, it is important to ensure that they meet the needs of female children as much as those of the male children. But, when all is said and done, the important challenge must be to bring about a change in the perception of the relative value of female children, for if this does not change, then, irrespective of the policies pursued, many parents may still find ways of discriminating against female children.

McNay, Kirsty (1995), in 'Fertility and Frailty : Demographic Change and Health and Status of Indian Women.' Asserts that The Dyson hypothesis of mortality decline is not the more optimistic of the two and the support for it found here reinforces the suspicion that the health status of Indian women may well have remained frail in the face of their mortality decline. Despite fewer household members, persistently poor female status dictates that girls and women continue to be less well fed and receive less timely medical attention than boys and men so that smaller family size alone mitigates against the grim association between longevity and poor status. For girls and women therefore, frailty may well replace early death. This assumes that the increase in the absolute share of resources allocated to girls and women within a smaller family is sufficient to exceed a threshold level at which the same level of relative discrimination within a larger family is translated into female mortality

vulnerability. More females therefore remain alive in the declining fertility regime but they are more likely to suffer from health frailty.

For expectant mothers that frailty means that the risks of pregnancy and childbirth remain high, even if confronted less frequently. These observations suggest that in addition to fertility decline safe motherhood in India requires a strengthening of the health and well-being of Indian women long before they are exposed to maternity. Pregnancy and delivery themselves will thereby become safer events so that risk per birth, in addition to the frequency of exposure to that risk, is lessened. It may be that this can be achieved only through a more fundamental change in women's social position so that the discriminatory practices, currently serving to keep maternity hazardous, disappear at last.

S. N. Singh and K. N. S. Yadava (1974) , A Study of Pattern of the Rural-Urban Migration, proposed models for studying the nature of rural-urban migration. Models are based on the number of previous migrants to the place of destination and opportunities available there and also the distance of the migratory places.

M. R. Narayana (1974) in 'Continuity of Inter-regional Migration of Workers in India: A Spatio-temporal Analysis' has developed a simple dynamic model for the purpose of estimating the determinants and spatiotemporal continuity of inter-regional migration of workers in India. The empirical implementation of the model for 1981 census data shows the importance of wage rates, regional taxes/expenditures, federal taxes/subsidies, labour market conditions, and moving costs as the major determinants of inter-regional migration of workers in India. These estimated determinants were in turn employed to obtaining a continuous spatiotemporal path of migration during 1971-74 by the econometric simulation analysis. The simulation results mainly demonstrated that the inter-regional migration of workers in India is a continuous process in time and space. However, this process is characterised by considerable variations in its magnitude, growth, and distribution between regions.

K. G. Selvaraj and P. S. S. Rao (1973) in 'Household Migration—Urbanization and Consequences' It has been highlighted in the present study that the reason to emigrate to

distances above 15 kms was for job secured. The study reminds the essentiality to alter work participation in rural areas.

P. S. Nair (1985), in the study of Inter-State Period Migration in India, 1971-81 Levels and Trends tries to reinstate the relationship between migration and distance with the help of empirical data.

Jagdish C. Bhatia and Georges Sabagh (1980) in their article 'Migration and Fertility in India' explain rural to urban migration in India is highly selective of young single persons. Explanation for the inverse relationship between rural-urban migration and rural general fertility is found in this paper. This relationship, however, is not very strong since the number of return migrants, as proportion to the total rural population, is very small. These persons try to delay their marriages and those who are married at the time of migration usually leave their families behind. This is clearly evident from the extremely lower sex ratios in the urban areas of India. These delayed marriages and husband-wife separations probably depress the fertility of the migrants. It appears that all these factors tend to lower the fertility of the rural to urban migrants to the levels considerably lower than those of urban natives so as to significantly affect the overall urban fertility rates.

They also states that rural general fertility of the states which have a higher rural-urban migration rates is also lower appears paradoxical. If the rural-urban migration in India is highly selective, then the common sense reasoning would suggest that the drift of enlightened people from rural areas should raise rather than lower the overall rural fertility levels. One of the important features of Indian migration is a very high degree of return migration. These return migrants not only have lower fertility themselves but also spread these norms in the rural areas. They usually return with new ideas, attitudes and values acquired during their stay in the cities and the people at their native place often seek their advice and listen to them with respect. Also, the other migrants who do not permanently return, maintain close kinship ties with their native place and often make visits and bring fresh ideas from the cities.

Myra Marx Ferree and Josef Gugler (1983) in their article 'The Participation of Women in the Urban Labour Force and in Rural-Urban Migration in India' recommends for women to be integrated into the urban labor force, and to realize their full potential contribution to the economy, entails an improvement in their status. The labour force participation of women both reflects their status and represents a major dimension of status. While access to earning opportunities in the city cannot be taken as equivalent to emancipation, an increase in the participation of women in the urban labour force provides a powerful incentive to redress the imbalance between the sexes in rural-urban migration. Women in cities reap the benefits of urban advantages in life expectancy and literacy, and their migration makes long-term family separation a less common problem.

Urban rural growth differential, defined as the difference between relative growth of urban population and relative growth of rural population, is the most popular measure of the tempo of urbanisation which itself is defined as the rate at which the level of urbanisation rises. P. K. Chaubey (1998) in his paper 'Factor Decomposition of Urbanisation Growth' shows that the URGD (Rural Urban Growth Differential), the most popular measure of tempo of urbanisation, is the correct measure of tempo only when the level of urbanisation is measured by urban rural ratio, not when it is measured by urban population ratio. If the level of urbanisation has to be measured by urban proportion of population, as is normally done, then URGD has to be corrected by the additive inverse of urban proportion.

Small and intermediate cities influence agricultural development and are being positively affected by agricultural development (Bhalla and Kundu 1982:67). The importance of strong agriculture sector to the vitality of small towns has also been highlighted by other studies as well. Richardson (1982:337) argues "small cities provide critical marketing and supply services to agriculture and public services to the rural population. Many of the industrial and commercial activities of the towns are linked, either on the supply or demand side with agriculture. The periodic markets that are based in towns provide a significant outlet for the output of small farmers. The informal sector generates incomes, not only for city residents, but also for circular migrants from villages and farms." "The planned and integrated development of small and medium towns and

cities along with slowing down of the growth of big metropolises" has been identified as one of the major constituents of comprehensive plan for urban development in the seventh plan. This aspect is discussed by R. P. Tyagi (1991) in 'Spatial Pattern of Urban Growth and Agricultural Development'.

Saraswati Raju (1991) concludes the article on 'Caste and Gender Disparities in Literacy in Urban India: Some Developmental Implications', stating in India, women and scheduled castes have traditionally been characterised by low rates of literacy, However, the present analysis shows the distinction to be more strongly marked between non-scheduled and scheduled castes as two different groups rather than between the male and female components of individual castes. The process of development does not seem to have any significant role in reducing this gap. However, the disparities which exist between non-scheduled and scheduled castes are less evident in regions where social reforms directed at improving the condition of scheduled castes have been important. Despite their marginality in terms of literacy attainment, the levels of female literacy are closely related to those of their male counterparts for both non-scheduled and scheduled caste women. The variation in the presence of communities which foster or hinder female education affects female literacy. Thus, women should be viewed not as a homogeneous body in contextual isolation but as a part of larger varied social realm.

Roger D. Clark (1983) examined the case of urban primacy and socio-economic development in Indian context and proved that for more developed regions, that socioeconomic development leads to declines in urban primacy.

CHAPTER - III
GUJARAT STATE – FEATURES



3.1 Introduction

This research work attempts to analyse the demographic features and changes occurred in demographic profiles of State of Gujarat in the light of 2001 Population Census. Before analysing various aspects of its demography, it is imperative to discuss the geographical features, social, economical and cultural conditions of the state.

3.2 Gujarat History

Signs of civilization in the region that is now Gujarat date back to the period from 3000 to 1500 BC. The region was part of the Mauryan Empire in the 3rd century C under King Asoka. In 1818 the British East India Company took control of Gujarat administering the state through local princely rulers. With the independence of India in 1947, Gujarat became part of the state of Bombay. In 1960 Bombay state was split up, and Gujarat was formed from the northern and western portions, which were predominantly Gujarati-speaking areas. The remainder of Bombay state became Maharashtra state. The history of Gujarat has its beginning right from Harappans appeared from Northern India to settle down, and established over a hundred towns and cities during 2500 BC. Thereafter, during 100 to 500 BC. Yadavas, Krishna's clan, held power over much of Gujarat with their capital at Dwarka. During 200 BC. Political history began with the powerful Mauryan empire by Chandragupta with its capital at Junagadh, and reached its peak under Ashoka. 100 AD witnessed the Satraps, members of the Saka tribes, gaining control over Saurashtra.

From 388 AD to foreign rulers from different part of the country and world came and established their supremacy in Various part of Gujarat like the Guptas, Maitrakas, Solanki Dynasty, Khalji etc. During 1307 AD. Muzaffar Shah's declaration of independence from Delhi marked the foundation of the Sultanate of Gujarat. The British East India Company set up original Indian headquarters in Surat in 1613 AD. During 1960 AD Bombay state was split and Gujarat state was created.

Today Gujarat's textile industry is still the largest in India, with the trading of the business-minded community helping to maintain its wealth. Indus Valley Civilization(2500-1700 BC), was the earliest known civilization of South Asia, corresponding to the Bronze Age cultures of ancient Egypt, Mesopotamia, and Crete. Harappa and Mohenjo Daro belonged to this civilization. Before the Mauryan empire took hold in the fourth century BC, the Indus Valley was the largest, well-planned and sophisticated civilization in India. The cities Mohenjo Daro and Harappa were discovered in 1920s. This society spread from the present borders of Iran and Afghanistan to Kashmir, Delhi, and Gujarat, covering an area larger than the Egyptian and Syrian dominions put together. It lasted until the heavy floods swept away the towns and villages in Sind, Saurashtra, and South Gujarat. Lothal, close to the Gulf of Cambay in South Gujarat, was a major port, and source of shells which the Harappans made into jewellery. The work of Indus Valley artisans shows a high degree of craft specialization. Characteristic handicrafts include a distinctive black-on-red pottery, ceramic toys and figurines, etched carnelian beads, metal (bronze, silver, and gold) ornaments and tools, and stamp seals with an undeciphered script. Indus Valley civilization was first defined by the British archaeologist Sir John Marshall's diggings at Mohenjo-Daro and M. S. Vat's excavations at Harappa in 1920s.

3.3 Religion

(a) Hindu:

Vedic Dharma was popular and from the remains found from the Indus valley Civilization, it is believed that worship of goddesses, Sun, Shiva, was followed. The temple of Somnath, in western coast, is one of the twelve jyotirlingas of Shiva. There is no definite record as of the origin of the temple (which is believed to have been built during Mahabharat times) but the earliest record is of the dates of 10th century. In Northern Gujarat, there is an eleventh-century Sun-Temple, at Modhera. Near Mehsana, the town of Siddhpur is known for Rudramala Temple, built in 12th century. Goddess-worship was followed in ancient times and popular amongst them are temples at Pavagarh,

Kherhbrahma and Ambaji. The oldest temple of Dwaraka has become a pilgrimage place to worship Krishna.

(b) Jain:

The Jainism is widely followed in Gujarat since years. The oldest temple is believed to be of Shankheshwar Parshwanath in North Gujarat. Taranga temples were built during the Solanki period and they are better preserved than the temples of Mount Abu, Girnar and Shatrunjay. Palitana, is India's principal Jain pilgrimage site, the temples dated 5th century.

(c) Muslim:

Through the sea-route which was open for trade, the people from Iran and Arabic countries started coming in Gujarat. The trade system was established and the Indo-Islamic culture got flourished. This is a marked feature of many Gujarati cities. The famous mosques are built during Mughul times. These include Sidi Sayyid's mosque, Jami Masjid, of Ahmedabad,, Alif Khan's mosque in Dholka, Jama Masjid of Bharuch, etc.

(d) Buddha:

About the same time as Jainism, Buddhism also got popular. There were Buddhist temples also and the remains of the same are found from all over Gujarat. Ashokan Buddhist edicts engraved on a rock are near Junagadh. These remains are of 3rd century BC.

(e) Parsi:

In 10th century, Iranian Jarthost followers came to Gujarat and got settled here first at Diu, and then at Sanjan, Udvada -in South of Gujarat. Sanjan and Udvada are today main pilgrimage places of Parsi followers.

3.4 Area

Gujarat is one of India's most industrialized states, in western India, covering an area of 196,024 sq km (75,685 sq mi). It has a fertile plain land in the south cut by several rivers, low hills in the west, and broad mudflats in the north that adjoin the Thar (Great Indian) Desert.

3.5 Geographical Location

Gujarat State is situated on the west coast of India between 20.1 and 24.7 degrees north latitude and 68.4 and 74.4 degree east longitude. The state is bounded by the Arabian Sea in the west, Pakistan in north and Rajasthan in north and east, Madhya Pradesh in the south-east and Maharashtra on south.

3.6 Geographical Regions

Gujarat has three geographical regions: (1) the peninsula, traditionally known as Saurashtra. It is a hilly tract with low mountains (2) Kutch: It is barren and rocky, Here lies the famous Rann (desert) of Kutch. The big Rann is located in the north and the little Rann in the east (3) The mainland extending from Rann of Kutch and the Aravalli hills to the river Damah Ganga is a level plain of alluvial soil

As the Tropic of Cancer passes through the northern border of Gujarat, the state experiences intense hot or cold climates. But this rigorous climatic condition is softened by the Arabian sea and Gulf of Cambay in the west and by the forest-covered hills in the east

3.7 Climate

The climate of Gujarat is varied. The northwestern part of the state is dry, with less than 500 mm (20 in) of rain a year. The average rainfall in the areas of state varies from 33 to 152 centimetres or 13 to 80 inches. In the more temperate central part of the state, the annual rainfall is more than 700 mm (28 in). In the southern part of Gujarat, rainfall averages 2000 mm (79 in) a year. In the winter

temperatures average between 12° and 27° C (between 54° and 81° F), although freezing levels have been recorded in the state. In the summer temperatures average between 25° and 43° C (77° and 109° F) and have been known to reach as high as 48° C (118° F). The climate of Gujarat in the Southern districts is moist, while the Northern districts have the dry climate nearly approaching that of Southern Rajasthan. On the basis of climate, in Gujarat, the year can be divided into four clusters, (a) the winter season from November to February, (b) the hot weather season from March to May, (c) the South-West monsoon from June to September, and (d) the transition month of October.

3.8 People

The population was 50596992 (including estimated figures of earthquake affected areas) at the 2001 census, giving it an average density of 258 persons per sq km. More than 70 percent of the population is Hindu; there are also significant minorities of Muslims and Jains in Gujarat. In 2001 more than 69.97 percent of the population was literate.

3.9 Education

Gujarat has two official languages: Gujarati, which is derived from Sanskrit, and Hindi. Several universities are located in Gujarat including Bhavnagar University (founded in 1978) in Bhavnagar, Gujarat University (1950) in Ahmedabad, Sardar Patel University (1955) in Kheda, Saurashtra University (1967) in Rajkot and Kachchh University during 2005. In all Gujarat has 17 Universities including 4 agricultural universities. The number of students enrolled during 1999-2000 in the Primary stage 61.46 lakh students, Middle stage 21.54 lakh students, Higher Secondary stage 14.86 lakh students and Higher Education stage 3.99 lakh students. During 1999-2000, Gujarat has 14789 Primary/Junior Basic Schools, 20044 Middle Senior Basic Schools, 6177 Higher Secondary Schools, 100 Professional Educational Institutions and 17 Universities.

3.10 Agriculture

Gujarat ranks first in the country in the production of cotton and groundnut and second in the production of tobacco. Cotton and groundnut have found good markets and provide a foundation for important industries like textiles, oil and soap. Other important crops of the state are isabgol, paddy, wheat and bajra. Jowar and maize are produced in limited areas. Forest species available in Gujarat are Teak, khair, Sadad, Haldario and Manual bamboos. Among livestock raised are buffalo and other cattle, sheep, and goats. Salt, manganese, limestone, and bauxite are mined. In this head, details of agricultural sector are examined.

(a) Land Utilisation

In 1991-92, Out of total reporting area of 188.2 lakh hectares in the state, 88.65 lakh hectares (47.10 percent) were under plough. During the year 1996-97, the gross cropped area was 11001000 hectares. Total cultivable area is 8865003.29 as per census 2001. Total forest area in the state is calculated as 1861200 hectares.

(b) Cropping Pattern

In the year 1999-2000, about 664400 hectare land was under rice crops, while 664400 hectares of land under Bajra and 926200 hectares under Maize.. Total area under food grain during 1999-2000 was 3416200 hectares. Land under cotton was estimated about 1539300 hectares, groundnut occupied about 1826500 hectares of land.

(c) Production

The Production of food grains during the year 1999-2000 is estimated as Rice 985 lakh tones, Wheat 10.20 lakh tones, total cereals 36.46 lakh tones and total pulses 4.06 lakh tons. In the area of non-food grain crops oilseeds 17.24 lakh tones. Sugarcane 143.09 lakh tones and Cotton 21.63 lakh tones.

(d) Irrigation

The ultimate irrigation potential through surface water as per latest estimate is placed at 64.88 lakh hectares which includes 18.45 lakh hectares irrigated through Sardar Sarovar Narmada Project. The total irrigation potential created up to June 2003 was 37.35 lakh hectares. Out of 18208 villages only 88 villages to be electrified. Installed capacity at the end of March 2003 was 17,940 MW. Total number of Pump sets energized in 1999-2000 was 670422

3.11 Industries

One of India's most industrialized states, Gujarat maintains a variety of industries. Gujarat is dominant in textile industry but the change in the industrial production base was signalled with the establishment of a refinery near Vadodara in 1960 which is also producing aviation fuel, chemicals, fertilizers, drugs, and pharmaceuticals, dye-stuffs and engineering units of multiple type have come up in the state. The state produces 60% of country's production of salt, about 90 per cent soda ash, 16 per cent caustic soda and chlorine, 1/3 of drugs and formulation, 72 per cent of azodyes and sulphur black and diesel engines. The state has the first position in the national project on bio-gas (28,000 plants in 1994-95).

The industrial structure in the State has been gradually diversifying with the development of industries like chemicals, petrochemicals, fertilizers, engineering, electronics, etc. Total number of SSI units in the state was 233777 in 1999-2000. The number of registered working factories in the State were 19,696 at the end of 2002 with the average daily employment to 8.40 lakh. The number of small scale industries units in the state was 2.83 lakh as on 30th September 2003. The provisional results of the Annual Survey of Industries 2004-05 which covers the entire registered factories, that the total number of registered units in the state of Gujarat was 27003 including 17979 operative units with 679629 workers and 9024 non-operative units. Gujarat stands second in the total number of units just behind Tamilnadu and third in the total number of

workers, being the first and second place goes to Tamilnadu and Maharashtra respectively.

A marginal increase is shown in the Employment in all factories covered under the survey inclusive of marginal, supervisory and clerical personal, increased from 6.75 lakh in 1990-91 to 6.80 lakh in 2004-05.

Gujarat Industrial Development Corporation (GIDC) has been assigned the role of developing industrial estates with infrastructure facilities. As on 31st December 2003, GIDC had set up 241 industrial estates. These include mega industrial estates at Jhagadia, Vagra and Savli. GIDC is developing a large industrial estate at Dahej.

The dairy industry has made tremendous progress in the state. There are 13 milk processing plants. There are 10 cattle feed factories producing 1500 MT of cattle feed per day to support milk production. The success of Kaira District Co-operative Milk Producers' Union has inspired other districts to replicate the pattern of dairy development popularly known as 'Anand'.

The State having 1,600 km of coastal line has as many as 40 ports, of which Kandla is major, 11 are intermediate and 28 minor ports. Kandla port handled cargo of 406.33 lakh tonnes and other ports handled 841.25 lakh tonnes during 2002-03. The total road length in the state was 73397 in 1999-2000.

On the coastal areas of Saurashtra, ship-breaking yards, have taken shape at Alang and Sachana. Besides, reservoirs have been constructed - the Sabarmati reservoir at Dharoi, and the Panam reservoir near Keldezar. Sixty eight medium irrigation projects have been completed.

Out of 18,114 villages in the state, 15,868 have been connected by pucca roads approximately 74,031 km. Total number of villages electrified was 17940 in 1999-2000. There are about 260 Industrial Estates in the State. Ankleshwar Industrial Estate is the largest petro-chemical complex in the country. Exploration and production of oil and natural gas in Ankleshwar, Cambay

and Kalol, the oil refinery at Koyali and Oil refineries of Reliance Industries and Essar Oils in Jamnagar are other industrial achievements. Reliance Group has established their supremacy in the field of telecommunication also in Gujarat. The total number of telephone connections as on January 2002 was 2652498.

Gujarat has 458 Export Oriented Units (EOU) i.e 12.41% of national level with an investment of 8356 crores (11.97%) providing employment for 88477 persons (9.15%).

3.12 Tertiary Sector

(a) Life Insurance Corporation

There are 142 branches of Life Insurance Corporation of India in Gujarat State. The Corporation insured about 7.82 lakh policies worth of Rs. 3150.30 crores in 1993-94, as against 7.47 lakh policies worth of Rs. 2762.77 crores issued in the preceding year.

(b) Banking

The number of commercial bank offices in the State is 3680 with an per capita deposit of Rs.11690.67 in 2001-02.

(c) Health

In all Gujarat has 1.94 primary health centers per lakh population.

3.13 Political Gujarat

The state capital is Gandhinagar. The state has a single-chamber legislative assembly with 182 members. The state sends 37 members to the Indian national Parliament: 11 to the Rajya Sabha (Upper House) and 26 to the Lok Sabha (Lower House). Local government is based on 25 administrative districts.

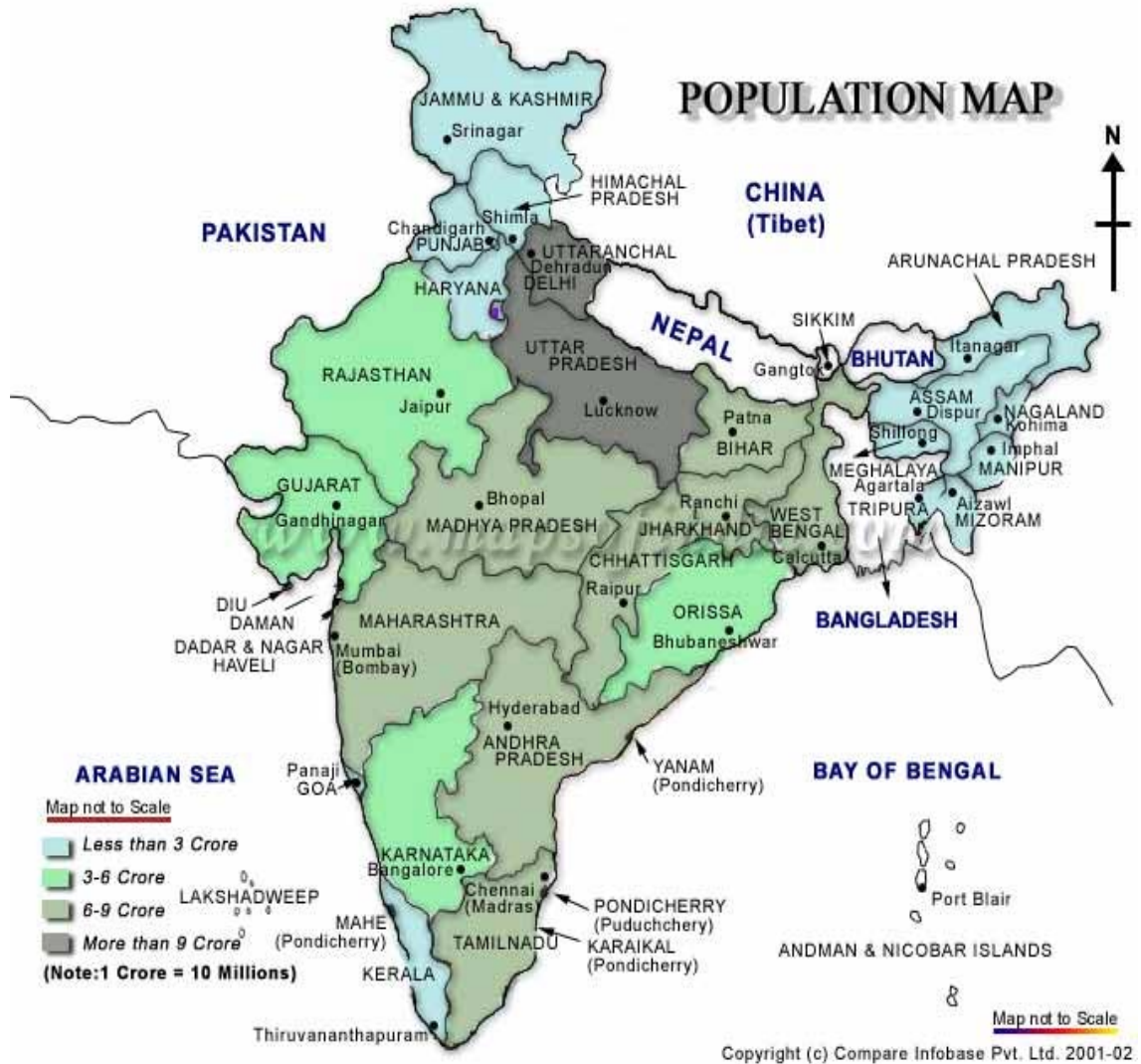
3.14 Tourist Centres

Religious spots like Dwarka, Somnath, Palitana, Pavagadh, Ambaji, Bhadreshwar, Shamlaji, Taranga and Girnar; Porbandar, birth place of Mahatma Gandhi, places of memorable monuments of architectural and archaeological surprises like Patan, Siddhpur Ghurnli, Dabhoi, Vadnagar, Modhera, Lothal and Ahmedabad, beautiful beaches like Ahmadpur-Mandvi, Chorwad, Ubharat and Tithal; the hill station Saputara; lion sanctuary of Gir Forest and wild ass sanctuary in Kachchh area are major tourist attractions in the State.

3.15 Major Cities

Ahmedabad, Jamnagar, Rajkot, Surendranagar, Bhavnagar, Junagadh, Porbandar, Gandhinagar, Nadiad, Anand, Vadodara, Bharuch, Surat, Navsari, Gandhidham are the major cities having population over 100000.

CHAPTER – IV
TRENDS IN INDIAN DEMOGRAPHY



4.1 Introduction

The study of demography of any country is significant from point of view of economic development and economic welfare. At present it is known as human resource development also. Change in volume of population is observed according to the theory of demographic transition. Before we discuss demographic change in India, it would be worth while to know the theory demographic transition. In following paragraphs, theory of demographic transition is discussed in brief.

4.2 The Theory of Demographic Transition

Population condition is a function of birth rate and death rate. Birth rate and death rate work in such a way that population growth becomes either stationary or high, or low. Population growth experiences a transition from one stage to another stage. This transition is called demographic transition. The theory of "demographic transition" postulates a three stage sequence of birth and death rates as typically associated with economic development.

The theory of demographic transition says that a country has to pass through three different stages of population growth.

- (1) The period of stable population growth (low population growth)
- (2) The period of rapid population growth and
- (3) The period of stationary or slowly growing population

1. First Stage of Demographic Transition: According to this theory, death rates are high in the first stage of an agrarian economy on account of poor diets, primitive sanitation and absence of effective medical aid. Birth rates are also high in this stage as a consequence of widespread prevalence of illiteracy, absence of knowledge about family planning techniques, early age of marriage and, last but not the least, as a consequence of deep-rooted social beliefs and customs about the size of the family, attitude towards children, etc. Moreover, in a primitive society there are economic advantages of a large family size. Elders brace with the words "Easta Putra Bhavet" (Have eight male children). Moreover, in an agrarian economy, there are some economic advantage of a large size family. According to Coale A. J. and Hoover E. M., "Children contribute at an early age... and are the traditional source of security in the old age of parents. The prevalent high death rates, especially in infancy, imply that such security can be attained only when many children are born." In such a society the actual rate

of growth of population is not high since high birth rate is balanced by high death rate. It is a stage of high growth potential but of low actual growth.

2. Second Stage of Demographic Transition: This stage is characterized by a high birth rate and a high falling death rate, causing fast population growth. Rise in income levels enables the people to improve the life style of the people. The rapid decline in death rate is caused by many direct and indirect causes by economic development such as: availability of better food, adequate clothing and proper housing, increase in the knowledge of health, decreases in the occurrence of famines and epidemics, increase medical and public health facilities and prevalence of peace and prosperity among the people.. Economic development also brings about all-round improvement including the improvement in transport and communication facilities which makes the supply of food and other necessities of life regular. Improvement in literacy rate is also seen during this period. All these factors tend to reduce death rate. Thus in the second stage birth rate remains high but death rate begins to decline rapidly. The reason is that the factors which influence the birth rate, such as urbanization, education, attitude towards family size, social traditions, religious attitudes etc., do not influence it much in the short period. These factors take time to show results. On the other hand, the birth rate may actually increase. The reason is that the number of persons in their reproductive age increases and their life expectancy being higher, the duration of their fertility becomes longer. This accelerates the growth of population very fast. High growth potential of the first stage is realized in the high actual growth in the second stage as a consequence decline in death rate. High birth rate and falling death rate contribute to the growth of the average size of the family in the second stage.

3. Third Stage of Demographic Transition: In the last stage the birth rate also declines. As it nears the already low death rate, the growth of population becomes low. With the advancement on economic front, there is quickening of industrialization and urbanization. Economic development further changes the

character of the economy from an agrarian to a partially industrialized one. The family no longer remains as a productive unit. People have to move to urban and industrial areas for employment. The shortage of houses etc. increases the cost of living. In these circumstances, large family becomes a difficult proportion. Instead of increase in production, children become a hurdle in mobility of their parents. Further, because of expansion of population, people change attitudes and give up traditional beliefs and old values. Besides, they realize the advantages of small family and start practicing birth control. With the growth of industrialization, population tends to shift away from rural areas towards industrial and commercial centres. Growth of urban population, "with the development of economic roles for women outside the home, tends to increase the possibility of economic ability that can better be achieved with small families, and tends to decrease the economic advantage of a large family. One of the features of economic development is typically increasing urbanisation, and children are usually more of a burden and less of an asset in an urban setting than in a rural." The consciousness to maintain reasonable standard of living tends to reduce the size of family in an industrialized economy: since the death rate is already low, this is possible only if birth rate falls. On the other hand, the death rate, after having fallen to a certain level, cannot possibly fall further because nobody can escape natural death. In this way the birth-rate, after falling steadily, comes nearer the level of death rate. Thus, the characteristics of the third stage are low birth rate, low death rate, small family size and low growth rate of population. This is the stage of incipient decline of population.

Thus, in the third stage, the birth rate and death rate become stable at low levels, resulting in very slow rise in population. At this level the third stage of demographic transition is characterized by stable population growth. Nothing definite can be said about how much time is needed to move from the second stage of population explosion to the third stage of slow and stable growth. It depends on many factors, such as the initial birth rate, the shape and rate of

economic and social change, policies of the government and the attitudes of the people. Obviously, the time period will be different in different circumstances. In some Western countries it took about 30 years for birth rates and death rates to fall to present low levels.

These three stages reveal the transformation of a primitive high birth and high death rate economy into a low birth and low death rate economy. When an economy shifts from the first stage to the second stage of demographic transition, an imbalance is created in the economy as a result of falling death rate but relatively stable birth rate. Historically it has been observed that death rate can be controlled more easily because the measures to reduce death rate are exogenous in nature like controlling diseases, improving nutrition levels, sanitation etc. and hence readily acceptable to the people. But the reduction of birth rate can be brought about by operating on endogenous factors, like changing social attitudes and customs, beliefs and dogmas about the size of the family, about marriage, etc. This requires a much longer time than the fall of death rate. Consequently, birth rate tend to fall after a time lag.

The second stage of demographic evolution has, therefore, been termed as the stage of population explosion. This stage is the most hazardous period for a developing economy. The decline in death rate in the second stage, therefore, creates an imbalance which requires a period of transition for adjustment. Thus, the theory is termed as the theory of demographic transition. During the period of transition the demographic factors get out of harmony. A new constellation of demographic forces is brought about which changes the character of society; birth and death rates become balanced at a lower level as a result of which growth rate of population also declines.

4.3 Size and Growth of population in India

According to 2001 the population of India is 1,027 million which is considered as about one-sixth of the world population. At the beginning of 20th century it was only 236 million. The following Table (Table 4.1) shows some of the key information about India according to 2001 population census in comparison with 1991 figures. The population of India is the second largest in the world. In area it has the seventh place in the world. Approximately 17% of the world population is there in India now which has only 2.4% of total land area of the world. The following Table (Table 4.2) gives the population of ten most populous countries of the world as per the latest census which shows that more than half of the world population live in these ten countries. According to the provisional results compiled quickly for the Census of India 2001, the population of India at 0:00 hours of 1st March, 2001, stood at 1,027,015,247 comprising of 531,277,078 males and 495,738,169 females. Thus, as widely believed and expected, India became only the second country in the world after China to officially cross the one billion mark. It is certainly most unlikely that in the history of mankind any country other than India and China would be shaping the lives and future of over a billion people. Although, in terms of population USA ranks third in the world after India, there is a yawning gap of 746 million between the population of these two countries. India accounts for a meagre 2.4 percent of the world surface area of 135.79 million square kms yet it supports and sustains a whopping 16.7 percent of the world population. In 1950, China with 22 percent share of the world population led the scene followed by India, which had a share of 14.2 percent. It is now estimated that by 2050, India will most likely overtake China to become the most populous country on the earth with 17.2 percent population living here¹. The United Nations has estimated that the world population grew at an annual rate of 1.4 percent during 1990-2000. China registered a much lower annual growth rate of population (one percent) during 1990-2000, as compared to India (1.9 percent during 1991-2001). In fact, the growth rate of China is now very much comparable to that of the USA (0.9 percent).

A study of growth rate of India's population falls into four phases:

- 1901-1921 (Stagnant population)
- 1921-1951 (Steady growth)
- 1951-1981 (Rapid growth)
- 1981-2001 (High growth with signs of slowing down)

During the first 20 years i.e. from 1901 to 1921 the population of India increased from 236 million to 251 million i.e. by 15 million only. The high birth rate during this period was compensated by high death rate. The birth rate as well rate was more or less same during this period. This was a period of stagnant population and India was in the first stage of demographic transition.

The average annual exponential growth rate for India is depicted in Table 4.3 since 1901. Some other indicators of growth rate such as decadal growth rate, change in decadal growth, average annual exponential growth rate and progressive growth rate over 1901 during each decade have also been presented in this statement. Thus, the population of India, which at the turn of the twentieth century, was only around 238.4 million increased by more than four times in a period of hundred years to reach 1027 million at the dawn of the twenty first century. Interestingly, the population of India grew by one and half times in the first half of the twentieth century, while in the later half it recorded almost a phenomenal three-fold increase.

Table 4.3 shows the decadal growth of population for India during 1901-2001. India's population growth during the twentieth century can be chartered and classified into four distinct phases as follows:

The story of population growth in India is fairly in tune with the classical theory of demographic transition. During most of the nineteenth century, India witnessed a fluctuating but ultimately more or less a stagnant growth of

population, which drifted into the twentieth century until 1921. Thereafter, the country passed through successively all the phases of demographic transition and is now widely believed to have entered the fifth phase, usually characterized by rapidly declining fertility.

It is very clear from the data presented in the table that growth of population of India falls in three distinct phases. The first phase of 20 years from 1901-1921, the second phase from 1921 to 1951, the third phase of 30 years i.e. post independence period from 1951 to 1981 and the fourth phase from 1981 to 2001.

During the first phase of 20 years (1901 -1921) India's population grew from 238 million in 1901 to 251 million in 1921 i.e. by only 15 million. The compound annual growth was negligible, it was registered 0.19 per cent per year during this period. The growth of population was held in check by prevalence of a high death rate against a high birth rate. Birth and death rates were more or less equal during this period. India was in the first stage of demographic transition in this period.

During the second phase of 30 years i.e. 1921 to 1951, the population increased from 251 million in 1921 to 361 million in 1951. Thus during this period the population increased by 110 million. The compound growth rate of population was 1.22 per cent per year which can be considered as a moderate growth rate. The main reason for this moderate growth was a decline in death rate. The death rate declined from 47 per thousand to 27 per thousand, but compared with this, there was a very small decline in the birth rate during this period. The decline in the death rate was largely due to the control of wide spread epidemics like plague small box, cholera etc. These were the main causes for human death. India has begun its entry in to the second phase of demographic transition during this period.

The third phase was considered from 1951 to 1981. During this period population of the country grew from 361 million in 1951 to 683 million in 1981. It shows that this was a record growth of population by 322 million during the period of 30 years. This way, during this period, a compound annual growth rate of the population was registered 2.14 per cent per year which was almost the double the growth rate of the previous phase. With the advent of planning, the extension of medical facilities under taken by Government on large scale, the death rate sharply declined up to the level of 15, per thousand. However the birth rate also gone down from 40 to 34 per thousand during this period. It shows that during this period death rate declined sharply while, birth rate declined at a very slow rate. As a consequence, there was a population explosion during this period.

The period 1981 to 2001, India population has shown somewhat different demographic characteristics. The decadal growth percentage became negative and the compound annual growth rate of population decreased from 2.14 per cent per year (1951 to 1981) to 2.03 percent per year. This can be attributed to an increase in the rate of fall of birth rate from 34 per thousand to 26 per thousand. The death rate also has shown a decrease from 13 per thousand to 9 per thousand. Thus this period shown a high population growth along with signs of falling down of the rate of growth.

The crucial question is - how long will this phase extend and when will India achieve a stable population? The National Population Policy (NPP), 2000, recently adopted by the Government of India states that 'the long-term objective is to achieve a stable population by 2045, at a level consistent with the requirements of sustainable economic growth, social development, and environment protection'. It has been assumed in the policy document that the medium-term objective of bringing down the Total Fertility Rate (TFR) to replacement level of 2.1 by 2010 will be achieved. It is envisaged that if the NPP is fully implemented, the population of India should be 1013 million by 2002 and

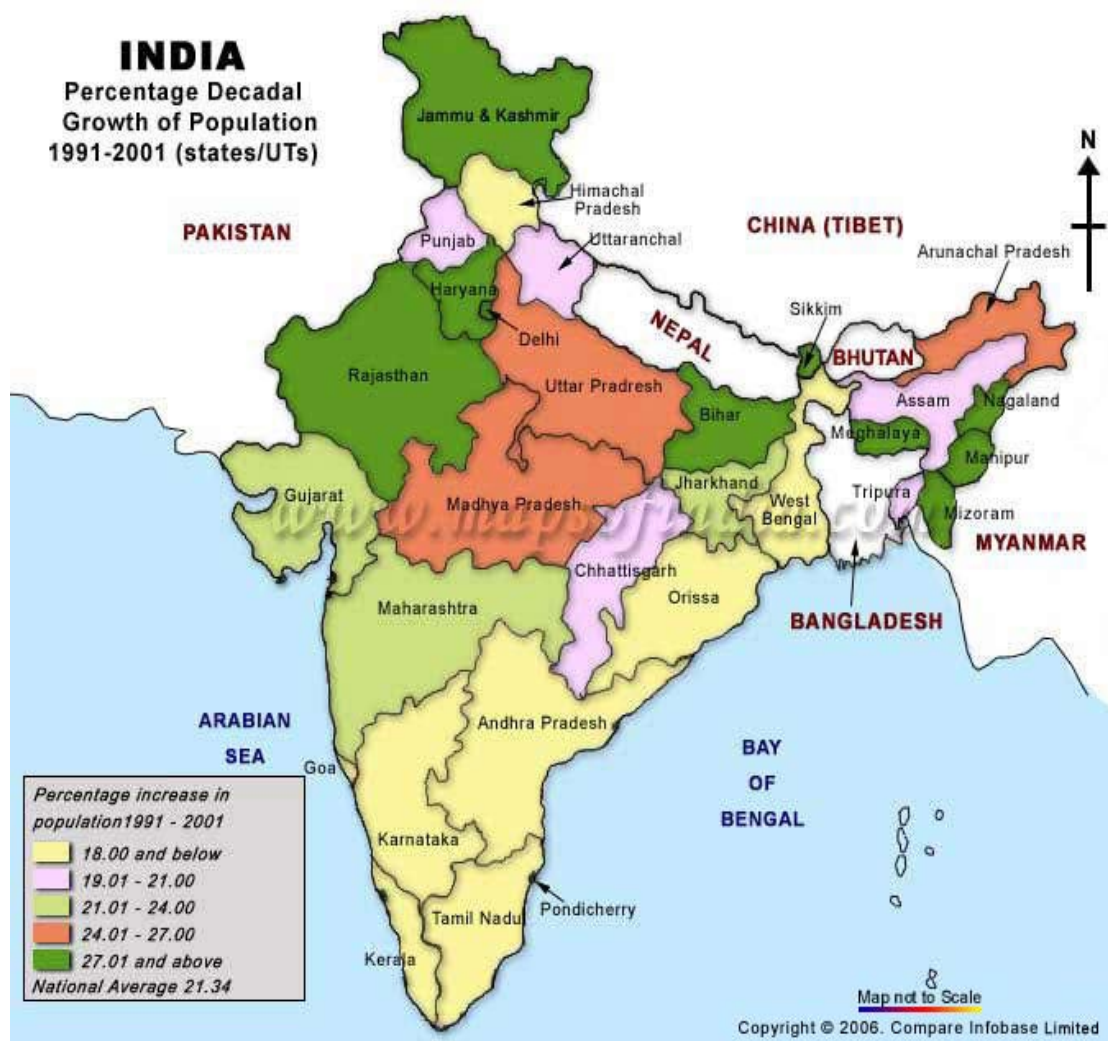
1107 million by 2010. However, in 2001 itself, India has already exceeded the estimated population for the year 2002 by about 14 million. It will no doubt require a Herculean effort on the part of the government and the people to achieve the much-cherished goal of a stable population. In absolute terms, the population of India has increased by a whopping 180.6 million during the decade 1991-2001. The absolute addition to the population during the decade 1991-2001 is more than the estimated population of Brazil, the fifth most populous country in the world. Although, the net addition in population during each decade has increased consistently, the change in net addition has shown a steady declining trend over the decades starting from 1961. While 27.9 million more people were added between the decade 1981-1991 than between 1971-1981, this number declined to 17.6 million for the decades between 1981-1991 and 1991-2001. This implies that as a result of the combination of population momentum and somewhat impeded fertility, although India continues to grow in size, its pace of net addition is on the decrease.

The percentage decadal growth during 1991-2001 has registered the sharpest decline since independence. It has declined from 23.86 percent for 1981-1991 to 21.34 percent for the period 1991-2001, a decrease of 2.52 percentage point. The average exponential growth rate for the corresponding period declined from 2.14 percent per annum to 1.93 percent per annum. The percentage decadal growth shown in column 4 of Statement 2 indicates a decline from 24.80 percent during the decade 1961-71 to 24.66 percent during the decade 1971-81, while the average annual exponential growth rate presented in column 7 of this statement shows an increase from 2.20 to 2.22. This is because the percent decadal variation has not been adjusted for the shift in reference date in 1971. The decadal variation for 1961-71 relates to 121 months while that 1971-81 relates to 119 months. If we adjust for this difference, the percentage decadal growth works out to 24.59 percent for 1961-71 and 24.87 percent for the decade 1971-81. Population variables are both determinants and consequences of the development process.

Table 4.4 shows the relative share of population of the States and Union territories to the total population of India as per the Census of India, 2001. Figures are presented in descending order. The statement also provides the ranking of these States and Union territories by population size in 1991 and 2001. It can be seen that Uttar Pradesh is by far the most populous State in the country with more than 166 million people living here, which is more than the population of Pakistan, the sixth most populous country in the world. The combined population of Uttar Pradesh and Uttaranchal (until recently a part of Uttar Pradesh) is greater than the population of Brazil. Nineteen states now have a population of over ten million. On the other extreme there are eight States and Union territories in the country that are yet to reach the one million mark. Almost half of the country's population lives in five States, namely, Uttar Pradesh, Maharashtra, Bihar, West Bengal and Andhra Pradesh. While Uttar Pradesh and Maharashtra have held on to the first two positions in terms of their ranking in 2001 as compared to 1991, Bihar has moved on to take the third position from its fifth position pushing West Bengal and Andhra Pradesh now to the fourth and fifth spots respectively.

Table 4.5 gives the percentage decadal growth of each of the States and Union territories starting from 1901. The analysis of growth rates of the States starting from the decade 1951-1961 tells the real story of population growth in India. It took four decades even for Kerala to reach a decadal growth of less than ten percent from a high growth rate of 26.29 percent during 1961-71. Tamil Nadu also took forty years to reduce its growth from a high of 22.30 percent during 1961-1971 to 11.19 percent during 1991-2001. The growth rate in Bihar has shown an upward swing during 1991-2001 and the growth rates in Rajasthan, Uttar Pradesh, and Madhya Pradesh are now at a level where Kerala and Tamil Nadu were forty years ago. Even if it takes four decades for these four States to reach the present levels achieved by Kerala and Tamil Nadu, it seems it would be difficult for India to achieve a stable population by 2045. Therefore, it is

imperative that some bold and path breaking initiatives are taken in reversing the trends of growth in these States, which at this stage do not show perceptible signs of abatement. Andhra Pradesh, however, has apparently shown an impressive fall in decadal growth rate by over ten percentage points within a short span of a decade and this success story does inspire confidence that it should be possible to cross all hurdles to achieve sharp declines in population growth.



Population growth in India is the function of growth rate in states and Union Territories. Table 4.5 gives the selected indicators of population growth in

different States and Union territories of India. The percentage decadal growth of population in the inter-censal period 1991-2001 varied from a low of 9.42 in Kerala to a very high 64.41 in Nagaland. Delhi with 46.31 percent, Chandigarh with 40.33 and Sikkim with 32.98 registered very high growth rates, while the small Union territories of Dadra and Nagar Haveli and Daman and Diu also registered very high growth rates. In addition to Kerala, two other major states in Southern India viz. Tamil Nadu and Andhra Pradesh registered low growth rates during 1991-2001. The percentage decadal growth has declined during the census decade 1991-2001 as compared to the previous census decade in all the States/Union territories except Haryana, Uttar Pradesh, Bihar, Sikkim, Nagaland, Manipur, Gujarat, Daman and Diu and Dadra and Nagar Haveli. These States and Union territories that have shown increases in percent decadal growth together constitute about thirty two percent of India's population.

During the inter-censal period 1991-2001, a decline of more than five percentage points in decadal growth rate from the previous census decade was recorded for the States of Andhra Pradesh, West Bengal, Arunachal Pradesh, Delhi, Mizoram, Tripura, Assam, Uttaranchal and Chhatisgarh, and also for the Union territories of Lakshadweep, Pondicherry and Andaman and Nicobar Islands. These twelve States and Union territories together account for 22.61 per cent of the country's population. In fact, among the major States, Andhra Pradesh has registered the sharpest drop of 10.33 percentage points during the said period followed by Chhatisgarh (7.67) and West Bengal (6.89). Jammu and Kashmir, Himachal Pradesh, Punjab, Meghalaya, Orissa, Madhya Pradesh, Maharashtra, Karnataka, Goa, Kerala and Tamil Nadu and the Union territory of Chandigarh have shown a decline of one to five percentage points in their growth rates during 1991-2001 as compared to 1981-1991. These twelve States and Union territories together account for 37.54 per cent of total population. In Rajasthan and Jharkhand, the decline in percentage decadal growth is less than one percentage point. These two states account for 8.12 percent of India's

population. Thus almost two third of the Indian population lives in States and Union territories which show a declining trend in population growth.

Table 3.6–A to Table 3.6-C gives the percentage growth of population after arranging state and union territories arranged in ascending order of growth rate of population for different decades starting from 1951 -1961 to 1991-2001. Table 3.6-A shows, during the decade 1951-61, the percentage decadal growth rate of population of nine states and four union territories falls below all India growth rate of 21.60 and the rest above the all India level and the state /union territories falling below the all India growth rate of 24.80 decreased from thirteen to nine during the decade 1961-71. During the decade 1951-61, Daman & Diu has shown least but negative growth rate of population of -24.80 and Chandigarh has shown the most 394.10. In the subsequent decade 1961-71, the least growth was shown by Uttar Pradesh with 19.50 and the growth rate of Chandigarh has decreased substantially from 394.10 to 114.60. Table 3.6-B gives the details of the decades of 1971-81 and 1981-1991. The all India growth during the decade 1971-81 was 24.70 and during 1981-91, 23.90. As discussed earlier, rapid growth of population can be seen during the period from 1951-61 to 1971-81. Thereafter a fall in the growth rate of population can be seen to the extent of 0.80 percent. This can be attributed to the slow and gradual structural change that was happening in the economy and different programmes commenced by government. During the decade 1971-81 there were twelve states/union territories below the all India growth rate and the number again reduced to 10 during 1981-91. During the decade 1991-2001, as shown in Table 3.6-C, the all India growth rate was reduced by 2.36% to 21.54 from 23.90 during 1981-91 with 15 states/union territories falling below the all India growth rate. This period has shown a positive response to the various policies of the country.

Table 4.7 gives the distribution of States and Union territories by ranges of percentage decadal growth and the percentage of population of these States/Union territories. It clearly brings out the major shift in distribution of

States and Union territories by the ranges of growth rates between 1981-1991 and 1991-2001. The number of States and Union territories with percentage decadal growth below twenty one percent, the current national average, has increased substantially from six in 1981-1991 to fifteen in the decade 1991-2001, whereas the number of States/Union territories with percentage decadal growth more than twenty one percent has reduced significantly from twenty nine to twenty. More significantly, the sum total of the population of the States and Union territories that registered less than the national growth rate has shown an impressive increase from about seventeen percent in 1991 to forty two percent in 2001.

Table 4.7 also presents the absolute increase in population of the States/Union territories of India during the census decades 1981-1991 and 1991-2001. The percentage contributions of each of the States and Union territories to the total growth of India for the decades 1981-1991 and 1991-2001 have also been shown in Table 4.7. Although, in the country as a whole there has been an increase in net accretion in the population during 1991-2001 as compared to 1981-1991, a few States and Union territories have shown a reverse trend in this respect. The most significant drops in the net addition are seen in Andhra Pradesh, West Bengal, Kerala and Tamil Nadu. It can be estimated that if these four States had added the same number of persons during 1991-2001 as they did in the previous decade, everything remaining the same, India would have added another 7.2 million more persons during this decade. This would have resulted in an increase decadal growth of India by almost one percentage point. Other things being equal it appears that these four States together have been partly responsible for arresting the rate of growth of population of the country. On the other hand Uttar Pradesh, Bihar and Rajasthan have together added about sixteen million more persons during 1991-2001 than the number they added in the previous decade. These three States along with Madhya Pradesh account for about forty two percent of the growth of the country during 1991-2001, while during 1981-1991 their contribution in the growth was about thirty six percent. On

the other extreme, there are sixteen States and Union territories, which individually have not contributed even one percent to the growth of India's population during 1991-2001. As many as fourteen States and Union territories have shown a decline in absolute growth in this decade as compared to the previous decade. These States and Union territories together account for 39.02 percent of India's population.

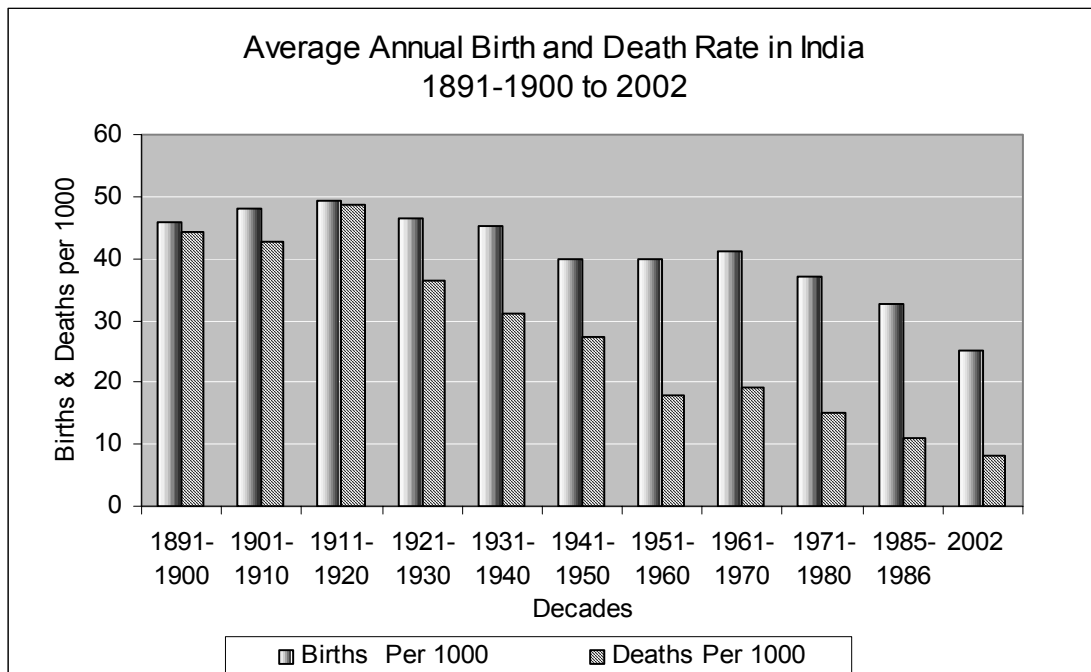
Table 4.8 shows distribution of states/union territories by range of percentage decadal growth for the period 1981-1991 and 1991-2001. The proportion of population of the States and Union territories in each of these categories to the total population have also been shown. During the period between 1981-1991, nine States and Union territories, with a share of about 34.73 percent of India's population, registered a percentage decadal growth rate of less than twenty four percent. During 1991-2001, as many as eighteen States and Union territories with a share of about 58.96 percent fall in this category.

A similar inference could be drawn from Table 4.9 in which the States and Union territories have been classified by ranges of the average annual exponential growth rates for these decades. The proportion of population of the States and Union territories in each of these category to the total population have also been shown. During the period between 1981-1991, eight States and Union territories, with a share of about twenty seven percent of India's population, registered a growth rate of less than two percent. During 1991-2001, as many as fifteen States and Union territories with a share of about forty two percent fall in this category.

Rate of growth of population is a function of birth rates and death rates. Therefore, variations in birth and death rates can provide an explanation of the acceleration of population growth. Table 4.10 gives the births and deaths per 1000 for the decades from 1891-1900 to 2002. It is clear from the table that the growth of population in India was very less before the year 1921. Birth rate during 1901-1921 fluctuated between 46 and 49 per thousand and the death rate

between 42 and 48. Consequently the growth rate of population was negligible. But after 1921 the death rate started to fall down from 48.6 per thousand during 1911-1920 to 36.3 per thousand during 1921-30, 18 per thousand during 1951-60 and reached to 8.1 per thousand during 2002.

Figure 4.1



The birth rate also registered a fall due to the family planning programmes. But the rate of fall of birth was comparatively less. Therefore the gap between high birth and falling death increased with the passage of time and this was reflected in the high survival rate. Thus, the high rate of growth of population can be attributed in terms of a persistently high birth rate but a relatively fast declining death rate.

4.4. Density of Population in India

Total population of any country does not give proper picture regarding population growth. It must be examined with reference land available to population. Land available to persons is measured by below given equation:

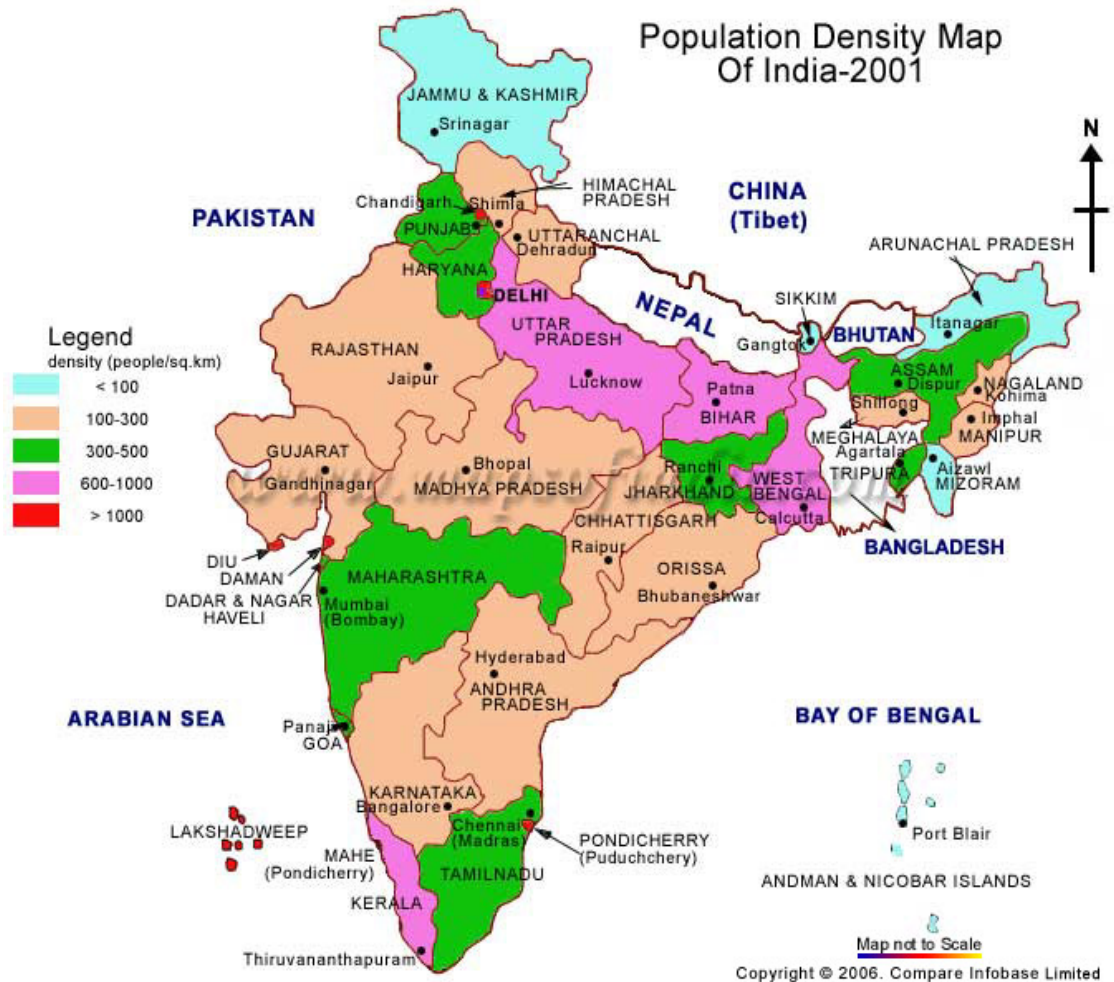
$$\text{Density of Population} = \frac{\text{Population in a region}}{\text{Area of the region}}$$

United Nations Organisation has explained concept of density in these words, "Each Population lives in a given area of territory and a study of the geographical of spatial distribution deals with the way in which distributed over the territory". This way density of population can be measured. At the time of such measurement topography rural-urban area, forest, desert etc. are not considered. Population living within one square km. is taken for the measurement of density of population.

One of the important indices of population concentration is the density of population. It is defined as the number of persons per square kilometer. The population density of India in 2001 was 324 persons per square kilometre, which means that now 57 more people live in a square kilometer area in the country than the number that lived a decade ago. The population density of India from 1901 to 2001 is shown in Table 4.11. At the beginning of the twentieth century i.e. in 1901 the density of India was as low as 77 and this steadily increased from one decade to another to reach 324 in 2001. The persons living in per sq. km. has increased by 21.3 per cent in 2001 as compared to 1991. High increase in the density of population is a matter of great concern as it puts immense pressure on our natural resources. Also it may adversely affect the quality of life. Due to difference in climatic conditions, availability of resources etc., the states and Union territories of our country largely varied in terms of density. It is, therefore, essential to analyze the variations across the States and Union territories.

In Table 4.12 States and Union territories of India are ranked in descending order of densities. The population density within the country widely varies across the States and Union territories. It varied from 13 persons per sq. km. in Arunachal Pradesh to 9294 in Delhi. The density of population has been increased in all States and Union territories of our country between 1991 and

2001 but huge variations in the rate of increase in density has been noticed. Among major states, West Bengal is still the most thickly populated, where population density has gone up from 767 in 1991 to 904 in 2001.



However, among major states, Bihar is now the second highest densely populated State pushing Kerala to the third spot in terms of ranking. Similarly, Punjab and Tamil Nadu have now interchanged their relative position of tenth and eleventh ranks respectively in 1991.

Since the size of population has been rapidly rising, it is but inevitable that, given the geographical area of the country, there should be an increase in the density of population. The main reason for the inter-state differences in density

of population in the agrarian nature of the country. Factors like climate, rainfall, irrigation facilities etc. have a large bearing on the cultivation of land.

Density of population that can be supported in any country depends upon the availability of natural resources and the extent of the use of technology to exploit the resources. In other words, natural resources coupled with the degree of industrialisation determine the extent to which a higher density of population can be supported. For instance, Japan supports a higher density (336 per sq. km.) at a higher standard of living. The main reason for this is that Japan has industrialised herself whereas 68 per cent of the population of India draws its livelihood from agriculture. However, the extremely high standard of living in U.S.A. is partly the result of a very favourable land-man ratio and natural endowments and partly due to the higher stage of economic development achieved. In short density of population cannot be treated as an index either of the poverty or of the prosperity of a country.

The density of population has been rising since 1921. The increase has indeed been a rapid one from 1951 onwards. As per the census, it was 324 in 2001, as against 274 in 1991, 216 in 1981, 177 in 1971, 142 in 1961, and 117 in 1951. This, however, is the all-India picture. At the state level too this has happened. But the change in density has varied from state to state. In some it has increased much, in others not much, and in some, it is little indeed. Even within the states, there are differences in density in different regions.

An attempt has been made to see the differentials in population densities across the six regions in the country. Table 4.13 the states included in different regions and densities of each of the regions. It may be seen that the Eastern region has by far the highest density and the North Eastern region the lowest. Eastern region has recorded the highest increase in density from 431 in 1991 to 525 in 2001 followed by Central region and Western region respectively.

Table 4.14 demonstrates the classification of state and Union Territories in different class intervals on the basis of percentage decadal growth of density of population. During the decade from 1991 to 2001, the percentage decadal change of density of population in four states shows only 5% to 15% increase; Kerala with least increase of 9.35% followed by Tamil Nadu 11.42% , Andhra Pradesh 13.64% and Goa with 14.87%. ON the other extreme Daman & Diu, Dadra & Nagar Haveli and Nagaland shown 55.57%, 59.22% and 64.38% respectively i.e. more than 55% increase in the percentage growth of density of population during the decade. Fifteen States has shown the percentage growth ranging from 15 % to 25 % with Gujarat showing 22.27% increase. On the eleven states has shown percentage increase ranging from 25% to 35 % and the remaining Chandigarh with 40.32% and Delhi with 45.84%.

Table 4.15 gives the details of a quartile analysis of the state-wise absolute population of 2001 census and density of population with percentage of population falls under each quartile. The first quarter in the ascending order is Arunachal Pradesh with population 1097968. The least populated state in this category is Lakshadweep with a population of 60650. Population of Twenty five percentage of least populated states falls below this figure in which Chandigarh with 900635 people and 7903 density of population and Arunachal Pradesh having least density of population 13. The total population in these nine states is 5197868 which is only 0.51% of the total population. The average density of population is 1540 per Sq. Kms.

The second quarter includes the next twenty five percentage of states with another nine state arranged in ascending order. The second quartile value falls with Delhi which has a population of 13850507 and highest recorded density of 9264 per sq. kms. Population Twenty five percentage of states falls below this figure. The least populated state in this category is Goa with a population of 1347668. Jammu & Kashmir second largest populated state in this category with the least density of 99 per Sq. Kms. The total population in these nine states is

49708310 which is only 4.83% of the total population. The average density of population is 1181 per Sq. Kms.

The third quarter includes the next twenty five percentage of states with another nine state arranged in ascending order. The third quartile value falls with Karnataka which has a population of 52850562 and density of 275 per sq. kms. Population twenty five percentage of states falls below this figure. The most densely populated state in this category is Kerala with 819 per sq. kms. and a population of 31841374. The least populated state in this category is Chattisgarh with a population of 20833803 and density of 154 per sq. kms. The total population in these nine states is 292106336 which is 28.40% of the total population. The average density of population is 375 per Sq. Kms.

In the fourth quarter includes the next twenty five percentage of states with another eight state arranged in ascending order. The highly populated state in this section is Uttar Pradesh which has a population of 166197921 and density of 689 per sq. kms. Population twenty five percentage of highly populated states falls below this figure. The most densely populated state in this category is West Bengal with 904 per sq. kms. and a population of 80176197. The least populated state in this category is Rajasthan with a population of 56507188 and least density of 165 per sq. kms. The total population in these eight states is 681722151 which is 66.28% of the total population. The average density of population is 488 per Sq. Kms.

The above analysis shows that in all the quarters the density of population is above the national density of 324 per sq. kms. Only 24.80% of population falling under the third quarter is some what nearer to the national average density figure.

In Table 4.16 state-wise figures are given. It can be seen from the table that in the year 1901 the highest density was found in West Bengal (202)

followed by Utter Pradesh and Kerala (both 165). The lowest density was found in Nagaland followed by Sikkim. Density of the country was 73. In this year in states like West Bengal, Utter Pradesh, Tamil Nadu; Punjab, Kerala, Jammu & Kashmir, Haryana and Bihar density was higher than that of India. In the year 1911 density of the country was 77. The highest density, was in West Bengal followed by Kerala. The lowest density was seen in Nagaland followed by Sikkim. In Punjab and Utter Pradesh density was declined.

In the year 1921, density in India was 76 which was less than the figure of 1911. In this year the highest density was found in state of West Bengal followed by Kerala, while the lowest in Nagaland followed by Sikkim. In states like Bihar, Karnatak, Maharashtra, Orissa, Rajsthan, Sikkim, Utter Pradesh and West Bengal, density was declined as compared to the density of 1911.

In the year 1931, the density of the country was 85 which was higher than that of 1921. The highest density was found in Kerala followed by West Bengal. The lowest density was found in Nagaland followed by Sikkim. It is interesting to state that in all states density was increased as compared to previous census year.

In the year 1941, India's density was 97. The highest density was found in Kerala followed by West Bengal. The lowest density was in Nagaland, followed by Sikkim. Between 1931 and 1941 density in each state was increased.

It can be seen from the table that after 1921, rate of growth in density increased gradually. In the year 1991 density in the country was found 257. Thus it increased by 23.56 per cent. The highest density was found in West Bengal followed by Kerala. The lowest density was found in Sikkim, followed by Nagaland. From the beginning of this century, density was found high in states like West Bengal and Kerala. The same thing was observed in the year 1991. From the beginning of this century, Nagaland was lagging behind with reference

to density, the same position was seen in the year 1991. It is also observed that gradually rate of growth have been increasing. In the year 2001 also West Bengal (9904) retains its highest position in density followed by Kerala (819). Out of these 22 states least density was found in Sikkim (79)

To compare and know change in density between two census, we have calculated state-wise per cent change in density. These figures are presented in Table 4.16(a). It can be seen from the data presented in the table that, the highest growth rate was found in Sikkim and Nagaland, followed by Tripura. Between 1911 and 1921, the highest growth was observed in Tripura followed by Assam. While the lowest in Bihar. The per cent growth in density between 1921, 1931 was found the highest in Sikkim, followed by Tripura. The lowest growth was observed in Himachal Pradesh. Between 1931 and 1941, the growth of density in India was 14 per cent which was higher than growth rate of states like Tamil Nadu, Sikkim, Orissa, Nagaland, Bihar and Andhra Pradesh.

Between 1941 and 1951 per cent growth of density was 13. The highest per cent growth was found in Tripura, following by Kerala. The lowest growth rate was found in Himachal Pradesh. In India between 1951 and 1961, growth of density remained 22 per cent which was higher than that of previous decade. During this period the highest per cent growth was In Tripura followed by Nagaland. While the lowest was seen in Jammu and Kashmir, followed by Tamil Nadu.

During 1961 and 1971 per cent growth of density in India was 25 which was higher than previous decade. In this period the highest per cent growth in density was seen in Nagaland, following by Manipur. The lowest per cent growth was seen in Bihar followed by Utter Pradesh.

During 1971 to 1981 per cent growth in density was 25 in India. It shows that the same per cent growth was observed in this decade. During this period

the highest growth was found in Nagaland, followed by Rajasthan (33%), Meghalaya, and Mnipur (33%).

Between 1981 to 1991 percent growth in density in was 24 which was less than the per cent growth in 1971 -81 decade. The state Jammu & Kashmir was on the top with 181 per cent growth in density followed by Nagaland. The lowest per cent growth rate was seen in Bihar, followed by Kerala.

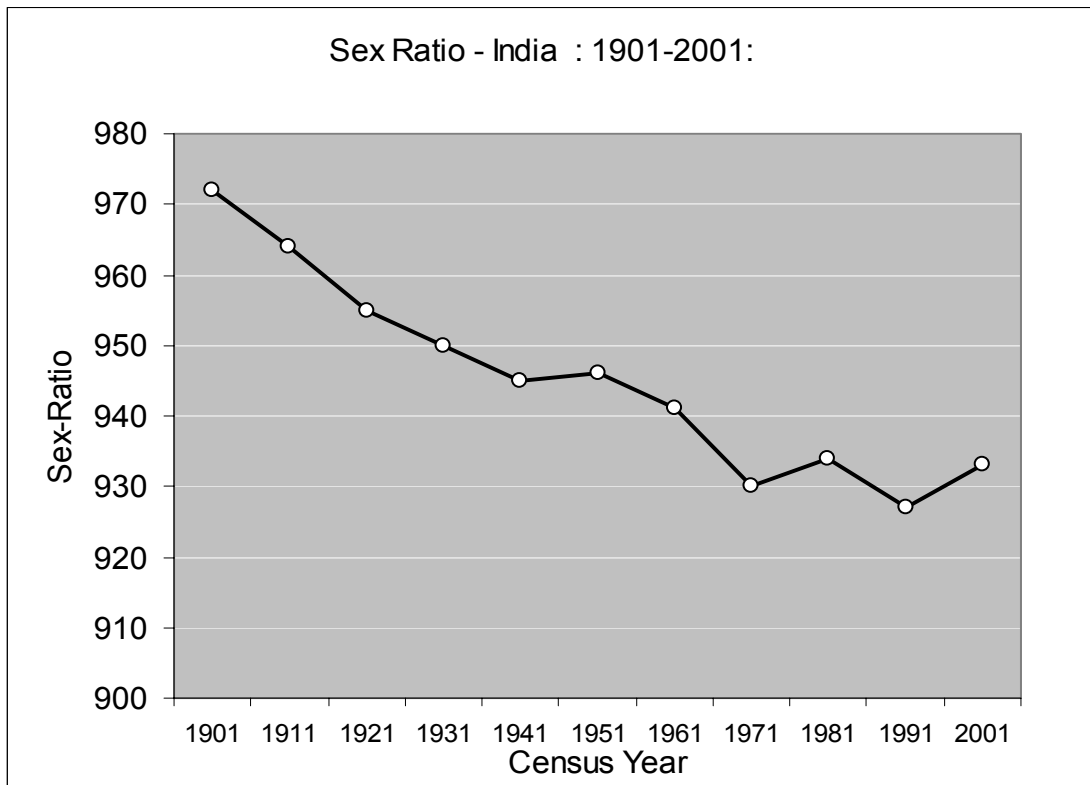
In the decade 1991-2001, the percent growth of density of India was 21.34 and Nagaland has shown highest percentage increase (64.4) followed by Tripura (45.7). The lowest percentage growth was registered by Kerala (9.3) and Gujarat has shown a 22.3 per cent growth.

4.5 Sex Composition of Population

Sex composition of the human population is one of the basic demographic characteristics, which is extremely vital for any meaningful demographic analysis. Indian Census has the tradition of bringing out disaggregated information by sex on various aspects of population. The first and foremost is the simple count of males and females. Changes in sex composition largely reflect the underlying socio-economic and cultural patterns of a society in different ways. Sex ratio defined here as the number of females per 1000 males in the population, is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time. It is mainly the outcome of the interplay of sex differentials in mortality, sex selective migration, sex ratio at birth and at times the sex differential in population enumeration.

The sex ratio of the population of India for the past hundred years is presented in Table 4.17 since 1901 to 1991. According to the Census of India, 2001, the sex ratio stands at 933 for the country as a whole. This is a welcome improvement from the 1991 Census, which had recorded 927 females for every

Figure 4.2

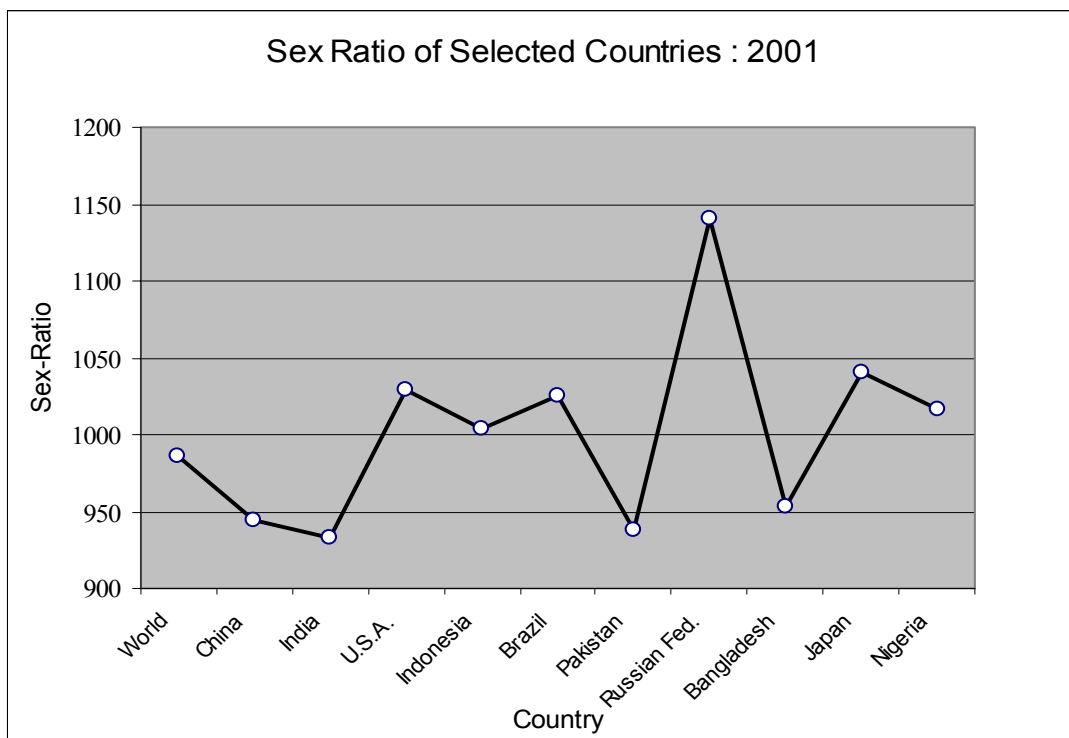


1000 males. It can be seen from the table that the sex ratio of the population of India and state has been generally adverse to woman, i.e. The number of woman per 1000 males has generally been less than 1000. A part from being adverse to women, the sex ratio has also declined over the decades. The sex ratio at the beginning of the twentieth century was 972 and thereafter showed continuous decline until 1941. In 1951 there was a marginal increase of one point, but thereafter it again dropped for two consecutive decades to reach 930 in 1971. In fact, between 1961-71, the country saw the sharpest decline of 11 points in the sex ratio. The slight improvement noticed in the year 1981 census has not been maintained in 1991 and in fact, there has been a fall by five points from 934 in 1981 to 929 in 1991. The reason for the general disparity in the sex ratio and the declining trend over the years need further examination. Studies made so far have offered several explanation for this phenomenon in the past. The preference for male children resulting in neglect of female babies the relative gap in the health conditions between males and females is considered

as one of the main reason. Many explanations have been given about the masculine character of population. The explanation for a declining sex ratio lies in the poverty of the Indian People. In a country where even now nearly 26 percent of the population lives below the poverty line, high infant mortality, poor medical facilities, extremely unhygienic conditions of living and absence of pre-natal and post-natal care, high death rate among women are all manifestations of the abjectly low level of living of the people. The preference of providing good food to the bread winner is again the manifestation of the much sought after modicum of economic security that the bread winner provides.

The British Census Commissioners had been repeating ad nauseam and an infinitum the geographical and sociological factors like climate, race, season of gestation, food habits and consanguineous marriage and polyandry as affecting sex ratio, but the statistical evidence could not support their a priori reasoning. It is however, difficult to pin-point any particular reason for declining sex ratio requires a detailed analysis.

Figure 4.3



It is natural for an ordinary person to believe that males and females in the population exactly balance each other. Little do they know, how imbalanced the sexes are in different populations across the world. It has been estimated that around the year 2000, the world had 986 females against 1000 males. Table 4.18 presents the global sex ratio and that of the ten most populous countries in the world as estimated for the year 2000. It is evident from this statement that except Indonesia and Japan, the other Asian countries show low sex ratios. The sheer weight of the population of these four Asian countries with low sex ratio appears to be largely responsible for the overall preponderance of males over females in the world.

Table 4.19 gives the sex ratio of the total population, sex ratio in the age group 0-6 and sex ratio of population aged 7 and above for 1991 and 2001 for all the States and Union territories. The diversity in sex ratio among the States and Union territories is phenomenal. At the Census of India, 2001, the sex ratio among the major States ranged from 861 in Haryana to 1058 in Kerala. In 1991 also, Haryana with a sex ratio of 865 was at the bottom with Kerala (1036) at the top. The changes in sex ratio over time, therefore, are dependent on the changes in the ratios of the individual States and Union territories and their relative share in population. It may be seen that the sex ratio of the total population have shown improvements in as many as twenty three States and Union territories. However, during the corresponding period the sex ratio of the child population in the age group 0-6 has increased in only four States and one Union territory.

Table 4.19 shows a favourable trend is shown in the sex ratio during the decade 1991 to 2001 with respect to the total population. But the sex ratio of the children between the age group of 0 to 6 has shown a declining trend while the sex ratio of the population above the age of 7 has shown a favourable trend.

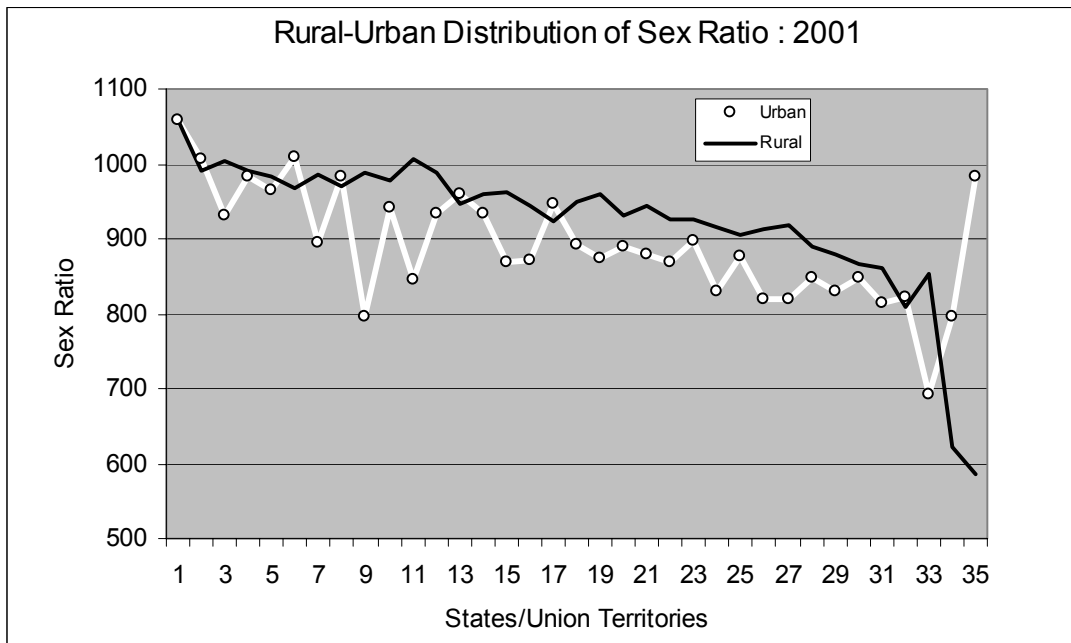
Table 4.20 gives an estimate of the distribution of population by size and sex ratio. This shows that 18 states including union territories of Lakshadweep and

Pondichery have the sex ratio above the national sex ration of 933 with Kerala having the highest sex ratio of 1058 and the remaining 17 states including the remaining union territories have the sex ratio below the national level with the union territory Daman and Diu having the least sex ratio 710.

Table 4.21 explains the state wise rural-urban distribution of sex ratio of the Census 2001. It is very interesting to note that out of 35 states including union territories only 8 states/union territories have the sex ratio above the state level ratio in urban area while 27 states/union territories have the sex ration below the state level. The situation in the rural area is entirely different. Out of 35 states/union territories 27 have the sex ratio above the state level and only 8 have the sex ration below state level.



Figure 4.4



1	Kerala	10	Karnataka	19	Maharashtra	28	Punjab
2	Pondichery	11	Uttaranchal	20	Rajasthan	29	Sikkim
3	Chhattisgarh	12	Goa	21	Gujarat	30	Haryana
4	TN	13	Tripura	22	Bihar	31	A & N Is.
5	AP	14	Lakshadweep	23	MP	32	Delh
6	Manipur	15	Jharkhand	24	Nagaland	33	D & N Ha.
7	Orissa	16	Assam	25	UP	34	Chandigarh
8	Meghalaya	17	Mizoram	26	AP	35	Daman Diu
9	HP	18	WB	27	J & K		

Table 4.22 gives the trends in sex ratio for past hundred years in respect of all the States and Union territories, except Arunachal Pradesh, for which data is not available from 1901 to 1951. The trends in sex ratio for some of the major States are also depicted in Figure 13 as line graphs. In 1901, there were as many as eleven States and Union territories that had sex ratio of more than unity. Among these, except Kerala all other States and Union territories have shown a downward slide. The major States that are largely responsible for the decline in the overall sex ratio in India are Uttar Pradesh, Bihar, Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu. Although

the sex ratio in Punjab has been consistently low, it has shown a longterm upward trend and has not contributed to the overall deterioration in sex ratio of the country. In Rajasthan, the sex ratio kept fluctuating in a narrow band and always remained at a low level. Haryana, Andhra Pradesh and Karnataka are the States where the sex ratio has remained more or less stagnant. In West Bengal the sex ratio declined sharply from 1901 to 1941 and then made a gradual turnaround on an upward path to reach 934 in 2001. The sex ratio of Indian population has always been of topical interest for the demographers, social scientists, women's groups, research scholars and various planners and policy makers. Why is it that India has such uneven composition of population as compared to most of the developed countries in the world? Several reasons are adduced to explain the consistently low levels of sex ratio and their further decline in the country. Some of the important reasons commonly put forward are listed below:

- . Neglect of the girl child resulting in their higher mortality at younger ages
- . High maternal mortality
- . Sex selective female abortions
- . Female infanticide
- . Change in sex ratio at birth

The imbalance in the number of males and females begins in the beginning. It is now a well established law of nature that the males exceed females at the time of birth. It is believed that generally 943-952 female births take place for every 1000 male births, which in effect would mean that there is a deficiency of about 50 females per 1000 males in every birth cohort. Many demographers believe that left on its own, this is an unalterable constant. Some likelihood of differential under registration of female births over time notwithstanding, the data on sex ratio at birth for the past many years as obtained from the SRS is indicative of a larger than usual shortfall in female births as compared to male births. The three years moving average sex ratio at birth worked out for India as a whole for the period 1982-98 leaves around 900. During the decade 1981-90 the SRS sex ratio

at birth were above 900 whereas in the succeeding decade it has shown definite sign of a decline below 900. Thus for recent period there is some primary evidence that sex ratio at birth in the country as a whole is possibly lower than

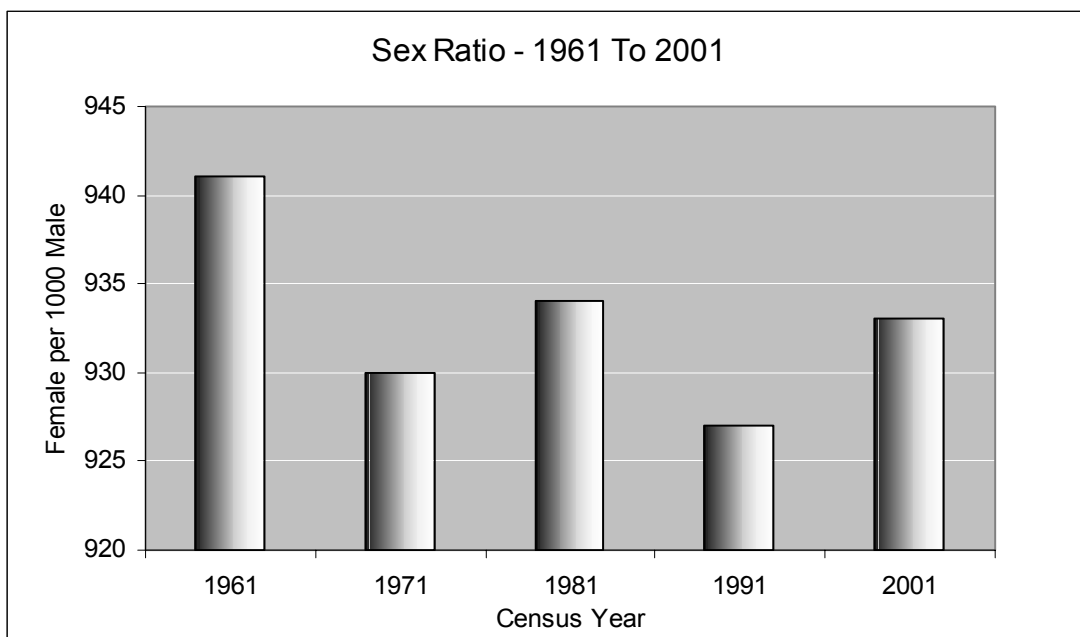


the generally accepted range of 943-952 but it needs to be corroborated by some more data. The overall sex ratio of India is dependent on the sex ratios obtained in different States and Union territories and their relative weights in terms of size of population. Statement 19 gives the sex ratio of the total population, sex ratio in the age group 0-6 and sex ratio of population aged 7 and above for 1991 and 2001 for all the States and Union territories. The diversity in sex ratio among the States and Union territories is phenomenal. At the Census of India, 2001, the sex ratio among the major States ranged from 861 in Haryana to 1058 in Kerala. In 1991 also, Haryana with a sex ratio of 865 was at the bottom with Kerala (1036)

at the top. The changes in sex ratio over time, therefore, are dependent on the changes in the ratios of the individual States and Union territories and their relative share in population.

Table 4.23 gives the figures of sex ratio of states and union territories arranged in descending order for fifty years ranging from 1961 to 2001. According to the Census 1961, the union territory of Daman Diu has shown the highest sex ratio of 1169 against the national level sex ratio of 941 which reached down to 709 against the national level sex ratio as per the Census figures of 2001. Only the state of Kerala has shown an upward trend during these fifty years of period. Goa, Manipur, Mizoram, Lakshadweep, Chhatisgarh, Bihar and Orissa which were having favourable sex ratios declined to the level with unfavourable sex ratio except Pondichery. Even though the sex ratio of Pondichery declined, it still remains favourable.

Figure 4.5



The national sex ratio showed an upward trend only during the decades 1971-81 and 1991-2001 with positive variation in the sex ratio (Table 4.24). During all other decades the net variation in the sex ratio remained negative only.

The sex ratio between 0 to 6 years of age always remained negative from 1961 to 2001.

Figure 4.6

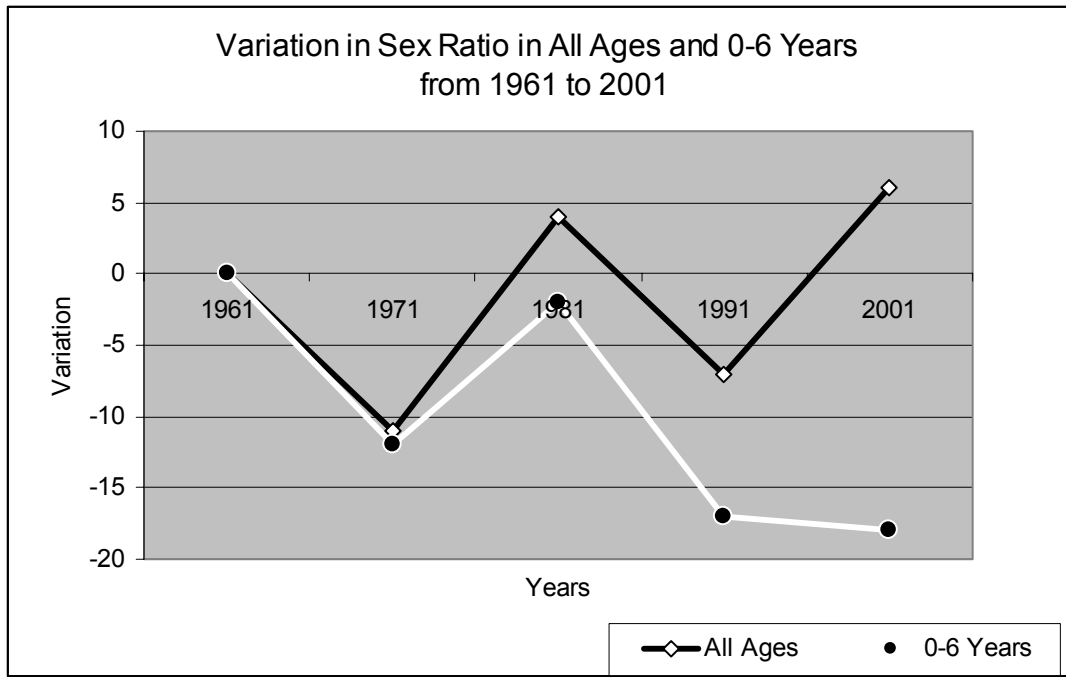


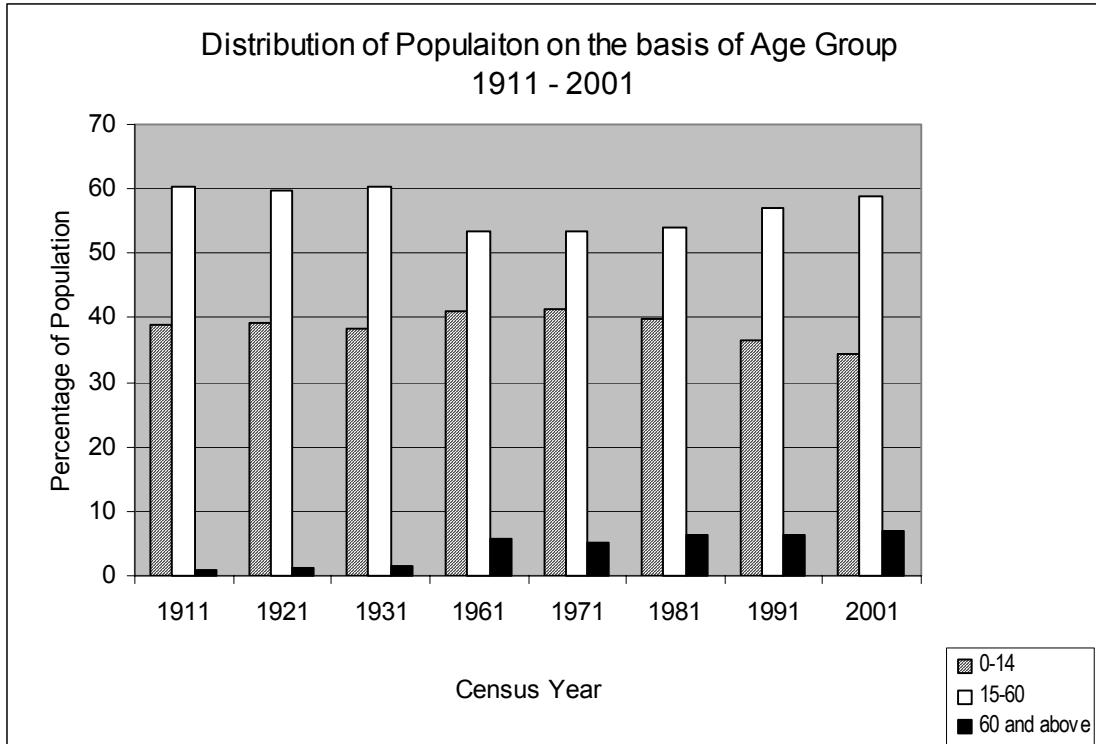
Table 4.25 gives the count in millions of rural-urban distribution of population on the basis of sex. The distribution of male-female in rural-urban break up makes the above discussion clear and unambiguous.

4.6 Age Composition of Population

The Age composition of population also influence economic activities like sex composition. The information on the age composition is of significance for several reasons .One can know the size of labour force, i.e., those falling within the working age (15 to 60 years). An estimate of labour force in India is made in the 2001 Census report. It is 58.2 percent of population in 2001 while the children who fall in the age group of 0-14 years constitute 35.6 percent of population. Table 4.27 depicts these figures from 1911 to 2001. The percentage of children in the total population during 2001 is lower than the figures of earlier four decades. The main reasons for the higher child population in India are high birth

rate and decline in infant mortality. This leads to higher level of unproductive consumers in the country adding the burden of the productive age group.

Figure 4.7



The number of persons above the age of 60 is shown as 6.3 percent of the total population. The fact is that the 58.2 percent of productive people of the country are to make food for not only themselves but for the remaining 41.8 percent of the unproductive population also.

4.7 Literacy

Article 45 of the Directive Principles of the Constitution urges the State to provide free and compulsory education for all the children until they complete fourteen years of age. In this direction the National Policy on Education, 1968 was a further milestone which stressed the need for strenuous efforts for early fulfillment of the goal laid down in the Constitution. The Constitutional amendment of 1976 included education in the concurrent list (the official list of subjects for which the Centre and the States assume joint responsibility). This

was an important step which called for a new sharing of responsibility between the union government and the states in this vital area of national importance. The National Policy on Education, 1986 emphasised that new thrust in elementary education will focus on:

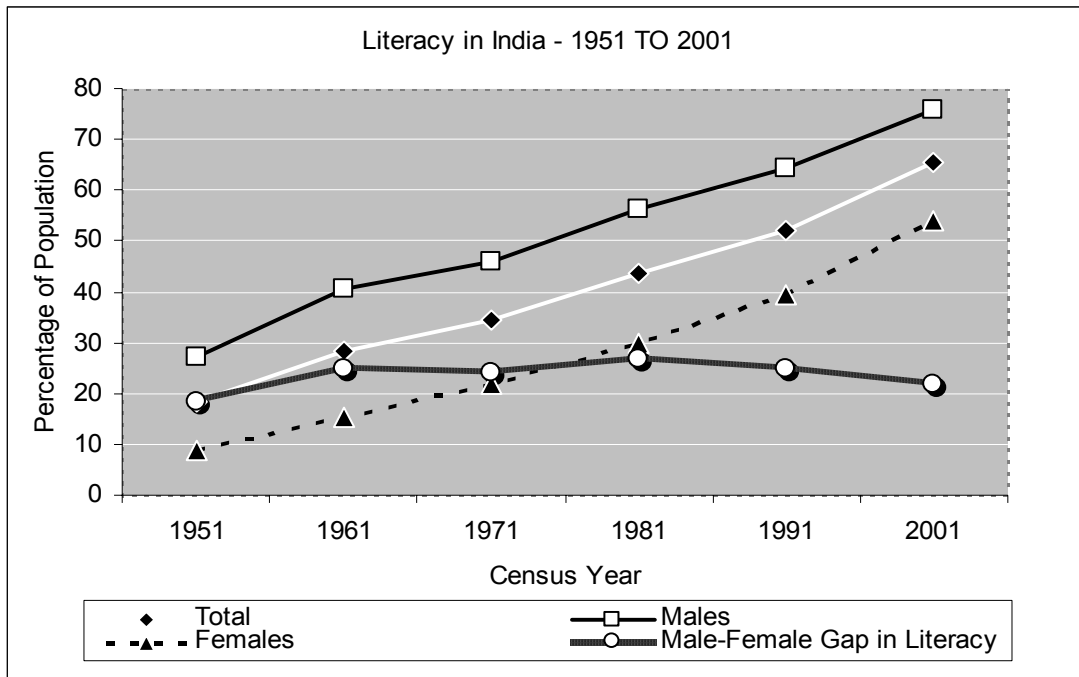


- (i) universal access and enrolment
- (ii) universal retention of children upto fourteen years of age, and
- (iii) a substantial improvement in the quality of education to enable all children to achieve essential levels of learning.

The literacy rates obtained at the census give a reflection of success of the government policies and programmes. Literacy and education are reasonably good indicators of development in a society. Spread and diffusion of literacy is

generally associated with essential traits of today's civilization such as modernization, urbanization, industrialization, communication and commerce.

Figure 4.8



It forms an important input in the overall development of individuals enabling them to comprehend their social, political and cultural environment better and respond to it appropriately. Higher levels of education and literacy lead to a greater awareness and also contributes in improvement of economic conditions. It acts as a catalyst for social upliftment enhancing the returns on investments made in almost every aspect of development effort, be it population control, health, hygiene, environmental degradation control, empowerment of women and weaker sections of the society. Improved levels of literacy also are pre-requisites for acquiring various skills. Literacy is one of the important social characteristics on which information is obtained of every individual in the census. For the purposes of census a person aged seven and above, who can both read and write with understanding in any language, is treated as literate. A person, who can only read but cannot write, is not literate. In the censuses prior to 1991, children below five years of age were necessarily treated as illiterates. The ability to read and write with understanding is not ordinarily achieved until one

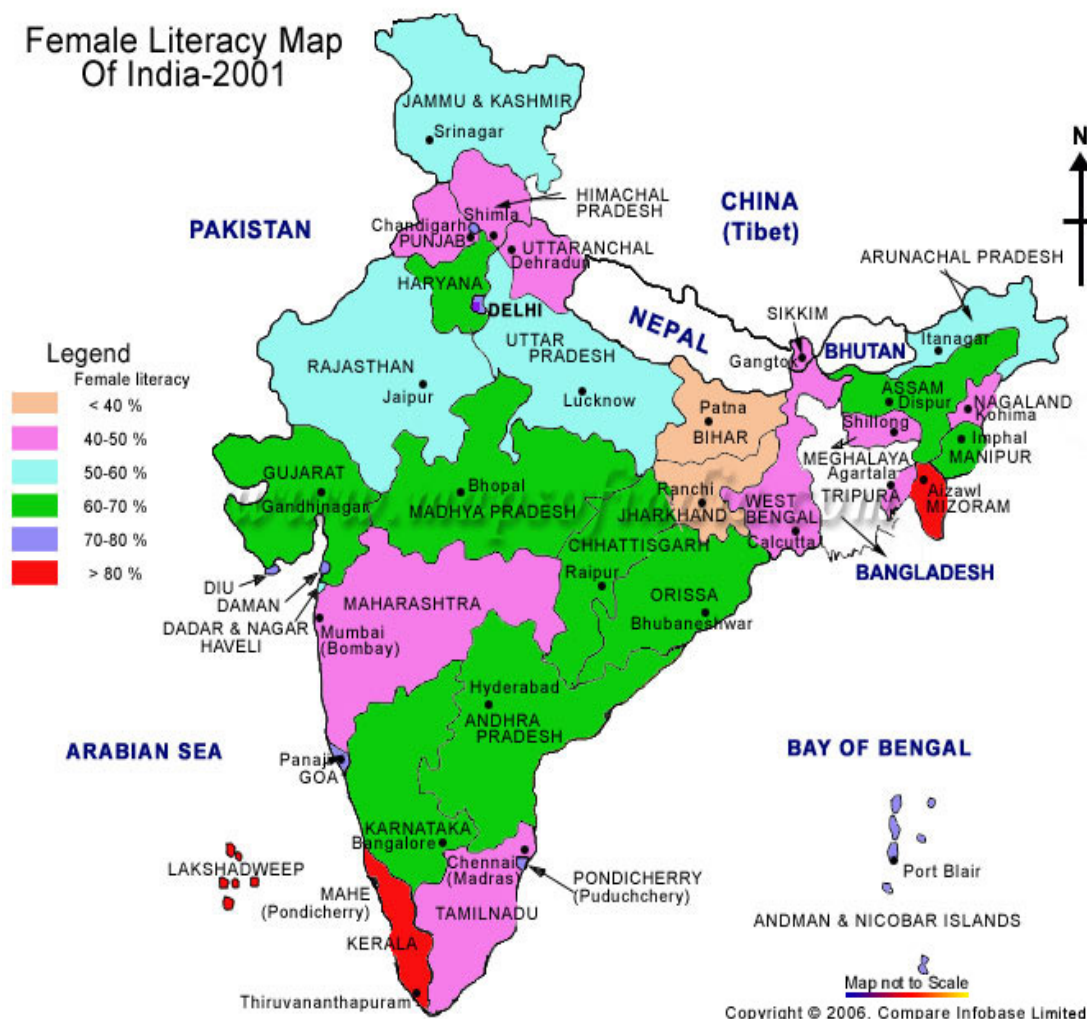
had some schooling or at least some time to develop these skills. It was, therefore, decided at the 1991 census that all children in the age group 0-6, will be treated as illiterate by definition and the population aged seven years and above only is to be classified as literate or illiterate. The same criterion has been retained at the Census of India, 2001, also. It is not mandatory that to be treated as literate, a person should have received any formal education or acquired any minimum educational standard. Literacy status can be acquired through adult literacy classes or by attending any non-formal educational system. Persons who are unfortunately blind and read in Braille are also treated as literates. In Censuses up to 1981, it was customary to work out the literacy rate taking into account the total population. Since literacy rate is more meaningful if the sub-population in the age group 0-6 is excluded from the total population, it was decided in 1991 to use the term literacy rate for the population relating to seven years and above.

Table 4.28 and subsequent graph give an idea about the percentage of literates in the total population, percentage of male and female literate and the gap in male and female in literacy. It is obvious that the percentage of literate population is shown an increasing trend through out the census. But the increase in the percentage in male literate is higher than that of female literate. The male-female gap of literacy has showing a decreasing trend only after 1981 attributing various measures taken by the government for improving the literacy among the female. Literacy rates are, however, more meaningful if the segment of population compulsorily treated as illiterate by definition is excluded from the total population. While literacy rates in this table for the 1951, 61 and 71 censuses relate to the population aged five years and above, those for the 1981, 91 and 2001 relate to the population seven years and above. The literacy rate for the country as a whole in 2001, works out to 65.38 percent for the population aged seven years and over. The corresponding figures for males and females are 75.85 and 54.16 per cent respectively. Thus three fourth of the male and more than half of the female population aged seven years and above are literate in the

country today. India has continued its inexorable march in improving its literacy rate by recording a jump of 13.17 percentage points from 52.21 in 1991 to 65.38 in 2001. The increase in literacy rates in males and females are in the order of 11.72 and 14.87 percentage points respectively. Thus the increase in literacy rates observed during 1991-2001 in respect of persons, males as well as females have been the highest recorded in comparison to earlier decades since 1951 except in case of males during 1951-61. This improvement in literacy rate augurs well for the country and needs not only to be sustained but requires a fillip particularly in the case of the fairer sex. The gap in male-female literacy rates of 18.30 percentage points in 1951, increased to 26.62 in 1981, but since then there are unmistakable signs of improvement. Thus, in 1991 this gap was marginally reduced to 24.84 and in 2001 it has further gone down to 21.70 percentage points. These declines are bound to be slow initially as a result of the continuing past legacy of a large number of adult illiterate women.

Table 4.29 gives the number of literates and illiterates among the population aged seven years and above in absolute figures for India for the 1991 and 2001 Censuses. It is important to take note of the changes in absolute numbers to observe their impact on the literacy trends in the country. Of the 836,650,839 population recorded for the country at the Census of India, 1991 as many as 686,569,914 persons were aged seven years and above. Out of these 358,402,626 were literate and 328,167,288 illiterates.

Female Literacy Map Of India-2001



At the Census of India, 2001, out of the provisional total population of 1,027,015,247 the number of persons aged seven years and above is 858,219,695. Out of these 562,010,743 are literates and 296,208,952 illiterates. There has been increase of 171,649,781 persons in the age group seven years and above during 1991-2001, while 203,608,117 additional persons have become literate during the decade. The significant milestone reached in Census of India, 2001, is that the total number of illiterates has come down from 328,167,288 in 1991 to 296,208,952. Thus for the first time since independence, there is a decline in the absolute number of illiterates during a decade. This is a major shift in improving the literacy status in India and the achievements of the decade 1991-2001 may permit us to label it as the 'Literacy Decade', if this trend

can be made permanently irreversible from now onwards. Out of the 203,608,117 added to the literate population during 1991-2001, 107,986,561 were males and 95,621,556 were females. On the other hand during this period the contribution to the total decrease of 31,958,336 among illiterates, is dominated by males (21,445,145) as compared to the females (10,513,191).

Table 4.30 presents states and Union Territories arranged in decreasing order according to the 2001 literacy rates. Kerala, where the literacy rate is about 90.9 per cent rank first in the country in both male and female literacy. Mizoram comes next with 88.8 percent literacy rate. Bihar, which has the lowest literacy rate during 1991 with 38.54 remain in the lowest rank during 2001 with an improved literacy rate of 47.0 percent which was followed by Jharkhand with 53.6 percent. The male and female literacy rate is also the lowest in the state of Bihar (Male 59.7 percent and Female 33.1 percent). 22 states/Union Territories are having literay rate above the national average while 13 states/Union Territories - Chhattisgararh, Madhya Pradesh, Assam, Orrisa, Meghalaya, Andhra Pradesh, Rajasthan, Dadra Nagar Haveli, Uttar Pradesh, Jammu & Kashmir, Arunachal Pradesh and Jharkhand and Bihar - remain with lesser literacy rates than the national average. Out of the thirteen states and union territories, whose literacy rates are below the current national average of 65.38, nine states occupy also the first nine positions in male-female gaps in literacy rates. Rajasthan, unfortunately, continues to occupy the unceremonious top position in male-female gap literacy rates. However, the gap of 34.55 percentage points in 1991 for Rajasthan has marginally come down to 32.12 percentage points. The other eight states and union territories besides Rajasthan in this group, are Dadra and Nagar Haveli (gap of 30.32 percentage points), Jharkhand (gap of 28.57 percentage points), Uttar Pradesh (gap of 27.25 percentage points), Bihar (gap of 26.75 percentage points), Madhya Pradesh (gap of 26.52 percentage points), Chhattisgarh (gap of 25.46 percentage points), Orissa (gap of 24.98 perc entage points) and Jammu and Kashmir (gap of 23.93 percentage points). The minimum gap in male-female literacy rates any where in the country

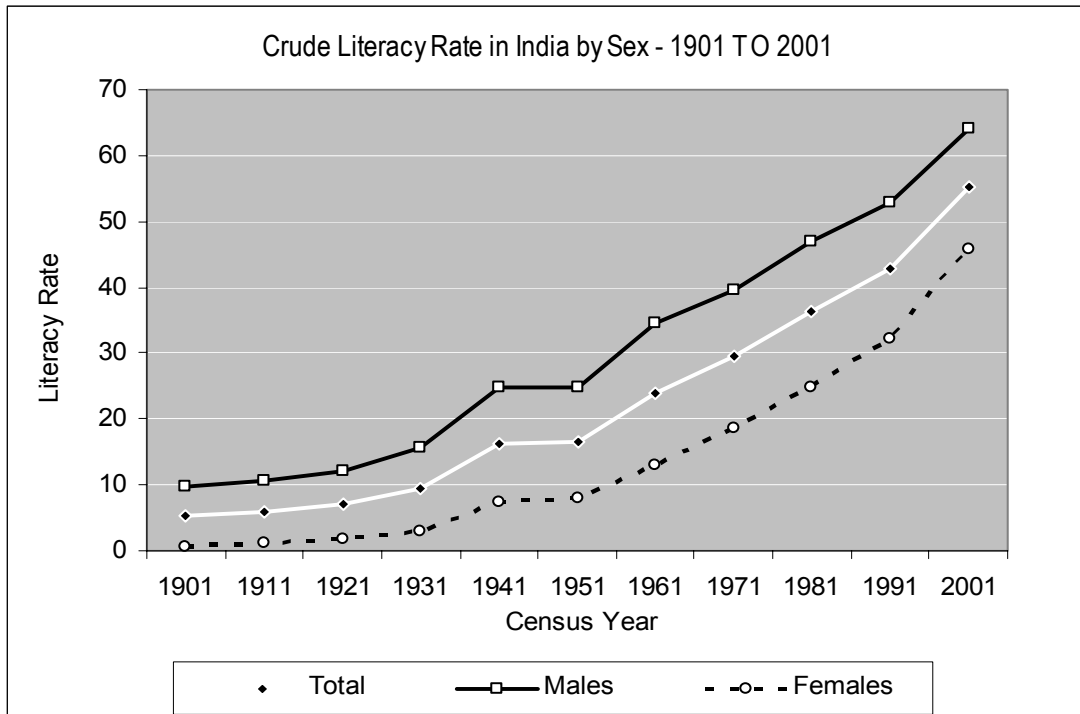
has been observed for Mizoram, (4.56 percentage points). Mizoram, which had also reported the lowest differential in male-female literacy rates during 1991 with 7.01 percentage points, has further narrowed it down to 4.56 in 2001 to lead all the states/ union territories in the country. In 1991, Mizoram was followed by Kerala (gap of 7.45 percentage points) and Meghalaya (gap of 8.27 percentage points). In 2001, Meghalaya and Kerala have interchanged their positions; Meghalaya (gap of 5.73 percentage points), is followed by Kerala (gap of 6.34 percentage points). It is important to note that in case of Meghalaya, although the combined literacy rate of the state is below the national average, the difference between male and female literacy rates is very small. The highest visible improvement in male literacy rate during 1991-2001, is for Rajasthan, where it has moved forward by 21.47 percentage points. It is followed by Chhattisgarh, Dadra and Nagar Haveli, Madhya Pradesh, Andhra Pradesh and Uttar Pradesh which show an improvement of 19.79, 19.76, 18.26, 15.72, 15.40 percentage points respectively. The minimum increase of 0.58 percentage points has taken place in Kerala since the state has almost reached the saturation point. On the pattern of male literacy, the first two top notches in decadal improvement in female literacy rates is claimed by Rajasthan and Chhattisgarh. In case of female literacy, Chhattisgarh occupies the first place, recording a creditable increase of 24.87 per cent during 1991-2001, closely followed by Rajasthan with an upward movement of 23.90 percentage points. The other states and union territories reporting significant improvement in female literacy rates during 1991-2001 are Madhya Pradesh (20.93 per cent), Uttaranchal (18.63 per cent), Uttar Pradesh (18.61 per cent), Andhra Pradesh (18.45 per cent), Orissa (16.29 per cent) and Dadra and Nagar Haveli (16.01 per cent). As in case of males and for the same reasons, Kerala has also shown the least increase of 1.69 percentage points in female literacy rates. The female literacy rates have increased at faster rate than male literacy rates in all the states and union territories except Dadra and Nagar Haveli during 1991-2001.

Table 4.31 gives population aged seven and above and the absolute number of literates in 1991, and their absolute decadal and percentage

difference between 1991-2001. The percentage decadal increase in population aged seven years and above during 1991-2001 is 25.00 while the corresponding increase in the number of literates in this age group is 56.81 per cent. The projected population of those who attained age of seven years and above after the conduct of the 1991 Census i.e., those who should have been enrolled in the schools works out to 239.81 million as per the projections (including Jammu and Kashmir) made by the Office of the Registrar General, India (1996), while the increase in number of literates between 1991 and 2001 (excluding Jammu and Kashmir) is of 203.61 million. These figures possibly suggest that a majority of children who attained age of seven years and above after 1991 attended school at one point of time or the other. However, this preliminary trend can only be confirmed when age wise data relating to literacy and children attending school is available. The number of literates have more than doubled in Dadra and Nagar Haveli and Rajasthan during the decade 1991-2001. The states and union territories, which have shown decadal percentage increase of more than eighty per cent, are Nagaland (85.60), Chhatisgarh (85.25), Madhya Pradesh (83.69), Daman and Diu (83.22) and Uttar Pradesh (81.75).

Table 4.32 shows the crude literacy rate in India by sex during 1901-2001. The literacy rates designated as crude literacy rates in this table, have been computed with total population as base without removing the mandatory illiterate population aged 0-4 or 0-6 from the denominator. The crude literacy rates starting from 1901 onwards show a consistent increase both for males and females. The crude literacy rate in 1901, started with a low level of 5.35 per cent and steadily increased by 1931 to reach a figure of 9.50 per cent. It further improved sharply to 16.10 per cent during 1931-41, recording an increase of 6.60 percentage points. The improvement in literacy during 1941-51 was barely visible with a gain of only 0.57 percentage point. In post-independence period, there has been a more rapid growth in crude literacy rates.

Figure 4.9



It has grown more than three times from 16.67 per cent in 1951 to 55.30 per cent at the Census of India, 2001. The crude literacy rate crossed the significant milestone of fifty per cent in the current census. The jump of 12.46 percentage points between 1991 and 2001 compares extraordinarily with the decadal literacy growth of previous decades since 1901. It is for the first time since 1901 that an increase in two digit percentage points during 1991-2001, has occurred in case of all the three categories of persons, males and females. The male crude literacy has moved forward by 11.39 percentage points from 52.74 per cent to 64.13 per cent and among females it has gone up by 13.67 percentage points from 32.17 per cent in 1991 to 45.84 in 2001. In pre-independence period, the male crude literacy rate increased from 9.83 per cent in 1901 to 24.90 per cent in 1941, whereas the corresponding increase in female crude literacy rate was from 0.60 per cent to 7.30 per cent. In post independence era the crude literacy rates of males has gone up by almost forty per cent. The corresponding increase among females is thirty eight per cent.

4.8 Birth Rate, Death Rate and Infant Mortality Rate

Birth rate, death rate and the migration of population are the three important factors which determine the growth of population of any country at any given time. The growth of population differs from state to state, time to time on account of the differences in these three factors. However, this difference in growth rate is also found among region to region within a given country. It is further understood that fertility has a bearing on the birth-rate. Out of these three factors, therefore, birth-rate is one of the most important factors in determining population growth. It is thus, necessary to examine trends of fertility in our country.

Figure 4.10

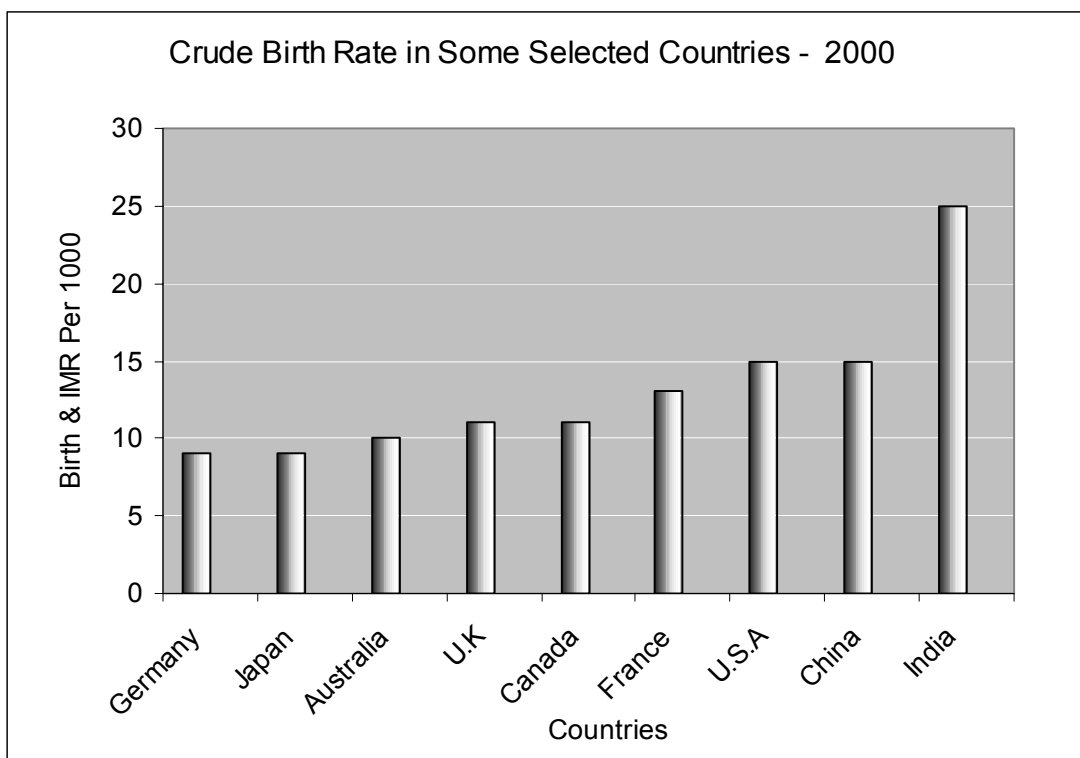
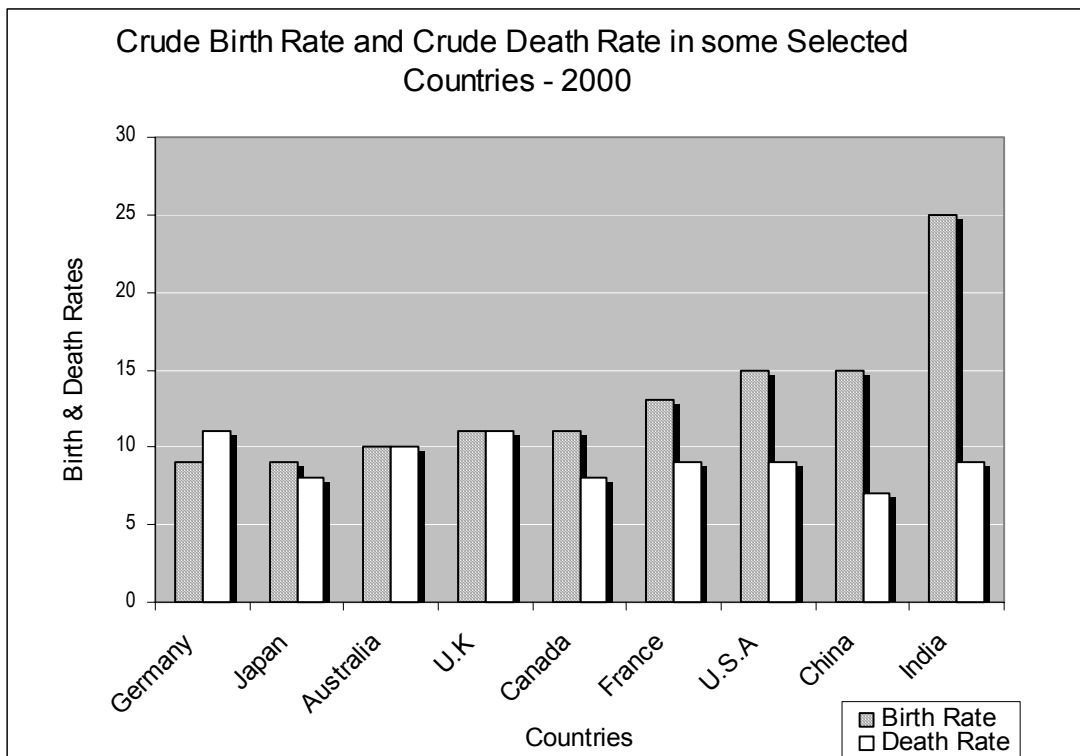


Table 4.33 gives the figures of crude birth rate in some selected countries of the world. India tops in the birth rate with 25 per thousand and Japan have the least birth rate with 9 per thousand. Australia 10 per thousand, U.K and Canada

with 11 per thousand France 13 per thousand, U.S.A. and China with 15 per thousand. The Infant Mortality Rate in these countries is given in table 4.38. In Germany, Japan and France it is only 4 per thousand, Australia and Canada it is 5 per thousand, U.K.6, U.S.A. 7 and in China it is 32 per thousand and in India remains at the top with 69 per thousand.

Figure 4.11



In the beginning of the 19th century the death rate ranged from 35 to 50 per thousands. It has now come down to 7 to 8 per thousand. Better diet, pure drinking water, improved hospital facilities, better sanitation, control by medicines are the main reasons for this heavy decrease in death rate. Table 4.34 shows the death rates in some selected countries of the world. The least death rates is in China (7 per thousand) followed by Japan and Canada (8 per thousand) and India, U.S.A. and France (9 per thousand), then Australia (10 per thousand) and last Germany and U.K.(11 per thousand). The correlation coefficient between birth rates and Infant Mortality rates among these selected countries is +0.927

which shows there is a very high correlation between the birth rates and Infant Mortality Rates.

Figure 4.12

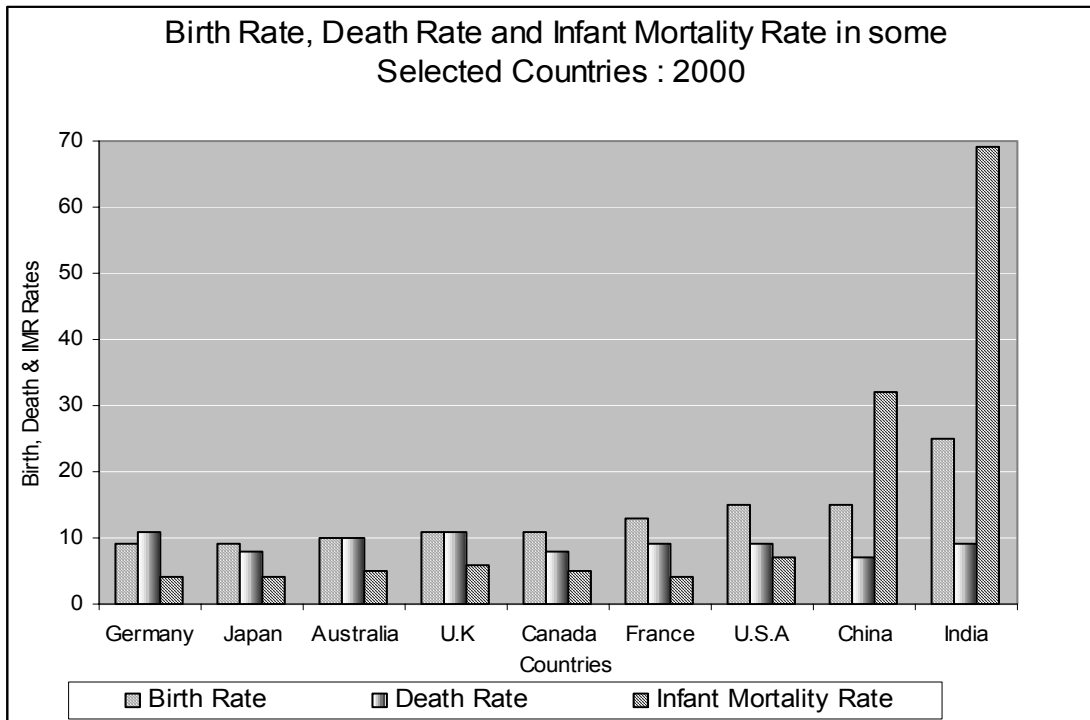
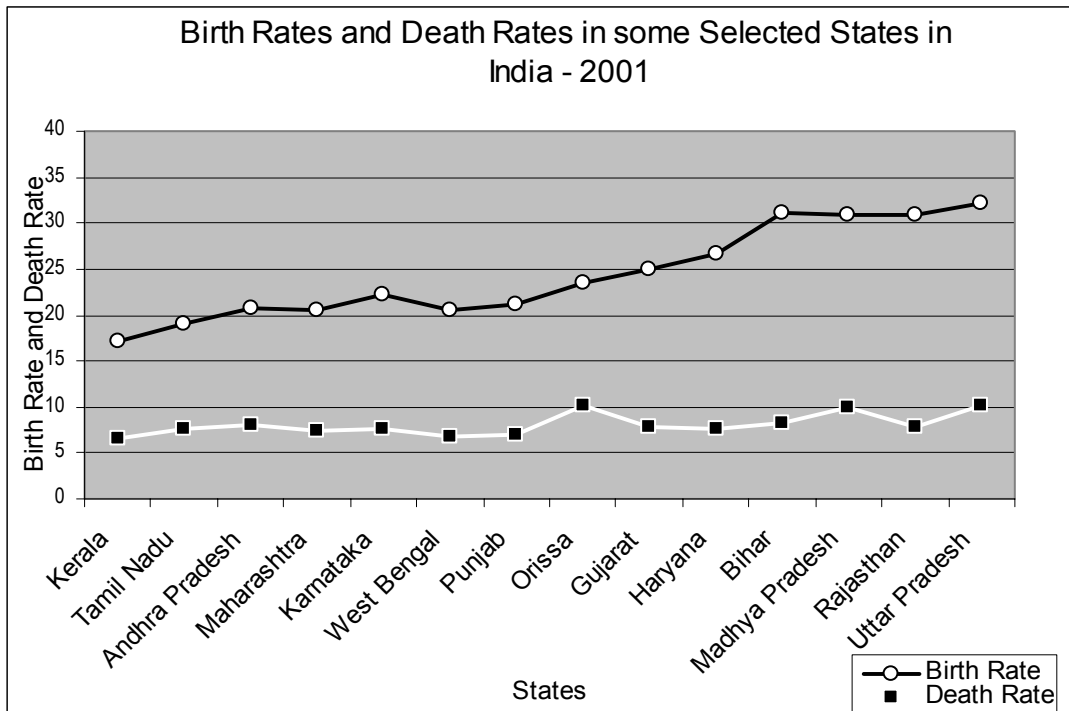


Table 4.34 gives the figures of Birth rate, Infant Mortality Rate and Mean age at Marriage of females for 14 major states during the year 2001. Kerala has the lowest birth and infant mortality rate 17.2 and 11 per thousand respectively. The mean age marriage of females is highest in the state of Kerala which is 22.3 years. The same figures for the state of Gujarat are 24.9 per thousand, 60 per thousand respectively. The mean age at marriage is 20.4 years. Uttar Pradesh has the highest birth rate of 32.1 per thousand, Orissa has the highest Infant Mortality Rate of 90 per thousand and the mean age at marriage is the lowest (17.8 years) in Andhra Pradesh.

Kerala the state which registered least death per thousand i.e. 6.4 per thousand against the national figure of 8.9 per thousand and the state of Orissa has registered the maximum , 10.7 per thousand. Out of the 14 states 10 states have the death rate below the national level, Bihar shows the death rate

equivalent to the national level and the remaining three states- Uttar Pradesh, Madhya Pradesh and Orissa have the death rates above the national average.

Figure 4.13

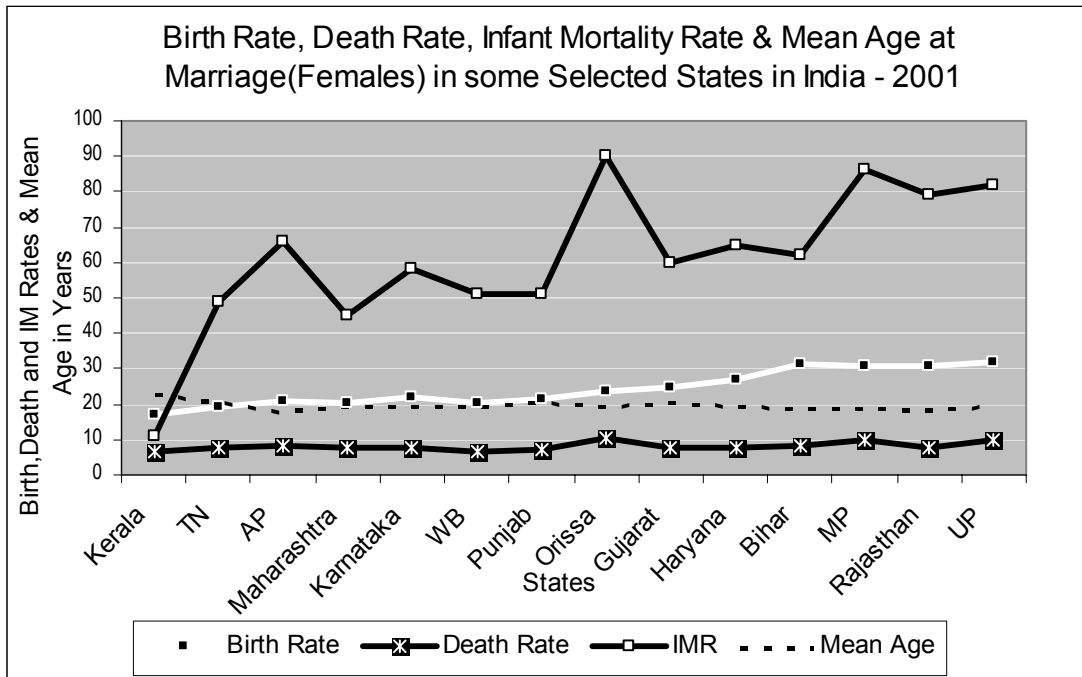


The correlation coefficient between birth rate and infant mortality rates have been found 0.724 among these 14 states which shows a positive correlation between the birth rate and infant mortality rates while the correlation between birth rate and mean age at marriage has shown a moderate negative correlation of (-)0.531. The above analysis shows that the birth rate and infant mortality rate moves in the same direction while the lesser the mean age at marriage, the higher the birth rate.

The rural-urban distribution of birth rate, death rate, infant mortality rate and natural growth rate of all the states during 2005 is shown in table 4.35. The birth rate, death rate IMR and Natural growth rates are more in the northern states of Bihar, Madhya Pradesh, Rajasthan and Gujarat compared to the southern states of Andhra Pradesh, Karnataka, Tamils Nadu and Kerala. Another feature observed is that the birth rate is comparatively lesser in rural area than in urban area. Consequently the natural growth rate is lesser in rural

sector of northern states than in the urban sector. In southern states, there is not much difference between the birth rate of rural and urban areas and therefore much difference can not be seen in the natural growth rate of rural and urban areas.

Figure 4.14



In southern states, there is not much difference between the birth rate of rural and urban areas and therefore much difference can not be seen in the natural growth rate of rural and urban areas.

The rural-urban distribution of birth rates and death rates is given in table 4.36 for the periods 1971, 1981, 1991 and 2000. Both birth and death rates remain at a low level in urban areas compared to rural areas. The main reason for high birth rate in rural area is illiteracy and for the birth rates is improper functioning of the health facilities. The birth rate in urban area declined from 30.1 during 1971 to 20.7 during 2000. Similarly the death rate declined from 9.7 to 6.3 during the same period. Against this in rural India, the birth rate declined from 38.9 during 1971 to 27.6 during 2000 and the death rate from 16.4 to 9.3. The rural-urban gap in birth rate during 2000 is just 6.9 and the same in the death

rate is 3 only. Table 4.37 gives the figures of birth rates of 14 major states of India from 1980-82 to 2001. All the states show a decreasing trend in the birth rates. The birth rate in India decreased from 33.8 percent to 25.4 percent. The state of Gujarat has shown 8.4% decrease over this period. West Bengal has shown maximum decrease of 11.9 per cent from 32.4 per cent to 20.5 per cent and the second is Andhra Pradesh with 10.5 per cent decrease from 31.3 per cent to 20.8 percent. Gujarat has registered a decrease of 10.10 per cent from 34.8 per cent in 1980-82 to 24.9 per cent in 2001. The lowest decrease occurred in Karnataka 5.7 per cent from 27.9 per cent to 22.2 per cent.

4.9 Nature of the Population Problem

The above discussion clearly reveals certain important features and issues pertaining to Indian Demography. Some of the issues needs immediate attention and more elaborative steps are needed to be taken to resolve the issues

a) The population base of India is very high and it feeds about one-sixth of the world population. Even though the rate of growth of population has been decreased, compared to the present level of population the per-year increase is very high.

b) India shows a rising masculine tilt, with the proportion of women in the total population gradually falling. This is a direct indication of low physical quality of life of the female folk of the country which indicated the need for more efforts in this area.

c) The high growth rate of population is attributed to a combination of high fertility and a declining mortality rate.

d) Birth rate seems to be decreased but not up to the expected level.

e) The age classification of population clearly shows a high dependency ratio compared to the number of bread winners.

f) Major portion of the population is still illiterate which works as the most important for the low economic growth of the economy. The proportion of illiterate in rural area is more than that in urban area. This signifies poor quality of human capital in the country. Our education is not much oriented towards the requirements of the domestic or global. There is a need to expand technical and professional education, taking into account the future need and globalisation of Indian economy.

g) Looking into the unutilised and under utilised natural resources and their improper and non-optimal utilisation indicates, theoretically the signs of an under populated country while the large number of population suffering from unemployment says India is over populated. This is a persistent dilemma which has to be discussed and resolved leaving a wide scope of further research.

h) Large scale unemployment, as usual, stands in India, in the midway making barricade to the faster economic growth of the country. From the above study and analysis of current trends in the job market it could be noticed that the one with skill and know how to apply it properly will never remain unemployed in India. Irrespective of educational qualification, the one acquired skill and application skill gets in to the job market quickly. This indicates that a thorough change is required in the present education system. The ways and methods are to be explored for a change in the system. Wide scope of research is hidden in this area also. Unemployment refers to a situation where people do not get work at the existing wage rate. It may be noted that the magnitude of unemployment, particularly educated unemployment has been on the increase over the years. There are two main reasons of growing unemployment.

(i) Controlling rural to urban migration is another area of concern creating a heavy burden on public infrastructure and civic amenities. Small town norms are to be strengthened.

The statements given above indicate the nature of Indian demography. Among these different features, the one which is of the almost concern to the students of population trends in India, and to the policy makers at large, relates to the high growth rate of population experienced during the last fifty-five years. There are several factors behind it. There is, for example, the high birth rate, the declining death rate; the nature, structure, and functioning of social institutions; economic factors, etc. On the basis of studies of population growth in developing and under-developed countries, some theories are also developed in recent times.

TABLE 4.1
KEY POPULATION STATISTICS

Information	Sex	Unit	2001	1991
Population		Million	1027	846
Density of population		Per sq. km	324	273*
Districts		Number	593	466
AUs & Towns		Number	5545	3768
Rural Population		Million	741	629
Urban Population		Million	285	218
Rural as % of total		%	72.2	74.3
Urban as % of total		%	27.7	25.7
Male population		Million	531	439
Female population		Million	495	407
Sex Ratio		Number	933	927
Workers*		Million	313	306
	Male	Million	240	219
	Female	Million	72	87
Birth Rate**		Per 1000	26.1	32.5
Death Rate***		Per 1000	8.7	11.4
Expectation of life at birth		Years	61.1	58.2
	Male	Years	60.4	57.7
	Female	Years	61.8	58.7
Literacy		%	65.38	52.2#
	Male	%	75.85	64.1#
	Female	%	54.16	39.3#

Note : Birth rate and death rate under 1991 relate to 1981-90 and expectation of life at birth to 1991-92. Workers are total of main and marginal

* Excluding Assam and J&K, ** 1993-97, *** 1999, # Excluding J&K

Source : Census 1991, 2001

TABLE 4.2
POPULATION OF TEN MOST
POPULOUS COUNTRIES OF THE WORLD

Sr. No	Country	Reference Date	Population (in Millions)
1	China	01-02-2000	1,277.6
2	India	01-03-2001	1,027.0
3	U.S.A.	April 2000	281.4
4	Indonesia	01-07-2000	212.1
5	Brazil	01-07-2000	170.1
6	Pakistan	01-07-2000	156.5
7	Russian Fed.	01-07-2000	146.9
8	Bangladesh	01-07-2000	129.2
9	Japan	01-10-2000	126.9
10	Nigeria	01-02-2000	111.5

Note:

1. For India, USA and Japan the population figures are as per the Census
2. Source for other countries: World Population Prospects (mid-year estimates) 1998 Revisions. Volume II, Sex and age, United Nations. The estimates are medium variant.

TABLE 4.3
INDIA'S POPULATION SIZE AND GROWTH

Census Year	Population	Increase/ Decrease in Millions	Decadal Growth %	Change in Decadal Growth %	Progressive Growth Rate over 1901 (%)	Annual Exponential Growth Rate (%)
1901	23,83,96,327	-	-	-	-	-
1911	25,20,93,390	14	5.75	-	5.75	0.56
1921	25,13,21,213	-1	-0.31	-6.05	5.42	-0.03
1891-1921		13	5.44			0.19
1931	27,89,77,238	28	11.00	11.31	17.02	1.04
1941	31,86,60,580	40	14.22	3.22	33.67	1.33
1951	36,10,88,090	42	13.31	-0.91	51.47	1.25
1921-1951		110	2.31			1.22
1961	43,92,34,771	78	21.64	8.33	84.25	1.96
1971	54,81,59,652	109	24.80	3.16	129.94	2.20
1981	68,33,29,097	135	24.66	-0.14	186.64	2.22
1951-1981		322	3.02			2.14
1991	84,63,87,888	161	23.86	-0.80	255.03	2.14
2001	1,02,70,15,247	183	21.34	-2.52	330.80	1.93
1981-2001		344	-2.52			2.03

Source: Provisional Population Totals. Paper 1 of Series 1

Note: 1. In working out 'Decadal Growth' and 'Percentage Decadal Growth' for India 1941-51 and 1951-61 the population of Tuensang district for 1951 (7,025) and the population of Tuensang (83,501) and Mon (5,774) districts for 1961 Census of Nagaland state have not been taken into account as the areas were censused for the first time in 1951 and the same are not comparable. 2. The 1981 Census could not be held owing to disturbed conditions prevailing in Assam. Hence the population figures for 1981 of Assam have been worked out by 'interpolation'. 3. The 1991 Census could not be held owing to disturbed conditions prevailing in Jammu and Kashmir. Hence the population figures for 1991 of Jammu and Kashmir have been worked out by 'interpolation'.

TABLE 4.4
STATES AND UNION TERRITORIES BY POPULATION SIZE

Rank in 2001	State/Union Territory*	Population in 2001	Percent to Total Population of India		Rank in 1991
			2001	1991	
1	Uttar Pradesh	166,197,921	16.16	15.60	1
2	Maharashtra	96,878,627	9.42	9.33	2
3	Bihar	82,998,509	8.07	7.62	5
4	West Bengal	80,176,197	7.79	8.04	3
5	Andhra Pradesh	76,210,007	7.41	7.86	4
6	Tamil Nadu	62,405,679	6.07	6.59	6
7	Madhya Pradesh	60,348,023	5.87	5.74	7
8	Rajasthan	56,507,188	5.49	5.20	9
9	Karnataka	52,850,562	5.14	5.31	8
10	Gujarat	50,671,017	4.93	4.88	10
11	Orissa	36,804,660	3.58	3.74	11
12	Kerala	31,841,374	3.10	3.44	12
13	Jharkhand	26,945,829	2.62	2.58	14
14	Assam	26,655,528	2.59	2.64	13
15	Punjab	24,358,999	2.37	2.40	15
16	Haryana	21,144,564	2.06	1.95	17
17	Chhattisgarh	20,833,803	2.03	2.08	16
18	Delhi*	13,850,507	1.35	1.11	18
19	Jammu & Kashmir	10,143,700	0.99	0.92	19
20	Uttaranchal	8,489,349	0.83	0.84	20
21	Himachal Pradesh	6,077,900	0.59	0.61	21
22	Tripura	3,199,203	0.31	0.33	22
23	Meghalaya	2,318,822	0.22	0.21	24
24	Manipur	2,291,125	0.23	0.23	23

TABLE 4.4 (Cont..)
STATES AND UNION TERRITORIES BY POPULATION SIZE

Rank in 2001	State/Union Territory*	Population in 2001	Percent to Total Population of India		Rank in 1991
			2001	1991	
25	Nagaland	1,990,036	0.19	0.14	25
26	Goa	13,43,998	0.13	0.14	26
27	Arunachal Pradesh	1,097,968	0.11	0.10	27
28	Pondichery	974,345	0.09	0.10	28
29	Chandigarh	900,635	0.09	0.08	30
30	Mizoram	888,573	0.09	0.08	29
31	Sikkim	540,851	0.05	0.05	31
32	Andaman & Nicobar Is.	356,152	0.03	0.03	32
33	Dadra & Nagar Haveli	220,490	0.02	0.02	33
34	Daman Diu	158,204	0.02	0.01	34
35	Lakshadweep	60,650	0.01	0.01	35

Note : The population of Manipur including the estimated population of the three sub-divisions of Senapati district. The population of Manipur excluding Mao-maram, paomata and Purul sub-divisions of Senapati district is 2,166,788 (Males 1,095,634 and Females 1,071,154)

Source: Primary Census Abstract : Census of India 2001

TABLE 4.5
PERCENTAGE DECADAL GROWTH RATE OF POPULATION :1951 -2001

Rank	India/State/ Union Territories	1951- 61	1961- 71	1971- 81	1981- 91	1991- 2001
	INDIA	21.6	24.8	24.7	23.9	21.54
1	Nagaland	73.4	39.9	50.1	56.1	64.53
2	Dadra & Nagar Haveli	39.6	28.0	39.8	33.6	59.22
3	Daman & Diu	-24.6	70.9	26.1	28.6	55.73
4	Delhi	52.4	52.9	53.0	51.5	47.02
5	Chandigarh	394.1	114.6	75.6	42.2	40.28
6	Sikkim	17.8	29.4	50.8	28.5	33.06
7	Meghalaya	27.0	31.5	32.0	32.9	30.75
8	Jammu & Kashmir	9.4	29.7	29.7	30.9	29.43
9	Mizoram	35.6	24.9	48.6	39.7	28.82
10	Bihar	19.8	20.9	24.2	23.4	28.62
11	Haryana	33.8	32.2	28.8	27.4	28.43
12	Rajasthan	26.2	27.8	33.0	28.4	28.41
13	Aruachal Pradesh	NA	38.9	35.2	36.8	27.00
14	Andaman & Nicobar Is.	105.2	81.2	63.9	48.7	26.9
15	Uttar Pradesh	16.4	19.5	25.4	25.6	25.85
16	Manipur	35.0	37.5	32.5	29.3	24.86
17	Madhya Pradesh	24.7	29.3	27.2	27.2	24.26
18	Jharkhand	19.7	22.6	23.8	24.0	23.36
19	Maharashtra	23.6	27.5	24.5	25.7	22.73
20	Gujarat	26.9	29.4	27.7	21.2	22.66
21	Pondichery	16.3	27.8	28.2	33.6	20.62
22	Uttaranchal	22.6	24.4	27.5	23.1	20.41
23	Punjab	21.6	21.7	23.9	20.8	20.10
24	Assam	35.0	35.0	23.4	24.2	18.92

TABLE 4.5 (CONT...)
PERCENTAGE DECADAL GROWTH RATE OF POPULATION :1951 -2001

Sr. No.	India/State/ Union Territories	1951- 61	1961- 71	1971- 81	1981- 91	1991- 2001
25	Chhatisgarh	22.8	27.1	20.4	25.7	18.27
26	West Bengal	32.8	26.9	23.2	24.7	17.77
27	Himachal Pradesh	17.9	23.0	23.7	20.8	17.54
28	Karnataka	21.6	24.2	26.8	21.1	17.51
29	Lakshadweep	14.6	32.0	26.5	28.5	17.30
30	Orissa	19.8	25.1	20.2	20.1	16.25
31	Tripura	78.7	36.3	31.9	34.3	16.03
32	Goa	7.8	34.8	26.7	16.1	15.21
33	Andhra Pradesh	15.7	20.9	23.1	24.2	14.59
34	Tamil Nadu	11.9	22.3	17.5	15.4	11.72
35	Kerala	24.8	26.3	19.2	14.3	9.43

Source: Primary Census Abstract : Census of India 2001

Note : Based on interpolated population of Jammu and Kashmir in 1991 and by including the estimated population of affected areas of Himachal Pradesh and Gujarat in 2001

TABLE 4.6 -A
STATE AND UNION TERRITORIES ARRANGED IN ASCENDING ORDER OF
PERCENTAGE DECADAL GROWTH OF POPULATION
FROM 1951 -1961 TO 1961-1971

Rank	India/State/ Union Territories	1951- 61	Rank	India/State/ Union Territories	1961- 71
1	Daman & Diu	-24.60	1	Uttar Pradesh	19.50
2	Goa	7.80	2	Bihar	20.90
3	Jammu & Kashmir	9.40	3	Andhra Pradesh	20.90
4	Tamil Nadu	11.90	4	Punjab	21.70
5	Lakshadweep	14.60	5	Tamil Nadu	22.30
6	Andhra Pradesh	15.70	6	Jharkhand	22.60
7	Pondichery	16.30	7	Himachal Pradesh	23.00
8	Uttar Pradesh	16.40	8	Karnataka	24.20
9	Sikkim	17.80	9	Uttaranchal	24.40
10	Himachal Pradesh	17.90		INDIA	24.80
11	Jharkhand	19.70	10	Mizoram	24.90
12	Bihar	19.80	11	Orissa	25.10
13	Orissa	19.80	12	Kerala	26.30
	INDIA	21.60	13	West Bengal	26.90
14	Punjab	21.60	14	Chhatisgarh	27.10
15	Karnataka	21.60	15	Maharashtra	27.50
16	Uttaranchal	22.60	16	Rajasthan	27.80
17	Chhatisgarh	22.80	17	Pondichery	27.80
18	Maharashtra	23.60	18	Dadra & Nagar Ha.	28.00

TABLE 4.6 - A(Cont..)
STATE AND UNION TERRITORIES ARRANGED IN ASCENDING ORDER OF
PERCENTAGE DECADAL GROWTH OF POPULATION
FROM 1951 -1961 TO 1961-1971

Rank	India/State/ Union Territories	1951- 61	Rank	India/State/ Union Territories	1961-71
19	Madhya Pradesh	24.70	19	Madhya Pradesh	29.30
20	Kerala	24.80	20	Sikkim	29.40
21	Rajasthan	26.20	21	Gujarat	29.40
22	Gujarat	26.90	22	Jammu & Kashmir	29.70
23	Meghalaya	27.00	23	Meghalaya	31.50
24	West Bengal	32.80	24	Lakshadweep	32.00
25	Haryana	33.80	25	Haryana	32.20
26	Manipur	35.00	26	Goa	34.80
27	Assam	35.00	27	Assam	35.00
28	Mizoram	35.60	28	Tripura	36.30
29	Dadra & Nagar Ha.	39.60	29	Manipur	37.50
30	Delhi	52.40	30	Aruachal Pradesh	38.90
31	Nagaland	73.40	31	Nagaland	39.90
32	Tripura	78.70	32	Delhi	52.90
33	Andaman & Nicobar	105.20	33	Daman & Diu	70.90
34	Chandigarh	394.10	34	Andaman & Nicobar	81.20
35	Aruachal Pradesh	NA	35	Chandigarh	114.60

TABLE 4.6 -B
STATE AND UNION TERRITORIES ARRANGED IN ASCENDING ORDER OF
PERCENTAGE DECADAL GROWTH OF POPULATION
FROM 1971 -1981 TO 1981-1991

Rank	India/State/ Union Territories	1971- 81	Rank	India/State/ Union Territories	1981- 91
1	Tamil Nadu	17.50	1	Kerala	14.30
2	Kerala	19.20	2	Tamil Nadu	15.40
3	Orissa	20.20	3	Goa	16.10
4	Chhatisgarh	20.40	4	Orissa	20.10
5	Andhra Pradesh	23.10	5	Punjab	20.80
6	West Bengal	23.20	6	Himachal Pradesh	20.80
7	Assam	23.40	7	Karnataka	21.10
8	Himachal Pradesh	23.70	8	Gujarat	21.20
9	Jharkhand	23.80	9	Uttaranchal	23.10
10	Punjab	23.90	10	Bihar	23.40
11	Bihar	24.20		INDIA	23.90
12	Maharashtra	24.50	11	Jharkhand	24.00
	INDIA	24.70	12	Assam	24.20
13	Uttar Pradesh	25.40	13	Andhra Pradesh	24.20
14	Daman & Diu	26.10	14	West Bengal	24.70
15	Lakshadweep	26.50	15	Uttar Pradesh	25.60
16	Goa	26.70	16	Maharashtra	25.70
17	Karnataka	26.80	17	Chhatisgarh	25.70
18	Madhya Pradesh	27.20	18	Madhya Pradesh	27.20

TABLE 4.6 –B (Cont..)
STATE AND UNION TERRITORIES ARRANGED IN ASCENDING ORDER OF
PERCENTAGE DECADAL GROWTH OF POPULATION
FROM 1971 -1981 TO 1981-1991

Rank	India/State/ Union Territories	1971- 81	Rank	India/State/ Union Territories	1981- 91
19	Uttaranchal	27.50	19	Haryana	27.40
20	Gujarat	27.70	20	Rajasthan	28.40
21	Pondichery	28.20	21	Sikkim	28.50
22	Haryana	28.80	22	Lakshadweep	28.50
23	Jammu & Kashmir	29.70	23	Daman & Diu	28.60
24	Tripura	31.90	24	Manipur	29.30
25	Meghalaya	32.00	25	Jammu & Kashmir	30.90
26	Manipur	32.50	26	Meghalaya	32.90
27	Rajasthan	33.00	27	Dadra & Nagar Ha.	33.60
28	Aruachal Pradesh	35.20	28	Pondichery	33.60
29	Dadra & Nagar Ha.	39.80	29	Tripura	34.30
30	Mizoram	48.60	30	Aruachal Pradesh	36.80
31	Nagaland	50.10	31	Mizoram	39.70
32	Sikkim	50.80	32	Chandigarh	42.20
33	Delhi	53.00	33	Andaman & Nicobar	48.70
34	Andaman & Nicobar	63.90	34	Delhi	51.50
35	Chandigarh	75.60	35	Nagaland	56.10

TABLE 4.6 –C
STATE AND UNION TERRITORIES ARRANGED IN ASCENDING ORDER OF
PERCENTAGE DECADAL GROWTH OF POPULATION DURING 1991-2001
AND AVERAGE GROWTH FROM 1951-61 TO 1991-2001

Rank	India/State/ Union Territories	1991- 2001	Rank	India/State/ Union Territories	Average Growth
1	Kerala	9.43	1	Tamil Nadu	15.76
2	Tamil Nadu	11.72	2	Kerala	18.81
3	Andhra Pradesh	14.59	3	Andhra Pradesh	19.70
4	Goa	15.21	4	Goa	20.12
5	Tripura	16.03	5	Orissa	20.29
6	Orissa	16.25	6	Himachal Pradesh	20.59
7	Lakshadweep	17.30	7	Punjab	21.62
8	Karnataka	17.51	8	Karnataka	22.24
9	Himachal Pradesh	17.54	9	Uttar Pradesh	22.55
10	West Bengal	17.77	10	Jharkhand	22.69
11	Chhatisgarh	18.27	11	Chhatisgarh	22.85
12	Assam	18.92		INDIA	23.31
13	Punjab	20.10	12	Bihar	23.38
14	Uttaranchal	20.41	13	Uttaranchal	23.60
15	Pondichery	20.62	14	Lakshadweep	23.78
	INDIA	21.54	15	Maharashtra	24.81
16	Gujarat	22.66	16	West Bengal	25.07
17	Maharashtra	22.73	17	Pondichery	25.30
18	Jharkhand	23.36	18	Gujarat	25.57

TABLE 4.6 –C
STATE AND UNION TERRITORIES ARRANGED IN ASCENDING ORDER OF
GROWTH RATE OF POPULATION RATE OF POPULATION 1991-2001
AND AVERAGE GROWTH FROM 1951-61 TO 1991-2001

Rank	India/State/ Union Territories	1991- 2001	Rank	India/State/ Union Territories	Average Growth
19	Madhya Pradesh	24.26	19	Jammu & Kashmir	25.83
20	Manipur	24.86	20	Madhya Pradesh	26.53
21	Uttar Pradesh	25.85	21	Assam	27.30
22	Andaman & Nicobar	26.90	22	Aruachal Pradesh	27.58
23	Aruachal Pradesh	27.00	23	Rajasthan	28.76
24	Rajasthan	28.41	24	Haryana	30.13
25	Haryana	28.43	25	Meghalaya	30.83
26	Bihar	28.62	26	Daman & Diu	31.35
27	Mizoram	28.82	27	Manipur	31.83
28	Jammu & Kashmir	29.43	28	Sikkim	31.91
29	Meghalaya	30.75	29	Mizoram	35.52
30	Sikkim	33.06	30	Tripura	39.45
31	Chandigarh	40.28	31	Dadra & Nagar Haveli	40.04
32	Delhi	47.02	32	Delhi	51.36
33	Daman & Diu	55.73	33	Nagaland	56.81
34	Dadra & Nagar Ha.	59.22	34	Andaman & Nicobar	65.18
35	Nagaland	64.53	35	Chandigarh	133.36

Source : Calculated from Census Data of different decades

TABLE 4.7
GROWTH OF POPULATION : 1981-1991 & 1991-2001

Sr. No.	India/State/ Union Territories	Population		Decadal Growth of Population		Percent to Total Growth of Population	
		2001	1991	1991-2001	1981-1991	1991- 2001	1981- 1991
	INDIA	1,028,610,328	846,387,888	182,222,440	163,058,791	100.00	100.00
1	Uttar Pradesh	166,197,921	131,998,804	34,199,117	26,862,264	18.77	16.47
2	Maharashtra	96,878,627	78,937,187	17,941,440	16,154,369	9.85	9.91
3	Bihar	82,998,509	64,530,554	18,467,955	12,227,889	10.13	7.5
4	West Bengal	80,176,197	68,077,965	12,098,232	13,497,318	6.64	8.28
5	Andhra Pradesh	76,210,007	66,508,008	9,701,999	12,956,982	5.32	7.95
6	Tamil Nadu	62,405,679	55,858,946	6,546,733	7,450,869	3.59	4.57
7	Madhya Pradesh	60,348,023	48,566,242	11,781,781	10,397,735	6.47	6.38
8	Rajasthan	56,507,188	44,005,990	12,501,198	9,744,128	6.86	5.98
9	Karnataka	52,850,562	44,977,201	7,873,361	7,841,487	4.32	4.81
10	Gujarat	50,671,017	41,309,582	9,361,435	7,223,783	5.14	4.43
11	Orissa	36,804,660	31,659,736	5,144,924	5,289,465	2.82	3.24
12	Kerala	31,841,374	29,098,518	2,742,856	3,644,838	1.51	2.24
13	Jharkhand	26,945,829	21,843,911	5,101,918	4,231,842	2.8	2.6
14	Assam	26,655,528	22,414,322	4,241,206	4,373,074	2.33	2.68
15	Punjab	24,358,999	20,281,969	4,077,030	3,493,054	2.24	2.14

TABLE 4.7 (Cont...)
GROWTH OF POPULATION : 1981-1991 & 1991-2001

Sr. No.	India/State/ Union Territories	Population		Decadal Growth of Population		Percent to Total Growth of Population	
		2001	1991	1991-2001	1981-1991	1991- 2001	1981- 1991
16	Haryana	21,144,564	16,463,648	4,680,916	3,541,529	2.57	2.17
17	Chhattisgarh	20,833,803	17,614,928	3,218,875	3,604,591	1.77	2.21
18	Delhi*	13,850,507	9,420,644	4,429,863	3,200,238	2.43	1.96
19	Jammu & Kash.	10,143,700	7,803,900	2,339,800	1,816,511	1.28	1.11
20	Uttaranchal	8,489,349	7,113,483	1,375,866	1,387,511	0.76	0.85
21	Himachal Pra.	6,077,900	5,170,877	907,023	890,059	0.50	0.55
22	Tripura	3,199,203	2,757,205	441,998	704,147	0.24	0.43
23	Manipur	2,291,125	1,837,149	453,976	416,196	0.25	0.26
24	Meghalaya	2,318,822	1,774,778	544,044	438,959	0.30	0.27
25	Nagaland	1,990,036	1,209,546	780,490	434,616	0.43	0.27
26	Goa	1,347,668	1,169,793	177,875	162,044	0.10	0.10
27	Arunachal Pra.	1,097,968	864,558	233,410	232,719	0.13	0.14
28	Pondichery	974,345	807,785	166,560	203,314	0.09	0.12
29	Chandigarh	900,635	642,015	258,620	190,405	0.14	0.12
30	Mizoram	888,573	689,756	198,817	195,999	0.11	0.12

TABLE 4.7 (Cont...)
GROWTH OF POPULATION : 1981-1991 & 1991-2001

Sr. No.	India/State/ Union Territories	Population		Decadal Growth of Population		Percent to Total Growth of Population	
		2001	1991	1991-2001	1981-1991	1991- 2001	1981- 1991
31	Sikkim	540,851	406,457	134,394	90,072	0.07	0.06
32	Andaman & Nicobar	356,152	280,661	75,491	91,920	0.04	0.06
33	Dadra & Nagar H	220,490	138,477	82,013	34,801	0.05	0.02
34	Daman Diu	158,204	101,586	56,618	22,605	0.03	0.01
35	Lakshadweep	60,650	51,707	8,943	11,458	0.01	0.01

Source : Paper 1 Series 1 of Provisional Population Totals , Census of India 2001

Note:

1. For working out the decadal growth of population for India, the population figures for 1991 Census for Jammu and Kashmir have been worked out by interpolation. Similarly, the population for India for 2001 Census has been arrived by including the estimated population of entire Kachchh district, Morvi, Maliya- Miyana and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat State and entire Kinnaur district of Himachal Pradesh where population enumeration of Census of India, 2001, could not be conducted due to natural calamities.
2. While working out the decadal growth of population of Jammu and Kashmir the population figures for 1991 have been worked out by interpolation as 1991 Census could not be held in this State owing to disturbed conditions.
3. While working out the growth rate for the decade 1991-2001 for Himachal Pradesh the estimated population of Kinnaur district has been added to the total population for the Himachal Pradesh for 2001 Census as the actual population of Kinnaur district is not available because the population enumeration of Census of India 2001 could not be conducted in this district due to natural calamity.
4. While working out the growth rate for the decade 1991-2001 for Gujarat the estimated population of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar district has been added to the total population for the Gujarat for the year 2001 as the actual population of these districts for Census of India is not available because the population enumeration of Census of India, 2001, could not be conducted in these districts due to natural calamity.

Table 4.8
DISTRIBUTION OF STATES/UNION TERRITORIES BY RANGE OF
PERCENTAGE DECADAL GROWTH :1981-1991 AND 1991-2001

Percentage decadal growth	Number of States/Union territories 1981-1991	Percentage of population to total population 1991	Number of States/Union territories 1991-2001	Percentage of population to total population 2001
<18	3	10.17	10	34.08
18-21	3	6.75	5	7.91
21-24	3	17.81	3	16.97
24-27	8	48.97	4	22.19
27-30	7	13.18	6	16.91
30+	11	3.12	7	1.94

Source : Paper 1 Series 1 of Provisional Population Totals , Census of India 2001

Note : Based on interpolated population of Jammu and Kashmir in 1991 and by including the estimated population of affected areas of Himachal Pradesh and Gujarat in 2001

Table 4.9
DISTRIBUTION OF STATES/UNION TERRITORIES BY RANGE OF AVERAGE
ANNUAL EXPONENTIAL GROWTH : 1981-1991 AND 1991-2001

Average annual exponential growth rate	Number of States/Union territories 1981-1991	Percentage of population to total population 1991	Number of States/Union territories 1991-2001	Percentage of population to total population 2001
<1.0	0	0.00	1	3.10
1.0-1.4	3	10.17	5	17.43
1.5-1.9	5	16.94	9	21.46
2.0-2.4	11	64.28	8	46.71
2.5-2.9	10	7.07	6	9.64
3.0+	6	1.54	5	1.66

Source : Paper 1 Series 1 of Provisional Population Totals , Census of India 2001

Note : Based on interpolated population of Jammu and Kashmir in 1991 and by including the estimated population of affected areas of Himachal Pradesh and Gujarat in 2001

TABLE 4.10
AVERAGE ANNUAL BIRTH AND DEATH RATES IN INDIA

Decade	Births Per 1000	Deaths Per 1000
1891-1900	45.8	44.4
1901-1910	48.1	42.6
1911-1920	49.2	48.6
1921-1930	46.4	36.3
1931-1940	45.2	31.2
1941-1950	39.9	27.4
1951-1960	40.0	18.0
1961-1970	41.2	19.2
1971-1980	37.2	15.0
1985-1986	32.6	11.1
2002	25.0	08.1

Source : Census of India 1971, Age and Life Tables and Census of India 1981, Series 1, India, Paper 1 of 1984 and Office of Registrar General, and Ministry of Health and Family Welfare, Annual Report (2000-01) and Economic Survey (2004-05)

TABLE 4.11
DENSITY OF POPULATION, INDIA: 1901-2001

Census Year	Density (PER SQ. KM)
1901	77
1911	82
1921	81
1931	90
1941	103
1951	117
1961	142
1971	177
1981	216
1991	267
2001	324

Source : Paper 1 Series 1 of Provisional Population Totals , Census of India 2001

Notes:

1. While working out the density of India, Jammu & Kashmir has been excluded as comparable figures of area and population are not available for that State.
2. The density has been worked out on comparable data.

TABLE 4.12
RANKING OF STATES AND UNION TERRITORIES BY DENSITY - 1991 &
2001

Rank in 2001	States/Union territories *	Density (per sq. km)		% Decadal Growth	Rank in 1991
		2001	1991		
1	Delhi *	9264	6352	45.84	1
2	Chandigarh *	7903	5632	40.32	2
3	Pondicherry *	2029	1683	20.56	3
4	Lakshadweep *	1894	1616	17.20	4
5	Daman & Diu *	1411	907	55.57	5
6	West Bengal	904	767	17.86	6
7	Bihar	880	685	28.47	8
8	Kerala	819	749	9.35	7
9	Uttar Pradesh	689	548	25.73	9
10	Punjab	482	403	19.60	11
11	Tamil Nadu	478	429	11.42	10
12	Haryana	477	372	28.23	12
13	Dadra & Nagar Haveli *	449	282	59.22	15
14	Goa	363	316	14.87	13
15	Assam	340	286	18.88	14
	India	324	267	21.34	-
17	Jharkhand	338	274	23.36	16
	Maharashtra	314	257	22.18	18

TABLE 4.12 (Cont..)
RANKING OF STATES AND UNION TERRITORIES BY DENSITY - 1991 &
2001

Rank in 2001	States/Union territories *	Density (per sq. km)		% Decadal Growth	Rank in 1991
		2001	1991		
18	Tripura	304	263	15.59	17
19	Andhra Pradesh	275	242	13.64	19
20	Karnataka	275	235	17.02	20
21	Gujarat	258	211	22.27	21
22	Orissa	236	203	16.26	22
23	Madhya Pradesh	196	158	24.05	23
24	Rajasthan	165	129	27.91	26
25	Uttaranchal	159	133	19.55	24
26	Chhatisgarh	154	130	18.46	25
27	Nagaland	120	73	64.38	31
28	Himachal Pradesh	109	93	17.20	27
29	Manipur	107	82	30.49	28
30	Meghalaya	103	79	30.38	29
31	Jammu and Kashmir ¹	99	77	28.57	30
32	Sikkim	76	57	33.33	32
33	Andaman & Nicobar Is.	43	34	26.47	33
34	Mizoram	42	33	27.27	34
35	Arunachal Pradesh	13	10	30.00	35

Source : Census of India, 2001, Series-I (India) Paper 1 of 2001, Provisional Population Totals.

Notes:

1. Percentage Decadal growth in Density is calculated.
2. While working out the density figures for Jammu and Kashmir for 1991 and 2001 censuses, the entire area and population of those portions of Jammu and Kashmir which are under illegal occupation of Pakistan and China have not been taken into account.

TABLE 4.13
DISTRIBUTION OF STATES AND UNION TERRITORIES BY DENSITY IN
DIFFERENT REGIONS : 1991 AND 2001 :

Region	States and Union territories*	Number of States/Union territories	Per Cent Decadal Growth	
			1991	2001
Northern	Jammu & Kashmir Himachal Pradesh Punjab Chandigarh* Haryana Delhi* Rajasthan	7	174	223
Central	Uttaranchal Uttar Pradesh Chhatisgarh Madhya Pradesh	4	278	347
Eastern	Bihar Sikkim West Bengal Jharkhand Orissa Andaman & Nicobar*	6	431	525
North East	Arunachal Pradesh Nagaland Manipur Mizoram Tripura Meghalaya Assam	7	124	151
Western	Gujarat Daman & Diu* Dadra & Nagar Ha* Maharashtra	4	239	293
Southern	Andhra Pradesh Karnataka Goa Lakshadweep* Kerala Tamil Nadu Pondicherry*	7	310	351

Source : Paper 1 Series 1 of Provisional Population Totals , Census of India 2001

TABLE 4.14
DISTRIBUTION OF STATES AND UNION TERRITORIES BY
PERCENTAGE DECADAL GROWTH OF DENSITY IN DIFFERENT CLASSES
: 1991 AND 2001 :

Range of % Decadal Growth of Density	States and Union territories*	Number of States/Union territories	% Decadal Growth
			1991-2001
05 - 15	Kerala Tamil Nadu Andhra Pradesh Goa	04	9.35 11.42 13.64 14.87
15 - 25	Tripura Orissa Karnataka Lakshadweep * Himachal Pradesh West Bengal Chhatisgarh Assam Uttaranchal Punjab Pondicherry * Maharashtra Gujarat Jharkhand Madhya Pradesh	15	15.59 16.26 17.02 17.20 17.20 17.86 18.46 18.88 19.55 19.60 20.56 22.18 22.27 23.36 24.05

TABLE 4.14 (Cont..)
DISTRIBUTION OF STATES AND UNION TERRITORIES BY
PERCENTAGE DECADAL GROWTH OF DENSITY IN DIFFERENT CLASSES
: 1991 AND 2001 :

Range of % Decadal Growth of Density	States and Union territories*	Number of States/Union territories	% Decadal Growth
			1991-2001
25 - 35	Uttar Pradesh	11	25.73
	Andaman & Nicobar Islands*		26.47
	Mizoram		27.27
	Rajasthan		27.91
	Haryana		28.23
	Bihar		28.47
	Jammu and Kashmir ¹		28.57
	Arunachal Pradesh		30.00
	Meghalaya		30.38
	Manipur		30.49
Sikkim	33.33		
35 - 50	Chandigarh *	02	40.32
	Delhi *		45.84
50 - 65	Daman & Diu *	03	55.57
	Dadra & Nagar Haveli *		59.22
	Nagaland		64.38

Source : Paper 1 Series 1 of Provisional Population Totals , Census of India 2001

TABLE 4.15
DISTRIBUTION OF STATES AND UNION TERRITORIES BY
PERCENTAGE OF POPULATION AND AVERAGE DENSITY OF
POPULATION : 2001 :

Sr. No.	Quartiles	India/State/ Union Territories	Population		Density of Population 2001
			Number	%	
INDIA			1028610328		324
1		Lakshadweep	60650	0.01	1894
2		Daman Diu	158204	0.02	1411
3		Dadra & Nagar Haveli	220490	0.02	449
4		Andaman & Nicobar Is.	356152	0.03	43
5		Sikkim	540851	0.05	76
6		Mizoram	888573	0.09	42
7		Chandigarh	900635	0.09	7903
8		Pondichery	974345	0.09	2029
9	Q1	Arunachal Pradesh	1097968	0.11	13
Total/Percentage/Average Density			5197868	0.51	1540
10		Goa	1347668	0.13	363
11		Nagaland	1990036	0.19	120
12		Manipur	2291125	0.22	107
13		Meghalaya	2318822	0.23	103
14		Tripura	3199203	0.31	304
15		Himachal Pradesh	6077900	0.59	109
16		Uttaranchal	8489349	0.83	159
17		Jammu & Kashmir	10143700	0.99	99
18	Q2	Delhi*	13850507	1.35	9264
Total/Percentage/Average Density			49708310	4.83	1181

TABLE 4.15 (Conti..)
DISTRIBUTION OF STATES AND UNION TERRITORIES BY
PERCENTAGE OF POPULATION AND AVERAGE DENSITY OF POPULATION
: 2001 :

Sr. No.	Quartiles	India/State/ Union Territories	Population		Density of Population 2001
			Number	%	
19		Chhattisgarh	20833803	2.03	154
20		Haryana	21144564	2.06	477
21		Punjab	24358999	2.37	482
22		Assam	26655528	2.59	340
23		Jharkhand	26945829	2.62	338
24		Kerala	31841374	3.10	819
25		Orissa	36804660	3.58	236
26		Gujarat	50671017	4.93	258
27	Q3	Karnataka	52850562	5.14	275
Total/Percentage/Average Density			292106336	28.40	375
28		Rajasthan	56507188	5.49	165
29		Madhya Pradesh	60348023	5.87	196
30		Tamil Nadu	62405679	6.07	478
31		Andhra Pradesh	76210007	7.41	275
32		West Bengal	80176197	7.79	904
33		Bihar	82998509	8.07	880
34		Maharashtra	96878627	9.42	314
35		Uttar Pradesh	166197921	16.16	689
Total/Percentage/Average Density			681722151	66.28	488

Note : Calculated from Census data 2001

TABLE 4.16
STATE-WISE DENSITY OF POPULATION IN INDIA (22 States) : 1901 TO 2001

Sr. No	States	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	Andhra Pradesh	69	78	78	88	99	113	131	158	195	242	275
2	Assam	42	49	59	71	85	102	138	186	230	286	340
3	Bihar	157	163	162	180	202	223	267	324	402	685	880
4	Gujarat	46	50	52	59	70	83	105	136	174	211	258
5	Haryana	105	93	96	103	119	128	172	227	292	372	477
6	Himachal Pradesh	35	34	35	36	41	43	51	62	77	93	109
7	Jammu & Kashmir	96	103	109	120	133	15	16	21	27	76	99
8	Karnataka	68	71	70	76	85	101	136	153	194	152	196
9	Kerala	165	184	201	245	284	349	435	549	655	749	819
10	Madhya Pradesh	38	44	43	48	54	59	73	94	120	149	196
11	Maharashtra	63	70	66	78	87	104	129	164	204	257	314
12	Manipur	13	16	17	20	23	26	35	48	64	82	107
13	Meghalaya	15	18	19	21	25	27	34	45	60	79	103
14	Nagaland	6	9	10	11	12	13	32	31	47	73	120

TABLE 4.16 (Conti..)
STATE-WISE DENSITY OF POPULAITON IN INDIA (22 States) : 1901-2001

Sr. No	States	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
15	Orissa	66	73	72	80	88	94	113	141	169	203	236
16	Punjab	150	134	142	159	191	182	221	269	333	403	482
17	Rajasthan	30	32	30	34	41	47	59	75	100	129	165
18	Sikkim	8	12	11	16	17	19	23	30	45	57	76
19	Tamil Nadu	148	161	166	180	202	232	258	317	372	429	478
20	Tripura	17	22	29	36	49	61	109	148	196	263	304
21	Uttar Pradesh	165	164	159	169	192	215	251	300	377	473	689
22	West Bengal	202	215	209	226	277	296	394	499	615	767	904

Note : Abstracted from different Census Reports

TABLE 4.16(a)
STATE-WISE PERCENTAGE OF DENSITY OF POPULATION IN INDIA (22 States) : 1901 TO 2001

Sr. No	State	1901 to 1911	1911 to 1921	1921 to 1931	1931 to 1941	1941 to 1951	1951 to 1961	1961 to 1971	1971 to 1981	1981 to 1991	1991 to 2001
1	2	3	4	5	6	7	8	9	10	11	12
1	Andhra Pradesh	13.0	0.0	13.0	11.0	14.0	16.0	21.0	23.0	24.0	13.6
2	Assam	17.0	20.0	20.0	20.0	20.0	35.0	35.0	24.0	24.0	18.9
3	Bihar	9.0	0.6	11.0	12.0	10.0	20.0	21.0	24.0	0.3	28.5
4	Gujarat	11.0	4.0	13.0	19.0	19.0	27.0	30.0	28.0	27.0	22.3
5	Haryana Pradesh	3.0	3.0	7.0	16.0	8.0	34.0	32.0	29.0	27.0	28.2
6	Himachal Pradesh	7.0	3.0	3.0	14.0	4.0	19.0	22.0	24.0	21.0	17.2
7	Jammu & Kashmir	4.0	6.0	10.0	11.0	89.0	7.0	31.0	29.0	1.8	30.3
8	Karnataka	12.0	1.0	9.0	12.0	19.0	22.0	24.0	27.0	22.0	28.9
9	Kerala	12.0	0.5	22.0	15.0	23.0	25.0	26.0	19.0	14.0	9.3
10	Madhya Pradesh	16.0	2.0	12.0	13.0	9.0	24.0	29.0	28.0	24.0	31.5
11	Maharashtra	11.0	6.0	18.0	12.0	16.0	24.0	27.0	20.0	26.0	22.2
12	Manipur	23.0	6.0	18.0	15.0	13.0	35.0	37.0	33.0	28.0	30.5
13	Meghalaya	20.0	6.0	11.0	19.0	8.0	26.0	32.0	33.0	55.0	30.4
14	Nagaland	50.0	11.0	10.0	9.0	8.0	41.0	52.0	52.0	55.0	64.4

TABLE 4.16 (a) (Conti..)
STATE-WISE PERCENTAGE OF DENSITY OF POPULATION IN INDIA (22 States) : 1901 TO 2001

Sr. No	State	1901 to 1911	1911 to 1921	1921 to 1931	1931 to 1941	1941 to 1951	1951 to 1961	1961 to 1971	1971 to 1981	1981 to 1991	1991 to 2001
1	2	3	4	5	6	7	8	9	10	11	12
15	Orissa	11.0	1.4	11.0	10.0	7.0	20.0	25.0	20.0	20.0	16.3
16	Punjab	11.0	6.0	12.0	20.0	5.0	21.0	22.0	24.0	21.0	19.6
17	Rajsthan	7.0	6.0	13.0	21.0	15.0	25.0	27.0	33.0	29.0	27.9
18	Sikkim	50.0	8.0	45.0	6.0	12.0	21.0	30.0	50.0	27.0	33.3
19	Tamil Nadu	9.0	3.0	8.0	12.0	15.0	11.0	22.0	17.0	15.0	11.4
20	Uttar Pradesh	0.6	3.0	6.0	14.0	12.0	17.0	20.0	32.0	34.0	15.6
21	Tripura	29.0	32.0	24.0	36.0	24.0	79.0	36.0	27.0	25.0	45.7
22	West Bengal	6.0	3.0	8.0	23.0	7.0	33.0	27.0	23.0	25.0	17.9

Source: Calculated from the figures given in Table-4.16

TABLE 4.17
SEX RATIO - INDIA : 1901-2001:

Census Year	Sex-Ratio (Females per 1000 Males)
1901	972
1911	964
1921	955
1931	950
1941	945
1951	946
1961	941
1971	930
1981	934
1991	927
2001	933

Source:

Provisional Population Totals ; census of India 2001 ;series 1,
India, paper 1 of 2001

Note:

1. For 1991, the interpolated figures for Jammu and Kashmir have
been used.

2. While working out the sex ratio for India for the year 2001, the
estimated population of entire Kachchh district, Morvi, Maliya- Miyana
and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar
district of Gujarat State and entire Kinnaur district of Himachal Pradesh
have been used as the population enumeration of Census of India, 2001
could not be conducted in these areas due to natural calamities.

TABLE 4.18
SEX RATIO OF SELECTED COUNTRIES : 2001

Sr. No.	Country	Sex-Ratio (Females per 1000 Males)
1	World	986
2	China	944
3	India	933
4	U.S.A.	1029
5	Indonesia	1004
6	Brazil	1025
7	Pakistan	938
8	Russian Fed.	1140
9	Bangladesh	953
10	Japan	1041
11	Nigeria	1016

Source:

1. World Population Prospects (mid year estimates) 1998 revision, Volume 2, Sex and Age, United Nations.

2. Provisional Population Totals ; census of India 2001 ;series 1, India, paper 1 of 2001

TABLE 4.19
SEX RATIO OF TOTAL POPULATION AND CHILD POPULATION IN THE
AGE GROUP 0-6 : 1991 AND 2001

Sr. No.	India/States/ Union territories *	Sex ratio (females per 1,000 males)					
		Total population		Child population in the age group 0-6		Population aged 7 and above	
		1991	2001	1991	2001	1991	2001
	INDIA	927	933	945	927	923	935
1	Jammu & Kashmir	N.A.	900	N.A.	937	N.A.	894
2	Himachal Pradesh	976	970	951	897	980	981
3	Punjab	882	874	875	793	883	886
4	Chandigarh *	790	773	899	845	772	763
5	Uttaranchal	936	964	948	906	933	976
6	Haryana	865	861	879	820	862	869
7	Delhi*	827	821	915	865	810	813
8	Rajasthan	910	922	916	909	908	925
9	Uttar Pradesh	876	898	927	916	863	895
10	Bihar	907	921	953	938	895	916
11	Sikkim	878	875	965	986	860	858
12	Arunachal Pradesh	859	901	982	961	829	888
13	Nagaland	886	909	993	975	865	899
14	Manipur	958	978	974	961	955	981
15	Mizoram	921	938	969	971	911	932
16	Tripura	945	950	967	975	940	947
17	Meghalaya	955	975	986	975	947	974
18	Assam	923	932	975	964	910	926
19	West Bengal	917	934	967	963	907	929
20	Jharkhand	922	941	979	966	908	936
21	Orissa	971	972	967	950	972	976
22	Chhatisgarh	985	990	984	975	986	992

TABLE 4.19 (Cont...)
SEX RATIO OF TOTAL POPULATION AND CHILD POPULATION IN THE
AGE GROUP 0-6 : 1991 AND 2001

Sr. No.	India/States/ Union territories *	Sex ratio (females per 1,000 males)					
		Total population		Child population in the age group 0-6		Population aged 7 and above	
		1991	2001	1991	2001	1991	2001
23	Madhya Pradesh	912	920	941	929	905	918
24	Gujarat	934	921	928	878	936	927
25	Daman & Diu *	969	709	958	925	971	682
26	Dadra & Nagar H**	952	811	1013	973	937	779
27	Maharashtra	934	922	946	917	931	923
28	Andhra Pradesh	972	978	975	964	972	980
29	Karnataka	960	964	960	949	960	966
30	Goa	967	960	964	933	967	964
31	Lakshadweep *	943	947	941	974	943	943
32	Kerala	1036	1058	958	963	1049	1071
33	Tamil Nadu	974	986	948	939	978	992
34	Pondicherry *	979	1001	963	958	982	1007
35	Andaman & Nicobar *	818	846	973	965	790	830

Source : Provisional Population Totals : Chapter 6 , Census of India 2001, Series 1, India, Paper 1 of 2001

Notes:

1. While working out sex ratio of child population for 1991 Census in the age group 0-6 and population aged 7 and above for India, the population in the age group 0-6 and population aged 7 and above of areas of Gujarat and Himachal Pradesh affected by natural calamities have been excluded. The details of affected areas are given in Note numbers 2 and 3 below.
2. To make the data comparable with Census of India, 2001, the proportion of child population for 1991 Census in the age group 0-6 and population aged 7 and above shown against Himachal Pradesh for 1991 excludes population in the age group 0-6 and population aged 7 and above of Kinnaur district where population enumeration of Census of India, 2001, could not be conducted due to natural calamity.
3. To make the data comparable with Census of India, 2001, the proportion of child population for 1991 Census in the age group 0-6 and population aged 7 and above shown against Gujarat excludes the population data of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district and Jodiya taluka of Jamnagar district of Gujarat state where population enumeration of Census of India, 2001, could not be conducted due to natural calamity.

TABLE 4.20
BASIC POPULATION OF INDIA, STATE & UNION TERRITORIES
BY SIZE AND SEX RATIO

Sr. No.	India/State/ Union Territories	Population			Sex ratio
		Persons	Males	Females	
	India[@]	1,028,610,328	532,156,772	496,453,556	933
1	Uttar Pradesh	166,197,921	87,565,369	78,632,552	898
2	Maharashtra	96,878,627	50,400,596	46,478,031	922
3	Bihar	82,998,509	43,243,795	39,754,714	919
4	West Bengal	80,176,197	41,465,985	38,710,212	934
5	Andhra Pradesh	76,210,007	38,527,413	37,682,594	978
6	Tamil Nadu	62,405,679	31,400,909	31,004,770	987
7	Madhya Pradesh	60,348,023	31,443,652	28,904,371	919
8	Rajasthan	56,507,188	29,420,011	27,087,177	921
9	Karnataka	52,850,562	26,898,918	25,951,644	965
10	Gujarat	50,671,017	26,385,577	24,285,440	920
11	Orissa	36,804,660	18,660,570	18,144,090	972
12	Kerala	31,841,374	15,468,614	16,372,760	1058
13	Jharkhand	26,945,829	13,885,037	13,060,792	941
14	Assam	26,655,528	13,777,037	12,878,491	935
15	Punjab	24,358,999	12,985,045	11,373,954	876
16	Haryana	21,144,564	11,363,953	9,780,611	861
17	Chhattisgarh	20,833,803	10,474,218	10,359,585	989
18	Delhi*	13,850,507	7,607,234	6,243,273	821
19	Jammu & Kashmir	10,143,700	5,360,926	4,782,774	892
20	Uttaranchal	8,489,349	4,325,924	4,163,425	962
21	Himachal Pradesh	6,077,900	3,087,940	2,989,960	968
22	Tripura	3,199,203	1,642,225	1,556,978	948
23	Manipur	2,291,125	1,161,173	1,129,925	978
24	Meghalaya	2,318,822	1,176,087	1,142,735	972

TABLE 4.20 (Cont...)
BASIC POPULATION OF INDIA, STATE & UNION TERRITORIES
BY SIZE AND SEX RATIO

Sr. No.	India/State/ Union Territories	Population			Sex ratio
		Persons	Males	Females	
25	Nagaland	1,990,036	1,047,141	942,895	900
26	Goa	1,347,668	687,248	660,420	961
27	Arunachal Pradesh	1,097,968	579,941	518,027	893
28	Pondichery	974,345	486,961	487,384	1001
29	Chandigarh	900,635	506,938	393,697	777
30	Mizoram	888,573	459,109	429,464	935
31	Sikkim	540,851	288,484	252,367	875
32	Andaman & Nicobar Islands	356,152	192,972	163,180	846
33	Dadra & Nagar Haveli	220,490	121,666	98,824	812
34	Daman Diu	158,204	92,512	65,692	710
35	Lakshadweep	60,650	31,131	29,519	948

Note: Final population as released in December 2003

The population of Manipur including the estimated population of the three Sub-divisions of Senapati district. The population of Manipur excluding Mao-maram, paomata and Purul sub-divisions of Senapati district is 2,166,788 (Males 1,095,634 and Females 1,071,154)

Source: Primary Census Abstract : Census of India 2001

TABLE 4.21
SEX RATIO – STATE, RURAL & URBAN

Sr. No.	India/State/ Union Territories	Sex Ratio		
		State	Urban	Rural
1	Kerala	1058	1,058	1,059
2	Pondichery	1001	1,007	990
3	Chhattisgarh	989	932	1,004
4	Tamil Nadu	987	982	992
5	Andhra Pradesh	978	965	983
6	Manipur	978	1,009	967
7	Orissa	972	895	987
8	Meghalaya	972	982	969
9	Himachal Pradesh	968	795	989
10	Karnataka	965	942	977
11	Uttaranchal	962	845	1,007
12	Goa	961	934	988
13	Tripura	948	959	946
14	Lakshadweep	948	935	959
15	Jharkhand	941	870	962
16	Assam	935	872	944
17	Mizoram	935	948	923
18	West Bengal	934	893	950
19	Maharashtra	922	873	960
20	Rajasthan	921	890	930
21	Gujarat	920	880	945
22	Bihar	919	868	926
23	Madhya Pradesh	919	898	927
24	Nagaland	900	829	916
25	Uttar Pradesh	898	876	904
26	Arunachal Pradesh	893	819	914

TABLE 4.21 (Cont...)
SEX RATIO – STATE, RURAL & URBAN

Sr. No.	India/State/ Union Territories	Sex Ratio		
		State	Urban	Rural
27	Jammu & Kashmir	892	819	917
28	Punjab	876	849	890
29	Sikkim	875	830	880
30	Haryana	861	847	866
31	Andaman & Nicobar Islands	846	815	861
32	Delhi*	821	822	810
33	Dadra & Nagar Haveli	812	691	852
34	Chandigarh	777	796	621
35	Daman Diu	710	984	586

Source: Primary Census Abstract : Census of India 2001

TABLE 4.22
SEX RATIO (FEMALE PER 1,000 MALES) : 1901-2001

Sr. No	India/ State/ Union territory *	Census year										
		1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
	INDIA ^{1,2,3}	972	964	955	950	945	946	941	930	934	927	933
1	Jammu & Kashmir ²	882	876	870	865	869	873	878	878	892	896	900
2	Himachal Pradesh ³	884	889	890	897	890	912	938	958	973	976	970
3	Punjab	832	780	799	815	836	844	854	865	879	882	874
4	Chandigarh *	771	720	743	751	763	781	652	749	769	790	773
5	Uttaranchal	918	907	916	913	907	940	947	940	936	936	964
6	Haryana	867	835	844	844	869	871	868	867	870	865	861
7	Delhi *	862	793	733	722	715	768	785	801	808	827	821
8	Rajasthan	905	908	896	907	906	921	908	911	919	910	922
9	Uttar Pradesh	938	916	908	903	907	908	907	876	882	876	898
10	Bihar	1,061	1,051	1,020	995	1,002	1,000	1,005	957	948	907	921
11	Sikkim	916	951	970	967	920	907	904	863	835	878	875
12	Arunachal Pradesh	NA	NA	NA	NA	NA	NA	894	861	862	859	901
13	Nagaland	973	993	992	997	1,021	999	933	871	863	886	909
14	Manipur	1,037	1,029	1,041	1,065	1,055	1,036	1,015	980	971	958	978
15	Mizoram	1,113	1,120	1,109	1,102	1,069	1,041	1,009	946	919	921	938
16	Tripura	874	885	885	885	886	904	932	943	946	945	950
17	Meghalaya	1,036	1,013	1,000	971	966	949	937	942	954	955	975
18	Assam ¹	919	915	896	874	875	868	869	896	910	923	932

TABLE 4.22 (Cont..)
SEX RATIO (FEMALE PER 1,000 MALES) : 1901-2001

Sr. No.	India/ State/ Union territory *	Census year										
		1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
		3	4	5	6	7	8	9	10	11	12	13
19	West Bengal	945	925	905	890	852	865	878	891	911	917	934
20	Jharkhand	1,032	1,021	1,002	989	978	961	960	945	940	922	941
21	Orissa	1,037	1,056	1,086	1,067	1,053	1,022	1,001	988	981	971	972
22	Chhatisgarh	1,046	1,039	1,041	1,043	1,032	1,024	1,008	998	996	985	990
23	Madhya Pradesh	972	967	949	947	946	945	932	920	921	912	920
24	Gujarat ³	954	946	944	945	941	952	940	934	942	934	921
25	Daman & Diu *	995	1,040	1,143	1,088	1,080	1,125	1,169	1,099	1,062	969	709
26	Dadra & Nagar H*	960	967	940	911	925	946	963	1,007	974	952	811
27	Maharashtra	978	966	950	947	949	941	936	930	937	934	922
28	Andhra Pradesh	985	992	993	987	980	986	981	977	975	972	978
29	Karnataka	983	981	969	965	960	966	959	957	963	960	964
30	Goa	1,091	1,108	1,120	1,088	1,084	1,128	1,066	981	975	967	960
31	Lakshadweep *	1,063	987	1,027	994	1,018	1,043	1,020	978	975	943	947
32	Kerala	1,004	1,008	1,011	1,022	1,027	1,028	1,022	1,016	1,032	1,036	1,058
33	Tamil Nadu	1,044	1,042	1,029	1,027	1,012	1,007	992	978	977	974	986
34	Pondicherry *	NA	1,058	1,053	NA	NA	1,030	1,013	989	985	979	1,001
35	Andaman & Nico. *	318	352	303	495	574	625	617	644	760	818	846

Note: 1. For working out the sex ratio of India and Assam for 1981, interpolated figures for Assam have been used. 2. For working out the sex ratio of India and Jammu and Kashmir for 1991, interpolated figures for Jammu and Kashmir have been used. 3. For working out the sex ratio of India, Gujarat and Himachal Pradesh for 2001, estimated figures for affected areas of Gujarat and Himachal Pradesh have been used. 4. The sex ratio for Arunachal Pradesh is not available for the years 1901-1951 and for Pondicherry it is not available for the years 1901, 1931 and 1941.

TABLE 4.23
STATES AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF SEX RATIO : 1961-2001

Rank	India/ State/ Union Territory *	1961	1971	1981	1991	India/ State/ Union Territory *	2001	Rank
1	2	3	4	5	6	7	8	9
	INDIA	941	930	934	927		933	
1	Daman & Diu *	1,169	1,099	1,062	969	Kerala	1,058	1
2	Goa	1,066	981	975	967	Pondicherry *	1,001	2
3	Kerala	1,022	1,016	1,032	1,036	Chhatisgarh	990	3
4	Lakshadweep *	1,020	978	975	943	Tamil Nadu	986	4
5	Manipur	1,015	980	971	958	Manipur	978	5
6	Pondicherry *	1,013	989	985	979	Andhra Pradesh	978	6
7	Mizoram	1,009	946	919	921	Meghalaya	975	7
8	Chhatisgarh	1,008	998	996	985	Orissa	972	8
9	Bihar	1,005	957	948	907	Himachal Pradesh	970	9
10	Orissa	1,001	988	981	971	Uttaranchal	964	10
11	Tamil Nadu	992	978	977	974	Karnataka	964	11
12	Andhra Pradesh	981	977	975	972	Goa	960	12
13	Dadra & Nagar Haveli*	963	1,007	974	952	Tripura	950	13
14	Jharkhand	960	945	940	922	Lakshadweep *	947	14
15	Karnataka	959	957	963	960	Jharkhand	941	15
16	Uttaranchal	947	940	936	936	Mizoram	938	16
17	Gujarat	940	934	942	934	West Bengal	934	17
18	Himachal Pradesh	938	958	973	976	Assam	932	18
19	Meghalaya	937	942	954	955	Maharashtra	922	19
20	Maharashtra	936	930	937	934	Rajasthan	922	20

TABLE 4.23 (Cont..)
STATES AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF SEX RATIO : 1961-2001

Rank	India/ State/ Union Territory *	1961	1971	1981	1991	India/ State/ Union Territory *	2001	Rank	
1	2	3	4	5	6	10	11	12	
18	Himachal Pradesh	938	958	973	976	Assam	932	18	
19	Meghalaya	937	942	954	955	Maharashtra	922	19	
20	Maharashtra	936	930	937	934	Rajasthan	922	20	
21	Nagaland	933	871	863	886	Gujarat	921	21	
22	Madhya Pradesh	932	920	921	912	Bihar	921	22	
23	Tripura	932	943	946	945	Madhya Pradesh	920	23	
24	Rajasthan	908	911	919	910	Nagaland	909	24	
25	Uttar Pradesh	907	876	882	876	Arunachal Pradesh	901	25	
26	Sikkim	904	863	835	878	Jammu & Kashmir	900	26	
27	Arunachal Pradesh	894	861	862	859	Uttar Pradesh	898	27	
28	West Bengal	878	891	911	917	Sikkim	875	28	
29	Jammu & Kashmir	878	878	892	896	Punjab	874	29	
30	Assam	869	896	910	923	Haryana	861	30	
31	Haryana	868	867	870	865	Andaman & Nicobar	I*	846	31
32	Punjab	854	865	879	882	Delhi *	821	32	
33	Delhi *	785	801	808	827	Dadra & Nagar H *	811	33	
34	Chandigarh *	652	749	769	790	Chandigarh *	773	34	
35	Andaman & Nicobar Is.*	617	644	760	818	Daman & Diu *	709	35	

Note: For preparation of this table, the sex ratio as shown against India and various States/Union Territories given in Table 10 have been used

TABLE 4.24
SEX RATIO VARIATION – (FEMALES PER 1000 MALES) – 1961-2001

Year	Sex Ratio	Variation	0-6 Age group Population	Variation
1961	941	-	976	-
1971	930	-11	964	-12
1981	934	+4	962	-2
1991	927	-7	945	-17
2001	933	+6	927	-18

Source: Census of India 2001

TABLE 4.25
RURAL-URBAN DISTRIBUTION OF POPULATION ON THE BASIS OF SEX

Sr. No.	India/State/ Union Territories	Population (in Millions)								
		Rural			Urban			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
	India[@]	381.6	360.89	742.49	150.55	135.57	286.12	532.16	496.45	1028.6
1	Uttar Pradesh	69.16	62.5	131.66	18.41	16.13	34.54	87.57	78.63	166.2
2	Maharashtra	28.46	27.32	55.78	21.94	19.16	41.1	50.4	46.48	96.88
3	Bihar	38.59	35.72	74.32	4.65	4.03	8.68	43.24	39.75	83
4	West Bengal	29.62	28.13	57.75	11.85	10.58	22.43	41.47	38.71	80.18
5	Andhra Pradesh	27.94	27.46	55.4	10.59	10.22	20.81	38.53	37.68	76.21
6	Tamil Nadu	17.53	17.39	34.92	13.87	13.61	27.48	31.4	31	62.41
7	Madhya Pradesh	23.03	21.35	44.38	8.41	7.55	15.97	31.44	28.9	60.35
8	Rajasthan	22.43	20.87	43.29	6.99	6.22	13.21	29.42	27.09	56.51
9	Karnataka	17.65	17.24	34.89	9.25	8.71	17.96	26.9	25.95	52.85
10	Gujarat	16.32	15.42	31.74	10.07	8.86	18.93	26.39	24.29	50.67
11	Orissa	15.75	15.54	31.29	2.91	2.61	5.52	18.66	18.14	36.8
12	Kerala	11.45	12.12	23.57	4.02	4.25	8.27	15.47	16.37	31.84
13	Jharkhand	10.68	10.27	20.95	3.21	2.79	5.99	13.89	13.06	26.95
14	Assam	11.94	11.28	23.22	1.84	1.6	3.44	13.78	12.88	26.66
15	Punjab	8.52	7.58	16.1	4.47	3.79	8.26	12.99	11.37	24.36
16	Haryana	8.05	6.98	15.03	3.31	2.8	6.12	11.36	9.78	21.14
17	Chhattisgarh	8.31	8.34	16.65	2.17	2.02	4.19	10.47	10.36	20.83
18	Delhi*	0.52	0.42	0.94	7.09	5.82	12.91	7.61	6.24	13.85

TABLE 4.25 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION ON THE BASIS OF SEX

Sr. No.	India/State/ Union Territories	Population (in Millions)								
		Rural			Urban			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
19	Jammu & Kashmir	3.98	3.65	7.63	1.38	1.13	2.52	5.36	4.78	10.14
20	Uttaranchal	3.14	3.17	6.31	1.18	1	2.18	4.33	4.16	8.49
21	Himachal Pradesh	2.76	2.73	5.48	0.33	0.26	0.6	3.09	2.99	6.08
22	Tripura	1.36	1.29	2.65	0.28	0.27	0.55	1.64	1.56	3.2
23	Manipur	0.81	0.78	1.59	0.29	0.29	0.58	1.16	1.13	2.29
24	Meghalaya	0.95	0.92	1.86	0.23	0.23	0.45	1.18	1.14	2.32
25	Nagaland	0.86	0.79	1.65	0.19	0.16	0.34	1.05	0.94	1.99
26	Goa	0.34	0.34	0.68	0.35	0.32	0.67	0.69	0.66	1.35
27	Arunachal Pradesh	0.45	0.42	0.87	0.13	0.1	0.23	0.58	0.52	1.1
28	Pondichery	0.16	0.16	0.33	0.32	0.33	0.65	0.49	0.49	0.97
29	Chandigarh	0.06	0.04	0.09	0.45	0.36	0.81	0.51	0.39	0.9
30	Mizoram	0.23	0.21	0.45	0.23	0.21	0.44	0.46	0.43	0.89
31	Sikkim	0.26	0.23	0.48	0.03	0.03	0.06	0.29	0.25	0.54
32	Andaman & Nicobar Is*	0.13	0.11	0.24	0.06	0.05	0.12	0.19	0.16	0.36
33	Dadra & Nagar H*	0.09	0.08	0.17	0.03	0.02	0.05	0.12	0.1	0.22
34	Daman Diu	0.06	0.04	0.1	0.03	0.03	0.06	0.09	0.07	0.16
35	Lakshadweep	0.02	0.02	0.03	0.01	0.01	0.03	0.03	0.03	0.06

Source: Primary Census Abstract : Census of India 2001

TABLE 4.26
SEX RATIO – FEMALES PER 1000 MALES 1951-2001

Sr. No.	India/State/ Union Territories	Sex Ratio (Females per 1000 Males)					
		1951	1961	1971	1981	1991	2001
	INDIA	946	941	930	934	927	933
1	Kerala	1028	1022	1016	1032	1036	1058
2	Pondichery	1030	1013	989	985	979	1001
3	Chhattisgarh	1024	1008	998	996	985	989
4	Tamil Nadu	1007	992	978	977	974	987
5	Andhra Pradesh	986	981	977	975	972	978
6	Manipur	1036	1015	980	971	958	978
7	Orissa	1022	1001	988	981	971	972
8	Meghalaya	949	937	942	954	955	972
9	Himachal Pradesh	912	938	958	973	976	968
10	Karnataka	966	959	957	963	960	965
11	Uttaranchal	940	947	940	936	936	962
12	Goa	1128	1066	981	975	967	961
13	Tripura	904	932	943	946	945	948
14	Lakshadweep	1043	1020	978	975	943	948
15	Jharkhand	961	960	945	940	922	941
16	Assam	868	869	896	910	923	935
17	Mizoram	865	878	891	911	917	935
18	West Bengal	865	878	891	911	917	934
19	Maharashtra	941	936	930	937	934	922
20	Rajasthan	921	908	911	919	910	921
21	Gujarat	952	940	934	942	934	920
22	Bihar	1000	1005	957	948	907	919
23	Madhya Pradesh	945	932	920	921	912	919
24	Nagaland	999	933	871	863	886	900

Table 4.26 (Cont..)
SEX RATIO – FEMALES PER 1000 MALES 1951-2001

Sr. No.	India/State/ Union Territories	Sex Ratio (Females per 1000 Males)					
		1951	1961	1971	1981	1991	2001
25	Uttar Pradesh	908	907	876	882	876	898
26	Arunachal Pradesh	NA	894	861	862	859	893
27	Jammu & Kashmir	873	878	878	892	896	892
28	Punjab	844	854	865	879	882	876
29	Sikkim	907	904	863	835	878	875
30	Haryana	871	868	867	870	865	861
31	Andaman & Nicobar I*	625	617	644	760	818	846
32	Delhi*	768	785	801	808	827	821
33	Dadra & Nagar Haveli	946	963	1007	974	952	812
34	Chandigarh	781	652	749	769	790	777
35	Daman Diu	1125	1169	1099	1062	969	710

Source: Primary Census Abstract : Census of India 2001

TABLE 4.27
PERCENTAGE DISTRIBUTION OF INDIA'S POPULATION BY AGE GROUPS

Year	Age Group (Years)		
	0-14	15-60	60 and above
1911	38.8	60.2	1.0
1921	39.2	59.6	1.2
1931	38.3	60.2	1.5
1961	41.0	53.3	5.7
1971	41.4	53.4	5.2
1981	39.7	54.1	6.2
1991	36.5	57.1	6.4
2001	34.31	58.7	7.0

Source: IAMR, Fact Book on Man Power, p.12 and Census of India, 1981, Series-I India, Paper 2 of 1983

TABLE 4.28
LITERACY RATE IN INDIA : 1951-2001

Year	Total	Males	Females	Male-Female Gap in Literacy
1951	18.33	27.16	8.86	18.30
1961	28.30	40.40	15.35	25.05
1971	34.45	45.96	21.97	23.98
1981	43.57	56.38	29.76	26.62
1991	52.21	64.13	39.29	24.84
2001	65.38	75.85	54.16	21.70

Source: Census of India 2001

TABLE 4.29
NUMBER OF LITERATES AND ILLITERATES AMONG POPULATION AGED 7 YEARS AND ABOVE AND THEIR CHANGE-INDIA [1991 AND 2001]

Literate/Illiterate	Persons	Males	Females
Literate			
1991	358,402,626	228,983,134	129,419,492
2001	562,010,743	336,969,695	225,041,048
Change in 2001	203,608,117	107,986,561	95,621,556
Illiterate			
1991	328,167,288	128,099,211	200,068,077
2001	296,208,952	106,654,066	189,554,886
Change in 2001	-31,958,336	-21,445,145	-10,513,191

Source : Provisional Population Totals, Chapter 7, Census of India 2001, Series 1, India, Paper 1 of 2001

Note:

1. To make the data comparable shown against literates and illiterates for the years 1991 and 2001, the corresponding figures for Jammu & Kashmir have not been included in both the years as the data for 1991. Census for Jammu & Kashmir is not available because the 1991 census could not be conducted in this state due to disturbed conditions.
2. To make the data comparable the figures of literates and illiterates shown against 1991 and 2001 do not include the figures for entire district of Kachchh, Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat state and entire Kinnaur district of Himachal Pradesh where population enumeration of Census of India, 2001, could not be conducted due to natural calamities.

TABLE 4.30
STATE AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF LITERACY RATE BY SEX - 2001

Rank	State/Union Territory	Total	State/Union Territory	Male	State/Union Territory	Female	Rank
1	Kerala	90.90	Kerala	94.20	Kerala	87.86	1
2	Mizoram	88.49	Lakshadeep*	93.15	Mizoram	86.13	2
3	Lakshadeep*	87.52	Mizoram	90.69	Lakshadeep*	81.56	3
4	Goa	82.32	Pondichery*	88.89	Chandigarh*	76.65	4
5	Delhi	81.82	Goa	88.88	Goa	75.51	5
6	Chandigarh*	81.76	Daman & Diu*	88.40	Andaman & Nicobar I*	75.29	6
7	Pondichery*	81.49	Delhi	87.37	Delhi	75.00	7
8	Andaman & Nicobar Is	81.18	Maharashtra	86.27	Pondichery*	74.13	8
9	Daman & Diu*	81.09	Andaman & Nicobar I**	86.07	Daman & Diu*	70.37	9
10	Maharashtra	77.27	Himachal Pradesh	86.02	Himachal Pradesh	68.08	10
11	Himachal Pradesh	77.13	Chandigarh	85.65	Maharashtra	67.51	11
12	Tripura	73.66	Uttaranchal	84.01	Tripura	65.41	12
13	Tamil Nadu	73.47	Tamil Nadu	82.33	Tamil Nadu	64.55	13
14	Uttaranchal	72.28	Tripura	81.47	Punjab	63.55	14
15	Gujarat	69.97	Gujarat	80.50	Nagaland	61.92	15

TABLE 4.30 (Cont..)
STATE AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF LITERACY RATE BY SEX - 2001

Rank	State/Union Territory	Total	State/Union Territory	Male	State/Union Territory	Female	Rank
16	Punjab	69.95	Haryana	79.25	Sikkim	61.46	16
17	Sikkim	69.68	Manipur	77.87	Meghalaya	60.41	17
18	West Bengal	69.22	Chattisgarh	77.86	Uttaranchal	60.26	18
19	Manipur	68.87	West Bengal	77.58	West Bengal	60.22	19
20	Haryana	68.59	Madhya Pradesh	76.80	Manipur	59.70	20
21	Nagaland	67.11	Sikkim	76.73	Gujarat	58.60	21
22	Karnataka	67.04	Rajasthan	76.46	Karnataka	57.45	22
	INDIA	65.38	Karnataka	76.29	Haryana	56.31	23
23	Chattisgarh	65.18	Orissa	75.95	Assam	56.03	24
24	Assam	64.28	INDIA	75.85	INDIA	54.16	
25	Madhya Pradesh	64.11	Punjab	75.63	Chattisgarh	52.40	25
26	Orissa	63.61	Dadra nagar Haveli*	73.32	Andhra Pradesh	51.17	26
27	Meghalaya	63.31	Assam	71.93	Orissa	50.97	27
28	Andhra Pradesh	61.11	Nagaland	71.77	Madhya Pradesh	50.28	28
29	Rajasthan	61.03	Andhra Pradesh	70.85	Rajasthan	44.34	29
30	Dadra & Nagar H* *	60.03	Uttar Pradesh	70.23	Arunachal Pradesh	44.24	30

TABLE 4.30 (Cont..)
STATE AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF LITERACY RATE BY SEX - 2001

Rank	State/Union Territory	Total	State/Union Territory	Male	State/Union Territory	Female	Rank
31	Uttar Pradesh	57.36	Jharkhand	67.94	Dadra & Nagar Haveli*	42.99	31
32	Arunachal Pradesh	54.74	Meghalaya	66.14	Uttar Pradesh	42.98	32
33	Jammu & Kashmir	54.46	Jammu & Kashmir	65.75	Jammu & Kashmir	41.82	33
34	Jharkhand	54.13	Arunachal Pradesh	64.07	Jharkhand	39.38	34
35	Bihar	47.53	Bihar	60.32	Bihar	33.57	35

Source: Rearranged from Census of India 2001 Data.

TABLE 4.31
POPULATION AGED 7 AND ABOVE, LITERATES IN 1991 AND THEIR DECADAL
DIFFERENCE AND PERCENTAGE DECADAL DIFFERENCE DURING 1991-2001

Sr. No.	India/States/ Union Territories*	Population aged 7 and above 1991	Number of literates 1991	Decadal difference in No. of literates 1991-2001	Percentage decadal difference 1991-2001
	INDIA	686,569,914	358,402,626	203,608,117	56.81
1	Jammu & Kashmir	N.A.	N.A.	N.A.	N.A.
2	Himachal Pradesh ³	4,270,662	2,730,512	1,298,585	47.56
3	Punjab	16,975,724	9,932,116	4,921,694	49.55
4	Chandigarh *	4 546,245	425,060	222,148	52.26
5	Uttaranchal	5,809,288	3,354,695	1,820,481	54.27
6	Haryana	13,338,475	7,449,012	4,776,024	64.12
7	Delhi *	7,813,248	5,882,297	3,820,752	64.95
8	Rajasthan	35,146,498	13,549,088	14,537,013	107.29
9	Uttar Pradesh	105,103,376	42,789,501	34,980,774	81.75
10	Bihar	51,172,348	19,185,832	12,489,775	65.1
11	Sikkim	331,810	188,940	133,888	70.86
12	Arunachal Pradesh	681,933	283,610	204,186	72
13	Nagaland	1,002,059	617,736	528,787	85.6
14	Manipur	1,530,532	916,692	512,964	55.96
15	Mizoram	561,483	461,930	201,332	43.58

TABLE 4.31 (Cont...)
POPULATION AGED 7 AND ABOVE, LITERATES IN 1991 AND THEIR DECADAL
DIFFERENCE AND PERCENTAGE DECADAL DIFFERENCE DURING 1991-2001

Sr. No.	India/States/ Union Territories*	Population aged 7 and above	Number of literates 1991	Decadal difference in No. of literates 1991-2001	Percentage Decadal difference 1991-2001
		1991			
16	Tripura	2,260,083	1,365,980	670,179	49.06
17	Meghalaya	1,381,049	678,105	492,338	72.6
18	Assam	17,992,811	9,516,393	4,811,147	50.56
19	West Bengal	56,515,668	32,609,397	15,212,360	46.65
20	Jharkhand	17,437,931	7,217,066	4,753,111	65.86
21	Orissa	26,312,235	12,915,917	7,137,868	55.26
22	Chhatisgarh	14,207,956	6,096,034	5,196,862	85.25
23	Madhya Pradesh	38,881,644	17,369,267	14,536,842	83.69
24	Gujarat ⁴	32,946,120	20,284,486	8,765,533	43.21
25	Daman & Diu *	85,808	61,096	50,843	83.22
26	Dadra & Nagar H*	110,140	44,834	63,996	142.74
27	Maharashtra	65,432,651	42,447,139	22,119,642	52.11
28	Andhra Pradesh	55,543,620	24,487,559	15,877,206	64.84
29	Karnataka	37,499,590	21,013,193	9,761,795	46.46
30	Goa	1,032,477	779,596	209,766	26.91

TABLE 4.31 (Cont...)
POPULATION AGED 7 AND ABOVE, LITERATES IN 1991 AND THEIR DECADAL
DIFFERENCE AND PERCENTAGE DECADAL DIFFERENCE DURING 1991-2001

Sr. No.	India/States/ Union Territories*	Population aged 7 and above 1991	Number of literates 1991	Decadal dufference in No. of literates 1991-2001	Percentage decadal difference 1991-2001
31	Lakshadweep *	42,243	34,548	10,733	31.07
32	Kerala	25,261,618	22,686,461	2,939,237	12.96
33	Tamil Nadu	48,410,887	30,336,235	10,288,163	33.91
34	Pondicherry *	697,390	521,213	180,234	34.58
35	Andaman & Nicobar I*	234,312	171,086	81,859	47.85

Source : Provisional Population Totals, Chapter 7, Census of India 2001, Series 1, India, Paper 1 of 2001

Note:1. For the sake of comparability the figures presented against India have been derived after excluding Jammu & Kashmir as the details for 1991 Census are not available since the Census of India 1991 could not be conducted in this State.

2. The figures shown against India exclude entire Kachchh district, Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat state and entire Kinnaur district of Himachal Pradesh where population enumeration of Census of India, 2001, could not be conducted due to natural calamities.

3. For the sake of comparability the figures shown against Himachal Pradesh exclude figures of entire Kinnaur district where population enumeration of Census of India, 2001, could not be conducted due to natural calamity.

4. For the sake of comparability the figures shown against Gujarat do not include entire Kachchh district, Morvi, Maliya- Miyana and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat state where population enumeration of Census of India, 2001, could not be conducted due to natural calamity.

5. N.A. stands for 'Not Available'

TABLE 4.32
CRUDE LITERACY RATE IN INDIA BY SEX : 1901 – 2001

Census Year	Crude literacy rate			Change in percent points		
	Persons	Males	Females	Persons	Males	Females
1901	5.35	9.83	0.60	-	-	-
1911	5.92	10.56	1.05	0.57	0.73	0.45
1921	7.16	12.21	1.81	1.24	1.65	0.76
1931	9.50	15.59	2.93	2.34	3.38	1.12
1941	16.10	24.90	7.30	6.60	9.31	4.37
1951	16.67	24.95	7.93	0.57	0.05	0.63
1961	24.02	34.44	12.95	7.35	9.49	5.02
1971	29.45	39.45	18.69	5.43	5.01	5.74
1981	36.23	46.89	24.82	6.78	7.44	6.13
1991	42.84	52.74	32.17	6.61	5.85	7.35
2001	55.30	64.13	45.84	12.46	11.39	13.67

Source : Provisional Population Totals, Chapter 7, Census of India 2001, Series 1, India, Paper 1 of 2001

Note:

1. Figures of 1901, 1911, 1921, 1931 are for undivided India.
2. Figures for 1981 excludes Assam as 1981 Census could not be conducted in this state due to disturbed conditions.
3. Figures for the 1951 and 1991 Censuses do not include Jammu & Kashmir.
4. Figures for 2001 do not include figures of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat State and entire Kinnaur district of Himachal Pradesh where population enumeration of Census of India, 2001, could not be conducted due to natural calamities.

TABLE 4.33
CRUDE BIRTH, DEATH AND INFANT MORTALITY RATES IN SOME
SELECTED COUNTRIES

Country	Birth Rate	Death Rate	Infant Mortality Rate
Germany	9	11	4
Japan	9	8	4
Australia	10	10	5
U.K	11	11	6
Canada	11	8	5
France	13	9	4
U.S.A	15	9	7
China	15	7	32
India	25	9	69

Source : World Development Indicators (2002)

Correlation Coefficient between Birth Rate and Infant Mortality Rate = +0.927

TABLE 4.34
BIRTH, DEATH AND INFANT MORTALITY RATES AND
MEAN AGE AT MARRIAGE FOR 14 MAJOR STATES OF INDIA-2001

State	Birth Rate	Death Rate	IMR	Mean Age
Kerala	17.20	6.60	11.00	22.30
Tamil Nadu	19.00	7.60	49.00	20.20
Andhra Pradesh	20.80	8.10	66.00	17.80
Maharashtra	20.60	7.50	45.00	19.10
Karnataka	22.20	7.60	58.00	19.40
West Bengal	20.50	6.80	51.00	19.50
Punjab	21.20	7.00	51.00	20.30
Orissa	23.40	10.20	90.00	19.50
Gujarat	24.90	7.80	60.00	20.40
Haryana	26.70	7.60	65.00	19.20
Bihar	31.20	8.20	62.00	18.60
Madhya Pradesh	30.80	10.00	86.00	18.80
Rajasthan	31.00	7.90	79.00	18.40
Uttar Pradesh	32.10	10.10	82.00	19.30
All India	25.40	8.40	66.00	19.40

Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.
Office of Registrar General of India.

Correlation Coefficients

Between Birth Rate and IMR = 0.724

Between Birth Rate and Mean Age at Marriage (Females) =(-)0.531

TABLE 4.35
ESTIMATED BIRTH, DEATH, INFANT MORTALITY AND NATURAL GROWTH
RATES, 2005 FOR SOME SELECTED STATES

State		Birth Rate (Per 1000)	Death Rate (Per 1000)	Infant Mortality Rate (Per 1000)	Natural Growth Rate (Per 1000)
North					
Bihar	Total	30.4	8.1	61	22.3
	Urban	23.8	6.6	62	22.9
	Rural	31.2	8.3	47	17.2
Madhya Pradesh	Total	29.4	9.0	76	20.5
	Urban	22.0	6.1	54	16.0
	Rural	31.6	9.8	80	21.8
Rajasthan	Total	28.6	7.0	68	21.6
	Urban	23.8	6.2	43	17.6
	Rural	30.2	7.2	75	22.9
Gujarat	Total	23.7	7.1	54	16.6
	Urban	21.0	5.8	37	15.2
	Rural	25.5	8.0	63	17.5

TABLE 4.35 (Cont.)
ESTIMATED BIRTH, DEATH, INFANT MORTALITY AND NATURAL GROWTH
RATES, 2005 FOR SOME SELECTED STATES

State		Birth Rate (Per 1000)	Death Rate (Per 1000)	Infant Mortality Rate (Per 1000)	Natural Growth Rate (Per 1000)
South					
Andhra Pradesh	Total	19.1	7.3	57	11.8
	Urban	16.7	5.9	39	10.8
	Rural	20.1	7.9	63	12.2
Karnataka	Total	20.6	7.1	50	13.5
	Urban	17.9	5.6	39	12.3
	Rural	22.1	7.9	54	14.2
Tamil Nadu	<i>Total</i>	16.5	7.4	37	9.2
	<i>Urban</i>	16.0	6.2	34	9.8
	<i>Rural</i>	16.9	8.2	39	8.7
Kerala	<i>Total</i>	15.0	6.4	14	8.7
	<i>Urban</i>	14.8	6.5	12	8.2
	<i>Rural</i>	15.1	6.3	15	8.8

Source: Office of the Registrar General, India, 2-A Mansingh Road, New Delhi 110 011, India

Note: Infant mortality rates for smaller States and Union Territories are based on three-years period 2003-05.

TABLE 4.36
RURAL – URBAN DISTRIBUTION OF
BIRTH AND DEATH RATES

	Rural	Urban	Combined
Birth Rate			
1971	38.9	30.1	36.9
1981	35.6	27.0	33.9
1991	30.9	24.3	29.5
2000	27.6	20.7	25.8
Death Rate			
1971	16.4	9.7	14.9
1981	13.7	7.8	12.5
1991	10.6	7.1	9.8
2000	9.3	6.3	8.5

Source: Registrar General of India on the basis of Sample Registration Data. Tata Services Ltd., Statistical Outline of India (2003-04)

TABLE 4.37
STATE-WISE BIRTH RATES OF 14 MAJOR STATES OF INDIA FROM 1980 TO 2001

States	1980-82	1982-84	1984-86	1986-88	1989-91	1996	1997	1998	1999	2000	2001	Variation 1980-2001
Kerala	26.20	24.90	22.90	21.50	19.10	18.00	18.20	18.30	18.00	17.90	17.20	
Tamil Nadu	27.80	27.90	25.50	23.50	22.10	19.50	18.90	19.20	19.30	19.30	19.00	8.80
A Pradesh	31.30	31.10	30.90	29.70	25.80	22.70	22.30	22.40	21.70	21.30	20.80	10.50
Maharashtra	29.10	30.20	30.00	29.40	27.40	23.40	22.30	22.50	21.10	21.00	20.60	8.50
Karnataka	27.90	29.10	29.60	28.90	27.50	23.00	22.00	22.00	22.30	22.00	22.20	5.70
West Bengal	32.40	31.60	29.80	29.60	27.10	22.80	21.30	21.30	20.70	20.70	20.50	11.90
Punjab	30.20	30.30	29.10	28.60	28.20	23.70	22.40	22.40	21.50	21.60	21.20	9.00
Orissa	32.70	33.40	32.00	31.80	29.70	27.00	25.70	25.70	24.10	24.30	23.40	9.30
Gujarat	34.80	34.00	32.90	30.90	28.60	25.70	25.30	25.50	25.40	25.20	24.90	9.90
Haryana	36.80	36.60	36.00	34.50	33.40	28.80	27.60	27.60	26.80	26.90	26.70	10.10
Bihar	38.10	38.20	38.10	36.80	32.60	32.10	31.10	31.10	31.50	31.90	31.20	6.90
M Pradesh	37.70	38.00	37.90	36.90	36.10	32.30	30.60	30.70	31.10	31.40	30.80	6.90
Rajasthan	37.20	39.30	38.60	34.90	33.90	32.40	31.50	31.60	31.10	31.40	31.00	6.20
U Pradesh	39.20	38.60	38.00	37.50	35.90	34.00	32.40	32.40	32.80	32.80	32.10	7.10
All India	33.80	33.80	32.20	32.10	29.90	27.40	26.40	26.50	26.10	25.80	25.40	8.40

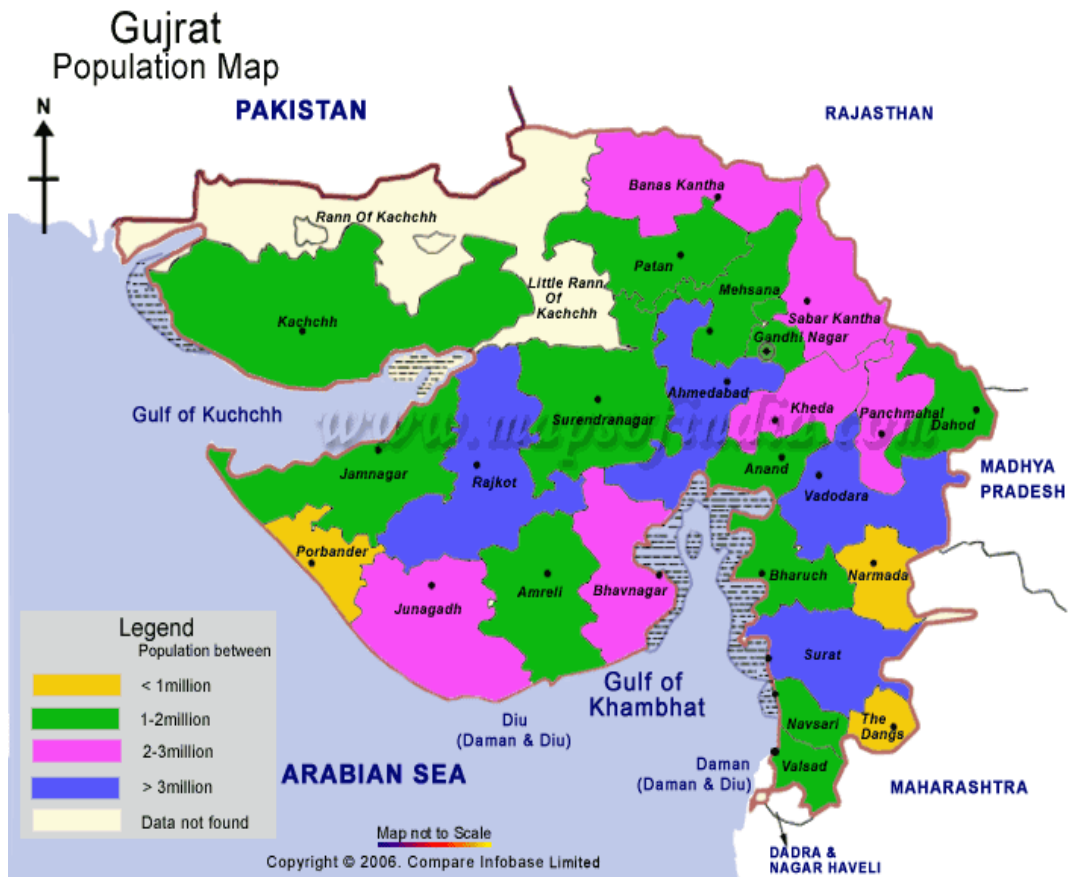
Source: (i) For years 1980-82 to 1989-91, "Demography Diversity in India". New Delhi
(ii) For years 1996, " Social Economic Review", Government of Gujarat, 1997-98, Gandhinagar, 1998
(iii) For years 1998 to 2004, SRS Bulletin, Registrar General of India, New Delhi, Vol.33 No.2 October 1999, Vol.33 No.1 April 2000, Vol.34 No.2 October 2000, Vol.35 No.1 April 2001, Vol.36 No.1 April 2002, Vol.40 No.1 April 2006.

CHAPTER - V

POPULATION GROWTH IN GUJARAT STATE

5.1 Introduction

An attempt is made to analyse the demographic features of the State of Gujarat on the basis of 2001 Census. Six new districts are added in the state and thus the number of states becomes 25 in the 2001 census. The newly added districts are 1) Anand 2) Dohad 3) Navsari 4) Patan 5) Porbandar and 6) Narmada. District wise census figures are analysed so that the causes of population growth may come into light. Sex-wise composition, age-wise composition, density of population, literacy etc. are also examined in this chapter.



At the 00.00 hrs of 1st March, 2001 Gujarat had 48.4 million population against 41.3 million in 1991 even excluding the above said earthquake affected areas.

Gujarat stands at 10th rank among the States of India in respect of population and rank 21st in population Density. In terms of percentage, Gujarat accounts 6.19 per cent of the area of India. Population of the State including estimated figures of Earthquake affected areas accounts 4.93 per cent of the India's population.

Population of Gujarat has become almost three times after independence during (1951-2001). As per 1951 Census there were 16.26 millions persons in the State. In 2001 Census this number rose to 48.39 millions excluding earthquake affected areas while including the estimated figures of earthquake affected areas it becomes 50.60 millions. In 100 years (1901 - 2001) it has become more than five times. In the 1901, there were 9.09 million persons in the State of Gujarat, in 2001 Census this number rose to 48.39 even excluding the earthquake affected areas, where Census was postponed.

5.2 Demographic Profile of Gujarat

Table 5.1 gives a picture of demographic profile of the state of Gujarat. The total population as per 2001 census including the estimated figures of earthquake affected areas is 5.06 Crores with 51.97% males and 48.03% females with a sex ratio of 921 females per 1000 males. In the total population the population in the age group of 0-6 excluding earthquake affected areas is 14.19% with male 14.51% and female 13.85% with a sex ratio of 878 female for 1000 male. The density of population is 258 persons per sq. kms. Decadal growth rate of population from 1991 to 2001 is 22.48.

Overall literacy rate in the state of Gujarat is 69.97% in which male literacy rate is 80.50% and female literacy rate is 58.60%.

5.3 Trends in Population Growth

In Table 5.2 ranking of districts by population size along with percentage of population in each district is given for the census years 1991 and 2001. For the table it can be seen that out of 25 districts in the state, 14 districts has shown negative population growth. The districts of Vadodara, Bhavnagar, Sabar khanta, Junagadh, Kheda, Anand, Mehsana, Kutchch, Amreli, Baruch, Nasari, Patan, Porbander, Narmada are those where a decrease in population is shown as per the census either to a high extent or low. In the remaining 11 districts a population increase is shown.

Table 5.2(A) shows the district-wise population in absolute number and table 5.3 examines district wise variations in population. It can be seen from the table that during 1901 to 1911, in districts like Banaskantha, Mahesana and Kheda, negative population was observed, It shows that as compared to the year 1901, with the year 1911, population we is declined. In rest of the districts, population was increased. However, rate of population was not even in all the districts. During this period (1901 to 1911), the highest population growth was found in The Dangs district (57.78%) , and the lowest per cent growth in Jamnagar district (2.12). In Gujarat State during this period, population growth was found 7.79 per cent, which was higher than that of Jamnagar, Amreli, Kutchch, Gandhinagar, Ahmedabad. Surat and Valsad. In the rest of the 12 districts, population growth was higher than that of Gujarat State.

During 1911 to 1921, in Rajkot, Bhavnagar, Amreli, Kutchchh and the Dangs district, population growth was observed negative. Among all these districts the decline was observed in The Dangs district. While, minor decline

was found in Amreli district, followed by Rajkot district. Between 1941 and 1951, population growth was the highest in Ahmedabad (28.66 per cent) followed by Banaskantha (26.90%), while the lowest was observed in Bharuch, followed by Kutchch district. During this period, Gujarat State registered growth of population about 18.69 percent. This figure was higher than that of the Dangs, Valsad, Surat, Bharuch, Vadodara, Kutchchh, Junagadh, Amreli, Bhavnagar, Surendranagar and Rajkot district.

During 1981-91, population growth in Gujarat State was 21.19 percent. This was higher than that of Jamnagar, Rajkot. Surendranagar, Amreli. Junagadh, Sabarkantha. Mahesana, Kheda, Vadodara and Bharuch district. The highest population growth was observed in Surat (36.29 per cent), followed by Dohad (34.60 per cent) while the lowest growth was found in Porbandar district (10.23 per cent), followed by Jamnagar district (12.24 per cent).

Table 5.4 depicts percentage decadal variation in population since 1901 for state and districts.

Table 5.5 examines decadal growth rate of population from 1901 to 2001 and Table 5.6 compares decadal growth rate of population of Gujarat to that of India. The decadal growth rate reached to 22.66% (excluding earthquake affected areas) and 22.48% (including earthquake affected areas) during 2001 from 7.79% during 1911 while the percentage progressive growth reached from 7.79% to 432.03% (excluding earthquake affected areas) and 456.00% (including earthquake affected areas) over last 100 years from 1901 to 2001.

During the decades from 1901-1911 to 1971-81 the variation in decadal growth rate was greater than the all India figures. It was 7.79% in Gujarat while in India it was only 5.75% during the decade 1901-1911. In

1911-1921 it was 3.79% and (-)0.31 in Gujarat and India respectively. An increasing trend can be noticed in the difference between the figures of Gujarat and India from 1931-1941 to 1961-71. The difference has decreased in 1971-81 to 3.01% from 5.03% in 1931-41 and in 1981-91, the decadal growth rate population in Gujarat decreased by 2.66% from the all India figure. Again the reverse happened in 1991-2001. Figure 5.1 clearly depicts the change in the decadal growth of population during the decade 1981-91 in which the decadal growth rate came down from that of all India level. Except for this decade in all other decades the growth rate of Gujarat was above the all India level.

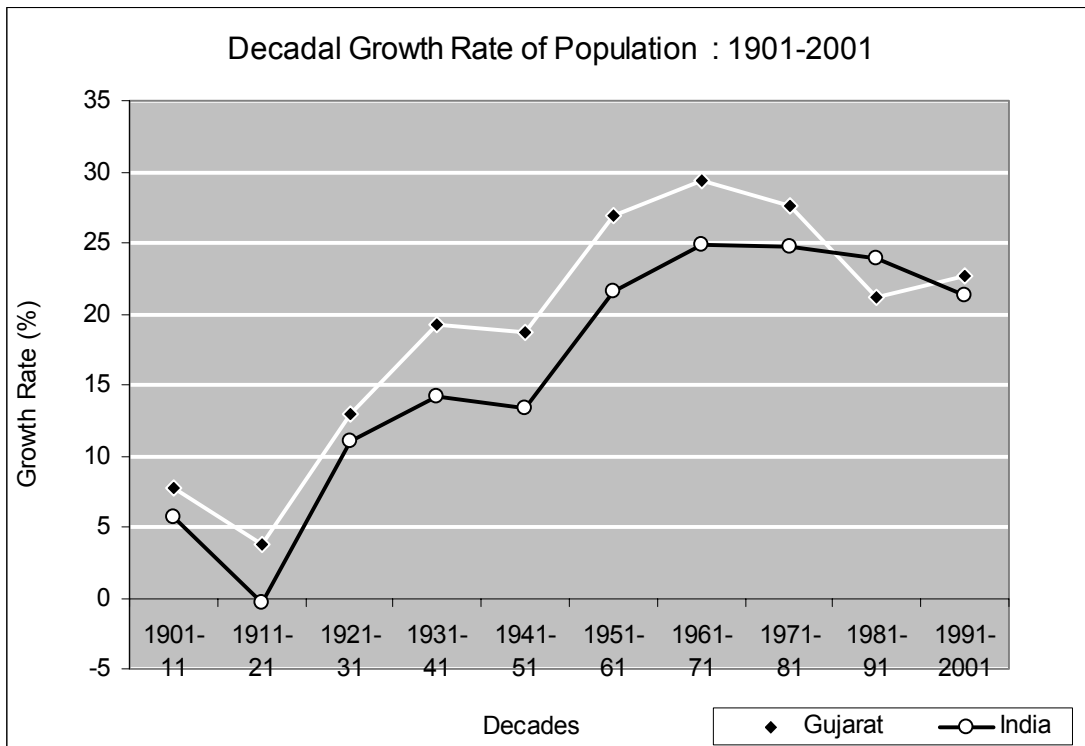
A study of growth rate of Gujarat's population can be classified in to three phases:

- 1901-1921 (Stagnant population)
- 1921-1951 (Steady growth)
- 1951-1971 (Rapid growth)
- 1971-2001 (Slowing down)

During the first 20 years i.e. from 1901 to 1921 the population of Gujarat has shown a slow decadal growth with 7.79% growth from 1901-1911 and 3.79% growth from 1911-21. During the decades 1921 to 1951 an average increase of 16.95% per decade is observed. The decades 1951 to 1971 registered an average increase of population to the tune of 28.13% per decade. During the decade from 1971 to 2001 slowing down of the population growth can be observed with an average increase of 23.5%. These three distinct periods denotes the different stages of demographic transition in the state of Gujarat.

Table 5.7 gives a comparative analysis of decadal growth rate of population among the districts of Gujarat. The state level growth rate is 22.66% in the decade 1991-2001.

Figure 5.1



Compared to this Surat has shown the highest growth rate of 47.04% and Amreli has shown the lowest 6.45% growth. The districts of Valsad, The Dangs, Rajkot, Dohad, Ahmedabad, Banas Kantha, Surendranagar and Gandhinagar have shown the growth rate higher than the state average while the districts of Jamnagar, Panch Mahals, Vadodara, Bharuch, Bhavnagar, Sabar Kantha, Junagadh, Narmada, Porbandar, Patan, Kheda, Navsari, Anand and Mehsana have registered a growth rate lower than the state average. The districts higher and lower average have been put in descending order of the growth rate.

5.4 Density of Population

Density is the number of person per sq. kms. It is derived by dividing the number of persons by the total land area of a region/country. Density of population figures indicates the man-land ratio. UNO defines density in these words, "Each population lives in a given area or territory and a study of the

geographical or spatial distribution deals with the way in which distributed over the territory is considered as a density of population for the area." Density of population varies from region to region / district to district. Climate, rainfall, irrigation facilities, fertility of the soil, pace of industrial development, availability of educational facilities are some of the reasons for differences in density of population from region to region.

Data regarding density in each district of Gujarat for each census is given in Table 5.8. It can be seen from the table that in 2001, the highest density was found in Ahmedabad district 718 per sq. kms. and the lowest in Kutchchh district 33 per sq. kms. The second densely populated district is Surat with 653 and the third is Anand with 631 and the fourth is Gandhinagar with a density of population of 617 per sq. kms. In 1991 census Gandhinagar was the most densely populated district in the state. Gujarat was 258 which was higher than that of Jamnagar, Bhavnagar, Amreli, Kutchchh, Banaskantha, Bharuch and the Dangs district. In all 11 districts has the density below the state level and the remaining 14 are above the state figure. It is very clear from the table that the density was found uneven among districts of Gujarat. The change in density was also uneven. Thus, it may be concluded that there exist wide-variations in population density in the districts of the state.

Table 5.9 illustrates the density index number and corresponding percentage increase in the density of population. Great increase in the density of population can be noticed in the some districts of the states. The reason behind this substantial increase is mainly attributed to the pace of Agricultural as well as industrial developments. Development of industry and trade combined with better amenities of life like higher education facilities, easy linkage to other parts of the world made Ahmedabad with 765.06% increase in the density compared to 1901 density. Concentration and development of diamond industry made the population growth faster in Surat

district with 716.25% increase. Panch Mahal District has got the fourth place in terms of increase in density. This is mainly due to fast growing agricultural sector. The astonishing finding here is that even though the absolute density of population is less, the Dangs District has shown the highest growth of 863.64% in density of population over the last hundred years which clearly denotes the structural change of the district from a tribal land to an agrarian land. The Kutch district remain the last both in terms of absolute density and index (200)

Density of the districts arranged in order of below and high from the state average of 2001 census is examined in table 5.10. The density of population in Kutch district falls below the state figure of 258 persons per sq. kms. with a density of 33 and Ahmedabad district has the highest density of 718 persons per sq. kms. which is far higher than the state level density. The districts of Bhavnagar, Porbandar, Banas Kantha, Bharuch, Patan, Amreli, Narmada, Surendranagar, Jamnagar and the Dangs have density below the state average and the remaining 13 districts; Surat, Anand, Gandhinagar, Navsari, Vadodari, Kheda, Valsad, Dohad, Mehesana, Panch Mahals, Rajkot, Sabar Kantha and Junagadh have the density above the state average.

(a) Density Function

From the above analysis, wide variation can be observed in density in different districts. It is because of the influence of various factors. The influence exerted by different factors has also shown differences during the passage of time. These variation in density are a function of land utilisation and cropping pattern. In Gujarat these differentials in population density are on account of rainfall, reliability of rainfall, irrigation facilities, fertility of soil, intensity of cropping, pace of industrial development, availability of other facilities like higher education.

A density function can be framed from the above facts. That is Density is function of rainfall, reliability of rainfall, irrigation facilities, fertility of soil, intensity of cropping, Percent of cultivable area to total area, pace of industrial development, availability of other facilities like higher education.

$$D_i = f(R_i, F_i, C_i, A_{C_i}, I_{N_i}, O_i)$$

Where

R_i = Rainfall in the i th District

F_i = Fertility of soil

C_i = Intensity of cropping in the i th district which is the percent of gross area to net area sown

A_{C_i} = Percent of cultivable area to total area in the i th district

I_{N_i} = Pace of industrial development in the i th district

O_i = Availability of other facilities like higher education in the i th district

Density has positive correlation with the above variables. That is an increase in rainfall will increase the intensity of cropping which will result in increase in the density of population.

5.5 Sex Composition of Population

Sex-ratio is a very significant factor of population growth. It determines the number of female for reproduction. It is expected that sex-ratio at he birth should be 1000 females per 1000 males. But sex-ratio is not normally found such. In India sex-ratio is given as number of females per 1000 males. Sex composition of the human population is one of the basic demographic characteristics, which is extremely vital for any meaningful demographic analysis. The first and foremost is the simple count of males and females.

Changes in sex composition largely reflect the underlying socio-economic and cultural patterns of a society in different ways. Sex ratio defined here as the number of females per 1000 males in the population, is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time. It is mainly the outcome of the interplay of sex differentials in

mortality, sex selective migration, sex ratio at birth and at times the sex differential in population enumeration.

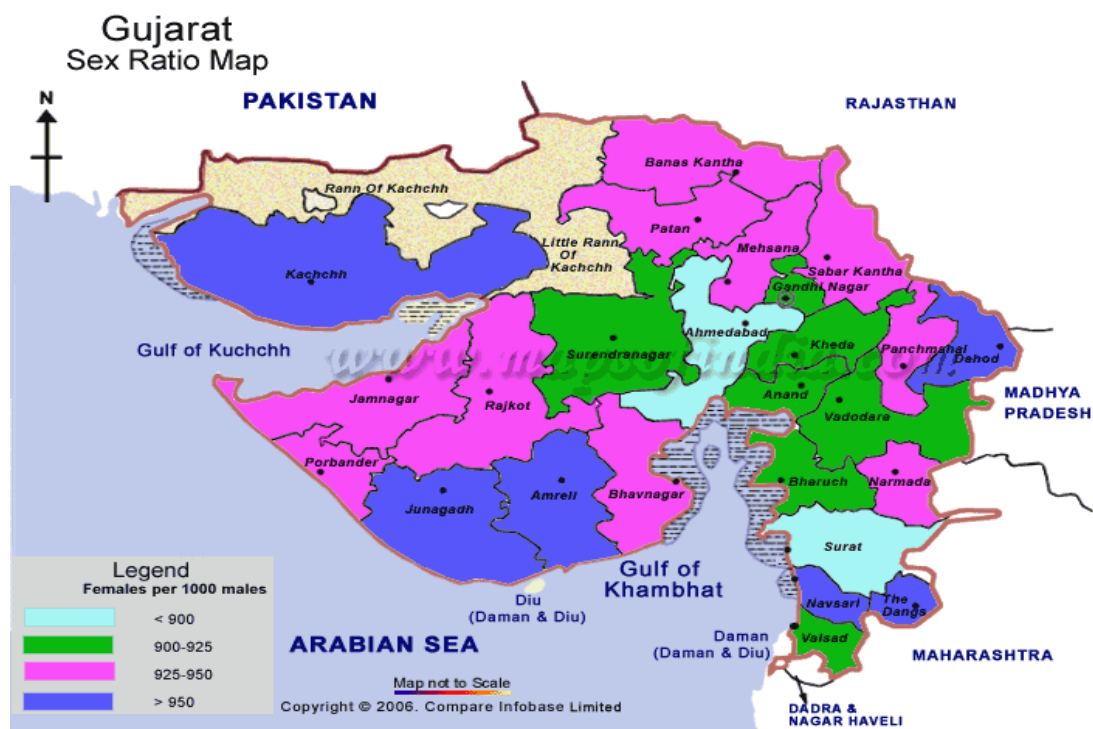


Table 5.11 compares the sex ratio of Gujarat for the last 100 years from 1901 to 2001 to that of India. The sex-ratio of the State shows the general trend that sex-ratio is decreasing except 1931, 1951 and 1981 where it is increasing. Sex-ratio in India has the decreasing trend except 1981 and 2001 census where it has increased. It can be seen that sex-ratio of Gujarat was less than the India's sex-ratio up to 1941. After 1941 Gujarat has

improved its sex-ratio in comparison to India but as per provisional results of 2001 Census sex-ratio of Gujarat has gone down by 15 females per thousand males in comparison to 1991 which is the drastic decrease since 1901. Such reduction in sex ratio in Gujarat is unfavourable for future. Gujarat has only 919 females per 1000 males while it comes 921 including the estimated figures of earthquake affected areas. The sex-ratio in 11 major States is higher than the Gujarat. Figure 5.2 depicts that during the years 1951, 1971, 1981 and 1991 the sex ratio of the state of Gujarat was greater than that of all India average. During all other periods the sex ratio of Gujarat remained below the national average.

Figure 5.2

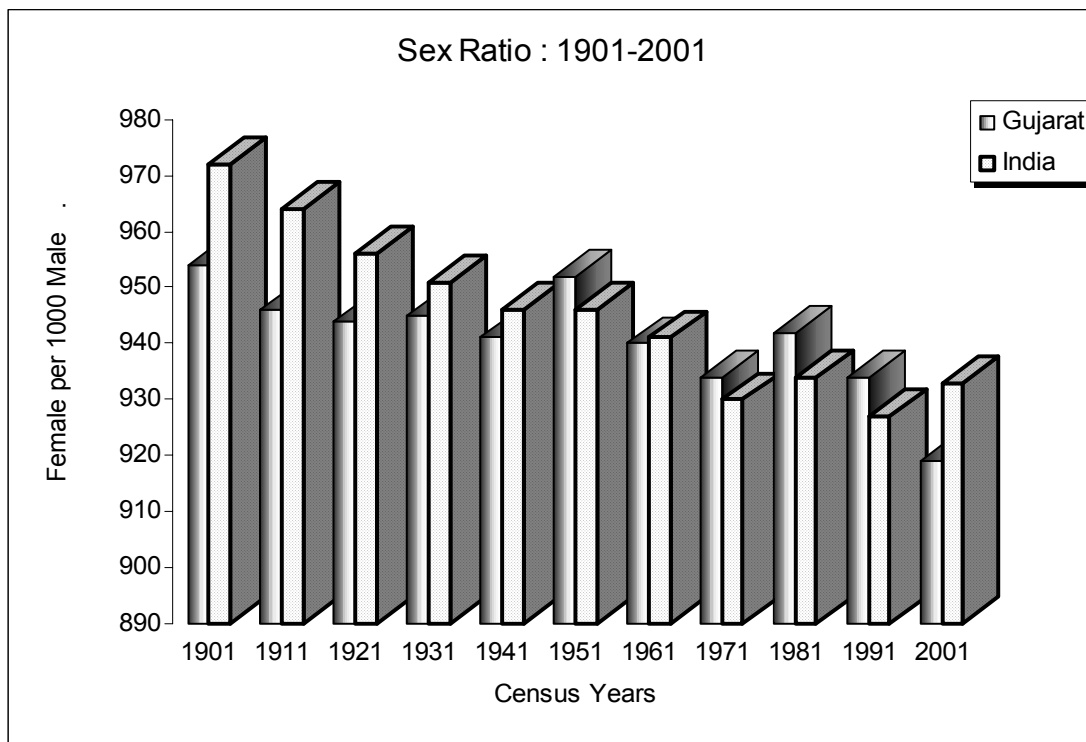


Table 5.12 examines the changes in sex-ratio of the districts of Gujarat for 100 years from 1901 to 2001. Figure 5.3 shows a declining trend in the sex-ratio which is unfavourable for future growth of Gujarat. Only Four districts - Surat (835), Anand (910), Ahmedabad (892) and Gandhinagar (911) - show the sex-ratio lower than the state average of 919. The remaining 21 districts shows sex-ratio higher than the state average. The districts Amreli, The

Dangs and Dohad have sex-ratio much higher than the state average. The loss of more female due to insufficient attention and care to them is considered as one of the major reason for this defective sex-ratio. Geographical and sociological factors like climate, race, caste, creed, orthodox belief, season of gestation, food habits and consanguineous marriages, polyandry are some of the major factors affecting adversely sex-ratio. Desire for male child, neglect of female contributed to the female infanticide also.

Figure 5.3

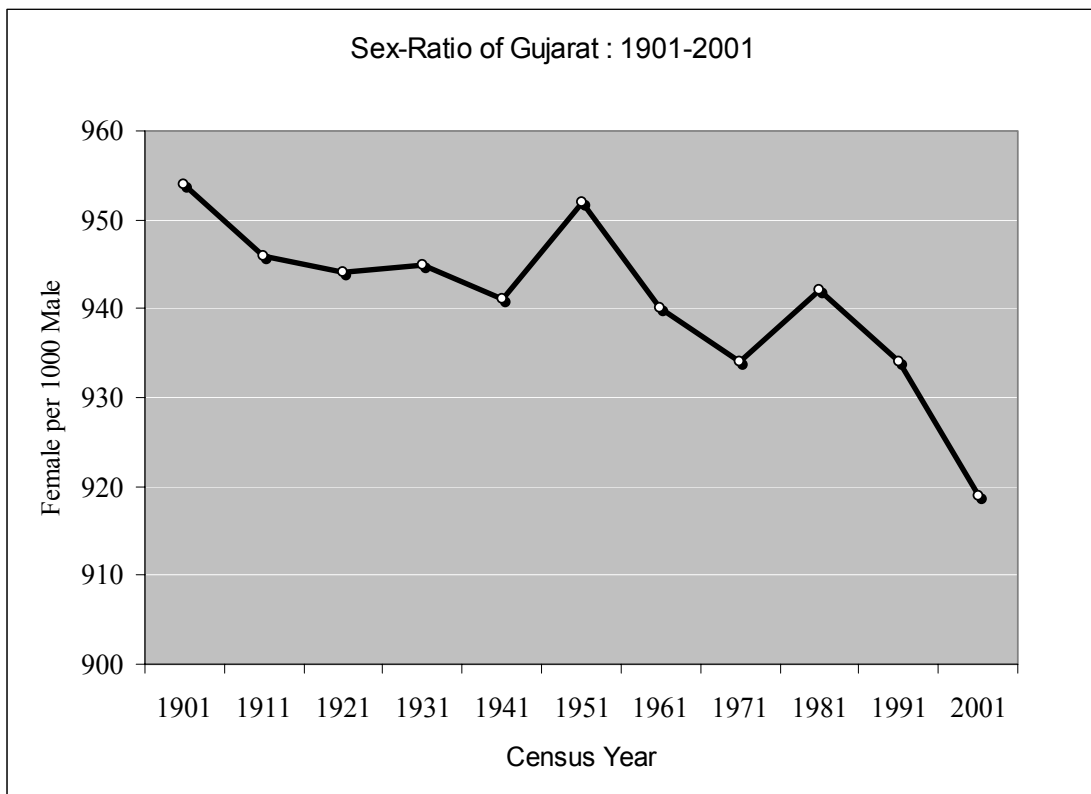
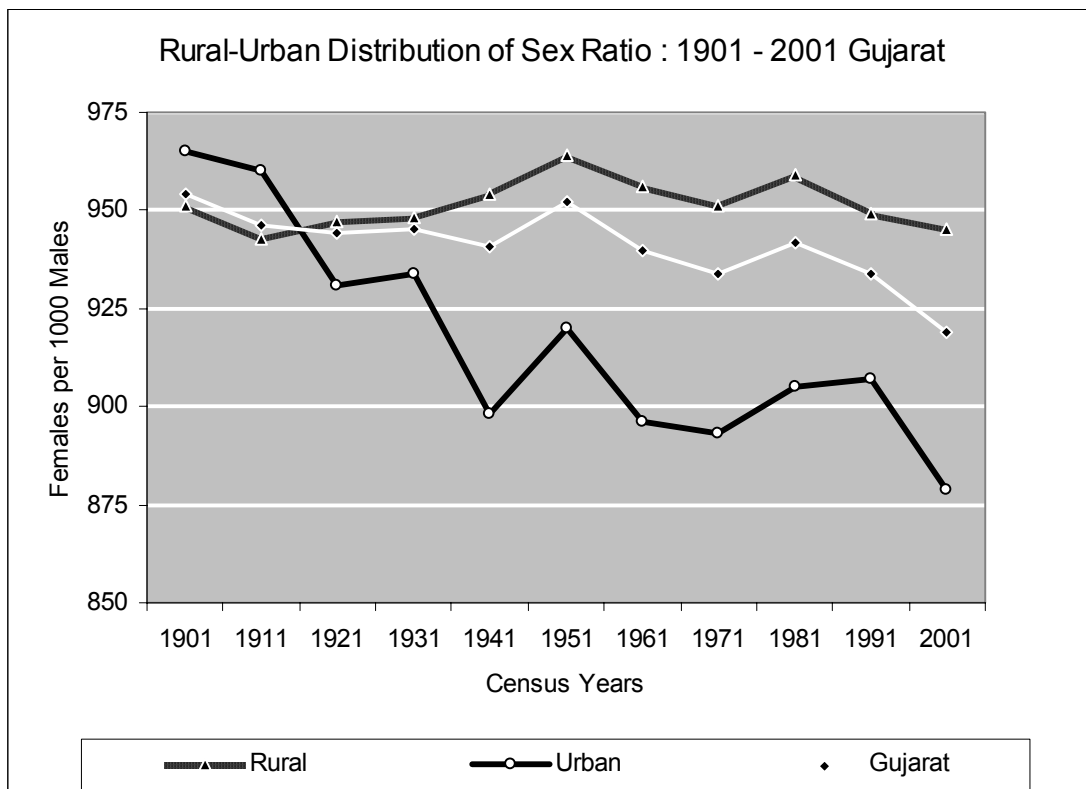


Table 5.13 and figure 5.4 explains the rural-urban distribution of sex-ratio of the state of Gujarat from 1901 to 2001. It is clear from the graph that the sex-ratio in urban area is far lesser than the state average while the sex-ratio in rural area is higher than that of the state average. During the year 1901 and 1911 the sex-ratio in urban area was much higher than that of rural area. But from the decade 1921 onwards the trend has been changed and the reverse has happened. The urbanization and subsequent structural change

and the facilities to determine pre-natal sex and facilities for female infanticide worked as main reasons for defective sex-ratio of an urban society which give privilege to only male child.

Table 5.14 makes a comparative study of the sex ratio between children of 0-6 years age and all age group. Except for two districts, the sex ratio of the children of the age group 0-6 years is lesser than the sex ratio of all age group. The districts Surat and Valsad show a higher sex ratio of children than that of all age groups. The sex ratio of children in Mahesana district is lesser by 125 female

Figure 5.4



to that of the all age groups. Gandhinagar lesser by 98, Amreli lesser by 94, Rajkot by 76, Sabar Kantha by 69 and Patan by 68. The faulty sex ratio of children is an indication of decreasing sex ratio in the state of Gujarat unless and until concrete measures are taken to empower women in the state.

5.6 Sex-Wise Change

In Table 5.15 index number of sex ratio is analysed. In Gujarat an average percentage decrease of -3.67% is observed. The districts like Bana Kantha, Amreli, Anand, Kheda, Dohad, Vadodara and The Dangs have shown an average percentage increase of sex ratio even though it is nominal. Remaining 18 districts have shown average percentage decrease ranging from -15.83% to -0.52%. Surat has shown substantial decrease in the sex ratio to the extent of 15.83% while the Dangs has shown 5.12% average percentage increase in the sex ratio during these 100 years.

5.7 Analysis of relationship of sex ratio with factors affecting it

For any economy especially a developing economy population count in favour of female is necessary in view of future growth prospects. Unfortunately, analysis of sex ration data of last ten census right from 1901 to 2001 has revealed the fact that in may states of the country the Sex ratio is alarmingly decreasing despite of various policies and programmes. In case of Gujarat the projected sex ratio for the year is 882 females per thousand males. In the following paragraph some of the demographic variables are weighed to find out their influence on sex ratio. A district-wise analysis is made taking all the districts of Gujarat except Kachchh, where census could not be conducted due to earthquake and the Dangs, the districts in which urbanisation is still at infant stage. The correlation coefficient of the relationship between sex ratio of the districts and the following variables are estimated.

- (a) Male literacy rate
- (b) Female literacy rate
- (c) Percentage of male agricultural workers
- (d) Percentage of female agricultural workers
- (e) Total Work participation rate in urban area

- (f) Female work participation in rural area
- (g) Female work participation rate in urban area
- (h) Male work participation in rural area
- (i) Male work participation rate in urban area
- (j) Female work participation in rural area
- (k) Female work participation rate in urban area

The relationship of sex ratio has also calculated for the following variables taking some selected states in India.

- (l) Women's Economic Status
- (m) Women's Social Status
- (n) Women's Health Status

Table 5.20 gives the correlation coefficient of sex ratio with all the above variables. The details of the variable is put in Tables 5.17, 5.18 and 5.19. The analysis revealed that there is a moderate and in some cases slightly high negative relationship exists in between sex ratio and following variables in the state of Gujarat. Male literacy rate (-)0.534, Female literacy (-) 0.497, Percentage of female agricultural workers (-) 0.168, Percentage of urban population to total population (-) 0.607, Work participation rate in urban areas (-) 0.499, Male work participation rate in rural areas (-) 0.395 and Male work participation rate in urban areas (-) 0.552. It is implied from the above coefficient that the districts in which the presence above variable is high the sex ratio is found less and the districts in which their presence is low sex ratio is found more. It is amazing that despite of increasing female and male literacy rate the sex ratio is found less. It is mainly attributable to the fact that the sons are still preferred in educated society also.

A low and in some cases slightly moderate positive relationship exists in between sex ratio and Percentage of male agricultural workers (+) 0.078,

Female work participation rate in rural area (+)0.145, female work participation rate in urban area (+)0.285 in the state of Gujarat.

The relationship between sex ratio and women's economic status, women's social status and women's health status is found positive in analysis done taking some selected states of India. Sex ratio is negatively related to gender disparity index (-)0.499 showing the necessity of serious efforts to be put in to make gender equality. Sex ratio has positive relationship with gross gender development index (+)0.336. This means that improvement in the status of women in the country economically, socially and in health can rectify the defective sex ratio.

5.8 Age Composition of Population

A study of age composition is very helpful in determining the population growth, economic development and proportion of the labour force in the country.

Table 5.21 examines total population, population in the age group 0-6, by sex for state and districts and Table 5.22 gives rural-urban distribution of population on the basis of age group and sex and subsequently Table 5.23 explains the rural-urban distribution of population on the basis of age group and sex as a percentage of total population. According to the data 32.81 percent of total population is in the age group of 0-14. The percentage of male population in total male population is 33.41 and that of female is 32.16. The active working force is considered as the people between 15-59 age group. 60.19% of total population of Gujarat is in this age group. Out of the total male population of Gujarat 60.32% male population is in the active workforce category while the female population is 60.06%. In the unproductive old age group has only 6.91% of the total population. The

proportion of unproductive aged male population in the total male population is 6.17% and that of female is 7.70%.

Table 5.24 gives an account of rural and urban distribution of the population on the basis of sex as a percentage of age group. 34.63% of rural population is in the age group of 0-14 and 57.99% is in the productive age group of 15-59. In the last category of 60 and above has only 7.31% total population. In the rural male population 35.41% is in the age group of 0-14, 57.93% is in the age group of 15-59 and 6.57% is in the age group of 60 and above. In the rural

female population these figures are 33.80%, 58.05% and 8.80% respectively. 29.76% of urban population is in the age group of 0-14 and 63.89% is in the productive age group of 15-59. In the last category of 60 and above has only 6.23% total population. In the urban male population 30.16% is in the age group of 0-14, 64.20% is in the age group of 15-59 and 5.52% is in the age group of 60 and above. In the urban female population these figures are 29.30%, 63.55% and 7.04% respectively. It is clear from the above analysis that the population under the productive age is more in urban sector than in rural sector. One more thing can also be observed that the age group of 10-14 has the highest percentage of population among all the different age groups.

Table 5.24 rural-urban distribution of population on the basis of sex as a percentage of age group in Gujarat. From figures shown in the table it can be observed that from the age group of 0-4 to 50-54 the percentage of male population under each group is more than 50% ranging from 51.65% to 53.41% and percentage of female population less than 50% ranging from 46.59% to 48.35%. The percentage of male population decreases gradually in descending order from the age group of 55-59 to the last group and the reverse happens in case of female population. It increases in ascending order from the age group of 55-59 to the last group.

A study on age distribution of population can not be completed if it does not analysis the proportion of children in the total population. Table 5.25 gives an illustration in this account taking all the districts of Gujarat into account. The state level average of child population in the age group of 0-6 is 14.19% and male 15.16 % and female 14.54%. Ten districts has child population above the state average and the remaining 15 districts has child population below the state average. The district Dohad has the highest child population 19.57% followed by the Dangs 18.84% , Banas Kantha 18.19% and Kutchchh 16.07%. The District Navsari has registered the least account of child population 11.50%. Ahmedabd has registered 12.44%, Rajkot 12.67%, Anand 12.97% and Vadodara 12.98%.

5.9 Literacy in Gujarat

In the study of demographic trends of any country, the study of literacy rate has special significance as it is one of the important determinant of the physical quality of life index. Not only the facilities for education but the use of these facilities are also important in the determination of the nations future. The literacy rates obtained at the census give a reflection of success of the government policies and programmes. Literacy and education are reasonably good indicators of development in a society. It forms an important input in the overall development of individuals enabling them to comprehend their social, political and cultural environment better and respond to it appropriately. Higher levels of education and literacy lead to a greater awareness and also contributes in improvement of economic conditions. Improved levels of literacy also are pre-requisites for acquiring various skills. Literacy is one of the important social characteristics on which information is obtained of every individual in the census. For the purposes of census a person aged seven and above, who can both read and write with understanding in any language, is treated as literate. A person, who can only read but cannot write, is not

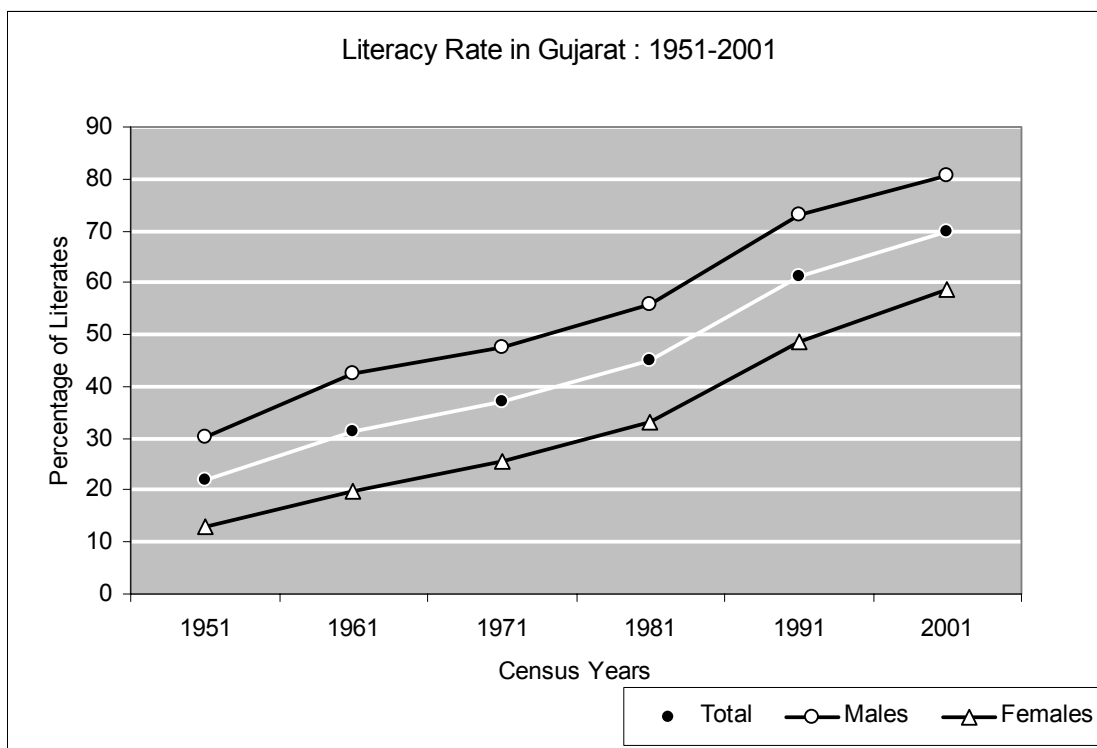
literate. Literacy rate is one of the Indicators to estimate socio-economic development.

Table 5.26 gives the literacy rates of Gujarat from 1951 to 2001 with male-female distribution of literacy. The literacy rate according to 1951 census was 21.82 percent with 30.32 male literate and 12.87 female literate. A three fold increase in the literacy rate can be observed during the 50 years from 1951 to 2001 as the rate reached 69.97 percent in 2001. During these 50 years the male literacy reached 80.50 percent in 2001 from 30.32 percent in 1951. The female literacy reached to 58.60 percent in 2001 from 12.87 percent in 1951.

The index number of the literacy rate over the past 50 years gives a clear picture of the efforts put there in for the improvement in the literacy rate. On 1951 base the index number of the literacy rate in Gujarat for the year 2001 is 320.67 showing a net average percentage increase of 220.67 percent in the total literacy rate of Gujarat. The index number of male and female literacy rate is 265.50 and 455.32 respectively showing a net average percentage increase in literacy rate of male and female 165.50 and 355.32 percent respectively. The above figures clearly indicate the substantial improvement in the female literacy rate.

Table 5.27 compares the State of Gujarat to the rest of the country in literacy rates. According to 2001 census, Gujarat holds 15th position in the literacy rate with 69.97% of literate population. The highest percent of literate population was found in the state of Kerala with 90.90% literacy rate. Gujarat has again 15th position in male literacy rates and 21st position in female literacy rates indicating the need for further enhancement in the educational and other literacy programmes.

Figure 5.5



(a) District-wise per cent of Literate Population

District-wise per cent of literate population for the year 1961, 1971, 1981, 1991 and 2001 is given in Table 5.28. It can be seen from the table that in 2001, the highest literacy rate was found in Ahmedabad (79.69%) while the lowest in Dohad (45.65%). In 1991, the first rank was obtained by Gandhinagar (73.78%) and the lowest rank was by Banaskantha (39.50%). Again in 1981 the highest literacy rate was in Gandhinagar (51.48%) and lowest was in Banas Kantha (20.04%). The same trend was observed for the year 1971 and 1961.

With respect to the growth rate of literacy, the Dangs district has registered the highest increase of 550% in literacy rate over the past forty years followed by Banas Kantha the 303% increase in literacy rate. Panch Mahals 219%, Junagadh and Sabar kantha 180% are registered over these years. Ahmedabad has registered lowest increase in literacy rate (91%). Kheda (101%), Vadodara (103%) are there just before Ahmadabad.

Much increase in male and female literacy rate is shown in all the districts with slight variations in 2001 compared to 1991. Table 5.29 and Table 5.30 gives a comparative picture of account of literacy rate in Gujarat in 1991 and 2001. In 2001 there are two districts with literacy rate below 60%. Dohad (45.65%) the lowest and Banaskantha (51.26%). The literacy rate of twelve districts lies below the state average but higher than 60% starting from Valsad with 69.41% to the Dangs with 60.23%. The remaining ten districts has literacy rate above state average with Ahmedabad (79.89%) occupying first place and Vadodara (71.32%) occupying last place. Table 5.31 provides the absolute number of illiterates in the with percentage distribution literates along with total population figures of the state of Gujarat.

(b) Literacy and Birth rate

The fertility seems to have strong correlation with educational level of mother. Table 5.32 examines the relationship between the literacy rate and the birth rate. For calculating correlation between literacy rate and birth rate, 12 major states have been selected for their literacy rates and birth rates. The correlation coefficient between total literacy rate and birth rate, Male literacy rate and birth rate and female literacy rate and birth rate is calculated and a high negative correlation $[(-)0.7487]$ was found between female literacy rate and birth rate and a moderately high negative correlation $[(-) 0.6455]$ was found between these variables. The correlation coefficient between male literacy rate and birth rate was low $[(-)0.4411]$ compared to that of the former two cases. It means when the literacy rate increases the birth rate tends to decrease. The above analysis proves that improvement in both male and female literacy rate is one of the best way to decrease the birth rate.

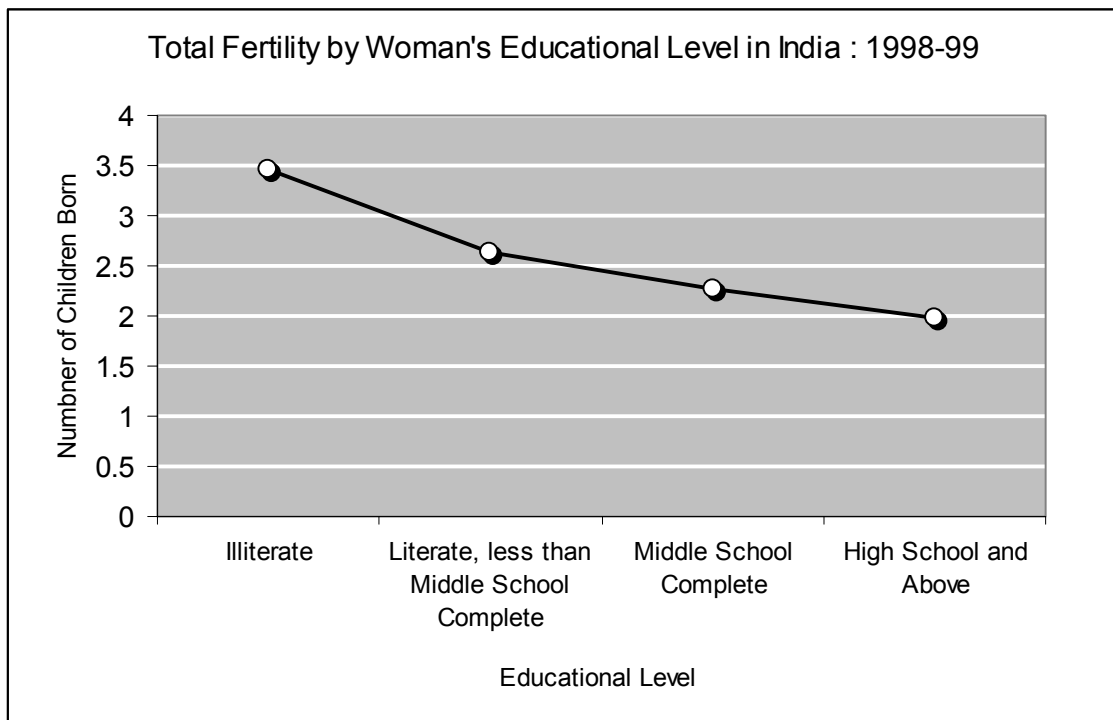
Supporting this fact, the National Family Health Survey (1998-99) reveals that the total fertility of illiterate women in India is 3.47 and it declines to 2.64 for women whose educational level is literate but less than middle school. (Table 5.33). It further declines to 2.26 for the middle school complete

women and is the lowest (1.99) for women with educational level of high school and above. Fertility is every case is higher in rural areas than in urban areas.

(c) The Theory of Social Capillarity

Prof. Arsene Dumont's Theory of Social Capillarity is applicable in this sense. Prof. Arsene Dumont's theory of population is known as the theory of social capillarity. Social capillarity means social attraction or repulsion to a particular thing. What is the principle of gravitation in the physical world, is the principle of capillarity in the social world.

Figure 5.6



In a civilised society, Dumont's theory of social capillarity becomes applicable. Human beings want to achieve name and fame in every walk of life. People cannot easily go up to the highest rung of the ladder with the heavy burden of so many children. Thus, social prestige or ambition is to be achieved, small family becomes a necessity. With the increase in income or wealth, the number of children does not increase, but man's desire for a

better position in the society becomes more intense. In a progressive or developed society, environment or atmosphere, the desire to go to the highest rung of the ladder becomes very pressing and intense. In a developed area, city or town, fertility declines due to social capillarity - 'Just as a column of liquid must be thin in order to rise under the force of capillarity so must a family be small to rise in the social scale.'

There is an inverse relationship between birth rate and social capillarity. Uncivilised people have higher birth rate, and civilised people have lower birth rate. The civilised people, with lower burden of population, become more civilised, enlightened and refined. According to Dumont, 'From the moment when the imagination and the attraction of the ideal enter the scene, we find ourselves in the presence of a new principle of population.' Dumont points out that poor people devote all their time, energy and money to expand and maintain their families. They can attain social capillarity by applying their time, money and energy for vertical mobility. The poor people have to exert more and work harder for achieving social capillarity. However, the first condition to achieve social capillarity is to reduce birth rate (one or two children).

Dumont finds that birth rate is lower in cities and higher in villages. In cities, there are better urges for a better standard of living, higher income and wealth, ambitious and progressive ideals, better knowledge, thinking and rationality and a constant and intense desire for progress, position and prestige. Due to all these, birth rate remains lower. The opposite picture is found in the rural areas where there are ignorance, casteism, illiteracy, absence of progressive ideals, fatalism, traditional thinking, conservatism and poverty. Lack of ambition and of the desire of progress, status and position is the main cause of higher birth rate and population problem.

Prof. Dumont observes that socialism or capitalism cannot lead to a reduction in birth rate. In a socialist state, employment is ensured, and there is limited scope for social capillarity. 'The socialist principle of equality of function, if entirely applied, would necessarily imply the destruction of social capillarity and cause a high birth rate.' Similarly, in a capitalist society, there are limited opportunities for the common people to rise up to the highest rung of the ladder.

5.10 Correlation Matrix

The following section reproduced the facts revealed by a recent study by Purujit Praharaj of International Institute of Population Sciences (IIPs) , Mumbai based up on 2001 census figures of Literacy, Sex Ratio, Density, Percentage of child population between 0-6 years, percentage of urban population and work participation rates. (Table 5.34)

Gujarat is one of the industrially developed states having the population 50.59 million out of which 26.34 million were males and 24.25 million were females. The decadal growth rate of population between 1991-01 is 22.48 percent. The sex ratio was 921 in 2001, which is slightly less than the national level. The sex ratio in 1991 was 934. The density of population increased from 211 persons per sq. km. in 1991 to 258 in 2001. The literacy rate was 69.97 percent. Among male it was 80.50 percent and among females it was 58.60 percent. In all the cases the literacy level was higher than the national average.

Therefore the work participation rate is also high. The total work participation rate increased from 40.23 percent in 1991 to 42.10 percent in 2001. Among males the work participation rate increased slightly. It increased from 53.57 percent in 1991 to 55.02 percent in 2001. Among all the districts, the work participation rates increased slightly. The work participation among

females increased more in comparison to their males. Among females it increased from 25.96 percent in 1991 to 28.03 percent in 2001. In the main worker category the male work participation rate declines from 53.17 percent in 1991 to 51.25 percent in 2001. The highest decline occurred in district "The Dangs". It declines from 53.30 percent in 1991 to 46.16 percent in 2001. This can also be said as the effect of urbanization. In case of females a slight increase has been observed. The female work participation rate increased from 13.74 percent in 1991 to 14.53 percent in 2001. In the marginal workers category, a straight increase in work participation rate of both sexes can be seen. Among males it increased from 0.40 in 1991 to 3.77 in 2001, and among females it increased from 12.23 to 13.50 percent. This might have occurred due to the new economic policy launched in 1991. New-economic policy emphasized privatization. Private organizations are giving jobs on short term-basis. They used to avoid the permanent jobs. As an effect of this the number of marginal workers increased.

If we look at the district level variation of Gujarat, then we can find that the variation in crude work participation rate is 9.00 percent, which is slightly more than Punjab. Among males the variation in marginal worker category is too high i.e. 43.37 per cent. Other wise the total crude work participation rate among males is 3.90 per cent and 28.42 per cent among females. Among females the variation in marginal worker category is higher than the main worker category. It is 42.23 per cent in marginal worker category and 25.96 per cent in main worker category.

In Gujarat the total work participation rate is negatively related with literacy level and percent urban. The correlation is also highly significant. It can be said that if development occurred then work participation declines. These two variables are negatively related with work participation and also related with increased level of development. In main worker category the male work participation rate is adversely correlated with sex ratio and density

of population, but positively related with literacy and percent urban. In all these case correlation is highly significant. This implies that in urban areas more educated males are working. In case of the marginal workers the female work participation rate is correlated positively with sex ratio and negatively with literacy and percent urban. This means in rural areas the illiterate women are working more as marginal workers. The same thing is also happening with the total female work participation rate.

5.11 Nature of the Population in Gujarat

The above discussion about demography of Gujarat signifies some important features and issues. Some of the issues needs immediate attention and more elaborative steps are needed to be taken to resolve the issues

- a) Gujarat stands at 10th rank among the States of India in respect of population and rank 21st in population Density. In terms of percentage, Gujarat accounts 6.19 per cent of the area of India. The decadal growth rate of population is 22.66 percent which higher than that of the national average of 21.54 per cent. The percent progressive growth reached 456.00 per cent. Gujarat human development fact sheet is given in Appendix V.I
- b) The high growth rate of population is attributed to a combination of high fertility and a declining mortality rate.
- c) The density of population is 258 persons per square kilometres. The lowest increase in density is shown in Kachchh district 200 per cent compared to 1901 while the Dangs has shown highest growth in terms of density 863.64 per cent from 1901 to 2001.

- d) The sex ratio in the state is 921 female per 1000 male against the national average of 933. It is, in case of children between the age group of 0-6 is 878 female per 1000 male, showing a further fall in the sex ratio in the near future. Even after implementation of various policies and programmes in Government as well as Non- Governmental level much improvement could not be seen in the sex ratio of the country.
- e) Out of the total population only 69.97 per cent is literate in which the male literacy is 80.50 per cent and that of female is 58.60 per cent. In literacy the state has to go far more ahead with 15 districts having literacy rate below the state average. This can be considered as one of the important reasons for the low economic growth of the economy. The rural sector, while dominating the economy, is also a low-productivity area.
- f) It is found that the population under the productive age is more in urban sector than in rural sector and the age group of 10-14 has the highest percentage of population among all the different age groups. This reveals the favourable trends in urbanisation. The highest percentage of population is in the age group of 10-14 means that, even though they are unproductive now, they constitute the strong hold of the state if they are brought up educationally high.
- g) A fall in birth rate, death rate and infant mortality rate could be observed from the comparative analysis of census data of last few decades. A fall in total fertility rate also could be noticed during this time period.
- h) Despite of the growth rate shown in all the factors influencing the sex ratio, it has shown the tendency of falling down and is

expected to reach 882 female per 1000 male by the year 2026. Immediate attention is to be given in this area by the policy makers of the state.

- i) The Gross gender development index and Gender disparity index in this state is 0.65 and 16.34 while that of the southern state Kerala, where the sex ratio is 1058 female per 1000 male is 0.80 and 3.64 respectively. The state should strive to improve the
- j) gender equality drives and allocate enough resources for improvement of women's economic, social and health standards
- k) A structural change can be observed in the economy of Gujarat in the form of migration from rural to urban for the last few years especially during the last decade. Due to high level illiteracy a high level of inter-state migration can be notice in the state. However, large scale rural-urban migration is to be controlled for balancing the input-output relationship of primary and secondary sectors.
- l) The projection says that 95 percent of the increase in population during the year 2026 will by urbanites. This shows the intensity of urbanisation that takes place in the state of Gujarat.

The statements given above indicate the nature of demography of the state of Gujarat. Still many specific areas of Gujarat demography like nature of working population, health facilities, nature of education and educational standards etc. are to be explored and studied. Then only one can understand the true nature of the state. As the scope of this study is limited those areas have not been analysed.

TABLE 5.1
GUJARAT – DEMOGRAPHIC PROFILE AT A GLANCE

Indicators		Excluding earthquake affected areas	Including estimated figures of earthquake affected areas
Population	Persons	48387270	50596992
	Males	25208865	26344053
	Females	23178405	24252939
Decadal Population Growth 1991-2001	Absolute	7077688	9287410
	%		22.48
Population Density			258
Sex ratio		919	921
Population of age 0-6 year	Persons	6867958 (14.19%)	
	Males	3656956 (14.51%)	
	Females	3211002 (13.85%)	
	Sex Ratio	878	
Literacy	Persons	29050019 (69.97%)	
	Males	17349179 (80.50%)	
	Females	11700840 (58.60%)	

Source: Census of India 2001; Series 1- Paper 1 Gujarat of Provisional Population Totals

TABLE 5.2
RANKING OF DISTRICTS BY POPULATION SIZE IN 1991 AND 2001

Rank in 2001	District	Population 2001	Percent to total population of the State 2001	Population 1991	Percent to total population of the State 1991	Rank in 1991
1	2	3	4	5	6	7
1	Ahmadabad	5808378	11.48	4587491	11.1	1
2	Surat	4996391	9.87	3397900	8.23	2
3	Vadodara	3639775	7.19	3038127	7.35	3
4	Rajkot*	3157676	6.24	2514122	6.09	4
	(excluding earthquake affected areas)	2571931	5.32	2514122	6.09	47
5	Banas Kantha	2502843	4.95	1981513	4.8	7
6	Bhavnagar	2469264	4.88	2069953	5.01	6
7	Junagadh	2448427	4.84	2091182	5.06	5
8	Sabar Kantha	2083416	4.12	1761086	4.26	9
9	Panch Mahals	2024883	4.00	1682333	4.07	10
10	Kheda	2023354	4.00	1786794	4.33	8
11	Jamnagar**	1913685	3.78	1563558	3.78	13
	(excluding earthquake affected areas)	1816029	3.75	1563558	3.78	13
12	Anand	1856712	3.67	1642615	3.98	11
13	Mahesana	1837696	3.63	1640251	3.97	12

TABLE 5.2(Cont..)
RANKING OF DISTRICTS BY POPULATION SIZE IN 1991 AND 2001

Rank in 2001	District	Population 2001	Percent to total population of the State 2001	Population 1991	Percent to total population of the State 1991	Rank in 1991
1	2	3	4	5	6	7
14	Dohad	1635374	3.23	1274123	3.08	15
15	Kachchh ***	1526321	3.02	1262507	3.06	16
16	Surendranagar	1515147	2.99	1208872	2.93	17
17	Valsad	1410680	2.79	1087980	2.63	19
18	Amreli	1393295	2.75	1308867	3.17	14
19	Bharuch	1370104	2.71	1148252	2.78	18
20	Gandhinagar	1334731	2.64	1077406	2.61	21
21	Navsari	1229250	2.43	1085692	2.62	20
22	Patan	1181941	2.34	1036019	2.51	22
23	Porbandar	536854	1.06	469472	1.14	23
24	Narmada	514083	1.02	449376	1.09	24
25	The Dangs	186712	0.37	144091	0.35	25

Source: Source: Census of India 2001; Series 1- Paper 1 Gujarat of Provisional Population Totals

Notes:

1. 2001 Census figures are presented including the estimated figures of Malia-miana, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake
2. ** 2001 Census figures are presented including the estimated figures of Jodia taluka where Census 2001 was postponed due to Earthquake
3. *** Census 2001 was not conducted due to earthquake, the estimated figures have been taken into account.

TABLE 5.2 (A)
DISTRICT-WISE POPULATION IN THE STATE OF GUJARAT (in '0000)

No.	District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
0	Gujarat	906.5	980.3	1017.4	1149.0	1352.2	1626.3	2063.3	2669.7	3398.6	4058.4	5059.7
1	Jamnagar	32.2	36.0	36.0	42.5	51.8	61.7	82.8	111.1	129.3	154.5	191.4
2	Rajkot	50.1	59.0	58.7	67.9	80.0	93.0	120.9	162.4	209.3	250.9	315.8
3	Surendranagar	30.3	34.0	34.8	38.2	42.9	50.6	66.3	84.5	103.4	120.5	151.5
4	Bhavnagar	52.0	56.1	55.0	62.8	76.4	88.6	111.9	140.5	187.9	228.8	246.9
5	Amreli	31.8	34.2	34.0	38.9	46.9	53.9	66.8	84.9	107.9	125.1	139.3
6	Junagadh	48.8	54.0	58.3	68.8	68.9	98.8	124.6	165.7	210.1	239.2	244.8
7	Kutchch	48.8	51.3	48.5	52.0	50.8	56.4	69.6	85.0	105.0	124.6	152.6
8	Banaskantha	48.6	46.5	48.9	53.0	61.0	77.8	99.6	126.5	166.8	215.8	250.3
9	Sabar Kantha	33.0	37.4	41.2	48.9	57.3	68.4	91.9	118.8	150.2	115.8	208.3
10	Mehsana	83.4	83.1	89.9	99.4	112.7	134.3	163.3	209.2	254.9	292.9	183.8
11	Gandhinagar	6.3	6.4	6.9	7.6	9.6	12.0	13.7	20.1	28.9	39.3	133.5
12	Ahmedabad	72.2	76.0	81.1	90.1	124.9	160.7	213.0	291.0	387.6	479.9	580.8
13	Kheda	103.7	101.7	103.2	112.3	133.6	161.2	197.8	245.1	301.5	343.7	202.3

TABLE 5.2 (Cont..)
DISTRICT-WISE POPULATION IN THE STATE OF GUJARAT (in '0000)

No.	District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
14	Panchmahal	45.9	59.4	69.1	82.2	94.6	113.1	146.9	184.9	232.2	294.8	202.5
15	Vadodara	59.0	69.7	75.5	87.8	104.6	121.2	152.7	198.0	255.8	307.3	364.0
16	Bharuch	41.3	47.3	48.0	54.4	65.0	71.8	89.2	111.0	129.6	154.3	137.0
17	Surat	61.9	66.1	66.4	73.0	88.1	104.5	131.4	178.6	249.3	339.1	499.6
18	Valsad	55.5	59.3	59.6	65.5	79.0	93.7	113.8	142.9	177.4	217.3	141.1
19	Dangs	1.8	2.8	2.4	3.3	4.0	4.7	7.2	9.4	11.4	14.3	18.7
20	Anand	-	-	-	-	-	-	-	-	-	-	185.7
21	Dohad	-	-	-	-	-	-	-	-	-	-	163.5
22	Navsari	-	-	-	-	-	-	-	-	-	-	122.9
23	Patan	-	-	-	-	-	-	-	-	-	-	118.2
24	Porbandar	-	-	-	-	-	-	-	-	-	-	53.7
25	Narmada	-	-	-	-	-	-	-	-	-	-	51.4

Source : (i) Data for the years 1901 to 1981 are taken from "Census of India 1981, Series-5, Gujarat Part II A, General Population Tables". Pp.78-81
(ii) For the year 1991 and 2001, Census of India, 2001, Gujarat paper 1 of 2001, Provisional Population Totals.

TABLE-5.3
PERCENTAGE DECADAL VARIATION IN POPULATION SINCE 1901 FOR STATE AND DISTRICTS

Sr. No.	State/District	Percentage decadal variation									
		1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81	1981-91	1991-2001
1	2	3	4	5	6	7	8	9	10	11	12
	Gujarat *	7.79	3.79	12.92	19.25	18.69	26.88	29.39	27.67	21.19	22.66
1	Kachchh	5.21	-5.63	7.42	-2.42	11.76	22.70	22.02	23.58	20.22	20.90
2	Banas Kantha	-4.26	5.36	8.27	14.96	26.90	30.05	27.35	32.10	30.87	26.31
3	Patan	-1.05	7.73	10.25	13.63	20.36	25.32	26.11	23.21	12.35	14.08
4	Mahesana	-0.37	8.22	10.64	13.38	19.08	20.07	36.32	21.07	17.35	12.04
5	Sabar Kantha	13.32	10.23	18.69	17.15	19.39	34.29	29.29	26.49	17.23	18.30
6	Gandhinagar	1.40	7.65	10.73	21.89	22.73	18.41	12.65	29.14	24.49	23.88
7	Ahmadabad	-5.20	6.80	10.98	38.70	28.66	33.40	40.13	33.79	24.25	26.61
8	Surendranagar	12.39	2.12	9.92	12.32	17.99	30.97	27.51	22.32	16.89	25.34
9	Rajkot **	17.92	-0.65	15.73	17.83	16.27	29.94	34.39	28.88	20.12	28.95

TABLE-5.3 (Cont..)
PERCENTAGE DECADAL VARIATION IN POPULATION SINCE 1901 FOR STATE AND DISTRICTS

Sr. No.	State/District	Percentage decadal variation									
		1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81	1981-91	1991-2001
1	2	3	4	5	6	7	8	9	10	11	12
10	Jamnagar ***	2.12	0.01	18.31	21.71	19.13	34.29	34.15	25.35	12.24	22.40
11	Porbandar	10.68	7.90	18.13	26.24	13.66	24.73	31.61	20.28	10.23	14.35
12	Junagadh	10.42	7.22	17.85	25.82	13.74	26.75	33.79	28.79	15.29	17.08
13	Amreli	7.62	-0.72	14.35	20.77	14.98	22.04	25.69	26.37	14.97	6.45
14	Bhavnagar	7.83	-1.85	14.13	21.68	15.88	27.79	25.44	34.76	23.13	19.29
15	Anand	-2.00	1.57	8.79	18.97	20.66	20.37	22.44	23.42	13.39	13.03
16	Kheda	-2.00	1.57	8.79	18.97	20.66	24.82	25.41	22.78	14.81	13.24
17	Panch Mahals	29.29	16.35	19.01	15.06	19.55	27.91	24.63	24.28	22.34	20.36
18	Dohad	29.29	16.35	19.01	15.06	19.55	32.94	27.73	27.51	34.60	28.35

TABLE-5.3 (Cont..)
PERCENTAGE DECADAL VARIATION IN POPULATION SINCE 1901 FOR STATE AND DISTRICTS

Sr. No.	State/District	Percentage decadal variation									
		1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81	1981-91	1991-2001
1	2	3	4	5	6	7	8	9	10	11	12
19	Vadodara	18.05	8.32	16.38	19.02	15.92	25.98	29.96	29.58	21.07	19.80
20	Narmada	15.09	2.53	13.80	19.35	11.28	39.05	27.39	20.14	19.85	14.40
21	Bharuch	14.60	1.53	13.33	19.41	10.40	19.94	22.93	15.35	18.36	19.32
22	Surat	6.94	0.38	9.94	20.64	18.66	25.72	36.01	39.53	36.29	47.04
23	The Dangs	57.78	-16.54	38.74	20.13	17.51	51.36	31.60	20.68	26.77	29.58
24	Navsari	6.94	0.38	9.94	20.64	18.66	18.53	24.52	24.18	19.34	13.22
25	Valsad	6.94	0.38	9.94	20.64	18.66	24.59	26.70	24.17	25.87	29.66

Note: Calculated from Census data of different decades

* 2001 Census figures are presented excluding the figures of Kachchh district; three talukas of Rajkot viz. Malia, Morvi and Wankaner and Jodia taluka of Jamnagar district where Census 2001 was postponed due to earthquake.

** 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake.

*** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake.

TABLE-5.4
POPULATION DISTRIBUTION, PERCENTAGE DECADAL GROWTH RATE, SEX-RATIO AND POPULATION DENSITY : 1991-2001

Sr. No.	State/District	Population 2001			Percentage decadal Growth rate		Sex-ratio		Population Density Per Sq. Kms.	
		Persons	Males	Females	1981-91	1991-01	1991	2001	1991	2001
1	2	3	4	5	6	7	8	9	10	11
	Gujarat *	48387270	25208865	23178405	21.19	22.66	934	919	211	N.A.
	Gujarat (including estimated figures)	50596992	26344053	24252939	21.19	22.48	934	921	211	258
1	Kachchh (estimated)	1526321	782335	743986	20.22	20.9	964	951	28	33
2	Banas Kantha	2502843	1296415	1206428	30.87	26.31	934	931	184	233
3	Patan	1181941	611486	570455	12.35	14.08	944	933	181	206
4	Mahesana	1837696	954006	883690	17.35	12.04	951	926	374	419
5	Sabar Kantha	2083416	1069602	1013814	17.23	18.3	965	948	238	282
6	Gandhinagar	1334731	698360	636371	24.49	23.88	934	911	498	617
7	Ahmadabad	5808378	3069861	2738517	24.25	26.61	897	892	567	718
8	Surendranagar	1515147	787785	727362	16.89	25.34	921	923	115	144

TABLE-5.4 (Cont..)
POPULATION DISTRIBUTION, PERCENTAGE DECADEAL GROWTH RATE, SEX-RATIO AND POPULATION DENSITY : 1991-2001

Sr. No.	State/District	Population 2001			Percentage decadal Growth rate		Sex-ratio		Population Density Per Sq. Kms.	
		Persons	Males	Females	1981-91	1991-01	1991	2001	1991	2001
1	2	3	4	5	6	7	8	9	10	11
9	Rajkot **	2571931	1332545	1239386	20.12	28.95	946	930	224	N.A.
	Rajkot (including estimated figures)	3157676	1635741	1521935	20.12	25.6	946	930	224	282
10	Jamnagar ***	1816029	935609	880420	12.24	22.4	949	941	111	N.A.
	Jamnagar (including estimated figures)	1913685	985266	928419	12.24	22.39	949	941	111	135
11	Porbandar	536854	275921	260933	10.23	14.35	960	946	204	234
12	Junagadh	2448427	1252458	1195969	15.29	17.08	960	955	236	277
13	Amreli	1393295	701384	691911	14.97	6.45	985	986	177	188
14	Bhavnagar	2469264	1275329	1193935	23.13	19.29	944	936	207	247
15	Anand	1856712	972355	884357	13.39	13.03	912	910	559	631
16	Kheda	2023354	1052869	970485	14.81	13.24	924	922	424	480
17	Panch Mahals	2024883	1044210	980673	22.34	20.36	934	939	322	388
18	Dohad	1635374	823968	811406	34.6	28.35	976	985	349	449

TABLE-5.4 (Cont..)
POPULATION DISTRIBUTION, PERCENTAGE DECADAL GROWTH RATE,
SEX-RATIO AND POPULATION DENSITY -

Sr. No.	State/District	Population 2001			Percentage decadal Growth rate		Sex-ratio		Population Density Per Sq. Kms.	
		Persons	Males	Females	1981-91	1991-01	1991	2001	1991	2001
1	2	3	4	5	6	7	8	9	10	11
19	Vadodara	3639775	1896859	1742916	21.07	19.8	913	919	402	482
20	Narmada	514083	263933	250150	19.85	14.4	947	948	163	187
21	Bharuch	1370104	713475	656629	18.36	19.32	925	920	176	210
22	Surat	4996391	2722675	2273716	36.29	47.04	901	835	444	653
23	The Dangs	186712	94001	92711	26.77	29.58	983	986	82	106
24	Navsari	1229250	628814	600436	19.34	13.22	958	955	491	556
25	Valsad	1410680	734945	675735	25.87	29.66	957	919	359	465

Source: Census of India 2001; Series 1 – Gujarat - Paper 1 of Provisional Population Totals

Note:- 1 Density of the State and three districts viz. Kachchh, Rajkot and Jamnagar has been calculated including the estimated figures of earthquake affected areas, where Census 2001 was postponed.

2 Population density per Km² is based on the area figures of 1991 Census. The area figures of new districts and effected districts have also been worked out from the 1991 Census area figures.

* 2001 Census figures are presented excluding the figures of Kachchh district; three talukas of Rajkot viz. Malia, Morvi and Wankaner and Jodia taluka of Jamnagar district where Census 2001 was postponed due to earthquake.

** 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake.

*** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake.

TABLE 5.5
DECADAL GROWTH RATE OF POPULATION FROM 1901 TO 2001

Census Year	Population	Decadal growth		Percentage progressive growth over 1901 (per cent)
		Absolute	Percentage	
1	2	3	4	5
1901	9094748	-	-	-
1911	9803587	+ 708839	+ 7.79	+ 7.79
1921	10174989	+ 371402	+ 3.79	+ 11.88
1931	11489828	+ 1314839	+ 12.92	+ 26.33
1941	13701551	+ 2211723	+ 19.25	+ 50.65
1951	16262657	+ 2561106	+ 18.69	+ 78.81
1961	20633350	+ 4370693	+ 26.88	+ 126.87
1971	26697475	+ 6064125	+ 29.39	+ 193.55
1981	34085799	+ 7388324	+ 27.67	+ 274.79
1991	41309582	+ 7223783	+ 21.19	+ 354.21
2001*	48387270	+ 7077688	+ 22.66	+ 432.03
2001 [§]	50596992	+ 9287410	+ 22.48	+ 456.00

Source: Census of India 2001; Series 1 – Gujarat - Paper 1 of Provisional Population Totals

Note:

Excluding badly affected Earthquake areas viz. entire Kachchh district; Maliya, Morvi and Wankaner talukas of Rajkot and Jodiya taluka of Jamnagar district where Census 2001 was postponed.

§ Including the estimated figures of earthquake affected areas where Census 2001 was postponed.

TABLE 5.6
DECADAL GROWTH RATE 1901-2001

Decades	Gujarat	India
1901-11	+ 7.79	+ 5.75
1911-21	+ 3.79	- 0.31
1921-31	+ 12.92	+ 11.00
1931-41	+ 19.25	+ 14.22
1941-51	+ 18.69	+ 13.31
1951-61	+ 26.88	+ 21.51
1961-71	+ 29.39	+ 24.80
1971-81	+ 27.67	+ 24.66
1981-91	+ 21.19	+ 23.85
1991-2001*	+ 22.66	+ 21.34

Source: Census of India 2001; Series 1 –

Gujarat - Paper 1 of Provisional Population Totals

Note: Excluding badly affected Earthquake areas

viz. entire Kachchh district; Maliya, Morvi and

Wankaner talukas of Rajkot and Jodia taluka of Jamnagar

district where Census 2001 was postponed

TABLE 5.7
POPULATION GROWTH IN THE DECADE 1991-2001 AMONG THE DISTRICTS

Highest growth rate	Higher than State average	Lower than State average	Lowest growth rate
1. Surat (47.04)	2. Valsad (29.66)	10. Jamnagar (22.40)	24. Amreli (6.45)
	3. The Dangs (29.58)	11. Panch Mahals (20.36)	
	4. Rajkot (28.95)	12. Vadodara (19.80)	
	5. Dohad (28.35)	13. Bharuch (19.32)	
	6. Ahmadabad (26.61)	14. Bhavnagar (19.29)	
	7. Banas Kantha (26.31)	15. Sabar Kantha (18.30)	
	8. Surendranagar (25.34)	16. Junagadh (17.08)	
	9. Gandhinagar (23.38)	17. Narmada (14.40)	
		18. Porbandar (14.35)	
		19. Patan (14.08)	
		20. Kheda (13.24)	
		21. Navsari (13.22)	
		22. Anand (13.03)	
		23. Mehasana (12.04)	

Source: Census of India 2001; Series 1 – Gujarat - Paper 1 of Provisional Population Totals

TABLE 5.8
DISTRICT-WISE DENSITY : 1901-2001

No.	District/State	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
	Gujarat	-	-	-	-	-	-	105	136	174	210	258
1	Jamnagar	23	25	25	30	37	44	59	79	98	109	135
2	Rajkot	45	53	52	61	71	83	108	145	184	224	282
3	Surendranagar	29	32	33	36	41	48	63	81	99	115	144
4	Bhavnagar	47	50	49	56	69	79	100	126	168	205	247
5	Amreli	47	51	50	58	69	80	99	126	159	185	188
6	Junagadh	46	51	55	65	82	93	117	156	198	226	277
7	Kutchch	11	11	11	11	11	12	15	19	23	27	33
8	Banaskantha	38	37	39	42	48	61	78	100	131	170	233
9	Sabar Kantha	45	51	56	66	78	93	124	161	203	238	282
10	Mehsana	92	92	100	110	125	119	181	232	282	324	419
11	Gandhinagar	96	99	106	118	148	184	211	309	443	606	617
12	Ahmedabad	83	83	93	103	143	185	245	334	441	550	718

TABLE 5.8 (Cont..)
DISTRICT-WISE DENSITY : 1901-2001

No.	District/State	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
13	Kheda	114	141	144	156	186	224	275	341	418	478	480
14	Panchmahal	52	67	78	93	107	128	166	209	261	333	388
15	Vadodara	76	89	97	113	134	156	196	254	327	394	482
16	Bharuch	46	52	53	60	72	79	99	123	143	171	210
17	Surat	80	85	86	94	114	135	170	231	325	414	653
18	Valsad	106	113	114	125	151	179	217	273	338	414	465
19	Dangs	11	17	14	20	24	28	43	56	65	81	106
20	Anand	-	-	-	-	-	-	-	-	-	-	631
21	Dohad	-	-	-	-	-	-	-	-	-	-	449
22	Navsari	-	-	-	-	-	-	-	-	-	-	556
23	Patan	-	-	-	-	-	-	-	-	-	-	206
24	Porbandar	-	-	-	-	-	-	-	-	-	-	234
25	Narmada	-	-	-	-	-	-	-	-	-	-	187

Source: (i) Data of the years 1091 to 1991, Census Report, Census of India, 1981, Series 5, Gujarat Part II-A
Census Population Totals, pp.25-26

(ii) For the year 1991, Census of India, 1991, Gujarat paper 1 of 1991, Provisional Population Totals.

(iii) For the year 2001, Census of India, 2001, Gujarat paper 1 of 2001, Provisional Population Totals.

TABLE 5.9
DISTRICT-WISE DENSITY OF POPULATION AND POPULATION INDEX
(Base Year 1901=100)

No.	District/State	Density		Index Number	Percentage Increase over 100 Years
		1901	2001		
	Gujarat	-	258	-	-
1	Jamnagar	23	135	586.96	486.96
2	Rajkot	45	282	626.67	526.67
3	Surendranagar	29	144	496.55	396.55
4	Bhavnagar	47	247	525.53	425.53
5	Amreli	47	188	400.00	300.00
6	Junagadh	46	277	602.17	502.17
7	Kutchch	11	33	300.00	200.00
8	Banaskantha	38	233	613.16	513.16
9	Sabar Kantha	45	282	626.67	526.67
10	Mehsana	92	419	455.43	355.43
11	Gandhinagar	96	617	642.71	542.71
12	Ahmedabad	83	718	865.06	765.06
13	Kheda	114	480	421.05	321.05
14	Panchmahal	52	388	746.15	646.15
15	Vadodara	76	482	634.21	534.21
16	Bharuch	46	210	456.52	356.52
17	Surat	80	653	816.25	716.25
18	Valsad	106	465	438.68	338.68
19	Dangs	11	106	963.64	863.64
20	Anand	-	631	-	-
21	Dohad	-	449	-	-
22	Navsari	-	556	-	-
23	Patan	-	206	-	-
24	Porbandar	-	234	-	-
25	Narmada	-	187	-	-

Source: Calculated from Census Data of different years

TABLE 5.10
DENSITY OF THE DISTRICTS ARRANGED IN ORDER OF BELOW AND HIGH FROM THE STATE AVERAGE OF 2001 CENSUS

Lowest			Below the State average			Higher than State average			Highest		
	1991	2001		1991	2001		1991	2001		1991	2001
Kachchh*	28	33	Bhavnagar	207	247	Surat	444	653	Ahmadabad	567	718
			Porbandar	204	234	Anand	559	631			
			Banas Kantha	184	233	Gandhinagar	498	617			
			Bharuch	176	210	Navsari	491	556			
			Patan	181	206	Vadodara	402	482			
			Amreli	177	188	Kheda	424	480			
			Narmada	163	187	Valsad	359	465			
			Surendranagar	115	144	Dohad	349	449			
			Jamnagar ***	111	135	Mahesana	374	419			
			The Dangs	82	106	Panch Mahals	322	388			
						Rajkot **	224	282			
						Sabar Kantha	238	282			
						Junagadh	236	277			

Source: Census of India 2001; Series 2 – Gujarat - Paper 1 of Provisional Population Totals

Note: Population Density of the following has been calculated by including the estimated figures of earthquake affected areas.

* Estimated figures of entire Kachchh ** Includes estimated figures of Malia, Morvi and Wankaner talukas

*** Includes estimated figures of Jodia taluka

TABLE 5.11
SEX-RATIO OF GUJARAT AND INDIA
1901-2001

Census Year	Gujarat	India
1901	954	972
1911	946	964
1921	944	956
1931	945	951
1941	941	946
1951	952	946
1961	940	941
1971	934	930
1981	942	934
1991	934	927
2001	919	933

Source: Census of India 2001; Gujarat – Paper 2 of Provisional Population Totals

TABLE-5.12
SEX-RATIO SINCE 1901 FOR STATE AND DISTRICTS

Sr. No.	State/ District	Sex-ratio (Number of females per 1000 males)										
		1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
	Gujarat *	954	946	944	945	941	952	940	934	942	934	919
1	Kutchchh	995	1034	1059	1066	1095	1079	1041	1012	999	964	942
2	Banas Kantha	925	921	919	934	948	951	947	941	947	934	931
3	Patan	950	944	949	967	968	971	955	957	963	944	933
4	Mahesana	956	948	955	973	972	1002	974	961	974	951	926
5	Sabar Kantha	996	982	994	964	967	973	954	965	976	965	948
6	Gandhinagar	952	935	923	943	912	992	962	936	943	934	911
7	Ahmadabad	947	913	863	889	824	832	850	863	888	897	892
8	Surendranagar	968	934	957	964	956	958	943	941	934	921	923
9	Rajkot **	970	978	984	974	977	988	963	947	947	946	930
10	Jamnagar ***	968	981	982	991	988	986	952	942	949	949	941
11	Porbandar	956	964	962	960	962	1001	962	952	967	960	946
12	Junagadh	955	963	962	960	962	976	949	933	954	960	955
13	Amreli	952	951	950	956	955	974	959	957	980	985	986
14	Bhavnagar	947	947	943	949	947	955	936	944	954	944	936

TABLE-5.12 (Cont..)
SEX-RATIO SINCE 1901 FOR STATE AND DISTRICTS

Sr. No.	State/ District	Sex-ratio (Number of females per 1000 males)										
		1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
15	Anand	897	865	872	875	896	906	890	880	905	912	910
16	Kheda	897	865	872	875	896	918	913	907	924	924	922
17	Panch Mahals	975	958	951	931	938	922	925	930	942	934	939
18	Dohad	975	958	951	931	938	954	954	964	984	976	985
19	Vadodara	914	905	904	902	899	914	906	900	915	913	919
20	Narmada	953	935	937	918	927	934	952	961	954	947	948
21	Bharuch	960	940	943	921	932	947	945	944	938	925	920
22	Surat	992	990	988	982	977	970	968	947	924	901	835
23	The Dangs	938	887	888	848	848	877	913	946	970	983	986
24	Navsari	992	990	988	982	977	1041	1013	1002	975	958	955
25	Valsad	992	990	988	982	977	1001	1005	992	989	957	919

Source: Source: Census of India 2001; Gujarat – Paper 2 of Provisional Population Totals

Note: * 2001 Census figures are presented excluding the figures of Kachchh district; three talukas of Rajkot viz. Malia, Morvi and Wankaner and Jodia taluka of Jamnagar district where Census 2001 was postponed due to earthquake.

** 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake.

*** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake.

TABLE 5.13
RURAL-URBAN DISTRIBUTION OF
SEX RATIO IN GUJARAT :1901-2001

Sex Ratio			
Census Year	Rural	Urban	Class I cities
1901	951	965	909
1911	943	960	881
1921	947	931	809
1931	948	934	848
1941	954	898	777
1951	964	920	836
1961	956	896	851
1971	951	893	861
1981	959	905	883
1991	949	907	894
2001	945	879	870

Source: Census of India 2001; Gujarat – Paper 2 of Provisional Population Totals

TABLE 5.14
SEX RATIO : 2001
CHILDREN BETWEEN 0-6 YEARS AGE AND ALL AGES

Sr. No.	State/ District	Sex Ratio : 2001		
		Age group 0-6 Years	All Ages	Difference
1	2	3	4	5 = 3 - 4
	Gujarat *	883	919	-36
1	Kachchh	922	942	-20
2	Banas Kantha	907	931	-24
3	Patan	865	933	-68
4	Mahesana	801	926	-125
5	Sabar Kantha	879	948	-69
6	Gandhinagar	813	911	-98
7	Ahmadabad	836	892	-56
8	Surendranagar	886	923	-37
9	Rajkot **	854	930	-76
10	Jamnagar ***	898	941	-43
11	Porbandar	898	946	-48
12	Junagadh	903	955	-52
13	Amreli	892	986	-94
14	Bhavnagar	881	936	-55
15	Anand	849	910	-61
16	Kheda	876	922	-46
17	Panch Mahals	935	939	-4
18	Dohad	967	985	-18
19	Vadodara	886	919	-33
20	Narmada	945	948	-3
21	Bharuch	918	920	-2
22	Surat	871	835	36
23	The Dangs	974	986	-12
24	Navsari	915	955	-40
25	Valsad	933	919	14

Source: Census of India 2001; Gujarat – Paper 2 of Provisional Population Totals

TABLE 5.15
INDEX NUMBER OF SEX RATIO IN GUJARAT : BASE YEAR 1901

Sr. No.	State/ District	Sex Ratio			
		1901	2001	Index Number	Average Percentage Change
	Gujarat *	954	919	96.33	-3.67
1	Kachchh	995	922	92.66	-7.34
2	Banas Kantha	925	931	100.65	0.65
3	Patan	950	933	98.21	-1.79
4	Mahesana	956	926	96.86	-3.14
5	Sabar Kantha	996	948	95.18	-4.82
6	Gandhinagar	952	911	95.69	-4.31
7	Ahmadabad	947	892	94.19	-5.81
8	Surendranagar	968	923	95.35	-4.65
9	Rajkot **	970	930	95.88	-4.12
10	Jamnagar ***	968	941	97.21	-2.79
11	Porbandar	956	946	98.95	-1.05
12	Junagadh	955	955	100.00	0.00
13	Amreli	952	986	103.57	3.57
14	Bhavnagar	947	936	98.84	-1.16
15	Anand	897	910	101.45	1.45
16	Kheda	897	922	102.79	2.79
17	Panch Mahals	975	939	96.31	-3.69
18	Dohad	975	985	101.03	1.03
19	Vadodara	914	919	100.55	0.55
20	Narmada	953	948	99.48	-0.52
21	Bharuch	960	920	95.83	-4.17
22	Surat	992	835	84.17	-15.83
23	The Dangs	938	986	105.12	5.12
24	Navsari	992	955	96.27	-3.73
25	Valsad	992	919	92.64	-7.36

Source: Census of India 2001; Gujarat – Paper 2 of Provisional Population Totals

TABLE 5.16
RANKING OF DISTRICTS BY SEX-RATIO

Rank in 2001	District	Sex-ratio (Number of females per 1000 males)		Rank in 1991
		2001	1991	
1	2	3	4	5
1	Amreli	986	985	1
1	The Dangs	986	983	2
2	Dohad	985	976	3
3	Junagadh	955	960	6
3	Navsari	955	958	7
4	Sabar Kantha	948	965	4
4	Narmada	948	947	11
5	Porbandar	946	960	6
6	Jamnagar**	941	949	10
7	Panch Mahals	939	934	14
8	Bhavnagar	936	944	13
9	Patan	933	944	13
10	Banas Kantha	931	934	14
11	Rajkot*	930	946	12
12	Mahesana	926	951	9
13	Surendranagar	923	921	17
14	Kheda	922	924	16
15	Bharuch	920	925	15
16	Valsad	919	957	8
16	Vadodara	919	913	18
17	Gandhinagar	911	934	14
18	Anand	910	912	19
19	Ahmadabad	892	897	21
20	Surat	835	901	20
N.A.	Kutchchh	N.A.	964	5

Source: Census of India 2001; Gujarat – Paper 2 of Provisional Population Totals

Note: 2001 Census figures are presented excluding figures of Malia-miana, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake

** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake

TABLE 5.17
DISTRICT-WISE SEX RATIO AND FACTORS INFLUENCING SEX RATIO : GUJARAT -
2001

Sr. No.	State/ District	Sex Ratio	Male Literacy	Female Literacy	Male Agri. Workers	Female Agri. Workers	Urban Popu. (%)
		a	1	2	3	4	5
	Gujarat *	919	80.50	58.60	17.33	39.76	37.40
1	Banas Kantha	931	66.91	34.54	17.51	29.63	11.00
2	Patan	933	74.07	46.36	25.16	48.63	20.20
3	Mahesana	926	86.52	63.96	20.14	31.39	22.40
4	Sabar Kantha	948	81.19	52.85	19.31	38.29	10.80
5	Gandhinagar	911	87.92	64.85	18.24	28.04	35.00
6	Ahmadabad	892	87.81	71.12	7.50	31.22	80.20
7	Surendranagar	923	75.33	48.72	22.96	50.39	26.60
8	Rajkot	930	83.66	67.64	9.76	28.35	51.30
9	Jamnagar	941	76.95	56.90	10.01	24.78	43.90
10	Porbandar	946	78.88	58.83	13.41	32.26	48.70
11	Junagadh	955	79.37	56.92	18.08	37.41	29.10
12	Amreli	986	77.68	57.77	18.53	36.81	22.50
13	Bhavnagar	936	78.83	54.46	13.42	45.66	37.90
14	Anand	910	86.31	62.53	32.32	45.99	27.40
15	Kheda	922	86.58	57.77	26.84	38.83	20.10
16	Panch Mahals	939	76.62	45.43	14.62	36.69	12.50
17	Dohad	985	59.45	31.70	12.39	32.46	9.60
18	Vadodara	919	80.65	61.24	21.90	52.54	45.20
19	Narmada	948	72.88	47.16	35.31	59.53	10.10
20	Bharuch	920	83.43	65.42	29.99	63.44	25.70
21	Surat	835	81.85	66.71	13.58	47.86	60.00
22	The Dangs	986	71.35	48.99	21.10	37.06	11.00
23	Navsari	955	82.93	68.74	24.96	48.42	27.40
24	Valsad	919	78.10	59.92	15.83	38.36	27.00

Source: Census of India, 2001, Gujarat Paper 1 to 3 of Provisional Population Totals

Note: District Kachch is not included in this table as the data for Kachch was not available

TABLE 5.18
DISTRICT-WISE SEX RATIO AND FACTORS INFLUENCING SEX RATIO : GUJARAT -
2001

Sr. No	State/District	Sex Ratio	Work Participation Rate				
			Total WRP in Urban	Female		Male	
				Rural	Urban	Rural	Urban
			a	6	7	8	9
	Gujarat	919	33.07	39.04	9.11	55.59	54.12
1	Dohad	985	31.33	51.49	13.34	52.07	48.41
2	Narmada	948	29.97	47.61	10.57	57.46	47.73
3	Panchmahal	939	29.27	47.63	8.09	54.19	48.72
4	Sabarkantha	948	31.31	40.76	11.29	52.62	49.72
5	Patan	933	32.24	42.30	11.94	53.96	50.71
6	Mahesana	926	32.20	42.53	11.37	54.59	50.95
7	Banaskantha	931	29.05	38.76	7.88	51.64	48.15
8	Kheda	922	31.56	39.27	11.00	56.31	50.51
9	Valsad	919	37.40	41.09	12.43	57.25	58.07
10	Navsari	955	35.28	37.97	13.63	57.21	55.10
11	Amreli	986	32.39	36.46	11.22	55.99	52.31
12	Surendranagar	923	31.55	37.86	9.68	55.06	51.39
13	Gandhinagar	911	30.91	38.59	10.13	55.22	49.35
14	Anand	910	33.29	33.55	13.30	56.58	51.53
15	Junagadh	955	30.64	33.87	8.31	56.10	51.62
16	Vadodara	919	32.26	39.63	9.68	58.81	52.74
17	Bharuch	920	31.99	30.97	8.51	57.89	53.29
18	Porbandar	946	31.86	36.33	9.38	58.68	52.98
19	Surat	835	38.42	42.99	8.39	59.66	61.44
20	Bhavnagar	936	31.90	30.16	7.77	53.59	53.53
21	Jamnagar	941	30.87	32.78	6.89	56.46	52.89
22	Rajkot	930	32.22	35.98	7.47	58.42	54.80
23	Ahmedabad	892	32.04	32.46	8.67	55.40	52.75

Source: Census of India, 2001, Gujarat Paper 1 to 3 of Provisional Population Totals

Note: (i) The District Kachch is not included in this table as the data for Kachch was not available
(ii) The District Dangs is not included in this table as no urban area has been identified in the Dangs.

TABLE 5.19
ANALYSIS OF SEX RATIO AND FACTORS INFLUENCING SEX RATIO
OF 14 SELECTED STATES IN INDIA: 2001

States	Sex Ratio (2001)*	Women's Economic Status Index (2001)**	Women's Social Status Index (2001)**	Women's Health Status Index (2001)**	Gender Disparity Index (2001)#	Gross Gender Development Index (2001)##
	a	1	2	3	4	5
Kerala	1058	0.714	0.795	0.976	3.640	0.800
Tamil Nadu	986	0.768	0.643	0.643	12.640	0.700
Andhra Pradesh	978	0.661	0.598	0.512	16.810	0.580
Maharashtra	922	0.643	0.429	0.571	12.680	0.570
Karnataka	964	0.768	0.446	0.571	14.670	0.610
West Bengal	934	0.375	0.357	0.333	13.090	0.450
Punjab	874	0.714	0.893	0.786	12.140	0.710
Orissa	972	0.232	0.161	0.214	20.500	0.280
Gujarat	920	0.714	0.893	0.643	16.340	0.650
Haryana	861	0.554	0.750	0.595	17.460	0.570
Bihar	921	0.259	0.268	0.119	24.800	0.230
Madhya Pradesh	920	0.411	0.250	0.357	21.600	0.330
Rajasthan	922	0.188	0.357	0.440	27.480	0.290
Uttar Pradesh	898	0.286	0.143	0.381	24.800	0.260

Source : ** Census of India, 2001

** and ## Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

pp.946, .ABL Srivastava(2002), Mahendra K. Premi (2002) and P.K.Bhargava (2002)

Table 5.20
Correlation Chart

District-wise Analysis in Gujarat (Table 5.17 & 5.18)	
Variable Sex Ratio and	Correlation Coefficient
Male Literacy Rate	(-) 0.534
Female Literacy Rate	(-) 0.497
Male Agricultural Workers	(+) 0.078
Female Agricultural Workers	(-) 0.168
Percentage of Urban Population to total population	(-) 0.607
Urban Work Participation Rate	(-) 0.499
Rural Female Work Participation Rate	(+)0.145
Urban Female Work Participation Rate	(+) 0.285
Rural Male Work Participation Rate	(-) 0.395
Urban Male Work Participation Rate	(-) 0.552
Analysis in some selected States in India (Table 5.19)	
Variable Sex Ratio and	Correlation Coefficient
Women's Economic Status Index	(+) 0.269
Women's Social Status index	(+) 0.049
Women's Health Status Index	(+) 0.288
Gender Disparity Index	(-) 0.499
Gross Gender Development Index	(+) 0.336

Note : Variable-wise data is given in Table 5.17, 5.18 and 5.19

TABLE-5.21
TOTAL POPULATION AND PER CENT POPULATION IN THE AGE GROUP 0-6
BY SEX FOR STATE AND DISTRICTS : 2001

Sr. No	State/ District	Total population			% of Population in age group 0-6		
		Persons	Males	Females	Persons	Males	Fe-males
1	2	3	4	5	6	7	8
	GUJARAT*	48387270	25208865	23178405	14.19	14.51	13.85
	GUJARAT(including estimated figures)	50596992	26344053	24252939	14.86	15.16	14.54
1	Kutchchh (estimated)	1526321	782335	743986	16.07	16.24	15.89
2	Banas Kantha	2502843	1296415	1206428	18.19	18.41	17.94
3	Patan	1181941	611486	570455	15.59	16.18	14.96
4	Mahesana	1837696	954006	883690	13.39	14.35	12.36
5	Sabar Kantha	2083416	1069602	1013814	14.93	15.50	14.33
6	Gandhinagar	1334731	698360	636371	13.21	13.90	12.46
7	Ahmadabad	5808378	3069861	2738517	12.44	12.98	11.84
8	Surendranagar	1515147	787785	727362	16.10	16.64	15.52
9	Rajkot **	2571931	1332545	1239386	12.67	13.26	12.03
	Rajkot (including estimated figures)	3157676	1635741	1521935	13.48	14.03	12.87
10	Jamnagar ***	1816029	935609	880420	14.04	14.39	13.66
	Jamnagar (including estimated figures)	1913685	985266	928419	14.40	14.72	14.06

TABLE-5.21 (Cont..)
TOTAL POPULATION AND PER CENT POPULATION IN THE AGE GROUP 0-6
BY SEX FOR STATE AND DISTRICTS : 2001

Sr. No	State/ District	Total population			% of Population in age group 0-6		
		Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8
11	Porbandar	536854	275921	260933	13.71	14.07	13.34
12	Junagadh	2448427	1252458	1195969	14.40	14.84	13.95
13	Amreli	1393295	701384	691911	13.71	14.38	13.03
14	Bhavnagar	2469264	1275329	1193935	15.65	16.06	15.20
15	Anand	1856712	972355	884357	12.97	13.23	12.70
16	Kheda	2023354	1052869	970485	13.80	14.10	13.46
17	Panch Mahals	2024883	1044210	980673	16.23	16.27	16.18
18	Dohad	1635374	823968	811406	19.57	19.78	19.36
19	Vadodara	3639775	1896859	1742916	12.98	13.30	12.63
20	Narmada	514083	263933	250150	15.15	15.12	15.19

TABLE-5.21 (Cont..)
TOTAL POPULATION AND PER CENT POPULATION IN THE AGE GROUP 0-6
BY SEX FOR STATE AND DISTRICTS : 2001

Sr. No	State/ District	Total population			% of Population in age group 0-6		
		Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8
21	Bharuch	1370104	713475	656629	13.51	13.59	13.43
22	Surat	4996391	2722675	2273716	13.35	13.08	13.68
23	The Dangs	186712	94001	92711	18.84	18.95	18.72
24	Navsari	1229250	628814	600436	11.50	11.75	11.23
25	Valsad	1410680	734945	675735	13.90	13.79	14.02

Source: Census of India, 2001, Gujarat Paper 2 of Provisional Population Totals

Note: * 2001 Census figures are presented excluding the figures of Kachchh district; three talukas of Rajkot viz. Malia, Morvi and Wankaner and Jodia taluka of Jamnagar district where Census 2001 was postponed due to earthquake.

** 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake.

*** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake.

TABLE 5.22
RURAL-URBAN DISTRIBUTION OF POPULATION ON THE BASIS OF AGE GROUP AND SEX IN GUJARAT

Age Group Data of Gujarat - 2001 Census (in '0000)									
Age-group	Total			Rural			Urban		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10
All ages	5,067	2,639	2,429	3,174	1,632	1,542	1,893	1,007	886
0-4	527	279	248	358	187	170	169	92	77
5-9	568	301	267	379	199	180	189	102	87
10-14	567	301	266	362	192	170	205	110	95
0-14	1,662	881	781	1,099	578	521	563	304	260
15-19	518	276	243	315	164	151	203	111	92
20-24	484	254	230	287	147	140	197	107	90
25-29	422	218	204	251	129	122	171	89	82
30-34	399	203	196	241	120	120	158	82	76

TABLE 5.22 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION ON THE BASIS OF AGE GROUP AND SEX IN GUJARAT

Age Group Data of Gujarat - 2001 Census (in '0000)									
Age-group	Total			Rural			Urban		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10
35-39	363	190	173	216	113	103	147	77	70
40-44	301	159	143	180	93	87	121	66	55
45-49	242	128	114	147	77	71	95	51	44
50-54	185	99	86	115	60	55	70	39	31
55-59	135	66	69	88	42	46	47	24	23
15-59	3,050	1,592	1,458	1,841	945	895	1,210	646	563
60-64	130	63	67	86	41	45	43	21	22
65-69	89	42	47	59	27	31	31	15	16
70-74	65	30	35	43	20	23	22	10	12
75-79	28	13	16	18	8	10	10	5	5
80+	37	16	22	25	11	15	12	5	7
60 & above	350	163	187	232	107	125	118	56	62
Age not stated	5	3	2	3	1	1	2	1	1

Source: Census of India, 2001, Gujarat Paper 2 of Provisional Population Totals

TABLE 5.23
RURAL-URBAN DISTRIBUTION OF POPULATION ON THE BASIS OF AGE GROUP AND
SEX AS A PERCENTAGE OF TOTAL POPULATION IN GUJARAT

Age Group Data of Gujarat - 2001 Census									
Age-group	Total			Rural			Urban		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0-4	10.4	10.6	10.2	11.3	11.5	11.1	8.9	9.1	8.7
5-9	11.2	11.4	11.0	11.9	12.2	11.7	10.0	10.2	9.8
10-14	11.2	11.4	11.0	11.4	11.8	11.1	10.8	10.9	10.8
0-14	32.8	33.4	32.2	34.6	35.4	33.8	29.8	30.2	29.3
15-19	10.2	10.5	10.0	9.9	10.1	9.8	10.7	11.1	10.4
20-24	9.6	9.6	9.5	9.1	9.0	9.1	10.4	10.6	10.2
25-29	8.3	8.3	8.4	7.9	7.9	7.9	9.1	8.9	9.2
30-34	7.9	7.7	8.1	7.6	7.4	7.8	8.3	8.2	8.5
35-39	7.2	7.2	7.1	6.8	7.0	6.7	7.8	7.6	7.9
40-44	6.0	6.0	5.9	5.7	5.7	5.7	6.4	6.6	6.3
45-49	4.8	4.8	4.7	4.6	4.7	4.6	5.0	5.1	4.9
50-54	3.7	3.8	3.6	3.6	3.7	3.6	3.7	3.9	3.5
55-59	2.7	2.5	2.9	2.8	2.6	3.0	2.5	2.4	2.6
15-59	60.2	60.3	60.1	58.0	57.9	58.1	63.9	64.2	63.6
60-64	2.6	2.4	2.8	2.7	2.5	2.9	2.3	2.1	2.5
65-69	1.8	1.6	2.0	1.8	1.7	2.0	1.6	1.5	1.8
70-74	1.3	1.2	1.4	1.4	1.2	1.5	1.2	1.0	1.3
75-79	0.6	0.5	0.7	0.6	0.5	0.7	0.5	0.5	0.6
80+	0.7	0.6	0.9	0.8	0.7	1.0	0.6	0.5	0.8
60 & above	6.9	6.2	7.7	7.3	6.6	8.1	6.2	5.5	7.0
Age Not stated	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Source: Calculated from the figures of Table 5.22

TABLE 5.24
RURAL-URBAN DISTRIBUTION OF POPULATION ON THE BASIS OF SEX
AS A PERCENTAGE OF AGE GROUP IN GUJARAT

Age-group	Total			Rural			Urban		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
1	2	3	4	5	6	7	8	9	10
All ages	100	52.07	47.93	100	51.41	48.59	100	53.18	46.82
0-4	100	52.95	47.05	100	52.34	47.66	100	54.25	45.75
5-9	100	52.98	47.02	100	52.42	47.58	100	54.09	45.91
10-14	100	53.13	46.87	100	52.96	47.04	100	53.43	46.57
0-14	100	53.02	46.98	100	52.57	47.43	100	53.9	46.1
15-19	100	53.18	46.82	100	52.15	47.85	100	54.77	45.23
20-24	100	52.46	47.54	100	51.21	48.79	100	54.27	45.73
25-29	100	51.65	48.35	100	51.25	48.75	100	52.22	47.78
30-34	100	50.87	49.13	100	50.08	49.92	100	52.08	47.92
35-39	100	52.37	47.63	100	52.4	47.6	100	52.32	47.68
40-44	100	52.63	47.37	100	51.5	48.5	100	54.3	45.7
45-49	100	52.77	47.23	100	52.03	47.97	100	53.91	46.09
50-54	100	53.41	46.59	100	52.3	47.7	100	55.23	44.77
55-59	100	48.69	51.31	100	47.55	52.45	100	50.82	49.18
15-59	100	52.18	47.82	100	51.36	48.64	100	53.44	46.56
60-64	100	48.23	51.77	100	47.8	52.2	100	49.07	50.93
65-69	100	46.84	53.16	100	46.38	53.62	100	47.71	52.29
70-74	100	46.59	53.41	100	46.46	53.54	100	46.84	53.16
75-79	100	44.45	55.55	100	43.86	56.14	100	45.53	54.47
80+	100	41.48	58.52	100	41.93	58.07	100	40.55	59.45
60 & above	100	46.54	53.46	100	46.24	53.76	100	47.13	52.87
Age Not stated	100	56.61	43.39	100	58.12	41.88	100	54.89	45.11

Source: Calculated from the figures of Table 5.22

TABLE 5.25
DISTRICT-WISE PERCENT OF POPULATION ACCORDING TO AGE GROUP

Sr. No	State/ District	% of Population in age group 0-6			% of Population in age group 7 and above		
		Persons	Males	Females	Persons	Males	Females
	GUJARAT*	14.19	14.51	13.85	85.81	85.49	86.15
	GUJARAT (including estimated figures)	14.86	15.16	14.54	85.14	84.84	85.46
1	Kutchchh (estimated)	16.07	16.24	15.89	83.93	83.76	84.11
2	Banas Kantha	18.19	18.41	17.94	81.81	81.59	82.06
3	Patan	15.59	16.18	14.96	84.41	83.82	85.04
4	Mahesana	13.39	14.35	12.36	86.61	85.65	87.64
5	Sabar Kantha	14.93	15.50	14.33	85.07	84.50	85.67
6	Gandhinagar	13.21	13.90	12.46	86.79	86.10	87.54
7	Ahmadabad	12.44	12.98	11.84	87.56	87.02	88.16
8	Surendranagar	16.10	16.64	15.52	83.90	83.36	84.48
9	Rajkot **	12.67	13.26	12.03	87.33	86.74	87.97
	Rajkot (including estimated figures)	13.48	14.03	12.87	86.52	85.97	87.13
10	Jamnagar ***	14.04	14.39	13.66	85.96	85.61	86.34
	Jamnagar (including estimated figures)	14.40	14.72	14.06	14.40	14.72	14.06
11	Porbandar	13.71	14.07	13.34	86.29	85.93	86.66
12	Junagadh	14.40	14.84	13.95	85.60	85.16	86.05
13	Amreli	13.71	14.38	13.03	86.29	85.62	86.97
14	Bhavnagar	15.65	16.06	15.20	84.35	83.94	84.80
15	Anand	12.97	13.23	12.70	87.03	86.77	87.30
16	Kheda	13.80	14.10	13.46	86.20	85.90	86.54
17	Panch Mahals	16.23	16.27	16.18	83.77	83.73	83.82
18	Dohad	19.57	19.78	19.36	80.43	80.22	80.64
19	Vadodara	12.98	13.30	12.63	87.02	86.70	87.37
20	Narmada	15.15	15.12	15.19	84.85	84.88	84.81
21	Bharuch	13.51	13.59	13.43	86.49	86.41	86.57
22	Surat	13.35	13.08	13.68	86.65	86.92	86.32
23	The Dangs	18.84	18.95	18.72	81.16	81.05	81.28
24	Navsari	11.50	11.75	11.23	88.50	88.25	88.77
25	Valsad	13.90	13.79	14.02	86.10	86.21	85.98

Source: Census of India, 2001, Gujarat Paper 2 of Provisional Population Totals

TABLE 5.26
LITERACY RATE OF GUJARAT (1951-2001)

Year	Total	Males	Females
1	2	3	4
1951	21.82	30.32	12.87
1961	31.47	42.49	19.74
1971	36.95	47.60	25.56
1981	44.92	55.95	33.20
1991	61.29	73.13	48.64
2001	69.97	80.50	58.60
Index Number Base Year 1951 = 100	320.67	265.50	455.32
Net Average Percentage Increase	220.67	165.50	355.32

TABLE 5.27
STATE AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF LITERACY RATE BY SEX :
2001

Rank	State/Union Territory	Total	State/Union Territory	Male	State/Union Territory	Female	Rank
1	Kerala	90.90	Kerala	94.20	Kerala	87.86	1
2	Mizoram	88.49	Lakshadweep*	93.15	Mizoram	86.13	2
3	Lakshadweep*	87.52	Mizoram	90.69	Lakshadweep*	81.56	3
4	Goa	82.32	Pondichery*	88.89	Chandigarh*	76.65	4
5	Delhi	81.82	Goa	88.88	Goa	75.51	5
6	Chandigarh*	81.76	Daman & Diu*	88.40	Andaman & Nicobar I*	75.29	6
7	Pondichery*	81.49	Delhi	87.37	Delhi	75.00	7
8	Andaman & Nicobar Is	81.18	Maharashtra	86.27	Pondichery*	74.13	8
9	Daman & Diu*	81.09	Andaman & Nicobar I**	86.07	Daman & Diu*	70.37	9
10	Maharashtra	77.27	Himachal Pradesh	86.02	Himachal Pradesh	68.08	10
11	Himachal Pradesh	77.13	Chandigarh	85.65	Maharashtra	67.51	11
12	Tripura	73.66	Uttaranchal	84.01	Tripura	65.41	12
13	Tamil Nadu	73.47	Tamil Nadu	82.33	Tamil Nadu	64.55	13
14	Uttaranchal	72.28	Tripura	81.47	Punjab	63.55	14
15	Gujarat	69.97	Gujarat	80.50	Nagaland	61.92	15

TABLE 5.27 (Cont.)
STATE AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF LITERACY RATE BY SEX - 2001

Rank	State/Union Territory	Total	State/Union Territory	Male	State/Union Territory	Female	Rank
16	Punjab	69.95	Haryana	79.25	Sikkim	61.46	16
17	Sikkim	69.68	Manipur	77.87	Meghalaya	60.41	17
18	West Bengal	69.22	Chattisgarh	77.86	Uttaranchal	60.26	18
19	Manipur	68.87	West Bengal	77.58	West Bengal	60.22	19
20	Haryana	68.59	Madhya Pradesh	76.80	Manipur	59.70	20
21	Nagaland	67.11	Sikkim	76.73	Gujarat	58.60	21
22	Karnataka	67.04	Rajasthan	76.46	Karnataka	57.45	22
	INDIA	65.38	Karnataka	76.29	Haryana	56.31	23
23	Chattisgarh	65.18	Orissa	75.95	Assam	56.03	24
24	Assam	64.28	INDIA	75.85	INDIA	54.16	
25	Madhya Pradesh	64.11	Punjab	75.63	Chattisgarh	52.40	25
26	Orissa	63.61	Dadra nagar Haveli*	73.32	Andhra Pradesh	51.17	26
27	Meghalaya	63.31	Assam	71.93	Orissa	50.97	27
28	Andhra Pradesh	61.11	Nagaland	71.77	Madhya Pradesh	50.28	28
29	Rajasthan	61.03	Andhra Pradesh	70.85	Rajasthan	44.34	29
30	Dadra & Nagar H* *	60.03	Uttar Pradesh	70.23	Arunachal Pradesh	44.24	30

TABLE 5.27 (Cont.)
STATE AND UNION TERRITORIES ARRANGED IN DECENDING ORDER OF LITERACY RATE BY SEX - 2001

Rank	State/Union Territory	Total	State/Union Territory	Male	State/Union Territory	Female	Rank
31	Uttar Pradesh	57.36	Jharkhand	67.94	Dadra & Nagar Haveli*	42.99	31
32	Arunachal Pradesh	54.74	Meghalaya	66.14	Uttar Pradesh	42.98	32
33	Jammu & Kashmir	54.46	Jammu & Kashmir	65.75	Jammu & Kashmir	41.82	33
34	Jharkhand	54.13	Arunachal Pradesh	64.07	Jharkhand	39.38	34
35	Bihar	47.53	Bihar	60.32	Bihar	33.57	35

Source: Rearranged from Census of India 2001 Data.

TABLE 5.28
DISTRICT-WISE PERCENT OF LITERATE POPULATION IN GUJARAT
FROM 1961 TO 2001

Sr. No.	State/District	Literacy rate *					Index Number 1961 = 100
		1961	1971	1981	1991	2001	
	Gujarat	-	-	-	61.29	69.97	-
1	Kutchchh	25.00	29.44	35.42	52.75	N.A.	-
2	Banas Kantha	12.73	15.76	20.04	39.50	51.26	403
3	Patan	-	-	-	53.91	60.59	-
4	Mahesana	33.94	38.86	46.74	68.39	75.54	223
5	Sabar Kantha	24.03	31.14	39.80	59.03	67.31	280
6	Gandhinagar	-	41.80	51.48	73.78	76.83	-
7	Ahmadabad	41.88	48.84	56.08	73.64	79.89	191
8	Surendranagar	24.52	29.86	37.47	54.77	62.46	255
9	Rajkot**	31.74	39.23	46.78	66.96	75.88	239
10	Jamnagar***	26.55	31.04	40.52	58.96	67.19	253
11	Porbandar	-	-	-	61.85	69.09	-
12	Junagadh	24.42	30.64	41.63	59.63	68.35	280
13	Amreli	28.91	33.65	42.80	60.46	67.72	234
14	Bhavnagar	27.43	32.73	39.79	57.75	66.98	244
15	Anand	-	-	-	67.92	74.95	-
16	Kheda	36.26	42.57	49.04	63.97	72.71	201
17	Panch Mahals	19.25	22.82	28.10	49.58	61.50	319
18	Dohad	-	-	-	35.84	45.65	-
19	Vadodara	35.21	40.67	48.34	63.73	71.32	203
20	Narmada	-	-	-	51.38	60.37	-
21	Bharuch	34.26	35.77	44.66	65.76	74.79	218
22	Surat	35.46	39.39	46.73	64.36	74.99	211
23	The Dangs	9.26	37.51	46.95	47.56	60.23	650
24	Navsari	-	-	-	68.29	75.98	-
25	Valsad	33.08	37.51	46.95	60.33	69.41	210

Source: (i) Census of India, Gujarat State Part-II, pp.78-81 for the years 1961 to 1981

(ii) For the years 1991 to 2001, Provisional Population Total, Paper 1 of 2001

TABLE 5.29
LITERACY RATES BY SEX FOR STATE AND DISTRICTS:1991-2001

Sr. No.	State/District	Literacy rate *					
		Persons		Males		Females	
		1991	2001	1991	2001	1991	2001
	Gujarat	61.29	69.97	73.13	80.50	48.64	58.60
1	Kachchh	52.75	N.A.	64.26	N.A.	40.89	N.A.
2	Banas Kantha	39.50	51.26	55.17	66.91	22.71	34.54
3	Patan	53.91	60.59	67.91	74.07	39.20	46.36
4	Mahesana	68.39	75.54	81.05	86.52	55.22	63.96
5	Sabar Kantha	59.03	67.31	74.53	81.19	43.08	52.85
6	Gandhinagar	73.78	76.83	84.85	87.92	62.04	64.85
7	Ahmadabad	73.64	79.89	82.94	86.87	63.28	71.12
8	Surendranagar	54.77	62.46	67.83	75.33	40.65	48.72
9	Rajkot**	66.96	75.88	76.76	83.66	56.66	67.64
10	Jamnagar***	58.96	67.19	69.96	76.95	47.45	56.90
11	Porbandar	61.85	69.09	73.24	78.88	50.08	58.83
12	Junagadh	59.63	68.35	72.04	79.37	46.78	56.92
13	Amreli	60.46	67.72	71.21	77.68	49.68	57.77
14	Bhavnagar	57.75	66.98	70.90	78.83	43.88	54.46

TABLE 5.29 (Cont..)
LITERACY RATES BY SEX FOR STATE AND DISTRICTS:1991-2001

Sr. No.	State/District	Literacy rate *					
		Persons		Males		Females	
		1991	2001	1991	2001	1991	2001
15	Anand	67.92	74.95	81.23	86.31	53.38	62.53
16	Kheda	63.97	72.71	79.83	86.58	46.90	57.77
17	Panch Mahals	49.58	61.50	66.18	76.62	31.64	45.43
18	Dohad	35.84	45.65	49.74	59.45	21.49	31.70
19	Vadodara	63.73	71.32	74.19	80.65	52.22	61.24
20	Narmada	51.38	60.37	64.86	72.88	37.03	47.16
21	Bharuch	65.76	74.79	76.31	83.43	54.27	65.42
22	Surat	64.36	74.99	72.61	81.85	55.13	66.71
23	The Dangs	47.56	60.23	59.55	71.35	35.31	48.99
24	Navsari	68.29	75.98	76.74	82.93	59.47	68.74
25	Valsad	60.33	69.41	70.16	78.10	50.02	59.92

Source: Census of India 2001; Paper 2 – Gujarat – Provisional Population Totals

Note :

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

** 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake

*** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake

TABLE 5.30
DISTRICTS ARRANGED ACCORDING TO LITERACY RATE
BELOW AND HIGHER THAN THE STATE AVERAGE.

Districts below 60%		Below the State average but more than 60%		Higher than the State average	
Banas Kantha	51.26	Valsad	69.41	Ahmadabad	79.89
Dohad	45.65	Porbandar	69.09	Gandhinagar	76.83
		Junagadh	68.35	Navsari	75.98
		Amreli	67.72	Rajkot	75.88
		Sabar Kantha	67.31	Mahesana	75.54
		Jamnagar	67.19	Surat	74.99
		Bhavnagar	66.98	Anand	74.95
		Surendranagar	62.46	Bharuch	74.79
		Panch Mahals	61.50	Kheda	72.71
		Patan	60.59	Vadodara	71.32
		Narmada	60.37		
		The Dangs	60.23		

Source: Census of India 2001; Paper 2 – Gujarat – Provisional Population Totals

TABLE-5.31
TOTAL POPULATION, NUMBER OF LITERATES AND LITERACY RATES BY SEX
FOR STATE AND DISTRICTS

Sr. No	State/ District	Total population			Number of literates §			Literacy rate #		
		Total	Males	Females	Total	Males	Females	Total	Males	Females
1	2	3	4	5	6	7	8	9	10	11
	GUJARAT*	4838.7	2520.9	2317.8	2905.0	1734.9	1170.1	69.97	80.5	58.6
	GUJARAT(including estimated figures)	5059.7	2634.4	2425.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1	Kachchh (estimated)	152.6	78.2	74.4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2	Banas Kantha	250.3	129.6	120.6	105.0	70.8	34.2	51.26	66.91	34.54
3	Patan	118.2	61.1	57.0	60.5	38.0	22.5	60.59	74.07	46.36
4	Mahesana	183.8	95.4	88.4	120.2	70.7	49.5	75.54	86.52	63.96
5	Sabar Kantha	208.3	107.0	101.4	119.3	73.4	45.9	67.31	81.19	52.85
6	Gandhinagar	133.5	69.8	63.6	89.0	52.9	36.1	76.83	87.92	64.85
7	Ahmadabad	580.8	307.0	273.9	406.3	234.6	171.7	79.89	87.81	71.12
8	Surendranagar	151.5	78.8	72.7	79.4	49.5	29.9	62.46	75.33	48.72
9	Rajkot **	257.2	133.3	123.9	170.4	96.7	73.7	75.88	83.66	67.64
	Rajkot (including estimated figures)	315.8	163.6	152.2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10	Jamnagar ***	181.6	93.6	88.0	104.9	61.6	43.3	67.19	76.95	56.9
	Jamnagar (including estimated figures)	191.4	98.5	92.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

TABLE-5.31 (Cont..)
TOTAL POPULATION, NUMBER OF LITERATES AND LITERACY RATES BY SEX
FOR STATE AND DISTRICTS

Sr. No	State/ District	Total population			Number of literates ^s			Literacy rate #		
		Total	Males	Females	Total	Males	Females	Total	Males	Females
1	2	3	4	5	6	7	8	9	10	11
11	Porbandar	53.7	27.6	26.1	32.0	18.7	13.3	69.09	78.88	58.83
12	Junagadh	244.8	125.2	119.6	143.2	84.7	58.6	68.35	79.37	56.92
13	Amreli	139.3	70.1	69.2	81.4	46.7	34.8	67.72	77.68	57.77
14	Bhavnagar	246.9	127.5	119.4	139.5	84.4	55.1	66.98	78.83	54.46
15	Anand	185.7	97.2	88.4	121.1	72.8	48.3	74.95	86.31	62.53
16	Kheda	202.3	105.3	97.0	126.8	78.3	48.5	72.71	86.58	57.77
17	Panch Mahals	202.5	104.4	98.1	104.3	67.0	37.3	61.5	76.62	45.43
18	Dohad	163.5	82.4	81.1	60.0	39.3	20.7	45.65	59.45	31.7
19	Vadodara	364.0	189.7	174.3	225.9	132.6	93.3	71.32	80.65	61.24
20	Narmada	51.4	26.4	25.0	26.3	16.3	10.0	60.37	72.88	47.16

TABLE-5.31 (Cont..)
TOTAL POPULATION, NUMBER OF LITERATES AND LITERACY RATES BY SEX
FOR STATE AND DISTRICTS

Sr. No	State/ District	Total population			Number of literates ^s			Literacy rate [#]		
		Total	Males	Females	Total	Males	Females	Total	Males	Females
1	2	3	4	5	6	7	8	9	10	11
21	Bharuch	137.0	71.3	65.7	88.6	51.4	37.2	74.79	83.43	65.42
22	Surat	499.6	272.3	227.4	324.6	193.7	130.9	74.99	81.85	66.71
23	The Dangs	18.7	9.4	9.3	9.1	5.4	3.7	60.23	71.35	48.99
24	Navsari	122.9	62.9	60.0	82.7	46.0	36.6	75.98	82.93	68.74
25	Valsad	141.1	73.5	67.6	84.3	49.5	34.8	69.41	78.1	59.92

Source: Census of India 2001; Paper 2 – Gujarat – Provisional Population Totals

Note: \$Literates exclude children in the age group 0-6 years who were by definition treated as illiterate in the Census of India 2001

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

*2001 Census figures are presented excluding the figures of Kachchh district; three talukas of Rajkot viz. Malia, Morvi and Wankaner and Jodia taluka of Jamnagar district where Census 2001 was postponed due to earthquake.

** 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner talukas where Census 2001 was postponed due to Earthquake.

*** 2001 Census figures are presented excluding figures of Jodia taluka where Census 2001 was postponed due to Earthquake.

TABLE 5.32
BIRTH RATES AND LITERACY RATE OF 12 MAJOR STATES OF INDIA

		Total Population		Male			Female		
Sr. No	States	Birth Rate	Literacy Rate	States	Birth Rate	Literacy Rate	States	Birth Rate	Literacy Rate
1	Kerala	18.00	90.90	Kerala	18.00	94.20	Kerala	18.00	87.96
2	Tamil Nadu	19.30	73.47	Tamil Nadu	19.30	82.33	Tamil Nadu	19.30	64.55
3	Andhra Pra.	21.70	61.11	Andhra Pra.	21.70	70.85	Andhra Pra.	21.70	51.17
4	Maharashtra	21.10	77.27	Maharashtra	21.10	86.27	Maharashtra	21.10	67.51
5	Karnataka	22.30	67.04	Karnataka	22.30	76.29	Karnataka	22.30	57.45
6	West Bengal	20.70	69.22	West Bengal	20.70	77.58	West Bengal	20.70	60.22
7	Punjab	21.50	69.95	Punjab	21.50	75.63	Punjab	21.50	63.55
8	Orissa	24.10	63.61	Orissa	24.10	75.95	Orissa	24.10	50.97
9	Gujarat	25.40	69.97	Gujarat	25.40	80.50	Gujarat	25.40	58.60
10	Haryana	26.80	68.59	Haryana	26.80	79.25	Haryana	26.80	56.31
11	Madhya Pra.	31.10	64.11	Madhya Pra.	31.10	76.80	Madhya Pra.	31.10	50.28
12	Rajasthan	31.10	61.03	Rajasthan	31.10	76.46	Rajasthan	31.10	44.34
13	All India	26.10	65.38	All India	26.10	75.85	All India	26.10	54.16
		Correlation Coefficient = (-)06455		Correlation Coefficient = (-)0.4411			Correlation Coefficient = (-)0.7487		

TABLE 5.33
TOTAL FERTILITY BY WOMEN'S EDUCATIONAL LEVEL
IN INDIA (1998-1999)

Educational Level	Total Number of Children Born
Illiterate	3.47
Literate, less than Middle School Complete	2.64
Middle School Complete	2.26
High School and Above	1.99
Total	2.85

Source: National Family Health Survey(1998-99) Final Report (All India)

Table 5.34
Correlation Matrix - Gujarat

Variables	CWPR	Literacy	Sex Ratio	Density	% of Child Popu. (0-6) Years	% of Urban Popu.
CWPR	1.00					
Literacy	-0.58	1.00				
Sex ratio	0.38	-0.54	1.00			
Density	-0.08	0.22	-0.01	1.00		
%Child Popu.(0-6)	0.15	0.04	-0.10	-0.29	1.00	
% of Urban Popu.	-0.81	0.60	-0.59	0.15	-0.06	1.00

Source: 'Trend in Work Participation Rates: A Comparative Study of Punjab, Gujarat and Orissa' - Purujit Praharaj, IIPs, Mumbai – 2001

CHAPTER-VI

URBANIZATION

6.1 Introduction

As per the 2001 Census results (Provisional), 285 million out of 1027 million persons lived in urban areas. In other words, slightly more than one-fourth of India's total population was enumerated in urban areas. When compared with the urban population projections made by the Experts Committee on Population Projections appointed by the Planning Commission (1987), enumerated urban population and level of urbanisation are on the lower side. Because, as per its medium population projections, 230 million persons constituting 27.5 percent were supposed to be urbanites. Further, the population living in cities and urban agglomerations having 100,000 and more population was also less than the population projected by the Task Force on Urban Development set up by the Planning Commission (1983) which had projected it as 150 million while the actual count showed approximate 139 million persons living in such places. Thus, the tempo of urbanisation i.e. the extent of urban population growth and cities population growth during the last decade has been less than that observed during preceding decade (1971-1981). For example, while the annual exponential growth of urban population fell from 3.83 to 3.09 the annual rate of gain in percentage of urban population reduced from 1.72 to 1.02 over the last 2 decades (Census of India, 1991). This slackening of urbanisation process noticed during the last decade has posed some serious questions to the scholars studying this phenomenon. It has been contended that this could be due to a decline in natural growth rate and rate of immigration.

6.2 Urbanisation in India: A Historical Perspective

Urban development in India has continued for a very long period. First trace of it has been found in the Harappa urbanism which prevailed during 2350

B.C. and 1750 B. C. It was flourishing in the North-West part of the Indian sub-continent where, a chain of urban centres was found which extended from Iran, Iraq and Asia Minor to Greece and Egypt.

This period was followed by the early historic period which lasted from 500 B. C. to around 600 A.D. and was largely confined to Middle Ganges Plain and parts of Coastal South India. After the fall of Gupta Empire, this urban development declined during the 7th century A.D.

Later on, the invasion of Turks followed by the Sultanate rule helped in revival of urban development in India. This revival was largely due to opening of commerce between India, Central Asia and West Asia resulting from the process of political integration of the country. This phase was started around 11th century A.D. and continued with some changes till fall of Mughal Empire i.e. till the 17th century A.D.

With the arrival of British East India Company, the nature of urbanisation process changed remarkably. Because, the establishment of the British Imperial Government and the advent of railways in the second half of last century led to the replacement of centripetal inter-settlement linkages evolved over time through introverted road net work by the centrifugal pulls generated by the metropolitan- economy through the establishment of new port towns and orientation of the railway net work and internal commodity flow towards them. Due to considerable growth in overseas trade during the colonial regime, some prominent port cities like Calcutta. Bombay and Madras were set up and these dominated the urban scene along with Delhi and a few other metropolises.

As a result of growth of these primate cities, importance of old cities and towns declined considerable not only in terms of population size but also in terms of economic and administrative functions, urbanisation in colonial India was thus characterised by the existence of a high degree of primacy.

6.3 Trends of Urbanisation in India - The Contemporary Scene

In order to have a better understanding of the contemporary urbanisation patterns in India, it would be appropriate to have some idea about the type of settlements treated as urban in the recent censuses. A review of changes in the concepts and definition employed for treating a place as urban in the recent censuses of India clearly shows that the civil or statutory status of a place has served as the most crucial factor for treating it as the urban in India. In addition, some places having certain conspicuous demographic features were also treated as the urban since the beginning of census operations in India. The definition of an urban area has remained fairly constant through out the period, however, this was made explicit and has been applied more rigorously and uniformly since 1961. Further, there has been no major change in it to date with only an exception relating to the exclusion of certain economic activities like fishing, livestock, logging, plantations, orchards, etc., in 1981 from the category of non-agricultural activities for computing the percentage of male workers engaged in such activities.

The definition of urban area, as per the 2001 Census is as follows:

1. Towns:

The following are treated as towns:

- (a) Statutory towns, i.e., municipal corporation, municipal board, cantonment board, notified area etc.
- (b) Census towns which are non-statutory towns and are actually rural areas but satisfy the following criteria:
 - (i) Minimum population of 5,000
 - (ii) Density of population of at least 400 per sq.km.
 - (iii) Seventy-five per cent of the male working population engaged in non agricultural activity

2. Cities

Towns with population of 1,00,000 and above are called cities.

3. Urban Agglomerations

Sometimes two or more towns may be contiguous to each other making it necessary to consider them together for studies on urbanisation in the area. In some other cases there are large railway colonies, university campuses, port areas, military camps, etc, just outside the statutory limits of a town but adjoining it. Though these areas may not themselves qualify to be treated as towns, it would be realistic to treat them as urban. Such areas are termed as outgrowths' (O.G.) and may cover the whole or part of a village. The above two types of contiguous urban areas are called 'Urban Agglomerations'. An urban agglomeration may comprise.

- (a) A town and contiguous outgrowths; or
- (b) Two or more towns and their outgrowths, if any; all of them forming a contiguous spread of urban area.

Besides, the Directors of Census Operations in State/Union Territories were allowed to include, in consultation with the concerned State Governments/Union Territory Administrations and the Census Commissioner of India, some places having distinct urban characteristics as urban even if such places did not strictly satisfy all the criteria mentioned under category (b) above.

Apart from these, the outgrowths of cities and towns also have been treated as urban. These outgrowths include "fairly large well organised railway colony, university campus, port area, military camp, etc., which might have come up" around a core city of statutory town... "since such areas are already urbanised... although a few of them may not satisfy some of the prescribed eligibility tests to qualify themselves as independent urban units... have been termed as outgrowth (OGs) and reckoned along with town" (Census of India.

1991). Each such town together with its outgrowth(s) is treated as an 'urban agglomeration.' This concept of urban agglomeration was adopted in 1971 in lieu of the old concept of town group which was introduced in 1961. An "urban agglomeration" denotes "a continuous urban spread and normally consists of a town and its adjoining urban outgrowths (OGs), or two or more physiologically contiguous towns together with contiguous well recognised outgrowths if any, of such towns" (Census of India. 1991).

Out of 1027 million (or 102.7 crore) population of India, as per Census 2001, 742 million live in rural areas and 285 million in urban areas comprising of 72.2% and 27.8% of the population respectively. The highest percentage of urban population is in Delhi (93.0%) and the lowest in Himachal Pradesh (9.8%). In eight States/UTs in India the percentage of urban population exceeded 40% level. These are Delhi, Chandigarh, Pondicherry, Goa, Mizoram, Lakshadweep, Tamil Nadu and Maharashtra.

At the 1991 Census, there were 23 UAs/Cities with Million Plus population. This number has now risen to 35. About 37% of the total urban population as per the Census 2001 live in these Million Plus UAs/Cities in India. Out of the 35 Million Plus UAs/Cities, 6 are located in Uttar Pradesh, 4 each in Gujarat and Maharashtra, 3 each in Andhra Pradesh, Madhya Pradesh and Tamil Nadu, 2 each in Punjab and West Bengal, Jharkhand and 1 each in Delhi, Haryana, Bihar, Kerala, Karnataka and Rajasthan.

The Provisional Population Totals for India and States by rural-urban areas were released on 16.7.2001 along with the population of 35 million plus Urban Agglomeration and Cities. In the next series the population of those statutory cities, which have crossed one million population as per Provisional Population Totals, Census of India, 2001 has been released. The population of million plus cities is confined to the statutory limits of respective Municipal Corporations only and population of the outgrowths, if any, appended to these

cities have not been included. 27 cities, which crossed the population mark of million plus at the Census 2001, are located in 13 States and Union territories. Their combined population (73, 021,246) is 25.6% of the total population of the country. The Municipal Corporation of Greater Mumbai is the most populous city in the country with 11.9 million population accounting for 16.3% of the total population of million plus cities in the country. It is followed respectively by Delhi Municipal Corporation - (Urban) 9.8 million (13.4%), and Kolkata Municipal Corporation - 4.6 million (6.3%).

At the State level, Maharashtra has the largest number of (7) cities (Greater Mumbai, Pune, Nagpur, Thane, Kalyan-Dombivili, Nashik, Pimprichinchwad), which has crossed one million populations at the 2001 Census and account for 28.8% of the total million plus cities population. Uttar Pradesh the most populated state in the country has only 5 cities (Kanpur, Lucknow, Agra, Varanasi and Meerut), in this category accounting for 11.2% of million plus cities population. Gujarat has three cities (Ahmadabad, Surat and Vadodara), whereas Punjab, Delhi, Bihar and Haryana have one city each with million plus population as per Census 2001.

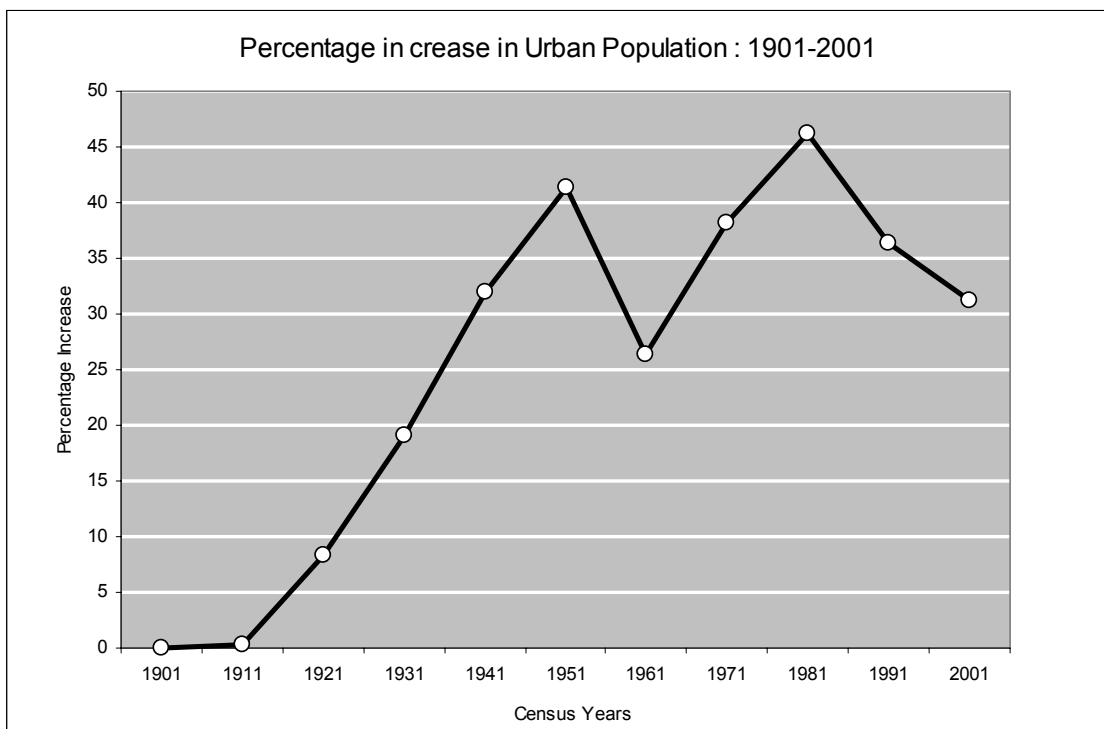
The highest growth of population among these million plus cities is recorded for Pimprichinchwad Municipal Corporation (94.6%) in Maharashtra. The least growth of 4.1% is seen in Kolkata Municipal Corporation in West Bengal.

Among these 27 cities, Chennai has registered the highest sex ratio of population 951, during the Census 2001. Ludhiana is at the bottom end with a sex ratio of 766, which makes it the most masculine million plus city. It is preceded by Surat (774). If it is assumed that the establishment of new towns in a district helps in creating basic infrastructure in terms of roads, electricity, water supply, new transportation routes, educational facilities etc., we may safely conclude that the districts which got a large number of new towns are mainly the

ones which benefited most from developmental efforts. In other words, the developmental effort in the country during the past two decades has, to a large extent, been concentrated only in few districts. It is believed that these particular districts have potentialities to attract capital and new industries at least in the short run and therefore may show a higher growth of urban population during the seventies as well.

(1) Dispersal and Growth in Number and Population of Urban Settlements in India

Figure 6.1



The urban population of India as per the 2001 Census is 285.35 million which includes estimated population of those areas of Gujarat and Himachal Pradesh where census could not be conducted due to natural calamities during the appointed period. This accounts for 27.78 percent of countries total population. It can be observed from Table 6.1 that the percentage increase in urban population during the decade is 31.17 while the same figure for the previous decades of 1991 and 1981 are 36.43 and 46.14 respectively. The

percentage increase in urban population has shown and increasing trend up to the decade 1981 and it showed a decreasing trend thereafter. It can be seen from the table that the number of persons living in urban area for every hundred population of the country increased from about eleven to twenty-eight between 1901 and 2001, registering an increase of seventeen per hundred during the time span of a century. When measured in terms of urban-rural ratio, only twelve lived in urban areas for every hundred persons living in rural areas in 1901, and this number increased to thirty-nine in rural areas in 2001. While during the first half of the century the proportion of urban population increased by six per hundred, during the second half, the increase registered was significantly higher being eleven per hundred. It is, therefore, clear that levels of urbanization which were low at the beginning of the twentieth century did not alter significantly even at the dawn of the twenty first century. One should not be misled by the fact that in 2001, the size of the urban population is a little over ten times than it was in 1901, whereas the corresponding increase in the size of the rural population is only three and a half times.

According to the Census 2001, in India out of total population of 1027 million about 285 millions live in urban areas and 742 millions live in rural areas. Thus, around 28 out of every 100 persons in India live in urban areas. In other words, for every 100 persons living in rural areas of India, 39 live in urban areas.

The number of persons living in urban areas for every 100 persons of the country increased from 11 to 28 between 1901 and 2001 registering an increase of 17 per 100 during the time span of the twentieth century.

The number of towns urban agglomerations has increased from 1830 in 1901 to 4378 in 2001 .There was a steady increase in number of towns till 1951 but due to more rigorous tests applied in 1961 "to determine whether a place qualified to be treated is a town of not many urban places were declassified and hence, the number declined from 2822 in 1951 to 2334 in 1961. Further, despite a continuous increase in urban population during the last 9 decades, the tempo

of urbanisation (average annual growth rate of urban population minus average annual growth rate of rural population) exhibited a waned trend. For example, it showed a decline 1901-31 owing to devastating plague epidemic of 1911 which spread mainly in the urban areas and brought an exodus of urban-population to rural areas while natural calamity was the main factor underlying the slow pace of urbanisation during 1901-31. The effect of 2nd World War and the partitioning of the country during 1947 were mainly responsible for the sudden spurt in urban growth during 1931-41 and 1941-51. The pace was slow again in 1951-61 due to declassification of a large number of areas as already mentioned. With the introduction of Five Year Plans, the country experienced rapid industrialisation. The decades 1961-71 and 1971-81, therefore, showed an upward trend in urban growth. The tempo is slow again during 1981-91, the reasons for which are briefly discussed in the next section but can be explored in detail only when requisite data would be available.

Table 6.2 explains the decadal increase in the urban population. Chain Base Indices from 1901 to 2001 shows that an abnormal variation can be seen in the figure of the decade 1921. During 1931 the urban population increased by 131.20% of the 1921 urban population. During 1941 the percentage increase was on 67.21% of 1931, for 1951 it was 29.59% of 1941, for 1961 the urban population has decreased to the extent of 36.25% of 1951 urban population. During the subsequent decades 1971 and 1981 the urban population increased by 44.76% and 20.69% of the previous decades respectively. During the decade 1991 and 2001 the urban population has increase but at a decreasing rate. In 1991, a decrease in the rate of increase by 21.04% of 1981 urban population was registered and in 2001 again a decrease in the rate by 14.44% of the 1991 urban population has occurred. This shows that, of course, the percentage of urban population increases year by year but at a decreasing rate. Figure 6.1 depicts the trend of urbanisation clearly.

At the Census 2001 as many as 5161 towns were delineated, which was 472 more than the number at the 1991 Census (4689). The number of towns at the 1981 Census was 4609. Out of the total 5169 towns, in 2001, 3800 are statutory towns and 1361 are Census towns. The number of statutory towns and census towns in 1991 was 2987 and 1702 respectively. The number of UAs in the country increased from 381 at the 1991 Census to 384 at the Census 2001. The corresponding number in 1981 was 276. If urban agglomeration is counted as one urban unit then the number of Urban Agglomerations/towns are 4378 as compared to 3768 in 1991.

The same picture is depicted in Table 6.3 showing the percentage decadal growth and average annual exponential growth in urban agglomerations and towns. During 1991-2001, while the urban population grew by 31.2 percent, the rural population during the same period grew by 17.9 percent. The growth of population in urban and rural areas during the previous decade i.e. 1981-1991 was 36.4 and 20.0 respectively. The slowing down of the growth rate in both rural and urban areas is indicative of fall in fertility in these areas. However, the sharper fall in growth rate in rural areas may partly be explained by migration from rural to urban area. The percentage decadal growth of the urban population, which was extremely low in the first decade of the century, showed brisk upward trend in the subsequent decades to reach a peak of about forty-one percent during 1941-51. The 1951-61 decade saw a sharp fall in urban growth rate mainly because of large reduction in number of urban units. Thereafter, the urban growth rate fluctuated sharply in all the subsequent decades.

The percentage decadal growths of rural population which remained very depressed in the first half of the century and fluctuated in all the decades after 1951, although, within a narrow band. The rural growth rates have always remained much lower than the urban growth rates in all the years except for the first decade of the century. In future also we expect a similar trend with higher growth rates being recorded for urban areas. The percentage decadal growth

rate of urban population reveals that in India it grew at a faster pace from the decade 1921-1931 until 1951. Thereafter it registered a sharp drop during the decade 1951-1961. The decades 1961-71 and 1971-81 showed significant improvement in the growth rates which has thereafter steadily dropped to the present level of 31.2 in case of decadal growth and 2.7 in case of annual average exponential growth rate. The sharp drop in urban rate during 1951-61 was larger mainly due to declassification of a very large number of towns during that period. Although the rural growth rate has been fluctuating from the first decade of the previous century, for the decades between 1951-61 and 1991-2001 it fluctuated within a small band.

The average annual exponential growth rate recorded for urban population during the decade 1991-2001 was 2.7 percent while that for the rural area it was 1.7 percent a difference of one percentage points per annum. During the decade 1981-91 the annual exponential growth for urban and rural population was 3.1 and 1.8 per annum respectively. The annual growth rates for urban and rural population obviously followed the same pattern as the percentage of decadal growths with sharper fluctuations in the second half of the twentieth century observed in urban areas than in rural areas of the century.

Table 6.4 and Table 6.5 gives rural-urban distribution of population of India in absolute numbers as well as in percentages. According to these tables Delhi top the list of the state with maximum percentage of urban population(93%). The second place to Chandigarh (90%). The third place goes to Pondichery with 67% and fourth place is shared by Goa and Mizoram with 50% urban population. Among the states fall under the lower category Bihar and Himachal Pradesh have the least number of urban population with only 10% of the total population, followed by Sikkim with 11%, Assam 13% and Orissa 15%. The percentage of urban population in Gujarat as per 2001 census is 37% while the neighbouring state of Maharashtra and Rajasthan has 47% and 23% urban population respectively. The above stated figures are derived after including the

estimated figures of some of the areas of Gujarat and Himachal Pradesh where Census enumeration could not be conducted due to natural calamity.

(2) Changes in size-Class Composition of Urban Population

Customarily, data on urban places and their population are presented in six-fold classification. While the first size-class comprises cities i.e. places having 100,000 and more population, the last category comprises tiny towns i.e. places having less than 5,00 population. Table 6.5 illustrates the classification of urban population in to six classes:

- a) Class I with population of 1 million and above
- b) Class II with population of 50000 less than one million
- c) Class III with population of 20000 to less than 50000
- d) Class IV with population of 10000 to less than 19999
- e) Class V with population of 5000 to less than 10000
- f) Class VI with population less than 5000

Table 6.6 gives the data relating to the number of towns and Urban Agglomerations, Population and percentage distribution of urban population from the year 1951 to 2001. The number of cities with more than a lakh has shown a steady increase from 76 in 1951 to 296 in 1991 while class II cities having population 50000 and less than a lakh has increased from 91 to 341, class III cities having population of 20000 and less than 50000 from 327 to 927, Class IV with population of 10000 to less than 20000 increased from 608 to 1135. The towns with population of less than 10000 have registered a decrease in number from 1693 to 910 during this period.

The population in class I towns has increased more than 6 times from 278 lakhs to 1767 lakhs over a period from 1951 to 2001 while population increase in other type is in class II cities 5.6 times, Class III cities 4.3 times and in Class IV

cities 2.6 times. A fall in population is observed in the other classes classified as towns having population less than 10000.

This phenomenon of increasing concentration of urban population in cities is given more explicitly reflected through the increase in number and population of cities having one million and more population commonly known as “million plus cities”. Figures provided in Table 6.7 thus indicate that the number of such cities has increased from 1 in 1901 to 23 in 1991 whereas the population living in such places increased from 15 million to 70.7 million in course of last 90 years. As a result, the percentage of urban population living in such places has increased from 6 in 1901 to 32.5 in 1991. It may also be seen from the table that the tendency of growing concentration has become most conspicuous at the 1991 census when this proportion registered 6 percent point growth. This increased pace of concentration of urban population in the cities and particularly in the Million+ cities implies that the economic activities are gradually getting localised in such places as well as in the surrounding areas of such places. Cities, thus are attracting more and more people from rural areas and also from the remaining towns. Apart from this, due to spread of industrial and other economic activities in the vicinity of large cities, a large number of new towns have also emerged around such places. This trend is indicative of the fact that urbanisation process in India is gradually being transformed into the process of 'concentrated urbanisation' as every third urbanite was enumerated in the cities, at the time of 1991 Census.

The table 6.8 shows that among the states Kerala villages has the largest population (17,281 persons) on an average followed by Haryana (2,152) and Tamil Nadu (2,137). The lowest village size is in Arunachal Pradesh (214) followed by Himachal Pradesh (273) and Meghalaya (308). Among states again, Maharashtra size of towns in terms has the largest average size of towns (108,518) followed by Andhra Pradesh (97,636) and Gujarat (78,097). Uttar Pradesh with largest number of villages and second largest number of towns

has, in terms of population, comparatively smaller villages (1,224) as well as medium size towns (49,024). The state of Gujarat has 18544 villages with 31.7 million population and an average population 1709 per village. It has 242 towns with 18.9 million population and an average population of 78097 per town. At the time of 2001 Census in India there were 0.638 million (or 6.38 lakh) villages and 5,161 towns. In 1991 the total number of villages and towns were 0.634 million (or 6.34 lakh) and 4,689 respectively. As the following table (Table 6) would also show, the largest number of villages expectedly was in Uttar Pradesh (123,950) and the least in Lakshadweep (24). The average size of villages also varied from state to state as also depending upon the nature of the terrain.

Table 6.9 shows the degree of urbanization in world, regions, continents and top ten most populous countries in the world. The two measures of degree of urbanization included are the percent urban population and urban-rural ratio. While in the more developed countries about three quarters of people live in urban areas, in the least developed countries only around a quarter of the population live in urban areas. Among the continents, the lowest proportion of urban population is found in Asia being only thirty-seven percent. Brazil is the most urbanized and Bangladesh is the least urbanized among the ten most populous countries in the world, with around eighty-one percent and twenty-five percent of population living in urban areas respectively. When measured in terms of urban-rural ratio, in the more developed region of the world three times as much population lives in urban areas in comparison to rural areas. In contrast, in the least developed countries, only about a third of every hundred (person living in rural areas) lives in urban areas. The urban-rural ratios for Africa and Asia are almost equal being around sixty, which is strikingly much less when compared with Europe, Northern America and South America. Among the most populous countries Brazil has over four persons living in its urban areas for every person in rural area. Notwithstanding the difference in definitions of what constitutes an urban area in various countries, it is clear that the degree of urbanization in India is among the lowest in the world.

The pace of urbanisation has also been slower in India as compared to other countries in the world. As per the UN estimates the degree of urbanisation in the world in 1950 was around 30 percent which increased to 47 percent in the year 2000. In India, it increased from 17.3 in 1951 to 27.8 in 2001. China and Indonesia which had lower levels of urbanisation in 1950, have now overtaken India with percentage of urban population being 32.1 and 40.9 respectively. Notwithstanding, the difference in definitions of all the constituents in urban areas in various countries, the degree of urbanisation in India is the first amongst the lowest in the world. As per the UN estimate for the year 2000, 47 percent of total population of the world live in urban areas. The percentage of urban population in Asia is 36.7 while that for Europe, South America and North America are 74.8, 79.8 and 77.2 respectively.

United Nations defined Mega City in 1970 as an urban agglomeration with a population of 8 million or more. In 1990 it raised the population threshold of mega cities to 10 million. Table 6.10 gives the twenty largest urban agglomerations in the world in terms of its population as estimated by United Nations for the year 2000. The population of urban agglomerations of India in this Table are provisional population as per Census 2001. Tokyo with an estimated population of 26.4 million holds the first position followed by Greater Mumbai (18.7 million) and Mexico City (18.1 million). It would be interesting to note that although the level of urbanization in India is among the lowest in the world, as many as three urban agglomerations figure in the top twenty urban agglomerations in the world.

Table 6.11 below shows number of mega cities in 1950, 1975, 2000 and projected mega cities in 2015. The number of mega cities has been growing rapidly particularly in the less developed countries. In 1950, New York was the only city in the world, which had a population of 10 million and above. The number of mega cities, which increased to 5 by 1975, is estimated to be 20 in the

year 2000 and this number is expected to reach 23 in the year 2015. In 2000, 16 out of the 20 mega cities were located in less developed regions. Asia has registered the highest number of mega cities (12) including Tokyo and Osaka in Japan.

6.4 Dynamics of Urban Population Growth

Urban population growth is a very complex phenomenon. Factor» influencing urban growth as explained in the first Section, have change I considerable since the early historical period and the contemporary urban growth in India is a legacy of British rule when the introduction of railways in the second half of the 19th Century coupled with the establishment of new port town led to an enormous growth in overseas trade and commerce. This in turn caused rapid growth of primate cities, during the later period and these cities still continue to dominate the urban scene. A probe into theses aspect of urban growth is, however, beyond the purview of the limited scope of presser enquiry. Instead, is intended here in this Section, to present a brief analysis on the three main components of urban population growth namely, nature increase, migration and area reclassification. This is followed by analysis of growth pattern of cities and towns as well as of urban population concentrations. As a prelude to this analysis changes in urban frame resulting from the addition and deletion of towns at the time of recent censuses as discussed in the following paragraphs:

(a) Changes in Urban Frame

Updating the list of towns forms and integral part if the preparations for the conduct of a new census. In the process, certain places treated as the new towns by virtue of their being qualified to be treated as the town. due to statutory notification of due to attainment of the minimum population size, density and required proportion of male working population engaged in the non-agricultural pursuits are added to the existing list. Simultaneously some urban places, which

either lose their civic status due to statutory notification of fail to qualify the prescribed eligibility tests are deleted from the said list besides the merger of certain adjoining rural-urban areas due to extension of statutory limits of the existing places.

(i) Rank order in urbanization:

Another observation of interest would be to find out the relative rank order in terms of urbanization in 1991 and 2001 Censuses. In 2001 among the major states, Tamil Nadu has climbed up the ladder substantially by occupying the seventh position from its tenth position in 1991. Haryana is another State that has substantially improved its ranking from nineteen in 1991 to fourteen in 2001. It would be important to reiterate that a large part of improvement in the degree of urbanisation in Tamil Nadu is explained by the large number of newly notified towns having been added to its urban frame of the Census 2001.

(ii) Share of urban population:

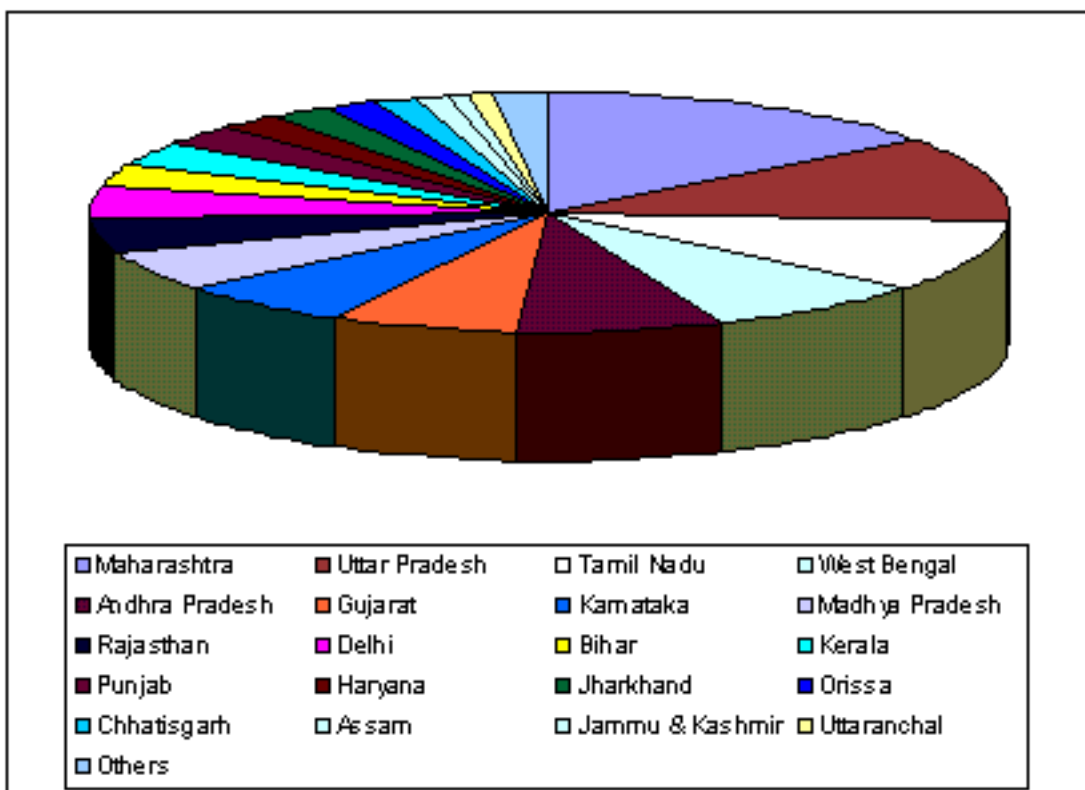
Total urban population in the country as per 2001 Census was about 285 million. Maharashtra has by far the largest urban population in the country being about forty one million followed by Uttar Pradesh (34.5 million) and Tamil Nadu (27.2 million). It would be interesting to note that the urban population of Maharashtra is larger than the total population of major states like Punjab, Assam, Jharkhand, Orissa, Chhatisgarh and Kerala.(Figure 6.2)

It may be seen from the above table (Table 6.12) that Maharashtra has the largest share of urban population of the country (14.4 percent) followed by Uttar Pradesh (12.1 percent) and Tamil Nadu (9.5 percent). In 1991 also Maharashtra, Uttar Pradesh and Tamil Nadu held the top three spots in that order. It would be interesting to note that about half of the urban population of the country lives in five states namely, Maharashtra, Uttar Pradesh, Tamil Nadu,

West Bengal and Andhra Pradesh. The situation was somewhat similar in 1991 when the same five states together contributed to about half of the country's urban population. The major states that have shown significant drop in their share of urban population between 1991 and 2001 are West Bengal, Andhra Pradesh and Kerala. Between the major States Jammu and Kashmir has smallest share of urban population being 0.9 percent followed by Assam (1.2 percent). It can be observed that as many as seventeen States and Union territories have less than one percent share of urban population. The urban population of these seventeen States and Union territories together constitute around three and half percent of the urban population of the country.

Figure 6.2

Share Of Country's Urban Population In States : 2001 Census



(iii) Distribution of districts by urban population ranges:

Table 6.13 gives the distribution of districts (absolute and percentage) by ranges of their degree of urbanisation (percent urban population) for the 1991

and 2001 Census. The absolute and percentage distribution of urban population in each of those ranges are also given. The number of districts with cent percent urban population and no urban population has also been indicated at the bottom of the statement. The urban population of districts of 1991 has been recast as per the jurisdictions at the Census 2001 for the sake of proper comparison.

It may be seen from the Table 6.13 above that the number of districts with number of urban population declined from thirteen in 1991 to ten in 2001. However, there has been no change in the number of districts with cent percent urban population. Table 6.13 reveals that while in 1991 there were 129 districts with more than thirty percent of population living in urban areas, in 2001 this number increased to 148. The corresponding urban population in this range increased from about forty million in 1991 to sixty-eight million in 2001, registering an increase of sixty-nine percent. It can be worked out from the statement that the Arithmetic Mean of percent urban population in the districts increased from 21.7 in 1991 to 23.2 in 2001 and the Median values of percent urban population for 1991 and 2001 are 17.0 and 18.0 respectively. Therefore, it can be said that there has been a very insignificant improvement in degree of urbanisation in the districts in a decade.

The nine fully urban districts in 2001 are New Delhi, Central (Delhi), Kolkata, Mumbai (Suburban), Mumbai, Hyderabad, Chennai, Yanam and Mahe (Pondicherry). The ten districts that do not have any urban population according to Census 2001 are Lahul & Spiti and Kinnaur (Himachal Pradesh), Upper Siang (Arunachal Pradesh), Senapati, Tamenglong, Churachandpur and Ukhrul (Manipur), Lawngthlai (Mizoram), The Dangs (Gujarat) and Nicobar (Andaman & Nicobar Islands).

A large area of the country covering contiguous districts in eastern Uttar Pradesh, Bihar, Jharkhand, northern West Bengal, Chhatisgarh, Orissa and Andhra Pradesh have very low levels of urbanisation. Although there are heaps

of highly urbanized districts in these areas Uttaranchal, Himachal Pradesh and Jammu and Kashmir are other areas that have low levels urbanisation.

(iv) Distribution of districts by rural population ranges:

Table 6.14 presents the distribution of districts and rural population by ranges of percentage of rural population for 1991. In so far the distribution of districts is concerned, for obvious reason, the same would be a mirror image of the distribution of districts in the Table.

The number of districts with percentage of rural population of seventy percent and above declined from 464 in 1991 to 445 in 2001. However, the combined share of rural population of these districts to the total rural population of the country hardly showed any decline as it moved from 71.9 percent in 1991 to 71.2 in 2001. It can be calculated that the Arithmetic Mean of percentage of rural population in districts declined marginally from 78.2 in 1991 to 76.7 in 2001 and the Median from 83.0 to 81.9 during the same decade. This shows that the degree of ruralisation of districts has not shown any significant change in the last decade.

6.5 Urbanisation and Economic Development

(a) Degree Of Urbanisation, Birth Rate, Infant Mortality Rate, And Natural Growth Rate

India ranks quite low among the countries of the world in the degree of urbanization. Two reasons can be attributed to the increase of population in urban areas : (a) natural increase of urban population, and (b) net migration from the rural areas. As India is passing through a period of high population growth, the natural increase of population in the urban areas is also quite high. Since the process of urbanization started in India about a decade or so ago, it has not gathered enough momentum so as to enable it to absorb a significant chunk of

the rural population. In fact, the impact of industrialization in fostering urbanization is only marginal. With a slowing down of the population growth rate in the coming decades and with an acceleration in the tempo of industrialization, it is expected that the extent of urbanization in India may show a significant change.

The extent of urbanisation can be measured by measuring the relationship between urbanisation, Per capita Income, Rte of Unemployment and percentage of population below poverty line. Economic development is expected to achieve three things : (i) a rise in per capita income so that level of living of the people improves; (ii) a reduction in the rate and magnitude of unemployment; and (iii) reduction of population below the poverty line. To understand the degree of urbanization and its impact of urbanization on economic development, it would be appropriate to take a comprehensive view of development and not restrict its impact on only one variable i.e., per capita income. In table 6.15, state-wise data of the proportion of urban to total population in 1981, estimates of per capita income for 1981-82, rate of daily status unemployment (1977-78) and percentage of population below the poverty line have been juxtaposed.

The analysis is based on cross-sectional data for 16 states of India. It is assumed that rates of unemployment and percentage of population below the poverty line are fairly stable variables and, therefore, they can be safely used to understand the impact of urbanization on them (Table 6.15). The hypotheses tested are:

- (I) Is urbanization associated with per capita income in a positive manner?
- (II) Does a higher degree of urbanization result in the lower degree of unemployment?
- (III) Does a higher degree of urbanization result in a reduction of the proportion of population below the poverty line?

The variables defined are:

α = percentage of urban population to total population

1 = Per capita income at current prices

2 = Rate of unemployment

3 = Percentage of population below poverty line.

The co-efficient of correlation between the proportion of urban to total population and per capita income was +0.78 which is significant. This indicates that the degree of urbanisation is positively associated with per capita income and is significant.(Table 6.16)

Correlation coefficient (r) between α and 1 = +0.78 significant at 5 per cent level, α and 2 = (-) 0.11 which shows the relationship between percentage of urban population and rate of unemployment is negative and weak α and 3 = (-) 0.42 which shows there is mild correlation between percentage of urban population and percentage of people below poverty line. However, correlation between the proportion of urban population and the rate of daily status unemployment was - 0.11 which was negative though its impact was weak. It implies that a higher degree of urbanisation did reduce the degree of unemployment to some extent by absorbing the surplus labour force released from rural areas in urban employment. The expected negative correlation between urbanisation and unemployment did not get support from an analysis of the empirical data.

Correlation between the proportion of urban population and percentage of population below the poverty line is -0.42. It indicates a negative but mild, correlation. Obviously, the pattern of urbanisation that has developed in India did not make a deep impact on reduction of poverty.

In conclusion, it may be mentioned that whereas urbanization and per capita income are positively correlated, there is near absence of a correlation

between urbanisation and unemployment and, urbanisation and reduction of population below the poverty line. Many factors may be responsible for the situation. Firstly, the neglect of slums in urban areas in our planning strategies may be perpetuating poverty. For instance, the slum survey revealed that in Calcutta, 33 per cent of the population was living in slums. Secondly, whereas the organised sectors are able to improve their income levels by collective bargaining, the unorganised sectors are ruthlessly exploited by the capitalists, the landlords, the contractors and other owners of the instruments of production. Thirdly, the increasing use of capital-intensive technologies in urban areas results in increase in unemployment. Consequently, the absorptive capacity of the economy continues to be low and this explains to some extent the fact that urbanisation did not make a definite dent on the problem of unemployment. Last, but not the least, the benefits of growth may be unequally shared by various sections of the society and the resulting concentration of income and wealth may lead to an increase in per capita income without either improving the economic condition of the poor or enlarging employment at higher wage levels. In other words, the country may be experiencing an enclave type development whose spread effects are very limited.

(b) Impact of Urbanisation on Birth Rate, Infant Mortality Rate and Natural Growth Rate

A study on relation between degree of urbanisation and birth rate, Infant Mortality Rate and Natural Growth Rate has been done to analysis the impact of urbanisation up on the above variable in Table 6.17 in the above study this analysis is also based on cross-sectional data for 16 states of India and all India Average. The hypotheses tested are:

- (I) Is Birth Rate affected by Urbanisation?
- (II) Does a higher degree of urbanization result in decrease in Infant Mortality rate?

(III) Does a Natural Growth Rate affect urbanization?

The variables defined are:

α = percentage of urban population to total population

1 = Birth Rate

2 = Infant Mortality Rate

3 = Literacy Rate

4 = Natural Growth rate.

The co-efficient of correlation between the proportion of urban to total population and Birth Rate was (-) 0.42 which is low. This indicates that the Birth Rate has negative relationship with degree of urbanisation. That is urbanisation causes a fall in Birth Rate. Correlation coefficient (r) between α and 1 is (-)0.42 , α and 2 = (-)0.38 which shows the relationship between percentage of urban population and Infant Mortality Rate is negative and weak i.e. when the percentage of population in urban area increases the Infant Mortality Rate decrease. Between variables α and 3 = (+)0.37 which shows increase in urban population causes an increase Literacy rate. When percentage of population in urban area increases the literacy rate also increases. The correlation coefficient between variables α and 4 = (-)0.36 which shows Natural growth rate and urbanisation has negative relationship and when percentage of population in urban area increases the natural growth rate decreases. All the figures are significant at 5% percent confidence level. (Table 6.18)

Further the relationship between urbanisation and human development index has also been measured to know the extent to which urbanisation influences the physical quality of human life. 15 major states are taken into consideration for this purpose (Table 6.19). It has been observed that there is a high positive correlation between these variables i.e. urbanisation influences positively the human development index. An increase in urban to total population increases the physical quality of human life. In urban areas the human

development index in more than that of rural areas. In 1981 the urban HDI was 0.442 while in rural it was 0.263 only showing an urban-rural disparity of 1.68. In 1991 the HDI in rural increased to 0.340 from 0.263 in 1981 while that of urban to 0.511 from 0.442 in 1981. In 1991, the urban-rural disparity decreased to 1.50 from that of 1.50 in 1981.

6.6 Components of Urban Population Growth.

The rising trend towards urbanization, as reflected in the larger rise in urban population, and concentration of the major proportion of urban population in larger cities, is a phenomenon caused by several factors. These may be studied under the following three heads: natural population increase migrations; and boundary changes.

(a) Natural increase:

One important factor is the natural increase in population. This is given by the number by which the birth-rate exceeds the death rate in urban areas. This is probably higher than the rural, and because of the health and medical facilities, the net survival rate is also higher. The birth-rate in urban areas in 1971 has been estimated at 30.1 (per thousand) with death-rate at 9.7 (per thousand). In 1991 the birth-rate declined to 24.3. the death-rate fell to 7.1. This has caused the growth rate to be high because of large difference between the two rates. The low level of death-rate due largely to such reasons as: greater medical and health services, good water supply and sanitation reducing the incidence of water-borne diseases etc. This natural factor must have added lot to the phenomenal population growth of urban areas at 46 per cent in 1971-81 and 36 percent in 1981-91 decade. This is much higher than the decadal growth of rural population at 19 percent and 20 per cent in the two respective decades.

(b) Migrations:

Of the total rise in urban population, while a major contributory factor is the natural growth, a part is also contributed by migrations from rural areas. Their number at the moment is not exactly known. But it can be guessed that it may be something to do with the welling of urban population. The rural to urban migrations have been caused by several factors in the past since independence. Industrial development has, for example, led to creation of many activities of manufacturing, trading etc. attracting rural people seeking jobs/higher incomes. After the Second World War many moved to the cities/ towns in search of work and jobs. Partition of the country in 1947 made many people, uprooted in rural areas, to settle in towns. Backwardness of villages in respect of living conditions (such as negligible arrangements for education, medicine, health, entertainment etc. as also insecurity associated with land disputes, caste conflicts etc.) is another factor pushing people out of villages. The availabilities of many opportunities for good education and living in urban areas etc. have also attracted rural people to urban areas.

When migrations are viewed at the disaggregated regional/state level, one can specify different factors operating in different areas. In the regions with the fastest urbanization, the following causes have been at work: heavy public investments in industry and mining, as for example in southern Bihar (Ranchi, Dhanbad, Bokaro), and in eastern Madhya Pradesh (Durgapur, Bhilai, Raipur); sustained large agricultural development, as for example in western U.P. In the comparatively richer states it is largely industrial development as, for instance, in Maharashtra and Gujarat, and largely agricultural development as in Punjab and Haryana that have been responsible for urbanization. All such causes are usually described as demand "pull factor" i.e., rural population migrating to urban areas in response to demand for labour. However, quite a significant part of urbanization has been caused by the "push factor" i.e., when rural population gets pushed out of villages because of bad economic conditions there. This is particularly true of the poor states wherein urban growth has been the fastest in

the 1971-81 decade. In these states there have been small increases in agricultural productivity. As a result, agricultural incomes have not been rising. And there is no land available for extensive cultivation. Hence rural population has been getting out of villages. This is supported by the fact that there is a considerable decline in the growth of rural population in these states. Thus both "pull factor" and "push factor" have operated in the recent phenomenon of urbanization.

(c) Boundary changes:

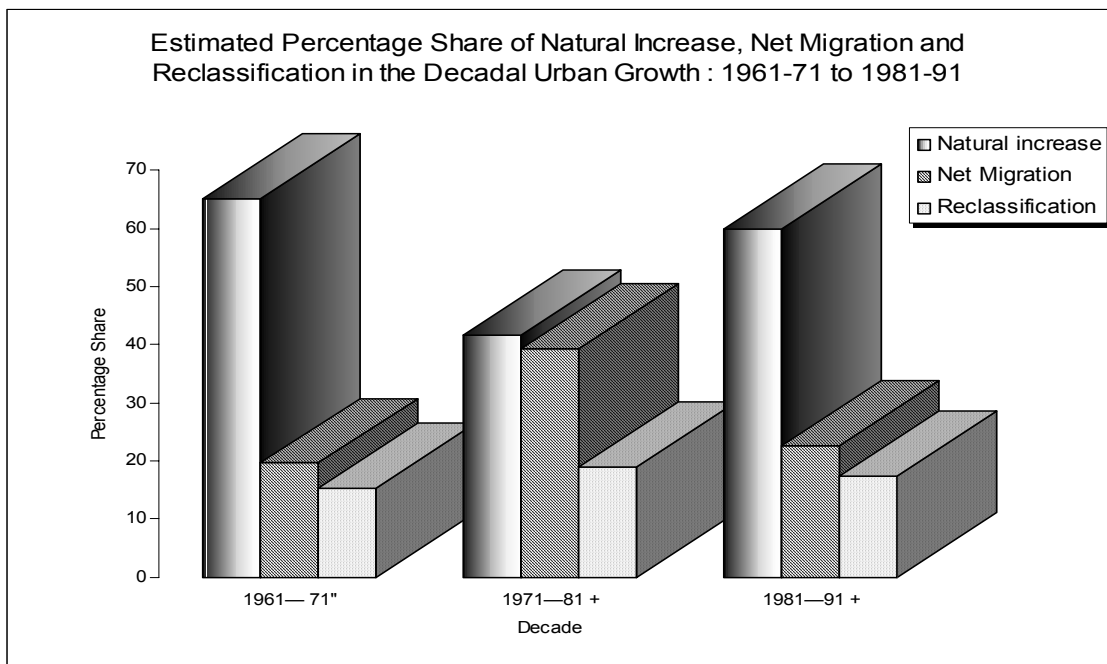
At times the boundaries of the towns have been extended. As cities expanded, the outlying rural areas have been included in the urban areas. It is not that these rural areas suddenly become urban areas. They may even continue to retain most of the characteristics of villages. But their inclusion in the expanding cities put them under the areas classified as towns. Of course at the time of reclassification these areas held rural population. But they are counted as urban population by virtue of being classified as urban areas. In future these are bound to acquire the features of urban life. However, rural population falling in these areas swell the number of urban population.

The urban population of India has increased from 25.8 million in 1901 to 62.4 million in 1951 and 217.2 million in 1991 thereby showing a more than eight-time multiplication in it. The annual exponential growth rates for the last 9 decades further indicate to considerable amount of variations over the decades. These variations in growth rates are due to varying amount of contributions of the 3 major components of urban population growth namely, natural increase i.e., births minus deaths, net migration, i.e., in-migration to urban areas minus out-migration from urban areas and areal reclassification i.e., addition of new towns minus declassification of existing towns. Besides, the extension of boundaries of towns also tends to influence the growth. However, it is of a small magnitude in most of the cases.

The relative shares of each of these components during the last 3 decades since 1961 have been estimated for India as a whole and for its major States. For this purpose, the rates of natural increase estimated from the Sample Registration

Scheme (SRS) data on Births and Deaths have been used for the last two decades of 1971-81 and 1981-91. The same were not available for the 1961-71 decade as the SRS was introduced on a full scale in 1969 and the estimates available from the Civil Registration System were hardly reliable. In view of this fact, the estimate of volume of intercensal net migration is obtained by using the data on duration of residence of the persons at the place of enumeration cross classified by place of last residence in 1971.

Figure 6.3



The estimated population growth attributable to natural increase, net (internal) migration and areal reclassification along with the percentage share of these three factors are presented in Table 6.20.

The figures given in this Table clearly indicate a significant rise in the contribution of natural increase towards urban population growth in the course of last two decades after an abrupt fall in it earlier. In other words, it indicates a significant reduction in the contribution of net migration towards urban population growth during 1981-91 as compared to that of the preceding decade. The population accounted by the reclassification, on the other hand, doubled in the first two decades, i.e., from 4.59 million to 9.32 million and remained almost the same, i.e., 9.82 million during 1981-91. Its proportionate share in urban population growth as may also be seen from Figure 6.3, increased very little from 15.2 to 18.8 percent during the earlier two decades and declined by approximately 2 percent points during 1981-91.

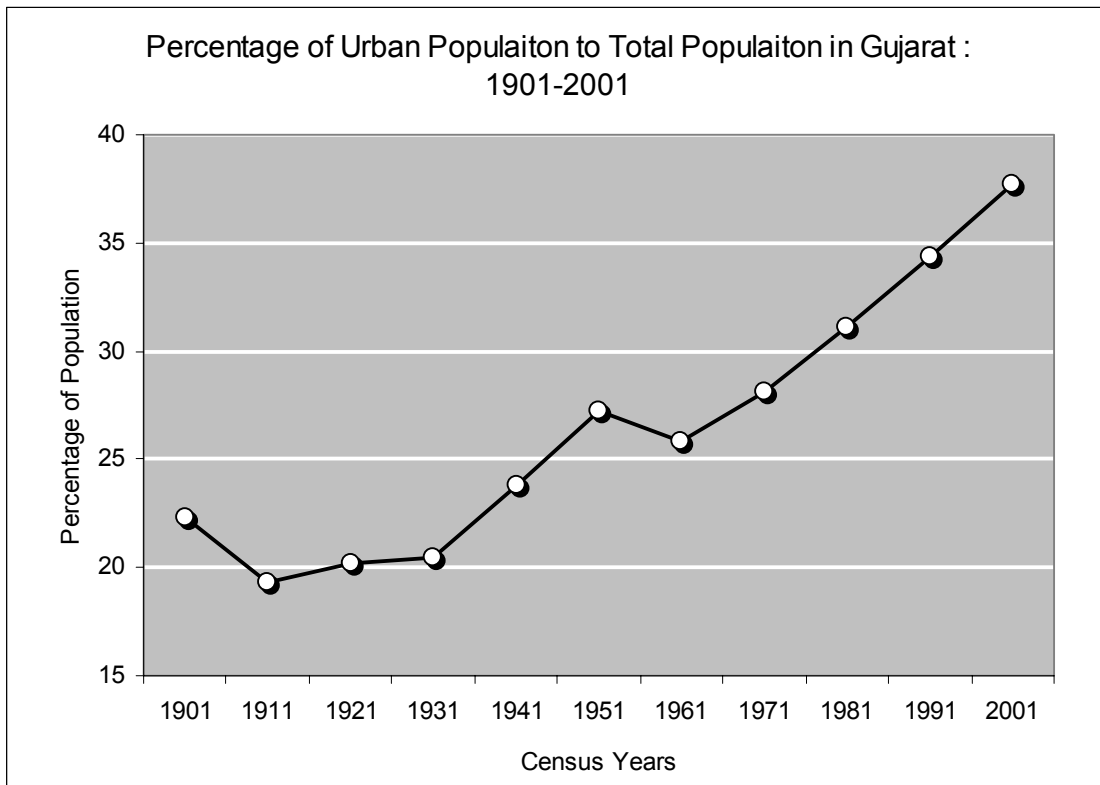
As regards the variations in the percentage share of these three factors in the decadal urban population growth among the major States, a perusal of Table 6.21 brings out that the contribution of natural increase appears to have increased considerably in the last decade after a decline in it during the earlier decade. Noteworthy States among these are Bihar, Karnataka, Punjab and Tamil Nadu where, 75 percent and more of the urban population growth during the last decade appears to have been accounted by this factor alone. In Tamil Nadu, this proportion is even more than nine-tenth. Further, the contribution of net migration is found to be on the negative side in Bihar and Tamil Nadu the proportion of net migration as worked out by separating out the proportion attributable to the natural increase and areal reclassification from the urban population growth comes to (—) 11 percent in Bihar and in case of Tamil Nadu, it is slightly more than (—) 2 percent thereby showing a large volume of out-migration than the in-migration to the urban areas of these States in the last decade. Apart from these, in Kerala also, its share is quite insignificant i.e., little more than 1 percent only. While the negative role of net migration towards the urban population growth in Bihar and Tamil Nadu shows that the growth potential of urban areas in these States have diminished considerably, probably due to stagnation in urban economy in these States. In Kerala, a relatively insignificant share of this factor

could partly be explained by considering the increasing pace of out-migration of educated people from rural as well as urban areas to the other States within India and to other countries particularly to the Gulf countries. Out of the remaining major States, Maharashtra and West Bengal have shown a considerably large share (around 30 percent) of the net migration. This large share of net migration towards the urban population growth in these two States is indicative of the fact that Bombay and Calcutta are still attracting a large number of migrants who are getting absorbed if not in these megacities then in the cities and towns situated in the respective city regions. Lastly, the contribution of the third factor namely, areal reclassification towards the state's urban population growth also shows wide fluctuations over the decades. For example, while in Andhra Pradesh, Karnataka and Madhya Pradesh, it increased continuously over the decades, Gujarat and Orissa showed an opposite trend. Moreover, its contribution towards the state's population growth in the last decade is found to be most significant (more than two-third) in Kerala only. Apart from this, a few other states namely, Bihar, Madhya Pradesh and West Bengal also have shown a relatively large share (i.e., between 20 and 30 percent) of this factor in the urban population growth during the last decade. In Punjab, on the other hand, there appears to be a negative role of this factor in the State's urban population growth. This is because, as explained earlier, at the time of last census, number and population of the declassified towns has been significantly higher than those added as the new towns.

6.7 Urban Population Growth in Gujarat

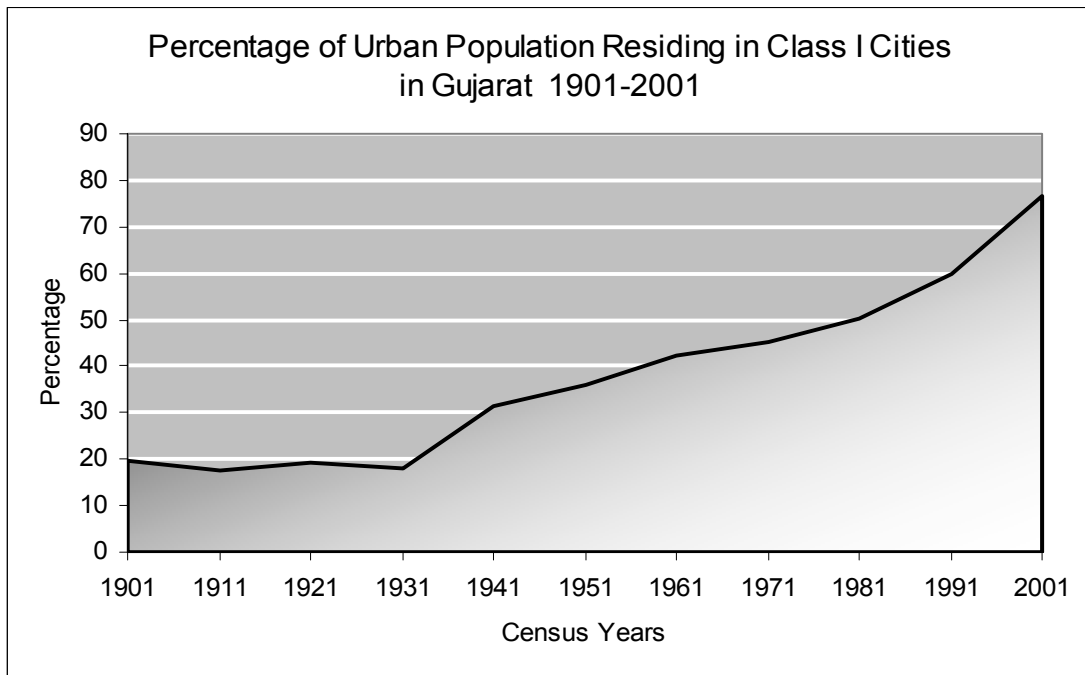
In the Table 6.22 per cent of urban population to total population is given from 1901 to 2001. It can be seen from the table that after 1961, per cent of urban population continuously increased. It can be observed that the decades 1971- 1981, 1981-1991 and 1991-2001 recorded the highest increase in per cent of urban population.

Figure 6.4



However, in Gujarat percent of urban population have been increasing. It is necessary to state that some of these changes might be because of the change in the definition of urban term on which rural-urban classification of population is made. In spite of this, we are in a position to state that in Gujarat, number of urban population has been increasing. In table 6.23 the number of urban population as well as percentage of urban population to total population residing in Class-I cities of Gujarat is given. It can be seen that during the decade 1981-91 there was a sharp increase in the number of class-I towns from 11 to 21 increasing the percentage to total urban population to 60 percent in 1991 from 50 percent in 1981. In the subsequent decade even though the number of towns increased to 6 more excluding the earthquake affected areas, the percent of total urban population has shown an increase of 16 percent in 2001 from 60 percent in 1991 to 77 percent in 2001.

Figure 6.5



(a) Urban population in Districts

In Gujarat, per cent of urban population to total population differs district to district and census to census. In Table 6.24 district-wise numbers of cities for the year 1901 to 2001 are given. It shows growth in urbanisation.

In Jamnagar, Rajkot, Surendrenagar, Bhavnagar, Amreli, Junagadh, Banaskantha, Sabarkantha and Ahmedabad district, numbers of cities remained unchanged during 1901, 1911 and 1921. While in other districts, like Kutchchh, Panchmahal and Vadodara numbers of cities increased and in rest of the Panchmahal and Vadodara numbers of cities increased and in rest of the district the same was declined. This shown that in districts of Gujarat there were uneven change in numbers of cities in different districts during 1901, 1911 and 1921. But between 1931 and 1951, in Jamnagar, Rajkot, Surendranagar, Amreli, Junagadh, Kutchchh, Banaskantha, Sabarkantha, Mahesana, Ahmedabad and Vadodara district, numbers of cities increased while in case of Kheda, Vadodara and Surat numbers cities had been declined during this period. During 1961 to

1981, in district like Jamnagar, Bhavnagar, Junagadh, Kutchchh, Sabarkantha, Ahmedabad, Kheda, Panchmahal, Vadodara, Bharuch, Surat and Valsad district numbers of cities increased. In case of Rajkot, Amreli and Mahesana, numbers of cities had been declined. In rest of the district uneven pattern was observed.

Above discussion is limited to numbers of cities in different district at a different census year. But it does not reflect urban population. In Table 6.25, district-wise and census-wise total urban population is given from 1901 to 2001. But figure given in the table are not comparable hence, we have calculated per cent of urban population to total population in each district. District-wise percentage of urban population during 1901 to 2001 is given in the Table 6.26.

It can be seen from the table that, in 1901 , the highest per cent of urban population was found in Ahmedabad district while the lowest in Banaskantha. But in 1911, Ahmedabad district was on the top. Banaskantha was replaced by Sabarkantha. In 1921, the per cent of urban population was found the lowest in Sabarkantha district. The same trend was found in each census year. It is clear from the table that in Ahmedabad district per cent of urban population was found the highest in all the census years. In the year 2001, Ahmedabad held its top position as the district having highest number of urban population. 80.20 percent population of this district is in urban areas. With the addition of new districts, the place of Sabar kantha (10.80%) became second among the lowest urban population category and Dohad with 9.60% became the district having lowest urban population. In Dangs district cent percent population resides in rural areas only.

In above paragraphs, we have discussed trends of urban population growth in districts of Gujarat. This discussion is not sufficient to understand factors responsible for urbanisation. Hence, we have developed a model which can establish relationship between different factors and urbanisation.

6.8 Urbanisation Model

There are several factors which determine urbanisation. Per cent increase in urban population, Per cent of urban population in total population, Population growth rate, Per cent of total workers to total population and Per cent of non-agricultural worker to total population. Among the districts of Gujarat, Narmada has highest work participation rate with 50.36 per cent of its total population recorded as workers. Ahmedabad ranks lowest with 34.51 per cent working population in the district. There are 15 districts which have higher work participation rate than the State average of 42.10 per cent of working population. Nine districts have WPR less than the State Work participation rate. Table 6.27 presents WPR of the districts along with the State average and rank and 1991 comparative figures.

Table 6.27 presents district-wise urban WPR along with 1991 data and rank. In 2001, working population in urban areas is 33.1 per cent of the total urban population which was 30.2 per cent in 1991 in urban areas. There is only +2.9 points gain during the decade. As regards urban work participation in the districts, Surat has the highest urban WPR at 38.42 per cent. The lowest urban WPR has been observed 29.05 per cent in Banas Kantha. The Dangs district is the entirely rural district. Table 6.28 represents percentage of agricultural workers to total workers and percentage of non-agricultural workers to total workers during the year 2001. Percentage of agricultural workers was 24.49 while the percentage of non-agricultural workers remain 75.51 in Gujarat. The maximum agricultural workers was reported in the district of Narmada and the minimum in Ahmedabad and naturally the maximum non-agricultural workers in Narmada and the minimum in Ahmedabad. In Table 6.29, data regarding percentage increase in urban population and corresponding data related to percentage of urban population, percentage decadal growth of population, percentage workers to total population and percentage non-agricultural workers to total population is given.

In Table 6.30, the relationship exists in between all the factors are shown.

The multiple regression model that is developed from the above correlation analysis is given under:

$$Y_i = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4$$

Where,

Y_i = Per cent increase in urban population during 1991 -2001 in ith district

X_1 = Per cent of urban population in total population in 2001

X_2 = Population growth rate during 1991-2001

X_3 = Per cent of total workers to total population in 2001

X_4 = Per cent of non-agricultural worker to total population in 2001

i = Indicates 1 to 19 districts of the state.

The finding of above equation is given in Table 6.31 explains the relationship of urbanisation with other variables.

It can be observed from the table that there is moderate positive correlation between percentage increase in urban population during the decade (1991-2001) and percentage of urban population in total population (2001). Percentage decadal growth of population and percentage of non-agricultural workers in total work force are positively related to urbanisation while the percentage of total working population in total population has shown a moderate negative correlation.

6.9 Social System Responses to Population Change

We can extend some of the ideas raised in the discussions of the dyad and triad, families, organizations, and the marriage market and other recruitment systems. In each of these examples we posited some ongoing social system which undergoes change in the wake of certain population changes. A full society is itself an ongoing social system, and as such it is also typically affected by population changes. Two major types of population changes are particularly relevant: turnover of population, which takes place by entrances and departures through migration and births and deaths; and growth of the population, which can also occur by increments or decrements deriving both from births and deaths and from migration. Population turnover disorganizes ongoing social systems, because the population replacements never exactly duplicate the departures. Population growth expands some or all of the units in the social system, and it also disorganizes the system because it typically occurs disproportionately to the existing composition.

6.10 Population Processes and Social Disorganization

Population processes may be direct or indirect causes of social disorganization. Both the changing size of population elements and the changing absolute or relative numerical relationships between them may render a group, an institution, or a social system unable to function or pursue its goals. Political institutions, decision making bodies, or political elites may be so affected by population growth or changing composition: for instance, the town meeting becomes unwieldy when communities become large. Again, legislative bodies, community councils and assemblies have difficulty operating with very heterogeneous constituencies. They must instead form coalitions, political machines, and political exchange and trade-off routines. These, in turn, will themselves become disorganized as population composition changes, and so they must periodically be revamped. Under conditions of population growth and changing composition, political elites must co-opt new elements or give way to competitors.

Schools, churches, voluntary organizations, police forces, and industry, and recreational institutions are other examples of social systems disorganized by population growth, turnover, or changing composition. The changing composition of a population, by age, race, ethnicity, religion, social class, or educational achievement, and changing size too, may well cause some institutionalized set of relationships to become disorganized. That is, they become unable to continue in previous manner or direction. This forces change in the content of roles and in the nature of social relationships. Primary schools which previously served pupils of some specific strata, or religious, ethnic; racial origins must introduce changes in curricula, in teaching routines and sometimes in personnel to meet the needs of new children of different origins and different socialization histories. Such a disorganization and reorganization process can extend to entire school systems and outside ghetto areas. And it can extend to other educational institutions, like colleges or universities, as well.

No industry or economy can integrate young persons with university degrees into the kinds of occupations and production arrangements in which persons with only grade-school education have previously been functioning without making major changes. Factories are also disorganized by the need to integrate the city-born-and bred into occupations previously held by farm-born-and-bred workers. The economy, and all of its sectors, must innovate and introduce technological and organizational changes, just as other social systems must. Norman Ryder (1965) summarizes the process. "Social change occurs to the extent that successive cohorts do something other than merely repeat the pattern of behaviour of their predecessors."

Major changes that have occurred in India's urban scene in the post-Independence period are:

1. Influx of refugees and their settlements, prima in urban areas of northern India;

2. Building of new administrative cities, such as Chandigarh, Bhubaneshwar and Gandhinagar;
3. Construction of new industrial cities and townships near major cities;
4. Rapid growth of metros;
5. Stagnation and, in some cases, decline of small towns;
6. Massive increase in squatters and the proliferation of slums in the metro cities and the emergence of the rural-urban fringe; and
7. Introduction of city planning and a general improvement in the civic amenities.

Even among the states and regions there are wide variations in the level of urbanization due to differences in economic and social development. For instance in southern and western regions, rural-to-urban migration is combined with high economic growth—with continued increase in the urbanization process throughout the 1980s and the 1990s. Whereas during the same period, cities in northern India experienced an alternate cycle of growth and decline in the form of population concentration, followed by geographic expansion, and sub-urbanization. Parallel to this trend we notice a faster growth of smaller and medium cities with a shift in the spread of population from the largest to the smaller cities. Among the states, Maharashtra is the most urbanized with 46 per cent of its population living in urban areas, followed by Gujarat (44 per cent) and Tamil Nadu (43 per cent). The interstate variation in the annual growth of urban population and urban-rural growth differential (URGD) is more revealing in most states except in Kerala, Gujarat and Maharashtra, where the URGD is lower in 1981-91 than in 1971-81. We also note a conspicuous deceleration in urban growth during 1981-91 in the states of Bihar, Orissa and Uttar Pradesh.

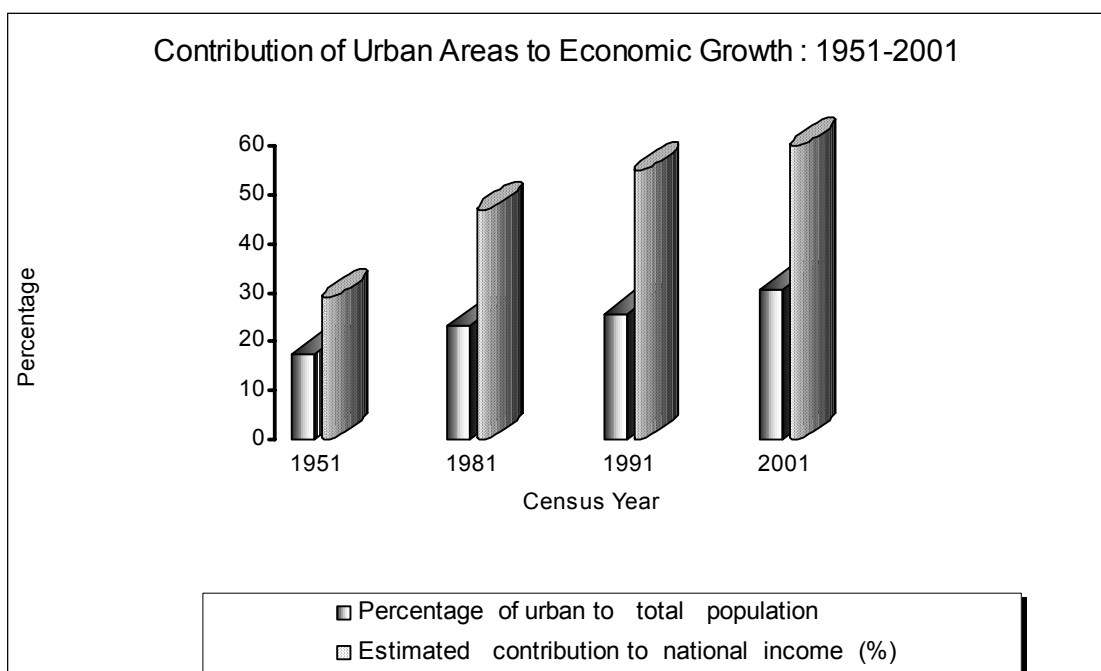
6.11 Consequences of Urbanisation

The rapid urbanization has its healthy aspects as also unhealthy ones. The two sides may be mentioned to form an opinion on the subject as also to formulate an appropriate urban policy.

(a) Favourable Aspects – Positive affects of urbanisation.

(i) Increased Economic Growth

Figure 6.6



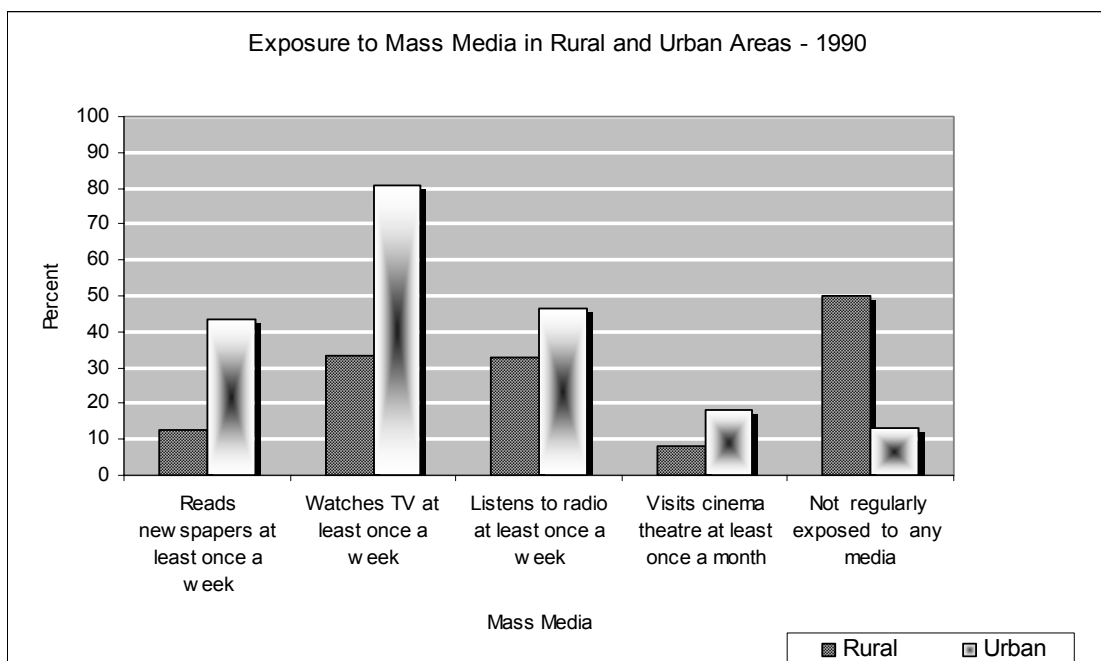
The process of urbanization is often accompanied by major economic and structural changes. Urban areas reflect the general orientation of the region vis-a-vis trade, commerce, financial services, transportation, etc., generating major employment avenues in urban areas. Urbanization also creates new job opportunities, brings in new talent from the countryside and provides improved services. Thus, it is the concentration of people that provides unique opportunities for economies of scale and resource conservation. Table 6.29 illustrates the benefits of urban development to the economic growth. There is a high positive correlation between the percentage of urban population to total population and the contribution of urban areas to the national income. In 1951

the percentage of urban population was 17.3 and its contribution to national income was only 29 percent. It increased to 47 percent in 1981 for 23.3 percent urban population and to 55 percent in 1991 and 60 per cent in 2001 for an urban percentage population of 25.7 and 30.5 percent respectively (Table 6.32).

(ii) Exposure to Mass Media

An important factor, which contributes to the increase in a person's knowledge, is the exposure to mass media. According to Table 6.33, more than half of the total population in rural areas in 1990 was not exposed to any type of media. Of course, with the spread of Satellite TV, things may have improved, but the difference is likely to have persisted. Research also shows that such type of media exposure results in greater contribution towards productivity, leading to an overall improvement of the economic status and a better quality of life (Table 6.33).

Figure 6.7



(iii) Industrial development and provision for basic amenities

The urbanization associated with development is something normal as has been the experience of the present developed countries. In the process of development, many industrial cities came into existence in these countries. Alongside manufactures, service sectors also developed. As a result, commercial, financial other activities like repair, maintenance etc., got expanded, with some cities specializing in them. The same can be said about the industrial to that have come into existence in India. These produce and service manufactures which symbolize the developing character of the economy. This has raised the proportion of the value of manufacturing and service sectors in the national product of the country, although the increase has small. The availability of basic amenities like electricity, safe drinking water, toilet facilities to the households in India are clearly indicate the demand-supply gap for infrastructure and resource gap for urban and rural population

(iv) Expanded employment opportunities

Another desirable aspect is related to the new and expanded employment opportunities that are created in urban areas. These benefit urban population, as also the migrants from rural areas. The benefits to the rural labour from the agriculturally advanced state/regions of the country have been particularly marked. With the increase in the demand for labour in the urban areas for non-food consumer industries producing radios, TVs, cycles etc. as also for capital goods industries producing machines, tools, equipment etc., and service industries, there has been a drawing of labour from agriculture which has surplus labour. This raised the product per head for the remaining labour in agriculture. In these rural areas modernization of agriculture (i.e., mechanization, use of chemical fertilizers etc.) has at the same time freed labour for urban areas where the industrial activities have been located. This is a familiar scenario of "industrialization—urbanization". This has been observed all over the world since the Industrial Revolution. This consequence is inevitable as a universal historical fact. It is unavoidable too, as also desirable. Besides employment in the modern

sectors, quite many in urban areas get work in the small establishments, largely producing traditional goods and goods/services for the large industries. Domestic service in the wealthy as also in the middle-class families is also a source of considerable employment, particularly for women.

(v) Gains of external economies of scale

There is also gain arising out of the external economies that cities give rise to. Growth in the city-size to some point, for example, makes it possible to reap the economies of scale in the provision of various services. It is cheaper, for instance, to provide infrastructure like transport, communication etc. It is also possible to meet the needs for education, water, drainage, medical facilities etc., at lower costs. Many a cultural activities, as also entertainment etc., can be organized without much expenditure of resources for large many people.

(vi) Change in attitude of the people

A very important result of urbanization pertains to changes in attitudes that accompany it. This process is furthered also because of the large reduction in the costs of organizing and disseminating information. The many contacts among people from different backgrounds, as also the variety of jobs and existence of cultural activities, tend to promote modernization of behaviour and motivation. The changed attitudes, which replace the traditional ones, further promote the development of economic activities in urban areas. Together with the other facilities mentioned above, it is rightly said that urbanization itself becomes a powerful factor in further urbanization.

(b) Unfavourable Aspects – Burden of urbanisation

Even though the process of urbanisation has many advantages, it is not out of limitations which are to be seriously taken in to account. Urbanization is an inevitable process. Hence, it is important to understand the relationship between economic change and urban growth and to examine the impact of urbanization on infrastructure, environment, human welfare, etc.

(i) The problem of congestion

While there are a number of benefits associated with urbanization, there are some serious problems that it gives rise to. One problem is that of congestion. It exhibit to itself in various forms. The traffic jams and, therefore, slowing down of movements, result from too many automobiles, in particular privately owned because of high income elasticity of demand for them. While the number of vehicles increases, there is little that the governments with limited resources can do in respect of widening streets/ roads, installation of electronic devices, enforcement of parking regulations etc. Other causes of congestion are heavy concentration of population due to the centralization of employment in urban areas, the creation of dense business areas etc. requiring more transportation to these places as also within these areas.

(ii) Excess population in urban area and subsequent emergence of slums

Another unhealthy aspect of urbanization is the excess of population which can find no jobs, houses, education, proper medical facilities etc. Since population is much too much for urban areas, it has led to the emergence of large unemployment, slums, restlessness in educational institutions, violence etc. The overcrowding has led to many evils and vices, diseases and degradation, crime and cruelties etc. In a word, the quality of human life deteriorates.

(iii) Large Scale rural to urban migration

Apart from the serious problems that congestion and overcrowding create in urban areas, rural areas also suffer from migrations. In quite many areas rural people with strong physique and good brains leave for urban areas. These cause loss of productivity in the villages. Those who get jobs may be able to earn more in cities, but the net earning will be less because of the loss of production in rural areas. Quite many of them do not get work in urban areas, thereby causing only loss. The people left behind in villages are mostly women, old people and children. This causes many family and social problems. The village economy, already much backward and uncared for, is further neglected by the people and the authorities. In sum, urbanization is beset with many undesirable consequences.

(iv) The problem of infrastructure

The positive role of urbanization has often been overshadowed by the deterioration in the physical environment and quality of life caused by the widening gap between the demand and supply of essential services and infrastructure. Water, transport, housing, electricity, health and sanitation, and education are some of the areas of concern. Infrastructure to meet these requirements calls for huge investments. Imperfections in the land use and housing markets have led to significant increases in land prices virtually leaving the urban poor with no alternative except to seek informal solutions to their housing problems through the creation of slums. It is estimated that in India today about one-third of urban dwellers live in slums. Moreover, the rent control act makes it virtually impossible to get a tenant to vacate the dwelling even when the owner needs it himself. As a consequence owners keep apartments locked up rather than renting them out and tenants do the same instead of vacating. Thus in Mumbai alone, it is estimated that 400,000 dwelling units are kept locked up. If they were to come into the market, they could accommodate a large fraction of people who live in slums today and would also give more space to other slum dwellings. Repeal of land ceiling and tenancy legislation can improve the

condition of the poor. However, one need not wait till then to provide other services to slum dwellers.

(v) The problem of energy

The study of energy use in urban areas is of particular importance in view of the impact of urbanization on the utilization of commercial energy resources like coal and oil products. The process of urbanization leads to the substitution of commercial energy for non-commercial energy in the industry, commercial and domestic sectors (the share of consumption of commercial energy carriers by urban areas is about 80 per cent whereas that of urban population is only 32 per cent). Thus, one can relate urban development with increased commercial energy use. Urbanites travel via energy-intensive transportation modes. Building infrastructure in urban areas to support the high population density requires significant quantity of energy. Also, in an urban environment land-use pattern, spatial structures, industrial location, etc., affect the levels of energy consumption. Often, availability and pattern of utilization of energy sources influence urban society. The shift in exploiting various energy sources has resulted in the development of urban and industrial centres leading to social change. If energy can be considered as a permitting factor in the process of urbanization, there is little doubt that it has exerted profound influence on the location and direction of urban development. Also, the changing lifestyle of people contributes significantly to differences in energy-utilization levels. In the residential sector, fuel-wood or charcoal stoves have been replaced with kerosene stoves. Air conditioners are being used in place of electric fans and fuel-wood or charcoal water heaters have been replaced by electric geysers. Scooters and cars have replaced bicycles. Other items that have penetrated include television sets, refrigerators, microwave ovens, etc. Liquefied Petroleum Gas (LPG) and electricity are significantly high in urban areas. Also, urban households utilize larger quantities of superior energy than rural households. Hence, it is important to assess this problem of relative deprivation, both

quantitative and qualitative going beyond final to useful energy. Also, since urban areas consume significant quantities of petroleum products, two-thirds of which are imported, the issue of energy security should be taken into account while considering urban energy policies.

The increase in urbanization levels will have a significant impact on energy markets as well as on the global environment. Since energy production and use is the single most important source of greenhouse gas (GHG) emissions, the pattern of energy utilization and its environmental impact will strongly influence the outlook towards the environment in the future. The environmental implications are significantly dependent on the type of energy carrier chosen and hence it is important to restrict the use of commercial energy sources through efficient utilization.

(vi) The problem of Transport

The high volumes, different speeds of various modes and the pathetic condition of roads further augment the problem of urban transport in India. The infrastructure is just not able to cater to the exponential growth of the population leading to congested and longer journeys on the road and in trains. The severe nature of the problem is evident in Kolkata trams, Delhi buses, two-wheeler travel in Bangalore and Mumbai local trains. The inadequacy of public transport is due to insufficient investment—as the highly subsidized public transport does not generate adequate surpluses. The result is that the users pay in terms of congestion, delays and inconvenience more than they save by low fares. Only when they can pay, the quality of service can be maintained. Another problem with urban mass transport is that the design of infrastructure dates long back and adequate provisions were not made at the time for the explosive growth in commuter traffic that has taken place. The role of urban transport is of high importance in metropolises since a large number of commuters travel from

residential areas (driven to the suburban areas) to the business district in the centre of the city.

(vii) The problem of Pollution

Increasing traffic on the roads, railways and at the airports is a major cause of noise pollution in urban areas. Noise pollution is also caused by industrial and commercial activities and by a number of public activities such as processions, festivals, political meetings, etc.

The rapid increase in private motorized transport, coupled with poor road infrastructure has led to congestion and severe air pollution. The concentration of air pollutants exceeded the World Health Organization (WHO) guidelines in many urban centres in India. Long-term exposure to soot, dust, sulphur dioxide and small particles in the air causes a wide range of chronic respiratory diseases and exacerbates heart disease another conditions. Heavy reliance on oil, particularly for transport, contributes to pollution-related health problems in large cities. In India, the death rate due to cancer increased by 3 per cent and that of lung cancer by 9 percent since 1990 (World Resource Institute 1997).

In India 50 per cent of the total surface water is considered polluted through industrial effluents and untreated sewage. Industrial pollution is linked with the impressive drive towards industrialization, mainly located in towns and cities. Unfortunately, till recently, industrial locations were never considered on environmental grounds, which led to many disastrous events within cities. The case of the Bhopal disaster in 1984, where the explosion in the Union Carbide factory and the emission of toxin gases resulted in 4000 deaths and injured 2,000,000 people—illustrates the impact of location of industry on human lives. Most of the industries cause many chronic disorders threatening human sustenance in the long run. In addition to vehicular emission, industrial emissions contribute significantly to air pollution.

(viii) The problem of Water

Water is one of the most important human needs. In India, more than 15 per cent of the urban population lives without proper water facilities. The per capita water consumption in urban India varies between 40 and 300 litres per day. The thirst of urbanites for water is not only depleting the sources but also degrading the quality of existing sources by means of pollution. The poor urban dwellers are the most affected by the deteriorating quality and availability of supply which cause many water-borne diseases. Water supply by state agencies, -which has been largely subsidized, is becoming an unsustainable basic service due to lack of proper pricing policies and cost recovery. Even the aspects of water conservation and reuse or recycling are not being encouraged. Some individuals and agencies have recently focussed on rainwater harvesting technology as a means to solve the problem of water scarcity.

(ix) The problem of Sewerage

Sewerage has become a very important part of modern urban society. In the absence of an adequate sewerage system cities often become breeding grounds for various kinds of pests and insects. According to recent estimates, one-third of the urban population still lacks toilet facilities, while less than 50 per cent of the waste water is collected and even less is treated. The beaches of Mumbai which were once famous are now choked with solid waste, and malodorous waves carry raw sewage. In addition to health problems, inadequate sewage disposal has led to severe environmental degradation, with waste-water discharges along the coast having created areas where water quality is critically impaired. Dissolved oxygen levels, an indicator of organic pollution in water, are perilously low along the most polluted stretches of the coast in Malad and Mahim, and moderately depleted along the entire coastline. The Ganga Action Plan that was launched in 1985 was perhaps the first comprehensive plan of action to

address, in an integrated manner, the conveyance and treatment of sewage, resource recovery through methane gas, fish farming, irrigation, sustaining aquatic diversity, and river quality monitoring management. But as recent studies show even this plan has not been a success.

(x) The problem of Solid Waste

Solid waste, produced by households, commerce, industry, construction, hospitals, animal husbandry, etc. is threatening urban life since most of it has management and disposal-related problems. Uncontrolled dumping of wastes on the outskirts of towns and cities has created overflowing landfills, which are not only impossible to reclaim because of the haphazard manner of dumping but also have serious environmental implications in terms of groundwater pollution and contribution to air pollution (where waste is burnt). Burning of waste leads to air pollution in terms of increased Total Suspended Particles (TSP) and particulate Matter (PM) emissions, which is at times, equivalent to vehicular emissions. In the Indian context, wastes of different qualities from different activities often get mixed up with the urban/municipal waste stream. Some of these wastes have a very high percentage of organic matter and thus a high potential for energy recovery. It would, therefore, be desirable that such wastes are collected and transported directly to energy recovery facilities and are not mixed with other waste streams which have a low energy recovery potential.

(xi) The problem of Housing

Housing is a major problem in most urban centres in India. By 1997 the total housing shortage in the country was estimated to be 13.66 million units, out of which 7.57 million units would be in the urban areas. More than 90 per cent of this shortage is for the poor and the low-income category. Mumbai, the commercial capital of India, is one of India's wealthiest cities in terms of human and financial capital. However, almost half of the city's 12 million residents are

either slum dwellers or homeless (occupying 6 per cent of the city's land)— living in cramped squatter areas with little or no access to sewage and sanitation facilities. About 60 per cent of chawls and huts (informal shanties) are one-room units. On an average most of the houses in Mumbai are small in size (Tiwari;1997;). The rapid increase in the population in cities has resulted in the growth of what are referred to as slums and squatter settlements where the living environment is pathetic, In India, around 20 to 25 per cent of the urban households in the country live in slums, squalor set-dements, and refugee colonies due to non-availability of affordable habitat in formal settlements.

(xii) The problem of poverty

While people migrate to urban areas in search of a better life and to escape poverty, the poor quality of urban infrastructure and housing forces them into shanties. The hope for an escape from poverty does not materialize. This is reflected in poverty statistics. In 1987-88 for the first time the percentage of urban poor (40.1 per cent) surpassed that of the rural poor (39.3 per cent) in the country. After taking into consideration the estimates prepared by the Lakdawala committee, the Planning Commission estimated the population below the poverty line for 1993-94 in urban areas at 76.3 million (constituting 32.4 per cent of the urban population) and 244.0 million in rural areas (37.2 per cent of the rural population). The geographical distribution of poverty is highly uneven. In the states of Bihar, Uttar Pradesh and Andhra Pradesh around 30 per cent of the urban population lives below the poverty line as compared to around 3 to 7 per cent in Himachal Pradesh and Punjab.

It is thus obvious that urbanization is not an unmixed blessing. It is no doubt an essential part of development. But, beyond a certain point, it is, in fact, a highly unhealthy phenomenon which negates the very progress itself.

6.12 Sustainable Urban Systems

Urbanization is a prerequisite to national economic growth since it supports the economies of production and consumption which are necessary to achieve the transformation to a modern economy. But when cities grow too large an excessive demand for land and housing, inflated land-and-property prices, and a residual housing sector associated among other things, with high health-and-safety costs, insecure tenure and environmental degradation will arise. Massive urbanization is also a problem because the rapid and uncontrolled growth generates a series of negative territorial and social effects like the costs of supply of resources, changing land-use pattern, traffic congestion, pollution and ill-health in modern exploding cities. Unfortunately, urban planners are yet to respond to the call for urban renewal and restructuring. Socio-economic policy decision makers do not seem to have been able to comprehend the long-term implications of urbanization. Funds are generously made available for mega city projects in India. This prohibits investment in rural areas leading to an unproductive rural economy and relative rural poverty. Planners consider these problems to be really serious. It is not surprising, therefore, that in the name of economic rationality all urban areas are being turned into large untidy regions which are difficult to manage and control. They are deprived of energy supplies, constrained by mass transportation problems, choked by air pollution and troubled by religious and ethnic strife. And yet, the influx to urban centres continues unabated and the urban population is expected to double by the end of this decade! Why? The answer is obvious. It is uneconomic to modernize rural areas. As a result, an important conflict in developing countries today is not between capital and labour, but between rural and urban regions. The rural areas contain most of the resources but the urban areas contain power. So the urban classes have been able to grow at the cost of their rural counterparts. However, in doing so, they have made the development process unfair. The view is gaining ground that cities with a large number of inhabitants may not be sustainable in the long run and it is important to revisit urban planning strategies.

In the coming years, population growth as well as economic prosperity will increase resource utilization putting a heavy burden on housing, industry and service sectors. To achieve urban sustainability, the factors that could be considered most important are equity among various strata of society and efficiency of resource utilization. For a long-term sustainable urban development the government should plan a two-pronged strategy viz., immediate measures to make the existing congested mega cities sustainable and long-term strategies to reduce the burden on urban areas. For this, planners need to prepare programmes for economic revitalization and improvement of the quality of life of the urban population across the country. The success of programmes in shaping the future of our cities and particularly the quality of life of the poor and under-privileged, depend on the kinds of policies we pursue. The problems can be resolved by the creation of new institutional arrangements of urban governance through collective planning and participation of state as well as central governments and non-governmental organizations (NGOs), public, and a panel of experts—there is a need to upgrade such sectors as energy, infrastructure, communications, etc. The involvement of the private sector as well as local user groups is essential to solve many of the problems. When the quality of urban life is improved, there will be greater pressure of rural-urban migration. For a long-term strategy, the planners should take initiatives to retain the rural population in rural areas so that rural migration to urban areas is reduced. This can be achieved through rural industrialization, increasing rural employment through agro-based industries, food-processing industries, etc. There is also a need to think in terms of integrated urban-rural policies which are required for sustainable development. Implementation of these measures raises a number of methodological and policy issues. It also requires the scrutiny and assessment of several components involved. It is important to critically examine the efficacy of various policy instruments such as reliance on market forces, administrative allocation of resources, capital, and technology, tariffs, taxes, subsidies and

incentives, penalties and disincentives, dissemination of information, administrative setting of priorities and creation of appropriate policy agents.

Cities remain the productive and dynamic centres of human life. The concentration of large populations potentially allows for a fuller expression of what humanity can do together breaking down prejudices, and opening up possibilities for communication and interaction. That many of the cities in India are currently unattractive places to live is an argument for more development and design.

TABLE 6.1
POPULATION, URBAN POPULATION, RURAL POPULATION AND
DEGREE OF URBANIZATION, INDIA 1901-2001

Census Year	Number of UAs /Towns and Towns	Population			Percentage of Population			Decennial Growth Rate	Average Annual Growth Rate (Urban)	Tempo of Urba- nisation
					Degree of Urbanisation		Rural			
		Total	Rural	Urban	Urban	Urban- Rural Ratio				
1901	1830	238.40	212.54	25.85	89.16	10.84	12	-	-	-
1911	1815	252.09	226.15	25.94	89.71	10.29	12	0.35	0.03	-0.59
1921	1944	251.32	223.24	28.09	88.82	11.18	13	8.27	0.83	1.81
1931	2066	278.98	245.52	33.46	88.01	11.99	14	19.12	1.91	2.83
1941	2253	318.66	274.51	44.15	86.14	13.86	16	31.97	3.20	5.31
1951	2822	361.09	298.64	62.44	82.71	17.29	21	41.43	4.14	8.13
1961	2334	439.23	360.30	78.94	82.03	17.97	22	26.41	2.64	3.46
1971	2567	548.16	439.05	109.11	80.09	19.91	25	38.23	3.82	6.18
1981	3347	683.33	523.87	159.46	76.66	23.34	30	46.14	4.61	8.90
1991	3769	846.39	628.84	217.55	74.30	25.70	35	36.43	3.64	6.73
2001	4378	1027.02	741.66	285.35	72.22	27.78	39	31.17	3.12	5.92

Source: Up to 1991 – Paper 1 Final Population Totals 1992 Vol.1 & Source : eCENSUSIndia, Vol. 3 of 2001,

Note: 1. The total population and urban population of India for the year 2001 includes estimated population of those areas of Gujarat and Himachal Pradesh where census could not be conducted due to natural calamities during the appointed period². The total population and urban population of India for the year 1991 includes interpolated population of Jammu and Kashmir where 1991 Census could not be conducted

3. The total population and urban population of India for the year 1981 includes interpolated population of Assam where 1981 Census could not be conducted

TABLE 6.2
DECADAL INCREASE IN URBAN POPULATION

Census Year	Percentage increase in Urban Population during the decade	Chain Base Index Number Base Year	Net Decadal Increase in Percentage
1901	-	-	-
1911	0.35	100.00	-
1921	8.27	2362.86	2262.86
1931	19.12	231.20	131.20
1941	31.97	167.21	67.21
1951	41.43	129.59	29.59
1961	26.41	63.75	-36.25
1971	38.23	144.76	44.76
1981	46.14	120.69	20.69
1991	36.43	78.96	-21.04
2001	31.17	85.56	-14.44

Source: Calculated from figures of Table 6.1

TABLE 6.3
PERCENTAGE DECADAL GROWTH AND
AVERAGE ANNUAL EXPONENTIAL
GROWTH IN URBAN AGGLOMERATIONS AND TOWNS

Census Decade	Percentage decadal growth in Urban Agglomerations/Towns			Average annual exponential growth in Urban Agglomerations/Towns		
	Total	Rural	Urban	Total	Rural	Urban
1901-11	5.70	6.40	0.30	0.60	0.60	0.00
1911-21	-0.30	-1.30	8.30	0.00	-0.10	0.80
1921-31	11.00	10.00	19.10	1.00	1.00	1.70
1931-41	14.20	11.80	32.00	1.30	1.10	2.80
1941-51	13.30	8.80	41.40	1.20	0.80	3.50
1951-61	21.60	20.60	26.40	2.00	1.90	2.30
1961-71	24.80	21.90	38.20	2.20	2.00	3.20
1971-81	24.70	19.30	46.10	2.20	1.80	3.80
1981-91	23.90	20.00	36.40	2.10	1.80	3.10
1991-2001	21.30	17.90	31.20	1.90	1.70	2.70

Source : eCENSUSIndia, Vol. 3 of 2001,

Note:

Urban Agglomerations, which constitute a number of towns and their outgrowths, have been treated as one unit.

The total population and urban population of India for the year 2001 includes estimated population of those areas of Gujarat and Himachal Pradesh where census could not be conducted due to natural calamities.

The total population and urban population of India for the year 1991 includes interpolated population of Jammu & Kashmir where census could not be conducted.

The total population and urban population of India for the year 1981 includes interpolated population of Assam where census could not be conducted.

TABLE 6.4
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001

Sr. No.	India/State / Union territory*	T/R/U	Population			Percent urban population
			Persons	Males	Females	
1	2	3	5	6	7	8
	INDIA	T	1027015247	531277078	495738169	28
		R	741660293	381141184	360519109	
		U	285354954	150135894	135219060	
1	Jammu & Kashmir	T	10069917	5300574	4769343	25
		R	7564608	3925846	3638762	
		U	2505309	1374728	1130581	
2	Himachal Pradesh	T	6077248	3085256	2991992	10
		R	5482367	2754251	2728116	
		U	594881	331005	263876	
3	Punjab	T	24289296	12963362	11325934	34
		R	16043730	8500647	7543083	
		U	8245566	4462715	3782851	
4	Chandigarh*	T	900914	508224	392690	90
		R	92118	56837	35281	
		U	808796	451387	357409	
5	Uttaranchal	T	8479562	4316401	4163161	26
		R	6309317	3143380	3165937	
		U	2170245	1173021	997224	
6	Haryana	T	21082989	11327658	9755331	29
		R	14968850	8017622	6951228	
		U	6114139	3310036	2804103	
7	Delhi*	T	13782976	7570890	6212086	93
		R	963215	533219	429996	
		U	12819761	7037671	5782090	
8	Rajasthan	T	56473122	29381657	27091465	23
		R	43267678	22394479	20873199	
		U	13205444	6987178	6218266	

TABLE 6.4 (Conti..)
RURAL-URBAN DISTRIBUTION OF POPULAITON-
INDIA, STATE AND UNION TERRITORIES – 2001

Sr. No.	India/State / Union territory*	T/R/U	Population			Percent urban population
			Persons	Males	Females	
1	2	3	5	6	7	8
9	Uttar Pradesh	T	166052859	87466301	78586558	21
		R	131540230	69096765	62443465	
		U	34512629	18369536	16143093	
10	Bihar	T	82878796	43153964	39724832	10
		R	74199596	38510686	35688910	
		U	8679200	4643278	4035922	
11	Sikkim	T	540493	288217	252276	11
		R	480488	255386	225102	
		U	60005	32831	27174	
12	Arunachal Pradesh	T	1091117	573951	517166	20
		R	868429	453560	414869	
		U	222688	120391	102297	
13	Nagaland	T	1988636	1041686	946950	18
		R	1635815	846651	789164	
		U	352821	195035	157786	
14	Manipur	T	2388634	1207338	1181296	24
		R	1818224	923428	894796	
		U	570410	283910	286500	
15	Mizoram	T	891058	459783	431275	50
		R	450018	233718	216300	
		U	441040	226065	214975	
16	Tripura	T	3191168	1636138	1555030	17
		R	2648074	1359288	1288786	
		U	543094	276850	266244	

TABLE 6.4 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001

Sr. No.	India/State / Union territory*	T/R/U	Population			Percent urban population
			Persons	Males	Females	
1	2	3	5	6	7	8
17	Meghalaya	T	2306069	1167840	1138229	20
		R	1853457	939803	913654	
		U	452612	228037	224575	
18	Assam	T	26638407	13787799	12850608	13
		R	23248994	11983157	11265837	
		U	3389413	1804642	1584771	
19	West Bengal	T	80221171	41487694	38733477	28
		R	57734690	29606028	28128662	
		U	22486481	11881666	10604815	
20	Jharkhand	T	26909428	13861277	13048151	22
		R	20922731	10660430	10262301	
		U	5986697	3200847	2785850	
21	Orissa	T	36706920	18612340	18094580	15
		R	31210602	15711853	15498749	
		U	5496318	2900487	2595831	
22	Chhatisgarh	T	20795956	10452426	10343530	20
		R	16620627	8290983	8329644	
		U	4175329	2161443	2013886	
23	Madhya Pradesh	T	60385118	31456873	28928245	27
		R	44282528	22975256	21307272	
		U	16102590	8481617	7620973	
24	Gujarat	T	50596992	26344053	24252939	37
		R	31697615	16289423	15408192	
		U	18899377	10054630	8844747	

TABLE 6.4 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001

Sr. No.	India/State / Union territory*	T/R/U	Population			Percent urban population
			Persons	Males	Females	
1	2	3	5	6	7	8
25	Daman & Diu*	T	158059	92478	65581	36
		R	100740	63576	37164	
		U	57319	28902	28417	
26	Dadra & Nagar Haveli*	T	220451	121731	98720	23
		R	169995	91887	78108	
		U	50456	29844	20612	
27	Maharashtra	T	96752247	50334270	46417977	42
		R	55732513	28443238	27289275	
		U	41019734	21891032	19128702	
28	Andhra Pradesh	T	75727541	38286811	37440730	27
		R	55223944	27852179	27371765	
		U	20503597	10434632	10068965	
29	Karnataka	T	52733958	26856343	25877615	34
		R	34814100	17618593	17195507	
		U	17919858	9237750	8682108	
30	Goa	T	1343998	685617	658381	50
		R	675129	339626	335503	
		U	668869	345991	322878	
31	Lakshadweep*	T	60595	31118	29477	44
		R	33647	17196	16451	
		U	26948	13922	13026	
32	Kerala	T	31838619	15468664	16369955	26
		R	23571484	11450785	12120699	
		U	8267135	4017879	4249256	

TABLE 6.4 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001

Sr. No.	India/State / Union territory*	T/R/U	Population			Percent urban population
			Persons	Males	Females	
1	2	3	5	6	7	8
33	Tamil Nadu	T	62110839	31268654	30842185	44
		R	34869286	17508985	17360301	
		U	27241553	13759669	13481884	
34	Pondicherry*	T	973829	486705	487124	67
		R	325596	163586	162010	
		U	648233	323119	325114	
35	Andaman & Nicobar Islands*	T	356265	192985	163280	33
		R	239858	128837	111021	
		U	116407	64148	52259	

Source: eCENSUSIndia, Vol. 3, 2001

Notes:1. The total, rural and urban population of India includes the estimated total, rural and urban population of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner taluks of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat state and estimated total and rural population of entire Kinnaur district of Himanchal Pradesh where population enumeration of Census of India, 2001 could not be conducted due to natural calamities.

2. The Figures of total, rural and urban population of Himachal Pradesh state have been arrived at after including the estimated total and rural population of entire Kinnaur district where population enumeration of Census of India, 2001 could not be conducted due to natural calamity.

3. The figures of total, rural and urban population of Gujarat state have been arrived at after including the estimated total, rural and urban population of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner taluks of Rajkot district, Jodiya taluka of Jamnagar district where population enumeration of the census of India, 2001 could not be conducted due to natural calamity.

4. T= Total, R = Rural, U = Urban

TABLE 6.5
RURAL-URBAN DISTRIBUTION OF POPULATION -
INDIA AND STATE/UNION TERRITORIES 2001

Sr. No.	India/State / Union territory*	T/R/U	Population in %		
			Total	Males	Females
1	2	3	4	5	6
	INDIA	T	100	100	100
		R	72	72	73
		U	28	28	27
1	Jammu & Kashmir	T	100	100	100
		R	75	74	76
		U	25	26	24
2	Himachal Pradesh	T	100	100	100
		R	90	89	91
		U	10	11	9
3	Punjab	T	100	100	100
		R	66	66	67
		U	34	34	33
4	Chandigarh*	T	100	100	100
		R	10	11	9
		U	90	89	91
5	Uttaranchal	T	100	100	100
		R	74	73	76
		U	26	27	24
6	Haryana	T	100	100	100
		R	71	71	71
		U	29	29	29
7	Delhi*	T	100	100	100
		R	7	7	7
		U	93	93	93

TABLE 6.5 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001 (PERCENTAGE)

Sr. No.	India/State / Union territory*	T/R/U	Population in %		
			Total	Males	Females
1	2	3	4	5	6
8	Rajasthan	T	100	100	100
		R	77	76	77
		U	23	24	23
9	Uttar Pradesh	T	100	100	100
		R	79	79	79
		U	21	21	21
10	Bihar	T	100	100	100
		R	90	89	90
		U	10	11	10
11	Sikkim	T	100	100	100
		R	89	89	89
		U	11	11	11
12	Arunachal Pradesh	T	100	100	100
		R	80	79	80
		U	20	21	20
13	Nagaland	T	100	100	100
		R	82	81	83
		U	18	19	17
14	Manipur	T	100	100	100
		R	76	76	76
		U	24	24	24
15	Mizoram	T	100	100	100
		R	51	51	50
		U	49	49	50
16	Tripura	T	100	100	100
		R	83	83	83
		U	17	17	17

TABLE 6.5 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001 (PERCENTAGE)

Sr. No.	India/State / Union territory*	T/R/U	Population in %		
			Total	Males	Females
1	2	3	4	5	6
17	Meghalaya	T	100	100	100
		R	80	80	80
		U	20	20	20
18	Assam	T	100	100	100
		R	87	87	88
		U	13	13	12
19	West Bengal	T	100	100	100
		R	72	71	73
		U	28	29	27
20	Jharkhand	T	100	100	100
		R	78	77	79
		U	22	23	21
21	Orissa	T	100	100	100
		R	85	84	86
		U	15	16	14
22	Chhatisgarh	T	100	100	100
		R	80	79	81
		U	20	21	19
23	Madhya Pradesh	T	100	100	100
		R	73	73	74
		U	27	27	26
24	Gujarat	T	100	100	100
		R	63	62	64
		U	37	38	36

TABLE 6.5 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001 (PERCENTAGE)

Sr. No.	India/State / Union territory*	T/R/U	Population in %		
			Total	Males	Females
1	2	3	4	5	6
25	Daman & Diu*	T	100	100	100
		R	64	69	57
		U	36	31	43
26	Dadra & Nagar Haveli*	T	100	100	100
		R	77	75	79
		U	23	25	21
27	Maharashtra	T	100	100	100
		R	58	57	59
		U	42	43	41
28	Andhra Pradesh	T	100	100	100
		R	73	73	73
		U	27	27	27
29	Karnataka	T	100	100	100
		R	66	66	66
		U	34	34	34
30	Goa	T	100	100	100
		R	50	50	51
		U	50	50	49
31	Lakshadweep*	T	100	100	100
		R	56	55	56
		U	44	45	44
32	Kerala	T	100	100	100
		R	74	74	74
		U	26	26	26
33	Tamil Nadu	T	100	100	100
		R	56	56	56
		U	44	44	44

TABLE 6.5 (Cont..)
RURAL-URBAN DISTRIBUTION OF POPULATION-
INDIA, STATE AND UNION TERRITORIES – 2001 (PERCENTAGE)

Sr. No.	India/State / Union territory*	T/R/U	Population in %		
			Total	Males	Females
1	2	3	4	5	6
34	Pondicherry*	T	100	100	100
		R	33	34	33
		U	67	66	67
35	Andaman & Nicobar Islands*	T	100	100	100
		R	67	67	68
		U	33	33	32

Note: Calculated from Table 6.4

Notes:1. The total, rural and urban population of India includes the estimated total, rural and urban population of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner taluks of Rajkot district, Jodiya taluka of Jamnagar district of Gujarat state and estimated total and rural population of entire Kinnaur district of Himanchal Pradesh where population enumeration of Census of India, 2001 could not be conducted due to natural calamities.

2. The Figures of total, rural and urban population of Himachal Pradesh state have been arrived at after including the estimated total and rural population of entire Kinnaur district where population enumeration of Census of India, 2001 could not be conducted due to natural calamity.

3. The figures of total, rural and urban population of Gujarat state have been arrived at after including the estimated total, rural and urban population of entire Kachchh district, Morvi, Maliya-Miyana and Wankaner taluks of Rajkot district, Jodiya taluka of Jamnagar district where population enumeration of the census of India, 2001 could not be conducted due to natural calamity.

4. T= Total, R = Rural, U = Urban

TABLE 6.6
TREND OF URBANISATION IN INDIA

Years	Towns with different Population Size Classes						
	Class I 100000 & above	Class II 50000 to 99999	Class III 20000 to 49999	Class IV 10000 to 19999	Class V 5000 to 9999	Class VI Less than 5000	All Classes
Number of Urban Agglomerations/Towns							
1951	76	91	327	608	1124	569	2795
1961	102	129	437	719	711	172	2270
1971	148	173	558	827	623	147	2476
1981	216	270	738	1053	739	229	3245
1991	296	341	927	1135	725	185	3609
Urban Population (Lakhs)							
1951	278	61	97	84	80	19	620
1961	405	87	132	99	54	6	783
1971	619	121	171	119	48	5	1082
1981	959	182	216	145	54	8	1564
1991	1401	236	287	171	57	6	2158
2001	1767	344	420	223	77	8	2836
Percentage Distribution of Urban Population							
1951	44.4	9.8	15.6	13.5	12.9	3.1	100.0
1961	51.7	11.1	16.9	12.6	6.9	0.8	100.0
1971	57.2	11.2	15.8	11.0	4.4	0.5	100.0
1981	61.3	11.6	13.8	10.9	3.5	0.5	100.0
1991	64.9	10.9	13.3	7.8	2.6	0.3	100.0
2001	62.3	12.0	14.8	7.9	2.7	0.3	100.0

Source: Registrar General of India

Note: Excludes Assam and Jammu & Kashmir

TABLE 6.7
 NUMBER OF POPULATION IN MILLION+ CITIES* IN INDIA**
 AS WELL AS PERCENTAGE OF URBAN POPULATION
 IN THAT CITIES : 1901 -1991

Census Year	Number of Million Plus Towns	Population In Million	Percentage of Population w.r.t Urban Population
1901	1	1.51	5.84
1911	2	2.76	10.65
1921	2	3.13	11.14
1931	2	3.41	10.18
1941	2	5.31	12.23
1951	5	11.75	18.81
1961	7	18.10	22.93
1971	9	27.83	25.51
1981	12	42.12	26.41
1991	23	70.66	32.54

Source: Census of India, 1991, Paper 2, Provisional Population Totals: Rural-Urban Distribution.

Note: (*) Million+ Cities include urban agglomeration classified on the Basis of their total population. Further, only those cities/urban agglomerations which had one million and more population are termed as 'Million+ Cities'.

(**) Excluding Assam and Jammu & Kashmir

TABLE 6.8
AVERAGE SIZE OF VILLAGES AND TOWNS BY POPULATION - 2001 CENSUS (PROVISIONAL)

Sr. No.	Name of State / Union Territory*	No. of Villages	Rural Population	Average Population per Village	No. of Towns	Urban Population	Average Population per Town
	INDIA	638691	741660293	1161	5161	285354954	55291
1	Jammu & Kashmir	6652	7564608	1137	75	2505309	33404
2	Himachal Pradesh	20118	5482367	273	57	594881	10437
3	Punjab	12729	16043730	1260	157	8245566	52520
4	Chandigarh *	24	92118	3838	1	808796	808796
5	Uttaranchal**	16823	6309317	375	86	2170245	25235
6	Haryana	6955	14968850	2152	106	6114139	57681
7	Delhi *	165	963215	5838	62	12819761	206770
8	Rajasthan	41353	43267678	1046	222	13205444	59484
9	Uttar Pradesh	107452	131540230	1224	704	34512629	49024
10	Bihar	45113	74199596	1645	130	8679200	66763
11	Sikkim	452	480488	1063	9	60005	6667
12	Arunachal Pradesh	4065	868429	214	17	222688	13099
13	Nagaland	1317	1635815	1242	9	352821	39202
14	Manipur	2391	1818224	760	33	570410	17285
15	Mizoram	817	450018	551	22	441040	20047
16	Tripura	870	2648074	3044	23	543094	23613
17	Meghalaya	6023	1853457	308	16	452612	28288
18	Assam	26247	23248994	886	125	3389413	27115
19	West Bengal	40793	57734690	1415	375	22486481	59964
20	Jharkhand**	32615	20922731	642	152	5986697	39386

TABLE 6.8 (Cont..)
AVERAGE SIZE OF VILLAGES AND TOWNS BY POPULATION - 2001 CENSUS (PROVISIONAL)

Sr. No.	Name of State / Union Territory*	No. of Villages	Rural Population	Average Population per Village	No. of Towns	Urban Population	Average Population per Town
21	Orissa	51349	31210602	608	138	5496318	39828
22	Chhatisgarh**	20308	16620627	818	97	4175329	43045
23	Madhya Pradesh	55392	44282528	799	394	16102590	40870
24	Gujarat	18544	31697615	1709	242	18899377	78097
25	Daman & Diu * Dadra & Nagar	23	100740	4380	2	57319	28660
26	Haveli *	70	169995	2429	2	50456	25228
27	Maharashtra	43722	55732513	1275	378	41019734	108518
28	Andhra Pradesh	28123	55223944	1964	210	20503597	97636
29	Karnataka	29483	34814100	1181	270	17919858	66370
30	Goa	359	675129	1881	44	668869	15202
31	Lakshadweep *	24	33647	1402	3	26948	8983
32	Kerala	1364	23571484	17281	159	8267135	51995
33	Tamil Nadu	16317	34869286	2137	832	27241553	32742
34	Pondicherry * Andaman & Nicobar	92	325596	3539	6	648233	108039
35	Is.*	547	239858	438	3	116407	38802

Note: * signifies the Union Territories

** signifies the New states formed during 2001 census

Source: Source: Census of India, 1991, Paper 2, Provisional Population Totals: Rural-Urban Distribution.

TABLE 6.9
DEGREE OF URBANIZATION WORLD, REGIONS,
CONTINENTS AND SELECTED COUNTRIES - 2000

Sl. No.	Region/Continent/Country	Percent urban population	Urban-rural ratio
1	World	47.00	89.0
2	More developed region	76.00	317.0
3	Less developed region	39.90	66.0
4	Least developed countries	26.00	35.0
5	Africa	37.90	61.0
6	Asia	36.70	58.0
7	Europe	74.80	297.0
8	South America	79.80	395.0
9	Northern America	77.20	339.0
10	China	32.10	47.0
11	India	27.80	39.0
12	USA	77.20	339.0
13	Indonesia	40.90	69.0
14	Brazil	81.30	435.0
15	Pakistan	37.00	59.0
16	Russian Federation	77.70	348.0
17	Bangladesh	24.50	32.0
18	Japan	78.60	367.0
19	Nigeria	44.00	79.0

Source: World Urbanization Prospects – The 1999 Revision-
United Nations

Note: For India the data relates to Census 2001

TABLE 6.10
 TWENTY LARGEST URBAN AGGLOMERATIONS RANKED BY
 POPULATION SIZE IN 2000: WORLD

Rank in 2000	Urban Agglomerations	Countries	Population (in million)
1	Tokyo	Japan	26.40
2	Greater Mumbai	India (2001 Census)	18.70
3	Mexico City	Mexico	18.10
4	Sao Paulo	Brazil	17.80
5	New York	United States of America	16.60
6	Shanghai	China	13.80
7	Lagos	Nigeria	13.40
8	Los Angeles	United States of America	13.10
9	Kolkata	India (2001 Census)	13.10
10	Dhaka	Bangladesh	12.70
11	Buenos Aires	Argentina	12.60
12	Karachi	Pakistan	12.20
13	Delhi	India (2001 Census)	12.10
14	Beijing	China	11.80
15	Jakarta	Indonesia	11.00
16	Osaka	Japan	11.00
17	Metro Manila	Philippines	10.90
18	Rio de Janeiro	Brazil	10.60
19	Cairo	Egypt	10.60
20	Tianjin	China	10.10

Source: World Urbanization Prospects - The 1999 Revision - The United Nations

TABLE 6.11
NUMBER OF MEGA CITIES IN 1950, 1975, 2000
AND 2015: WORLD

Region	1950	1975	2000
WORLD	1	5	20
<u>Less developed regions</u>	0	3	16
Africa	0	0	2
Asia (excluding Japan)	0	1	10
Latin America and the Caribbean	0	2	4
<u>More developed regions</u>	1	2	4
Northern America	1	1	2
Japan	0	1	2

Source: World Urbanization Prospects - The 1999 Revision –
The United Nations

TABLE 6.12
SHARE OF URBAN POPULATION IN STATES AND UNION TERRITORIES OF INDIA –
2001 CENSUS (ARRANGED IN DESCENDING ORDER)

India/States/Union territories	Urban population	Share of urban population	India/States/Union territories	Urban population	Share of urban population
India	285354954	100.00	Assam	3389413	1.20
Maharashtra	41019734	14.40	Jammu & Kashmir	2505309	0.90
Uttar Pradesh	34512629	12.10	Uttaranchal	2170245	0.80
Tamil Nadu	27241553	9.50	Chandigarh	808796	0.30
West Bengal	22486481	7.90	Goa	668869	0.20
Andhra Pradesh	20503597	7.20	Pondicherry	648233	0.20
Gujarat	18899377	6.60	Himachal Pradesh	594881	0.20
Karnataka	17919858	6.30	Manipur	570410	0.20
Madhya Pradesh	16102590	5.60	Tripura	543094	0.20
Rajasthan	13205444	4.60	Meghalaya	452612	0.20
Delhi	12819761	4.50	Mizoram	441040	0.20
Bihar	8679200	3.00	Nagaland	352821	0.10
Kerala	8267135	2.90	Arunachal Pradesh	222688	0.10
Punjab	8245566	2.90	Andaman & Nicobar	116407	0.00
Haryana	6114139	2.10	Sikkim	60005	0.00
Jharkhand	5986697	2.10	Daman & Diu	57319	0.00
Orissa	5496318	1.90	Dadra & Nagar H	50456	0.00
Chhatisgarh	4175329	1.50	Lakshadweep	26948	0.00

Source: Source: Census of India, 1991, Paper 2, Provisional Population Totals: Rural-Urban Distribution.

TABLE 6.13
DISTRIBUTION OF DISTRICTS AND THEIR URBAN POPULATION BY DIFFERENT RANGES
OF PERCENTAGE OF URBAN POPULATION IN DISTRICTS, INDIA, 1991-2001

Percentage of urban population in district	1991				2001			
	Absolute		Percentage		Absolute		Percentage	
	No. of districts	Population (in Lakhs)	No. of districts	Population	No. of districts	Population (in Lakhs)	No. of districts	Population
1	2	3	4	5	6	7	8	9
Total	593	2176	100.00	100.00	593	2854	100.00	100.00
<=10.0	174	1065	29.30	49.00	148	1223	25.00	42.90
10.1-20.0	175	451	29.50	20.70	183	719	30.90	25.20
20.1-30.0	115	257	19.40	11.80	112	232	18.90	8.10
30.1-40.0	56	268	9.40	12.30	63	340	10.60	11.90
40.1-50.0	28	46	4.70	2.10	30	197	5.10	6.90
50.1-60.0	16	52	2.70	2.40	26	80	4.40	2.80
60.1-70.0	8	16	1.30	0.80	7	34	1.20	1.20
70.1-80.0	3	1	0.50	0.10	4	2	0.70	0.10
80.1-90.0	5	2	0.80	0.10	5	2	0.80	0.10
>90.0	13	17	2.20	0.80	15	25	2.50	0.90
0	13	46	2.20	2.10	10	41	1.70	1.40
100	9	12	1.50	0.50	9	16	1.50	0.50

Source: Census of India, 1991, Paper 2, Provisional Population Totals: Rural-Urban Distribution. **Note:** 1. The total population and urban population of India for 2001 includes estimated population of those areas of Gujarat and Himachal Pradesh where census could not be conducted during the appointed period due to natural calamities. 2. The total population and urban population of Jammu and Kashmir for 1991 is as interpolated for the state as census could not be conducted here due to disturbed condition. 3. The urban population of entire Kachchh district, Marvi, Maliya-Miyana and Wankanu talukas of Rajkot district and Jodiya taluka of Jamnagar district of Gujarat for 2001 has been estimated as the Census 2001 could not be conducted here during the appointed period due to earthquake. 4. The urban population of districts of Jammu and Kashmir for 1991 is based on interpolation, as the 1991 Census could not be conducted in the state due to disturbed conditions.

TABLE 6.14
DISTRIBUTION OF DISTRICTS AND THEIR RURAL POPULATION BY DIFFERENT RANGES
OF PERCENTAGE OF RURAL POPULATION IN DISTRICTS, INDIA, 1991-2001

Percentage of rural population in district	1991				2001			
	Absolute		Percentage		Absolute		Percentage	
	No. of districts	Population (in Lakhs)	No. of districts	Population	No. of districts	Population (in Lakhs)	No. of districts	Population
1	2	3	4	5	6	7	8	9
Total	593	6288	100.00	100.00	593	7417	100.00	100.00
<10.0	13	81	2.20	1.30	15	91	2.50	1.20
10.0-19.9	5	54	0.80	0.90	5	57	0.80	0.80
20.0-29.9	3	26	0.50	0.40	4	36	0.70	0.50
30.0-39.9	8	99	1.30	1.60	7	100	1.20	1.30
40.0-49.9	16	255	2.70	4.10	26	355	4.40	4.80
50.0-59.9	28	291	4.70	4.60	30	489	5.10	6.60
60.0-69.9	56	959	9.40	15.20	63	1039	10.60	14.00
70.0-79.9	115	1028	19.40	16.40	112	1190	18.90	16.00
80.0-89.9	175	1894	29.50	30.10	183	2533	30.90	34.20
>90.0	174	1600	29.30	25.40	148	1527	25.00	20.60
0.00	9	44	1.50	0.70	9	36	1.50	0.50
100.00	13	56	2.20	0.90	10	54	1.70	0.70

Source: Census of India, 1991, Paper 2, Provisional Population Totals: Rural-Urban Distribution.

Note: 1 The total population and urban population of India for 2001 includes estimated population of those areas of Gujarat and Himachal Pradesh where census could not be conducted during the appointed period due to natural calamities. 2. The total population and urban population of Jammu and Kashmir for 1991 is as interpolated for the state as census could not be conducted here due to disturbed condition. 3. The urban population of entire Kachchh district, Marvi, Maliya-Miyana and Wankanu talukas of Rajkot district and Jodiya taluka of Jamnagar district of Gujarat for 2001 has been estimated as the Census 2001 could not be conducted here during the appointed period due to earthquake. 4. The urban population of districts of Jammu and Kashmir for 1991 is based on interpolation, as the 1991 Census could not be conducted in the state due to disturbed conditions.

TABLE 6.15
DEGREE OF URBANISATION, PER CAPITA INCOME, RATES OF UNEMPLOYMENT
AND POPULATION BELOW POVERTY LINE

Sr. No.	States	Urban to Total Population ¹ (2001) (%)	Per Capita Income Current Prices ² (1996-97) Rs.	Rate of Unemployment (Daily Status) ³ (1999-2000)	Percentage Of Population ³ Below Poverty Line (1993-94)
		α	1	2	3
1	Tamil Nadu	43.9	13382	11.78	35.0
2	Maharashtra	42.4	17825	7.16	36.9
3	Gujarat	37.4	16287	4.55	24.2
4	Karnataka	34.0	11772	4.57	33.2
5	Punjab	33.9	17447	4.03	11.8
6	Haryana	29.0	16454	4.77	25.1
7	West Bengal	28.0	9886	14.99	35.7
8	Andhra Pradesh	27.1	11224	8.03	22.2
9	Kerala	26.0	13050	2.97	25.4
10	Madhya Pradesh	25.0	8689	4.45	42.5
11	Rajasthan	23.4	10171	3.13	27.4
12	Uttar Pradesh	20.8	7743	4.08	40.9
13	Orissa	15.0	6401	7.34	48.6
14	Bihar	13.4	4965	7.32	55.0
15	Assam	12.7	7394	22.21	40.9
16	Himachal Pradesh	9.8	10728	2.96	28.4
	All India	27.8	11564	7.32	36.0

Note: (a) Urbanisation percentage for Bihar has been recalculated to include Jharkhand and that for Madhya Pradesh to include Chattisgarh (b) States have been arranged in the descending order on the basis of degree of urbanisation

Source: 1. Census of India (2001) 2. Economic Survey (2001-2002) 3. Planning Commission (1998), Ninth Five Year Plan (1997-2002)

TABLE 6.16
CORRELATION CHART FOR TABLE 6.15
(SIGNIFICANT AT 5% LEVEL)

Variables	Correlation Coefficients	Interpretation
Between % of Urban to total population and Per Capita Income	(+) 0.78	Strong Positive
Between % of Urban to total population and Rate of Unemployment	(-) 0.11	Weak Negative
Between % of Urban to total population and Percentage of population below poverty line	(-) 0.42	Mild Negative

Note: Calculated from Table 6.15

TABLE 6.17
DEGREE OF URBANISATION, BIRTH RATE, INFANT MORTALITY RATE, AND
NATURAL GROWTH RATE

Sr. No.	States	Urban to Total Population (2001) (%)	Birth Rate (2001)	Infant Mortality Rate (2001)	Literacy Rate (2001)	Natural Growth Rate (2001)
		a	1	2	3	4
1	Tamil Nadu	43.9	19.00	49	73.47	11.4
2	Maharashtra	42.4	20.60	45	77.27	13.1
3	Gujarat	37.4	24.90	60	69.97	17.2
4	Karnataka	34.0	22.20	58	67.04	14.6
5	Punjab	33.9	21.20	51	69.95	14.2
6	Haryana	29.0	26.70	65	68.59	19.1
7	West Bengal	28.0	20.50	51	69.22	13.7
8	Andhra Pradesh	27.1	20.80	66	61.11	12.8
9	Kerala	26.0	17.20	11	90.90	10.6
10	Madhya Pradesh	25.0	30.80	86	64.11	20.8
11	Rajasthan	23.4	31.00	79	61.03	23.0
12	Uttar Pradesh	20.8	32.10	82	57.36	22.0
13	Orissa	15.0	23.40	90	63.61	13.1
14	Bihar	13.4	31.20	62	47.53	23.0
15	Assam	12.7	26.80	73	64.28	17.3
16	Himachal Pradesh	9.8	21.00	54	77.13	14.0
	All India	27.8	25.40	66	65.38	17.0

TABLE 6.18
CORRELATION CHART FOR TABLE 6.17
(Significant at 5% level)

Variables	Correlation Coefficients	Interpretation
Between % of Urban to total population and Birth Rate	(-)0.42	Mild Negative
Between % of Urban to total population and Infant Mortality Rate	(-)0.38	Mild Negative
Between % of Urban to total population and Literacy Rate	(+)0.37	Mild Positive
Between % of Urban to total population and Natural Growth Rate	(-)0.36	Mild Negative

Source: Calculated from Table 6.17

TABLE 6.19
DEGREE OF URBANISATION AND
HUMAN DEVELOPMENT INDEX

Sr. No	States	Urban to Total Population (2001) (Percent)	Human Development Index (2001)
		a	1
1	Tamil Nadu	43.9	0.531
2	Maharashtra	42.4	0.523
3	Gujarat	37.4	0.479
4	Karnataka	34.0	0.478
5	Punjab	33.9	0.537
6	Haryana	29.0	0.509
7	West Bengal	28.0	0.472
8	Andhra Pradesh	27.1	0.416
9	Kerala	26.0	0.638
10	Madhya Pradesh	25.0	0.394
11	Rajasthan	23.4	0.424
12	Uttar Pradesh	20.8	0.416
13	Orissa	15.0	0.388
14	Bihar	13.4	0.367
15	Assam	12.7	0.386
	All India	27.8	0.472

Notes: States have been arranged in the descending order on the basis of HDI values

Source: Planning Commission (2002), National Human Development Report.

<p>Correlation Coefficient (+)0.65</p> <p>High Positive Correlation between Urban to total population and Human Development Index.</p>

TABLE 6.20
ESTIMATES OF RELATIVE SHARE ON NATURAL INCREASE, NET
MIGRATION AND AREA RECLASSIFICATION IN THE
DECADAL URBAN GROWTH OF INDIA, 1961-1991

Category	Decade		
	1961—71"	1971—81 +	1981—91 +
TOTAL URBAN POPULATION			
GROWTH (in millions) ESTIMATED SHARE (fig. in millions)	30.18	49.45	56.45
Natural increase	19.65	20.40	33.86
Net Migration	5.91	19.73	12.73
Reclassification	4.59	9.32	9.82
% SHARE OF			
Natural increase	65.21	41.75	59.98
Net Migration	19.58	39.40	22.62
Reclassification	15.21	18.85	17.40

NOTES : (*) Excluding Assam and Jammu & Kashmir for the last 2 decades of 1971-81 and 1981-91. (**) Figures pertaining to Natural Increase refers to the residual i.e.. Urban growth - number of net intercensal migrants and the Population added due to reclassification of towns as new and declassified towns. (+) Figures on net migration have been derived by subtracting the estimated number of persons added on account of Natural Increase and Reclassification.

Sources: (i) Census Of India, Occasional Paper-1 of 1986, "Study on Distribution of Infrastructure! Facilities.....Levels and Trends Of Urbanization," pp. 78-79, 346—350.

(ii) Census of India, 1981. Part II-A General Population Tables pp. 1045—1111.

(iii) Computed from Census of India, 1991, Paper No. 2 of 1991 Provisional Population Totals: Rural—Urban Distribution pp. 56-57 and 171—369.

TABLE 6.21
PERCENTAGE SHARE OF NATURAL INCREASE, NET MIGRATION (INTERNAL) AND
AREAL RECLASSIFICATION IN THE DECADAL URBAN POPULATION GROWTH
IN INDIA AND ITS MAJOR STATES DURING 1961-71** , 1971-81 AND 1981-91

India/State	1981—91 +			1971—81 +			1961—71**		
	NI	NM	AR	NI	NM	AR	NI	NM	AR
1	2	3	4	5	6	7	8	9	10
INDIA	59.98	22.62	17.40	41.75	39.40	18.85*	65.17	19.60	15.23
Andhra Pradesh	54.50	28.47	17.03	44.22	47.62	8.16	66.07	29.04	4.89
Bihar	85.51	(—)10.85	25.34	N.A.	-	10.58	35.93	24.83	39.24
Gujarat	69.90	20.21	9.89	51.91	36.16	11.93	64.36	18.26	17.38
Haryana	62.08	27.23	10.69	36.49	38.01	25.50	77.85	16.13	6.02
Karnataka	74.84	12.32	12.84	33.45	55.32	11.23	74.34	15.69	9.97
Kerala	29.86	1.40	68.74	51.68	7.79	40.53	49.96	(—)12.06	62.10
Madhya Pradesh	56.83	14.28	28.89	39.80	40.10	20.10	69.46	19.79	10.75
Maharashtra	56.96	30.52	12.52	46.52	48.46	5.02	60.03	32.21	7.76
Orissa	60.70	24.80	14.50	29.18	48.95	21.87	30.97	39.92	29.11
Punjab	81.54	23.37	(—)4.91	45.38	39.90	14.72	84.90	12.94	2.16
Rajasthan	65.26	25.95	8.79	38.51	41.42	20.07	81.95	8.23	9.82
Tamil Nadu	92.44	(—)2.31	9.87	61.13	33.06	5.81	72.48	13.59	13.93
Uttar Pradesh	62.82	27.22	9.96	33.65	23.40	42.95	75.56	8.28	16.16
West Bengal	50.00	29.71	20.29	N.A	-	18.87	64.18	17.02	18.80

Note: (1) NI- Natural Increase: NM – Net Migration: AR - Areal Reclassification and NA – Not Available
(2) For foot notes and sources please ref. table 6.20

TABLE 6.22
PERCENTAGE OF URBAN POPULATION TO TOTAL
POPULATION IN GUJARAT 1901-2001

Census Year	No. of Towns	Total Population	Urban Population	Percentage to Total Population
1901	166	9094748	2030738	22
1911	155	9803587	1886775	19
1921	166	10174989	2050339	20
1931	172	11489828	2355009	21
1941	191	13701551	3259955	24
1951	243	16262657	4427896	27
1961	181	20633350	5316624	26
1971	216	26697475	7496500	28
1981	255	34085799	10601653	31
1991	264	41309582	14246061	34
2001	242	48,387270*	18,227,051*	37.67*

Source: Census of India, Gujarat, Part II-A, General Population Tables, Different Volumes

Note:* Excludes areas of Kachchh, Jamnagar and Rajkot, where Census 2001 could not be conducted due to earthquake

TABLE 6.23
PERCENTAGE OF URBAN
POPULATION RESIDING IN CLASS I CITIES 1901-2001

Year	No. of Class I Cities	Population	Percentage to Total Urban Population
1901	3	405823	19.59
1911	2	331645	17.58
1921	2	391441	19.09
1931	2	419639	17.82
1941	4	1017887	31.22
1951	6	1597361	36.07
1961	6	2255532	42.42
1971	7	3380646	45.10
1981	11	5316142	50.14
1991	21	8539515	59.94
2001	27*	13943312	76.50

Source: Census of India, Gujarat, Part II-A, General Population Tables, Different Volumes

Note:* Does not include Morvi, Bhuj and Gandhidham Municipalities, which were more than 1 lakh in 1991, but where Census 2001 could not be conducted due to earthquake.

TABLE 6.24
DISTRICT-WISE NUMBER OF CITIES: 1901-1981

DISTRICT	1901	1911	1921	1931	1941	1951	1961	1971	1981
Jamnagar	6	6	6	8	11	16	15	15	17
Rajkot	10	10	10	10	12	19	14	12	12
Surendranagar	10	10	10	10	10	13	11	11	11
Bhavnagar	12	12	12	11	10	13	13	14	16
Amreli	10	10	10	10	11	13	13	12	12
Junagadh	12	12	12	12	15	22	17	21	22
Kutchchh	8	8	9	9	9	10	6	11	10
Banaskantha	3	3	3	3	3	4	4	8	5
Sabarkantha	5	5	5	5	5	6	5	7	8
Mahesana	18	14	16	7	24	26	14	13	14
Gandhinagar	-	-	-	-	-	-	-	1	1
Ahmedabad	10	10	10	11	11	20	14	21	30
Kheda	23	19	22	22	21	38	7	17	18
Panchmahal	7	7	8	8	8	8	8	9	9
Vadodara	10	12	12	12	14	10	9	12	19
Bharuch	6	4	5	7	7	7	4	7	8
Surat	7	6	9	10	13	9	7	11	21
Valsad	9	7	7	7	7	9	10	14	22
Gujarat	166	155	166	172	191	243	181	116	255

Source: Census of India, 1981 – 5 Gujarat II-A, pp.99-102

TABLE 6.25
DISTRICT-WISE URBAN POPULATION – GUJARAT : 1901- 2001
(IN 000'S)

No.	District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Jamnagar	88	78	75	104	150	215	264	392	522	623	836
2	Rajkot	141	134	151	193	260	384	468	623	864	1182	1626
3	Surendranagar	858	82	90	98	115	157	186	228	297	362	402
4	Bhavnagar	140	140	137	161	207	284	352	450	626	803	935
5	Amreli	66	63	62	72	877	118	143	168	220	269	313
6	Junagadh	133	143	152	177	265	329	352	486	640	778	712
7	Kutchchh	99	876	80	92	95	114	135	214	274	383	475
8	Banaskantha	41	36	35	41	39	518	71	120	144	220	276
9	Sabarkantha	30	26	27	31	38	49	61	104	149	122	225
10	Mahesana	176	140	154	181	259	300	300	389	511	645	412
11	Gandhinagar	6	7	5	5	5	16	-	24	62	161	467
12	Ahmedabad	262	288	349	386	685	985	1344	1946	2781	3584	4664
13	Kheda	240	193	212	241	277	456	384	489	606	784	406
14	Panchmahal	63	57	73	96	100	137	155	207	258	313	253

TABLE 6.25 (Cont...)
DISTRICT-WISE URBAN POPULATION- GUJARAT : 1901- 2001
(IN 000'S)

No.	District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
15	Vadodara	148	144	151	177	235	297	397	603	951	1321	1646
16	Bharuch	83	75	81	86	117	129	134	193	242	328	353
17	Surat	155	140	150	139	225	284	361	603	1066	1715	2996
18	Valsad	65	59	67	77	90	123	182	256	389	532	381
19	Patan*	-	-	-	-	-	-	-	-	-	-	238
20	Porbandar*	-	-	-	-	-	-	-	-	-	-	261
21	Anand*	-	-	-	-	-	-	-	-	-	-	508
22	Dohad*	-	-	-	-	-	-	-	-	-	-	156
23	Narmada*	-	-	-	-	-	-	-	-	-	-	52
24	Navsari*	-	-	-	-	-	-	-	-	-	-	336
25	The Dangs*	-	-	-	-	-	-	-	-	-	16	16
26	Gujarat	2031	1887	2050	2355	3260	4428	5317	7497	10602	14140	18946

Source : Census of India, 1981 - 5, Gujarat-II-A, P. 17.

TABLE 6.26
DISTRICT-WISE PERCENTAGE OF URBAN POPULATION TO TOTAL POPULATION: 1901- 2001

No.	District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Jamnagar	25.03	21.56	20.96	24.47	28.92	74.87	35.45	35.31	37.44	40.35	43.90
2	Rajkot	28.10	22.77	25.69	28.42	32.53	41.25	38.72	38.37	41.29	47.09	51.30
3	Surendranagar	28.32	24.20	25.82	25.66	26.88	30.96	28.00	27.01	28.72	30.01	26.60
4	Bhavnagar	26.87	24.61	24.91	25.71	27.06	32.03	31.48	31.99	33.29	35.11	37.90
5	Amreli	20.66	18.37	18.06	18.45	18.49	21.87	21.35	19.88	20.42	21.53	22.50
6	Junagadh	29.39	26.56	26.16	25.75	30.52	33.28	28.24	29.33	30.46	32.54	29.10
7	Kutchchh	20.22	17.06	16.44	17.66	18.77	20.04	19.39	25.24	26.13	30.72	30.00
8	Banaskantha	8.38	7.72	7.14	7.65	6.43	6.66	7.09	9.45	8.64	10.19	11.00
9	Sabarkantha	9.20	6.92	6.49	6.29	6.64	7.17	6.66	8.75	9.90	10.51	10.80
10	Mahesana	21.07	16.91	17.18	18.17	23.00	22.35	18.37	18.58	20.07	22.01	22.40
11	Gandhinagar	0.40	5.80	7.24	7.04	5.39	13.77	-	11.99	21.60	40.89	35.00
12	Ahmedabad	36.33	37.90	42.97	42.83	54.81	61.28	63.07	66.86	72.00	74.69	80.20
13	Kheda	23.13	18.98	20.51	21.44	20.74	28.25	19.41	19.95	20.11	22.80	20.10
14	Panchmahal	13.63	9.57	10.60	11.62	10.53	12.12	10.54	11.21	11.09	10.61	12.50

TABLE 6.26 (Cont.)
DISTRICT-WISE PERCENTAGE OF URBAN POPULATION TO TOTAL POPULATION: 1901- 2001

No.	District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12	13
15	Vadodara	25.06	20.66	19.97	20.14	22.46	24.52	26.03	30.46	37.16	42.98	45.20
16	Bharuch	20.07	15.83	16.91	15.76	18.03	17.98	15.00	17.39	18.63	21.27	25.70
17	Surat	25.09	21.16	22.60	18.98	25.54	21.17	27.44	33.73	42.76	50.56	60.00
18	Valsad	11.71	9.90	11.28	11.74	12.59	13.17	15.97	17.95	11.92	24.47	27.00
19	Patan*	-	-	-	-	-	-	-	-	-	-	20.20
20	Porbandar*	-	-	-	-	-	-	-	-	-	-	48.70
21	Anand*	-	-	-	-	-	-	-	-	-	-	27.40
22	Dohad*	-	-	-	-	-	-	-	-	-	-	9.60
23	Narmada*	-	-	-	-	-	-	-	-	-	-	10.10
24	Navsari*	-	-	-	-	-	-	-	-	-	-	27.40
25	The Dangs*	-	-	-	-	-	-	-	-	-	11.04	0.00
26	Gujarat	22.33	19.25	20.15	20.50	23.79	27.13	25.77	28.08	31.10	34.49	37.40

TABLE 6.27
PERCENTAGE OF WORKING POPULATION TO
TOTAL POPULATION IN THE DISTRICTS WITH RANK

Rank in 2001	State/District	Work Participation Rate		Rank in 1991
		2001	1991	
1	Narmada	50.36	48.73	2
2	Dohad	49.83	47.62	3
3	The Dang	49.76	50.55	1
4	Panchmahal	48.29	46.64	5
5	Valsad	46.12	46.97	4
6	Sabarkantha	45.15	43.90	7
7	Patan	45.08	41.77	11
8	Mahesana	45.06	43.23	8
9	Kheda	44.81	42.07	10
10	Navsari	44.33	44.29	6
11	Surat	43.68	43.17	9
12	Banaskantha	43.62	39.35	17
13	Amreli	43.12	40.17	16
14	Surendranagar	42.73	40.49	14
15	Anand	42.25	40.81	13
	Gujarat	42.10	40.39	
16	Vadodara	41.74	40.42	15
17	Bharuch	41.62	41.30	12
18	Gandhinagar	41.52	38.54	19
19	Junagadh	40.97	38.82	18
20	Porbandar	40.03	36.46	23
21	Rajkot	39.13	36.77	21
22	Jamnagar	38.41	36.41	22
23	Bhavnagar	38.24	38.25	20
24	Ahmedabad	34.51	32.65	24

Source: Paper 3 of Provisional Population Total, Census of India 2001 - Gujarat

TABLE 6.28
PERCENTAGE OF WORKING POPULATION TO
TOTAL POPULATION IN THE DISTRICTS WITH RANK

Rank in 2001	State/District	Percentage of Agricultural labourers to total workers	Percentage of Non- Agricultural labourers to total workers
1	Narmada	45.59	54.41
2	Bharuch	39.71	60.29
3	Anand	36.63	63.37
4	Patan	34.28	65.72
5	Navsari	33.09	66.91
6	Surendranagar	32.34	67.66
7	Kheda	31.17	68.83
8	Vadodara	31.10	68.90
9	The Dang	28.61	71.39
10	Sabarkantha	27.00	73.00
11	Amreli	25.04	74.96
12	Mahesana	24.43	75.57
	Gujarat	24.49	75.51
13	Junagadh	24.19	75.81
14	Panchmahal	24.08	75.92
15	Valsad	23.73	76.27
16	Bhavnagar	22.34	77.66
17	Banaskantha	22.25	77.75
18	Dohad	21.96	78.04
19	Surat	21.87	78.13
20	Gandhinagar	21.47	78.53
21	Porbandar	18.74	81.26
22	Rajkot	14.46	85.54
23	Jamnagar	13.92	86.08
24	Ahmedabad	11.86	88.14

Source: Paper 3 of Provisional Population Total,
Census of India 2001 - Gujarat

Note: Percentage of Non-Agricultural labours is calculated from the
percentage of agricultural labours given.

TABLE 6.29
RELATION SHIP OF URBANISATION WITH SOME FACTORS INFLUENCING URBANISATION : GUJARAT

Sr. No.	District	Percentage increase in Urban population (1991-2001)	Percentage of Urban Population to Total Population (2001)	Percentage of Decadal Growth Rate of Population (1991-2001)	Percentage of Total Workers to Total Population (2001)	Percentage of Non-Agricultural Workers to Total Population (2001)
		α	1	2	3	4
0	Gujarat State	16.61	37.40	22.66	42.10	75.51
1	Jamnagar	34.74	43.90	22.40	38.41	86.08
2	Rajkot	37.10	51.30	28.95	39.13	85.54
3	Surendranagar	11.49	26.60	25.34	42.73	67.66
4	Bhavnagar	16.51	37.90	19.29	38.24	67.66
5	Amreli	16.35	22.50	6.45	43.12	74.96
6	Junagadh	-8.48	29.10	17.08	40.97	75.81
7	Banaskantha	19.63	11.00	26.31	43.62	77.75
8	Sabarkantha	25.18	10.80	18.30	45.15	73.00
9	Mahesana	84.87	22.40	12.04	45.06	75.57
10	Gandhinagar	-36.15	35.00	23.88	41.52	78.53
11	Ahmedabad	190.35	80.20	26.61	34.51	88.14
12	Kheda	29.97	20.10	13.24	44.81	68.83
13	Panchmahal	-48.11	12.50	20.36	48.29	75.92
14	Vadodara	-19.09	45.20	19.80	41.74	68.90
15	Bharuch	24.55	25.70	19.32	41.62	60.29
16	Surat	7.31	60.00	47.04	43.68	78.13
17	Valsad	74.84	27.00	29.66	46.12	76.27
18	Patan*	-28.37	20.20	14.08	45.08	65.72

Note: Represented from Table No.6.27 and Table 6.28

TABLE 6.30
CORRELATION CHART OF TABLE 6.29

Variables	Correlation Coefficients	Interpretation
Between percentage increase in urban population and percentage of urban population to total population	(+)0.51	Moderate Positive
Between percentage increase in Urban Population and percentage decadal growth of population	(+)0.11	Low Positive
Between percentage increase in Urban Population and percentage total workers to total population	(-)0.48	Moderate Negative
Between percentage increase in Urban Population and percentage of non-agricultural Workers to total population	(+)0.45	Moderate Positive

Note: Calculated from Table 6.29

TABLE 6.31
CORRELATION MATRIX
RELATIONSHIP OF FACTORS WITH URBANISATION

Variables	Y _i	X ₁	X ₂	X ₃	X ₄
Y _i	1.0000				
X ₁	0.5076	1.0000			
X ₂	0.1131	0.0367	1.0000		
X ₃	-0.4799	-0.7644	-0.1464	1.0000	
X ₄	0.4455	0.5289	0.3751	-0.4031	1.0000

Source: Computed from Table 6.29

TABLE 6.32
CONTRIBUTION OF URBAN AREAS TO ECONOMIC GROWTH

Year	Percentage of urban to total population	Estimated contribution to National income (%)
1951	17.30	29.00
1981	23.30	47.00
1991	25.70	55.00
2001	30.50	60.00

Source: Urban India, Ministry of Urban Affairs and Employment, 2001
Source: Anon, 1991 (India Development Report 2002).

High Positive Correlation between Percent of Urban Population and Contribution of urban areas to National Income	(+)0.97
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TABLE 6.33
EXPOSURE TO MASS MEDIA IN
RURAL AND URBAN AREAS - 1990 (IN PER CENT)

Exposure	Rural	Urban
Reads newspapers at least once a week	12.80	43.40
Watches TV at least once a week	33.40	80.60
Listens to radio at least once a week	33.00	46.30
Visits cinema theatre at least once a month	7.90	18.10
Not regularly exposed to any media	50.10	12.90

Source: Anon, 1991 (India Development Report 2002)

CHAPTER-VII

MIGRATION

7.1 Introduction

Many studies have been conducted to analyse and understand the pattern of migration internationally as well as domestically. The scope of this chapter is limited to study patterns of migration in India and especially in Gujarat and the extend of its influence on demography of the country.

7.2 What Is Migration?

Migration plays an important role in the population dynamics of a country. Migration is shifting .the home, and not the house. In the context of migration, we come across two processes emigration and immigration. Emigration refers to going out of a country, while immigration refers to coming in a country. Thus, emigration reduces population of a country, and immigration increases it. Adam Smith remarked that of all the language, man is the most difficult to be transported. Migration is practised from time immemorial. Migration keeps a balance between the distribution of population and the supply of natural resources. Transportation is helpful for the migration of people from one place to another. Prof. Hawley has remarked that civilised people are those people who obtained the high degree of mobility. Migration increases mobility. Migration means the change of place of living for almost a permanent period. It refers to the leaving of some political boundary, however small it may be. When people are leaving one place and going to a new place for a temporary span of time, it is no migration from the demographic point of view. Family and individual migrator has played an important role in the growth and distribution of population.

(a) Types of Migration

There are two types of migration: (i) International migration, and (ii) Internal migration.

International migration is the migration from one political boundary to another political boundary. It depends on the laws regarding migration of the two countries. Internal migration is the migration from one place of another within the same country. Internal migration may be divided into the following four types:

- (a) Migration from rural to urban,
- (b) Migration from rural to rural,
- (c) Migration from urban to urban and
- (d) Migration from urban to rural.

According to Kingsley Davis, internal migration is more important than the international migration, from the point of view of demography. In the case of internal migration, there are less restrictions on individuals, resources and capital. Therefore, internal migration is more frequent than the international migration. The distance involved in internal migration may sometimes be greater than that involved in international migration. During Sino-Japanese War (1939-45), lakhs of Chinese people left the eastern sea-side, and went towards the interior of the country. During the period of this great internal migration, there was a large scale social change in China. Similar important internal migration took place in America when people in large number migrated towards the western side of the country. International migration is based on some legal control and regulation; but in the case of internal migration, there is no such control on the movement of population. Therefore, internal migration is practically more important.

Internal migration may be divided into the following two types on the basis of the advantage of the migration:

- (i) *Inter-regional migration*: It involves migration from one region to another region,
- (ii) *Migration from rural to urban*: Village people come to city areas for education, for white-collar jobs and so on.

7.3 Motives and Factors Encouraging Migration

The economic motive is the dominant motive for migration. People migrate to better places in search of better living. The search for better economic opportunities has been the dominant motive both among international migrants and internal migrants. The forced types of migrations find their motives in the desires and ambitions of the political leaders. In the totalitarian states, people are forced to move from one place to another. However, the motive for migration may also be non-economic—the desire to secure freedom from political oppression, the desire for religious freedom, personal maladjustments to family and community life, and the like. Military and national considerations also play their parts in the movement of large amount of people from one place to another. Sometimes, for migration, the dominant group forces the weaker group.

(1) Pull Factors

(i) Attraction towards Land:

People generally migrate from the place where there is excess pressure of population on land, to a place where there is much less pressure of population on land. From many parts of Europe, people migrated to America, Australia and Africa where the supply of land was sufficient and the pressure on land was not at all excessive. Similarly, in India,¹ many people migrated from Kerala where the pressure of

population is high, to different areas where there is relatively low pressure of population on land.

- (ii) Better employment opportunities of the new area.
- (iii) Better economic possibilities.
- (iv) Better facilities for education, housing and medical treatment.
- (v) Better economic prosperity, higher standard of living and better climatic conditions of the new place.

(2) Push Factors

- (i) Inadequate facilities for earning the livelihood, lower wages at the existing places of living.
- (ii) Poverty, unemployment, under-employment and lower standard of living.
- (iii) Discrimination based on religion and politics.
- (iv) Lack of personal development, employment and matrimonial prospect for certain groups of people.
- (v) Dissatisfaction with the existing traditions and customs, behaviour of people and superstitions.

7.4 Factors Discouraging Migration

Human beings generally do not like to leave the original place of residence. They become the part and parcel of the culture, language, religion, environment, social custom and tradition of the place where they live. They do not like to part with all these things. People have to face many difficulties in migrating from one place to another. They have to adjust themselves to the environment of the new place. Therefore, only economic factors do not induce people to migrate. Along with economic factors, people have to consider so many other things while migrating from one place to another. The following are the factors which discourage migration:

- (i) Distance:
- (ii) Uncertainty about Income and Employment:
- (iii) Attachment of Old Place of Living:
- (iv) Differences in Language, Culture, Social Custom and Tradition:
- (v) Double Establishment Expenditure:
- (vi) State Regulation:

7.5 General Effects of Migration

(i) Migration to a new place requires social and personal adjustments which may be difficult to a new environment, because of differences in cultural patterns. Due to maladjustments, there may be the instability in conduct leading to crime, lawlessness and mutual antagonism.

(ii) The new kind of life may disturb the family relationship and office relationship of the migrant. The traditional pattern of living may also be hampered. It may lead to high degree of undisciplined individualism. A large proportion of the migrants may experience change in their modes of living.

(iii) Migration may make an orderly mental development very difficult and sometimes impossible. The migrants live without the guidance of settled habits and attitudes of minds. Thus, their personalities are disorganised.

(iv) However, the migrants may face some social and economic freedom as well. They may improve the economic aspect of their lives. From economic stand point, the individuals are generally benefited by migration.

(v) Migration will reduce the pressure of population of the area from which the migration has taken place; and it will increase the pressure of population on the new area where people have migrated.

(vi) Migration from a particular area may lead to massive brain drain. Generally, the best people of the country migrate to foreign countries. This implies the emigration of the brain resources from a country. This is certainly bad for a country wherefrom migration has taken place. Now-a-days, brain drain has become a problem in less developed countries.

(vii) A country having immigration of population may have to face different problems. It will now have heterogeneous population leading to cultural differences. Some people observe that only a highly homogeneous group can produce a civilization of high order. However, there would be the problem of integration of different cultural patterns. But immigration retards the integration of the life of all classes, and to that extent, it puts an obstacle to the achievement of many of the higher human values.

(viii) International migration may be accompanied by racial differences. So race conflicts will become more bitter in the long-run. Many countries sustained racial prejudice; and migration to such countries will lead to racial antagonism.

7.6 Migration and Population Growth

Walker pointed out that birth rate declined most rapidly in those parts of the country where immigrants were most numerous. The reason for this decline in birth rate is the unwillingness on the part of the natives to have their children compete economically with foreigners. With immigration, the natives pass on the laborious works to the foreigners, and they (natives) want to enjoy a better standard of living; and as a consequence, birth rate is reduced.

A quick industrialisation and urbanisation are made possible by the help of poorly paid immigrants. Industrialisation and urbanisation help to reduce the birth rate. Industrialisation is helped by abundant and cheap labour supply made possible by the immigration. But it is not sure that immigration always leads to

quicker industrialisation. However, with immigration, the natives take up better-paid urban jobs where limitation of the family size becomes essential. The immigrants may not lead to any net gain in numbers over what the country would have had, if the process of industrialisation would have been slower.

According to some, the population growth of a country is not much affected by emigration. This was the position of Italy up to the World War I. Therefore, a country does not get much relief if a certain number of people migrate from there. However, a large emigration may have some influence in slowing down the rate of growth of population. In Germany, the rate of population increase was lower in the periods of large emigration than in the period of smaller emigration. But it is not certain that the number of emigrants was the only important factor affecting population growth. The effects of emigration are closely associated with other social and economic conditions affecting population growth.

It is impossible to determine the effects of migration on population growth of the sending country. If there are a high birth rate and a high death rate in a country, emigration will not considerably change the rate of growth of population in the sending country. A large emigration may lower the death rate. Thus, the rate of natural increase in population would be raised. The birth rate is not generally affected by emigration. But, if a large number of young women emigrate, the birth rate may decline a little.

However, emigration is not always possible. The lands available for emigration are not sufficient today. Thus, the possibility of international migration is very bleak. Emigration will not help much a country which has a very high birth rate and a very high death rate. An area having a relatively low birth rate and death rate may be to some extent benefited by emigration, if it is in large scale. In such a case, death rate would be raised a little, and birth rate would be reduced a little, and thereby, reducing the natural increase in population a little. Birth rate

would be reduced by the emigration of young men and women, and death rate would be raised because of the proportional increase of the older people in the population. However, the countries having low birth rate and death rate seldom send out emigrants. Where conception control is widely practiced, emigration may quicken the adjustment of numbers to the changing economic situation due to the vagaries of the foreign trade.

When the people of more advanced culture immigrate to a new land, the population is very much increased. The population of USA, Canada, Austria, etc. is much greater than what it would have been, if no European entered these areas. According to Prof. Thompson, during the last 300 years, most immigrants settled in the new areas, and the surroundings have been favourable to a high birth rate and a low death rate, so that population increased rapidly.

7.7 Migration as a Substitute for Birth Control

Migration may be regarded as a substitute for birth control.⁴ The effect of emigration on population growth depends on the age and sex distribution on the emigrants. If they were newly born and had the same sex ratio as other newly born children, emigration will have the same demographic effects in the short-run and in the long-run, as decline in the number of births due to the spread of birth control. However, if the comparison is between the birth control and emigration that has the same age and sex distribution as the actual population, birth control would be better than emigration, because birth control will make the age distribution more favourable. But, it is better to emigrate the young adults or recently-married couples. Emigration will decrease the adverse economic effects that are related to the increase in the labour force. Emigration is generally selective with respect to sex and age. This means that emigration is a costly way of bringing down the population growth. The cost of emigration is greater than the cost of birth control. Migration within the country reallocates population according

to the natural resources. This may offset partly the bad effects of emigration as compared with birth control.

When the most enterprising, better trained and educated people emigrate to foreign countries, the harmful effects on economic development will more than offset the benefits from a lower rate of growth of population. Internal migration may have favourable effects on the quality of population of the area where the immigration has occurred.

7.8 Internal Migration

Internal migration may be of different types. Firstly, there may be marginal and dispersed movement of population seeking better economic opportunities. Secondly, there may be migration towards the cities. Another type-of internal migration involves refugees fleeing from local military actions or from clashes between ethnic or religious groups. People may flee to cities which give them better protection. The most important type of internal migration consists of the movement of population from densely to sparsely populated areas. There are opportunities for the resettlement of population in Indonesia, Vietnam, Ceylon, Philippines, India, Pakistan and a few countries of South Asia.

However, the causes of internal migration are not essentially different from those international migration. Non-economic factors play more important role in internal migration. The movement generally is from the agricultural sector to the non-agricultural sector. When the agricultural sector develops, lesser number of worker is required for doing the agricultural works. Thus, more labourers have to be transferred to the non-agricultural sector. The rural areas have always been the chief source of internal migrants.

(a) Factors determining and affecting Internal Migration

The volume and the direction of migration are determined by the economic differences between the areas. People generally move from low-earning areas to high-earning areas. People may migrate from the unproductive areas, the areas having high pressure of population, and the areas where job opportunities are not sufficient. The net movement out of, or into, any area will depend on the nature and strength of the push and pull forces. The uncertain economic condition and bleak economic prospect may act as great push factors; while industrialisation in the city areas may act as a pull factors. The factors affecting internal migration may be discussed below:

(i) Abnormal Pressure of Population on Land: Abnormal pressure of population on land compels people to migrate to other areas. Excessive pressure on land leads to uneconomic holdings, poverty, underemployment, disguised unemployment, indebtedness and so on. Therefore, people try to emigrate.

(ii) Industrialisation: Industrialisation is an encouraging factor for internal migration. It leads to the establishment of different industries and projects. During the period of industrialisation, cottage and handicrafts get relatively less importance. Therefore, the people who are in search of jobs may migrate to the city areas where the tempo of industrialisation is generally increased.

(iii) Better Transport and Communication Facilities: Improvement of transport and communication facilities encourages the movement from village to city and, from city to village. Since the transportation facilities are easily available, people are encouraged to move from one place to another.

(iv) Joint Family System: Joint family system is an advantage towards internal migration. In a joint family system, some of the members may easily

migrate to other areas in search of a better job or education. They are not worried because their families are looked after properly in the joint family system.

(v) **Indebtedness and Poor Economic Conditions:** Indebtedness and poor economic conditions induce people to leave the village in search of better-paid occupations so that they can earn sufficient money to pay off the debt and to better off the economic condition.

(vi) **Social Conditions:** In certain areas, social conditions are not favourable for free living. Untouchability, class antagonism, personal conflict and the like may induce people to leave such societies. In cities, social evils affecting personal freedom are comparatively less. Therefore, the people are attracted towards cities.

(vii) **Family Trouble:** There may be conflict among the members in the same family. Some members of the family may migrate to towns for avoiding the conflict and antagonism.

(viii) **The Attraction of Cities:** Cities have great attraction for the people of the non-city areas. Cities provide better facilities for education, employment, living and the like. Therefore, the villagers are easily attracted by the way of life in the cities.

(ix) **Marriage:** Marriage is a great force favouring internal migration. After marriage, the wives accompany their husbands. Thus, the wives have to migrate to new places.

(x) **Economic Condition:** Economic is a great force for internal migration. During the time of economic difficulties, people migrate to a place where there is economic prosperity.

(xi) Geographical Factor: If an area does not have conducive climate, sufficient drinking water and transport facilities, the people cannot live there for a long time. Sooner or later, they try to migrate from that place to a better place.

(xii) Political Factor: Political factor influences internal migration. The government may redistribute population from thickly populated area to sparsely populated areas. Internal migration may be a government sponsored policy as in China and Russia.

(xiii) Services and Transfers: When people get services in a new area, they settle there. People in the government services or even in the private services may be transferred to new places where they have to migrate.

7.9 Some Characteristics of Migrants

In rural-urban migration, it is observed that the brighter and more energetic boys and girls leave the rural areas and join the cities. It requires more than an average amount of energy and initiative to cutoff home ties and move into unknown conditions. Internal migrants have better hereditary qualities.

The sex ratio of the migrants is generally very low. More males migrate to unknown places. Unmarried girls generally do not move into unknown conditions. When people migrate from urban to rural areas, the sex ratio becomes generally high, because the males are left in the city, as they are engaged in regular services.

The migrants are generally in the age-group 15-35, with proportionally more females under 20, and more males over 35. Old people show little tendency to migrate. The migrants are more educated than non-migrants. People with a good education can expect to get opening in cities. Therefore, the educated people have a high rate of migration. In underdeveloped countries, young people having school education migrate to cities in search of white-collar jobs.

While-collar workers are much more mobile than the manual labourers. The higher the social status of the white-collar workers, the more mobile they are. The people from the village areas are attracted by the low-paid occupations in the city areas. They have low wage and salary incomes. The young people who have received some amount of education look down upon farm jobs and manual labour. They are unable to cope with the strain required by the occupation in the rural areas. They want to avoid the drudgery of the rural occupation and try to find out a chance for lucky break which is possible more in the cities than in the rural areas.

7.10 Migration Pattern in India

The phenomenon of migration is as old as the human history. Right from stone-age men used to move from one place to another place in search of food. Man's migration was very limited because of non-developed or under-developed transport facilities. The migration capacity has increased by use of animals for transport purposes. It is increased very significantly with the industrial revolution. At present migration is very common phenomenon and sky is the limit for it. It is one of the important factors which influenced population growth. Volume of population in any place and time is determined by three factors, birth rates, death rate and migration. The factor migration is not an independent variable. It is influenced by Government policy, economic development, transport facilities, level and type of education, social traditions etc. Impact of migration can be seen on different screens like politics, economic situation, society, employment pattern, etc.

(a) Internal Migration

Under this head, migration pattern is examined for India. Findings of the same may differ at state level. Number of in and out migrants, pattern, types, structure and sex ratio of migrants differ from state to state and census to

census. For example, state like Assam, West Bengal and Maharashtra are the cases of in migration.. The Indian census collect data on place of birth of persons. From this data one can derive numbers of migrants population and that provides exaggerated picture on international shift of population in a view of prevailing custom among Indian culture family, wives to return to their father's home for their delivery; in this situation, the children are considered in-migrants at the time of analysis of census data. Moreover, data do not provide internal migration during any period of time, but survivors of cumulative migrants since birth of migration. In the study of migration in India, comparable figures of survivors of cumulative internal migration are possible to obtain from Indian census up to 1931; hence, it is difficult to complete the series up to 1961 and onward. Because, in 1942 details on internal migration were not collected excepting in state of Bombay cat present Maharashtra, Bihar, Orissa and Madhya Pradesh, while data regarding persons born outside the state were collected on one per cent sample base. Hence, we do not have any details for 1951 census for many states. Moreover, in 1931 and 1951, concept of migration is not same. It creates some problems in comparative study of migration among states and among censuses. With this limitation entire analysis is done for India.

On account of above stated limitation, figures of cumulative migration since birth are being used. Table 7.1 gives details of total migrant population enumerated outside the state of birth and per centage of the total population. Looking to the figures given in the Table 7.2, it can be said that the general pattern of internal migration has remained more or less unchanged; however, a marginal improvement is observed in the per centage of migrants population to total population. During the decade 1991-2001, the per centage of migrated people out of total population has shown an increase compared to other decades.

(b) Pattern of Internal Migration

2001 Census, like previous censuses, had collected migration details for each individual by place of birth and last residence. Data on last residence along with details like duration of stay in the current residence and reason for migration provides useful insights for studying migration dynamics of population.

(i) Migrants by place of birth:

Migrants by place of birth are those who are enumerated at a village/town at the time of census other than their place of birth. Out of the 1.02 billion people in the country, 307 million (or 30%) were reported as migrants by place of birth. This proportion in case of India (excluding J&K) is slightly more than what was reported in 1991 (27.4%).

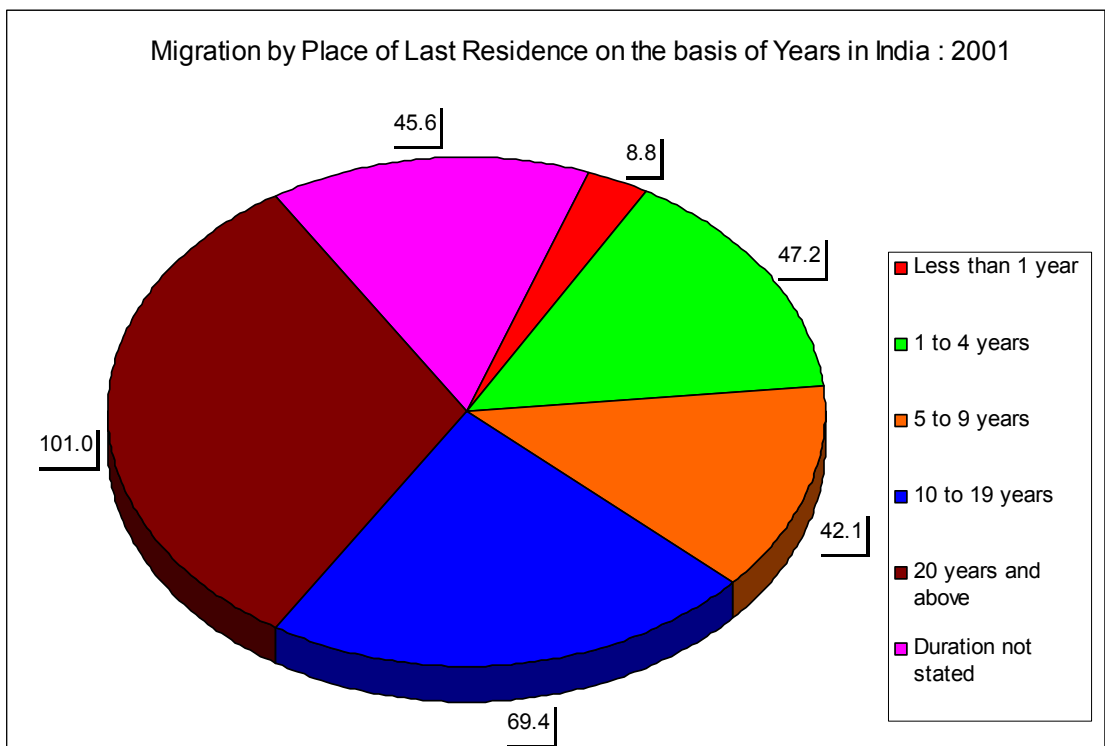
There has been a steady increase in the country in the number of migrants. Whereas in 1961 there were about 144 million migrants by place of birth, in 2001 Census, it was 307 million. (Table 7.4)

As per 2001 Census, Maharashtra received largest number of migrants (7.9 million) by place of birth from other states and other countries, followed by Delhi (5.6 million) and West Bengal (5.5 million). In 1991 Census, the corresponding number of migrants in to Maharashtra was 4.3 million, Delhi 3.7 million and West Bengal 5.1 million, indicating a sharp rise in migration over the decade. During the last decade (1991-2001), the number of migrants in India (excluding J&K) rose by 32.9%, high in comparison to India's population, which recorded a growth of 21.5% during this decade.

(ii) Migration by Place of last residence:

A person is considered as migrant by place of last residence, if the place in which he is enumerated during the census is other than his place of immediate last residence. By capturing the latest of the migrations in cases where persons have migrated more than once, this concept would give a better picture of current migration scenario. Table 7.5 illustrates the migration by place of last residence. Total migrants by last residence is estimated as 314.5 million out of which 8.8 million migrated with in one year. with duration 1 to 4 years is estimated as 47.2 million, duration 5 to 9 years 42.1 million, duration 10 to 19 years 69.4 million. The highest migration can be observed in the duration of 20 years and above and the figure is 101.0 million and the remaining 45.6 million no duration is stated

Figure 7.1



A substantial proportion among the total migrants (101 million) had migrated at least 20 years back. About 98.3 million (or 31.2%) reported as migrants, had migrated over the last decade (i.e., duration 0-9 years).

Total number of migrants by place of last residence in India (excluding J&K) grew by 34.7% between 1991-2001. High growth (53.6%) among inter state migrants is also observed.

There is 13.4% decline among the migrants who came from other countries between 1991 and 2001 Census.

Total number of in-migrants during the last ten years is largest in Greater Mumbai Urban Agglomeration (UA), the main component being those who are coming from outside the state. Delhi UA on the other hand received 1.9 million migrants from other states, the largest among the UAs shown above.

In terms of proportion of in-migrants to total population in these UAs, Delhi UA was at the top, with in-migrants constituting 16.4% of the total population of Delhi UA. Greater Mumbai (15.1%) and Bangalore UA (13.4%) followed.

(iii) Reasons for migration (during last decade)

Figure 7.2

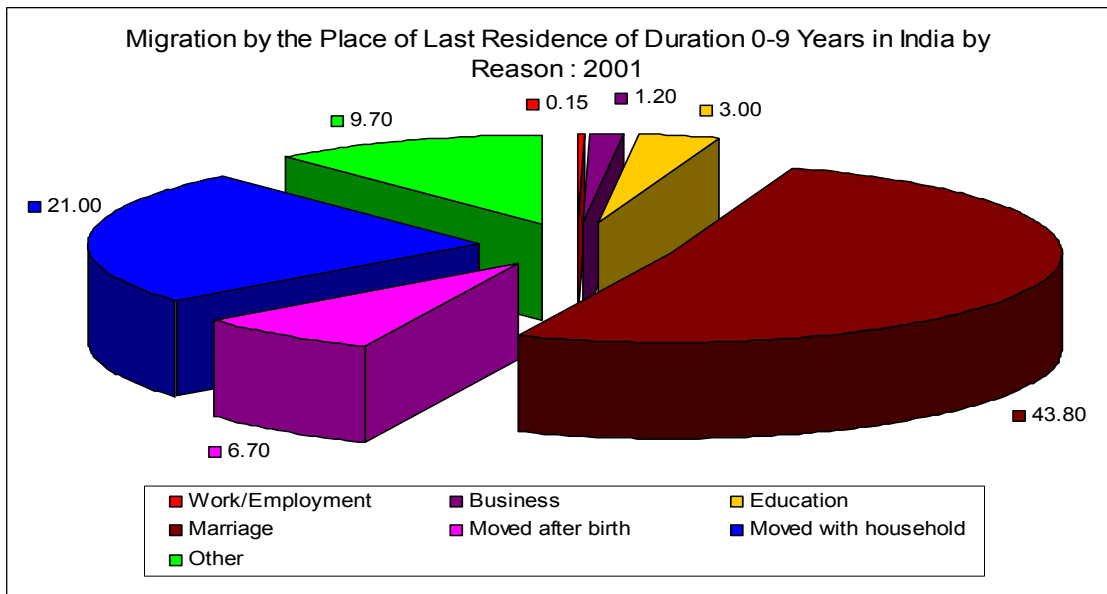


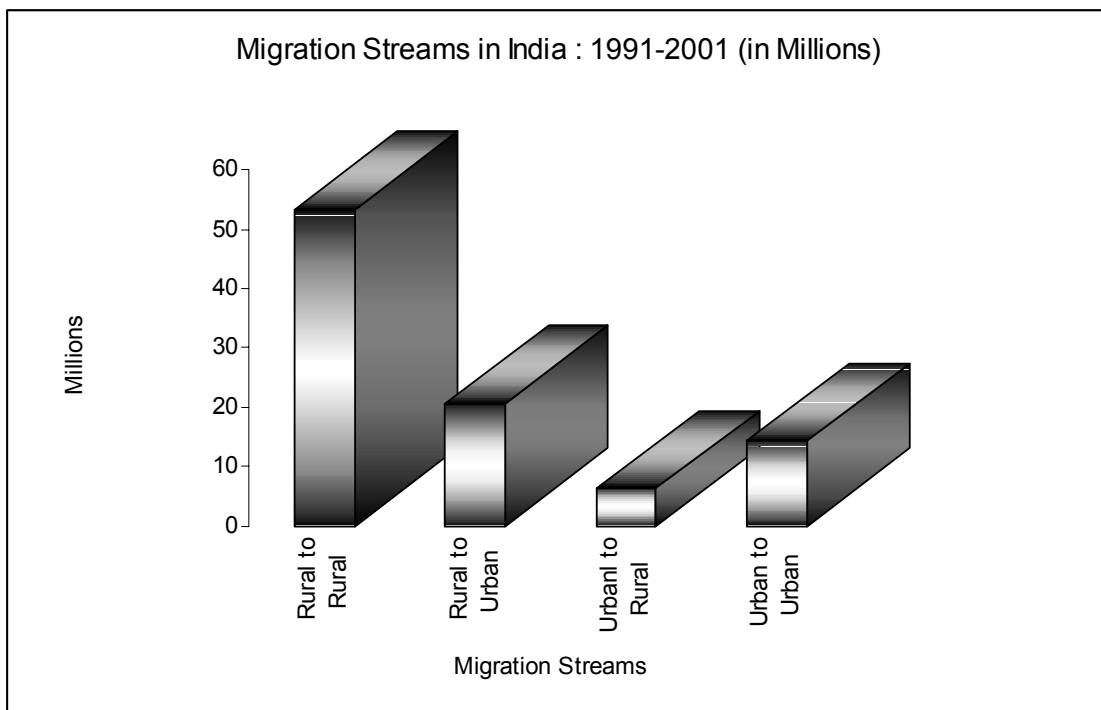
Table 7.6 gives a picture of total migrants by last residence (0-9 yrs) along with reasons for migration. During the decade the total migrants is 98.3 million in which 14.4 million i.e. 14.7% of the total migrated for want of Work/Employment. 1.1 million (1.2%) Business, 2.9 million (3.0%) Education, 43.1 million (43.8%) Marriage. The number of persons moved after birth is 6.5 million (6.7%), Moved with household 20.6 million (21.0%) and Other 9.5 million (9.7%)

Marriage was cited as the pre-dominant reason for migration among females. About 42.4 million migrants out of total 65.4 million female migrants cited this reason for migration.

Among males the most important reason for migration was 'Work/Employment', 12.3 million out of 32.8 million total male migrants returning this reason for migration.

(iv) Migration streams (during the last decade)

Figure 7.3



The distribution of migrants by migration streams (i.e., rural to rural, rural to urban, urban to rural and urban to urban areas) is generally associated with the degree of economic and social development. Population pressure on land, increased opportunities for work, education and a variety of reasons including marriage in case of females contribute to migration to a rural or urban area. During the decade rural to rural migration within the country is 53.3 million, rural to urban migration 20.5 million, urban to rural migration 6.2 million and urban to urban migration is 14.3 million (Table 7.7)

It may be important to note that in case of intra-state migrants majority of the migration is from one rural area to another, due to marriage in case of females and in search of work in case of males. For inter-state migrants, however, the flow is mainly towards urban areas.

(v) Migration by last residence from neighbouring countries:

In 2001 Census about 5.1 million persons reported as migrant by last residence from across the International border.

About 97% of these migrants by last residence were from the eight neighbouring countries (including Afghanistan). Of these migrants 3.0 million were from Bangladesh, 0.9 million from Pakistan, 0.5 million from Nepal and 0.1 million from Sri Lanka.

About 65.2% of these migrants from the neighbouring countries had migrated to India at least 20 years back perhaps at the time of partition and later during the Bangladesh war in 1971. In comparison to 1991, there is 31.6% decline in international migration to India (excluding J&K) in 2001. This is due to substantial decline in the number of recent migration and death of earlier migrants due to old age.

(c) Sex-wise migration pattern in India

Table 7.8 provides details about internal migration, on the basis of birth place statistics in various migration streams for the year 1961, 1971 and 1981.

(i) Rural to Rural Migration : It is evident from the data presented in Table 7.8 that, rural to rural migration formed major percentage of total migrants population in all the three censuses i.e. 1961, 1971 and 1981. However, declining trend is observed. Particularly in the case of males declining trend is very sharp. In case of females, percentage of rural to rural migration has declined, but at a slower rate as compared with males in all the censuses.

In India average percentage of rural population to total population is about 77, on account of such large uneven distribution between rural and urban area, percentage of rural to rural migrants is found higher in all the censuses; percentage of female migrants is also higher than that of males. Marriage is the main reason for higher percentage of female migrants.

(ii) Rural to Urban Migration: in the year 1961, percentage of migrant population was estimated 14.6, 15.3 in 1971 and 16.5 per cent in 1981. It shows that the percentage of rural to urban migrants increased. On account of several reasons people move from rural area to urban areas. As compared to other types of migration i.e. urban to urban, percentage of rural to urban is higher. The same trend is observed in case of males and females and females in the three censuses.

It is very clear and significant that percentage of male migrants is higher than that of the female. Occupation and education probably are the reasons for male migration. It is seen from the table that percentage of male migrants has shown incremental trend in each successive census. The same trend is found in case of females. In India and in rural society as far as female migration is

concerned, it is a dependent variable. It depends on male migration. Hence, as the per centage of male migrants increase, the same of the female migrants also increases. When males move to urban area for employment, dependent female members like wife, daughters and daughter-in-law move with them.

(iii) Urban to Urban Migration: In India, per centage of urban to urban migration is found very low. In 1961 it accounted for only 8 per cent of total migration. It increased in a very insignificant way in the years 1971 and 1981. About one cent increment during a decade is quite insignificant. It indicates that in India urban migration is very limited. In case of males, it was estimated 13 per cent in 1961, 14.0 and 16.1 per cent in 1971 and 1981 respectively. As compared to per centage of male migrants, the same is found lower in case of female migrants. The same pattern is seen in census of 1971 and 1981.

(iv) Urban to Rural Migration: The per centage of migrants population from urban to rural is found the lowest as compared to other types of migration. In 1961 it was only 3.6 per cent while the same was 5.5 per cent in 1971 and 6.2 per cent in 1981. The reason is quite obvious and people would like to move from rural to urban for several reasons but reasons for compelling migration from urban to rural will be very limited. Hence, very limited migration takes place from urban to rural. In case of male migrants, per centage is higher than that of female in the reference years.

(d) Sex-wise migration pattern in India with different migration type.

On the basis of the migration tables, presented in the census reports of 1961, 1971 and 1981, migrants can be classified into three categories as per their distance as follows : (a) intra-district, (b) inter-district, and interstate. These three types of migrants can be classified according to rural and urban area as the place of migration and place from the migration. This way rural and urban

migrants can be classified according to migration distance. In Table 7.9, calculated per centage of all type of migration for male and female is presented.

(1) Intra-District Migration

A person migrates from his place of birth, and at the time of census counting, he finds residing elsewhere is considered inter-district migration. This type of migration may be rural to rural, rural to urban, urban to rural and urban to rural.

(i) Rural to Rural Migration

About 74.3 per cent (In 1991) of the total population is in rural areas. Hence, per cent of migrant population would be higher as compared with urban population. This can be seen from the data presented in the table 7.9. In 1961 about 73.75 per cent of males had migrated from rural to rural areas of the same district. Somewhat some trend was observed in 1971 and 1981 censuses, but at a slowly declining per cent. In case of females, in 1961, about 88 per cent of females changed their places of residence within the district. It was 86.62 per cent in 1971 and 84.59 per cent in 1981. It shows that in females, migration is on the large scale, mainly because of social tradition. Per centage of migrant females has been higher than that of males.

(ii) Rural to Urban Migration

A person changes his place of residence with is in rural area and shifts to urban area in the same district, it is classified as intra-district rural to urban migration. As compared to per centage of males migration from rural to rural, per centage of rural to urban migrants of males is lower. It indicates that in India, there is a trend of migration from rural area to urban area and that increased at a

low rate. Its case of females, per centage is insignificant and accounted for 6 per cent to 8 per cent in the reference years.

(iii) Urban to Urban Migration

If a person resident of urban area migrates to urban area of the same district, it is known as intra-district urban to urban migration. As compared with other above discussed to types of migration, contribution of this type of migration was very low. It was about 5 per cent in 1961, only 2 per cent in 1971 and 3 per cent in 1981. It indicated declining trend in case of males and females.

(iv) Urban to Rural Migration

In case of males and females, the lowest per centage of migrants from urban to rural areas were observed in all the censuses. Employment avenues, education facilities, medical facilities, enjoyment of good life etc. are the main factors for this. In urban area, such facilities are available and hence, no one would prefer to migrate from urban to rural area. In spite of this, there are some reasons for migration from urban to rural areas. But contribution of such migration is be very limited. In 1961, for males it was 4.22 per cent and about 6 per cent in 1971 and 1981. Per centage of females migrants was found lower than of males during reference period.

(2) Inter-District Migration

Inter-district migration means migration in the same state.

(i) Rural to Rural Migration

Inter-district rural to rural migration in case of males, in 1961, was 42 per cent. It shows that as compared to intra-district rural to rural migration, inter-

district migration in the same category declined very sharply. The same trend is observed in case of 1971 and 1981 censuses. But in case of females, the per centage was as high as 65 in 1961, 60 per cent in 1971 and 56 per cent in 1981. Data indicate declining trend in both the cases.

(ii) Rural to Urban Migration

In 1961, in case of males 32.86 per cent were found born outside the district of enumeration but within the same state. Such trend is observed in case of 1971 and 1981 censuses. But in case of females, the per centage was as high as 65 in 1961, 60 per cent in 1971 and 65 per cent in 1981. Data indicate declining trend in both the cases. However, per centage of female migrants in this type was found lower than that of male migrants. A slight increment was observed in both the cases.

(iii) Urban to Urban Migration

Male migration from urban area to urban area was limited to 19 per cent in 1961 and it increased to 22 per cent in 1971 and 23 per cent in 1981. The per centage of such migrants is lower than rural to rural and rural to urban. In case of females, the per centage is low but with rising trend.

(iv) Urban to Rural Migration

Contribution of this category was the lowest as compared with other types of migration. Per centage remains about equal in case of males and females.

(3) Inter-State Migration

(i) Rural to Rural Migration

The per centage of male inter-state rural to rural migration was only 28.27 per cent in 1961, the lowest in this type with reference to intra and inter-state migration. It remained 25.89 per cent in 1971 and 23.76 per cent in 1981 .While in case of females, it was as high as 46.80 per cent in 1961, 42 per cent in 1971 and 40 per cent in 1981.

(ii) Rural to Urban Migration

In this type of migration, per cent of male migrant was 41 in 1961,39 and 38 per cent in 1971 and 1981 respectively. It is interesting to state that per centage of female migrants was found lower than that of females in all the reference censuses.

(iii) Urban to Urban Migration

One-fourth of the total male migrant were from urban area to urban area. It shown increase in 1971 and 1981. In 1961. per centage of migrant females was lower than that of males; the same trend was observed in the census of 1971 and 1981. There was rising trend in the per centage of male and female migrants.

(iv) Urban to Rural Migration

Only 4 per cent of male migrants was classified urban to rural migrants while in case of females, the same was about 5 per cent which was the lowest. among all types of migration.

The 1971 census first time presents details of migrants tike sex, age, marital information, classification of workers according to sector, level of education to cities with population of one lakh and above.

The data relating to sex and marital status enable us to understand the pattern of migration with some details. On bases of this information, we can estimate the quantum of marriage migration, associational migration and other causes of migration. A study of such analysis at a micro level may bring very significant understanding of movement of population from region to region in India. An industrial classification of worker-migrants in various migration types and of the rural and urban non-migrants, bring out the changes in employment pattern among different categories of workers in different regions and cities. This information is important from the view points of planning.

Table 7.10 provides further details on different streams of migration among intra- state, inter state and international migrants by last residence (duration 0-9 years). These streams include people migrating from rural to rural areas, rural to urban areas, urban to rural areas or even urban to urban areas for both sexes. For both intra-state and inter-state migrants this set of data is important and helps to track the mobility in the streams. For international migrants, the migrants are classified into two groups, those moving into rural areas and the others into urban areas. Out of 98 million migrants in the country based on last residence during last ten years, 80 million were those who migrated from one part of the state or district to another within the same state. Out of these intra-state migrants, 48.8 million (60.5%) migrants moved from rural to rural area, the majority of them being females who usually move out from their natal residence after marriage. Rural to urban migration stream constituted 17.6% and those moving from urban to rural areas only 6.5%. For those who were residing in urban areas there are likelihood that they move to another urban area and such urban to urban stream comprised of 12.3% of intra-state migrants. For inter-state migrants, rural to rural migration is low in comparison to the intra-state category, mainly due to the small number of women migrating due to marriage outside the state. Only 4.4 million out of 16.8 million migrants coming from outside the state belong to this stream of rural to rural migration. The rural to urban migration was higher (37.9%) indicating that the choice of town is not

limited to those within the state while migrating. Urban to urban migration among inter-state migrants was also quite high (26.7%) and evenly distributed among both males and females.

About international migrants coming to this country, 53.0% were found in rural areas and the remaining 47% in the urban areas, thus indicating no particular preference, at least in the initial period.

Table 7.11 shows the migration streams for top 10 states in terms of internal migration in states by last residence with duration 0-9 years. This statement helps to focus on those states where large proportion of internal migrants was found among different migration streams. For example, Bihar reported 79.9% migrants moving from rural to rural areas followed by Jharkhand (75.8%) and Assam (73.0%). In the rural to urban stream, Mizoram reported 39.1% of internal migrants moving from rural to urban areas. Interestingly, among the urban to rural category Goa ranked top with 26.7% of the intra-state migrants which could be due to various reasons as retirement, illness or returning to the parental home. The other factor could be better communication to commuters from adjacent areas to urban centres for work. Tamil Nadu reported 27.4% of the internal migrants moving from one urban area to another.

(e) Contribution of migration to urbanization

Migration is one of the important factors contributing to the growth of urban population. The total urban population of the country, excluding Jammu and Kashmir increased from 217.6 million in 1991 to 283.6 million in 2001 registering a growth rate of 30.3 per cent. The migration data of 2001 Census indicates that 20.5 million people enumerated in urban areas are migrants from rural areas who moved in within the last 10 years. There are 6.2 million migrants who have similarly migrated from urban areas to rural areas. Thus the net addition to urban population on account of migration is 14.3 million. This works

out to be 6.6 per cent of the urban population in 1991. In other words, out of the urban growth of 30.3 per cent, 6.6 per cent is accounted for by migration to urban areas. Thus, natural growth of urban population and growth due to formation of new urban settlements and extension of areas of towns during 1991-2001 adds up to 23.7 per cent.

(f) Migration into Urban Agglomerations

2001 Census data also presents migration data by last residence for each Urban Agglomeration (or UA) and City in the country, allowing specific examination. The inflow of migrants depends upon the size of the UA/city as in large UAs and Cities the availability of work/employment is greater. However, in terms of amenities and services, in-migration causes a severe pressure, as these are not commensurate to high growth in population.

7.11 Migration Pattern in Gujarat

Migration is important unknown factor which influences population change. Unlike birth and death, migration is largely the result of purposeful behaviour. People migrate to improve their condition. A high rate of migration, thus reflects substantial inter-regional inequalities in their rate of expansion of economic activities or population growth of both. In this chapter an attempt is made to study the migration pattern in Gujarat.

According to birth-place criterion, person residing outside the birth- place at the time of the census, the person is considered as a migrant. Table 7.12 provides details regarding per centage of in and out migration population for Gujarat and India.

It can be seen from the table that per centage of migrant population has increased slightly. In 1961 it was 33.0 and it increased to 33.7 per cent in 1981.

Per centage of migrant population in Gujarat State is higher than of India. However, in India numbers of migrant population has increased from 6.8 million in 1961 to 11.4 million in 1981. But on account of high population growth, per centage of migrant population to total population does show any increment.

(a) Type of Migration

According to the birth-place data migrants are classified into the four major categories, (i) Inter-District (ii) Inter-District but intra-state (iii) Inter-state and (iv) Inter-national migrants. The details regarding per centage of inter-districts, intra-state, inter-state and inter-national migrants population for Gujarat and India are presented in Table 7.13

It can be seen from the table that, of the total migrants enumerated in Gujarat in 1981, about 60% have moved within the same district and 29 per cent between districts of the state; 10 per cent had move in from other states of India and per centage of migrants from other countries constituted only about one per cent to total migrant population. Data presented in the table indicates that the total proportion of inter-district migrants among total migrants has declined from 66 per cent in 1961 to 59 per cent in 1981, slightly more in Gujarat than in the country as a whole. The constant increase in number of districts in the country has probably contributed to this change.

(b) Migration and Distance

It is clear from the data presented in Table 7.13 that in Gujarat as well as in India the per cent share of total migrants in the four categories steadily declines as we consider inter-district migrant, inter-state migrants and international migrants. Looking to the data presented in the table indicates that in India the intra-district migrants move over a shorter distance on an average

than the inter-district migrants within state and inter-state migrants are presumed to have the longest distance.

(c) Rural and Urban Migration

Using the detailed classification of migration data in terms of rural- urban original and destination, the four streams of internal migration (excluding international migration) can be identified. The relevant data are presented in Table 7.14

It is very clear from the table that during the last two decades, there is a decline in the proportion of migrants moving between rural areas from 64 per cent in 1961 to 57 per cent in 1981. On the other hand, the counter stream and the inter-urban stream have grown in 1961 and 1981. In the view of the economic development of the state in recent years and its relatively higher level of urbanisation, this finding is not surprising. It is possible that the rural-urban and inter-urban migration will become progressively more important in the migration pattern in Gujarat with further development and urbanisation.

In above paragraphs, we have discussed a migration pattern in Gujarat State. Now in following paragraphs, district-wise migration pattern is examined.

7.12 Migration Pattern at District Level : Gujarat

Accounting to birth-place criterion, the per centage of migrant in each district of Gujarat for the year 1961 and 1971 is shown in Table 7.15. The data cover all types of migration. It can be seen from the table that among the 19 districts the per cent of migrants in the total population ranged from 26 per cent for Panchmahals to 41 per cent for Gandhinagar. Ten of the 19 districts had migration ratios above the average of Gujarat, Gandhinagar and Ahmedabad were well ahead of all the districts. The low ranks in regard to migration ratio are

seen in Panchmahals, Valsad and Banaskantha. The pattern of intra-district migration, inter-district migration, inter-state migration and international migration is given for the years 1961, 1971 and 2001 both in absolute numbers and in percentages table 7.15, table 7.16, table 7.17 and table 7.18 respectively. During the year 2001, out of the total migrants of Gujarat Surat places itself in the first position with 13.4% and Ahmedabad in the second with 11.4% of the migrants. The Dangs is the last with 0.30% of migrants. Distribution of total migrants of each district into different types shows an upward trend in the number of migrants in each districts.

(a) Intra-district Migration

Intra-district migration indicates a person's movement within the same district. The per cent of intra-district migrants is presented in Table 7.15. It can be read from the table that inter-district migrants represented about 20 per cent of the total population in the state; both in 1961 and 1971. The proportion of intra-district migrants in 1971, was the highest in Kutch followed by the Dangs, Bharuch and Mehsana, and the lowest in Gandhinagar and Ahmedabad. Except Sabarkantha, the proportion of intra-district migrants had declined between 1961 and 1971. The decline was the highest in Surat followed by Ahmedabad. The proportion of intra-district migration is less compared to inter-district and inter-state migration. Out of the total intra-district migrants of Gujarat, Vadodara has 7.0% at the top and the Dangs has 0.4% at the bottom (Table 7.17). In Junagadh, the total migrants constitute 36.6 per cent of the population in which 30.6 per cent are intra-district migrants and Surat has 11.9 per cent of this type of migrants out of its 50.5 per cent population of migrants (Table 7.18)

(b) Inter-District Migration

Inter-district migrants numbered about 3.3 million in 1981, which accounted 9.7 per cent of the total population. Out of the total inter-district

migration took place in Gujarat during the decade 1991-2001, Surat and Ahmedabad are in the first number with 17.1% of the total inter-district migrants and the Dangs has the lowest place with 0.2% of the inter-district migrants. All other big districts have the inter-district migrants ranging from 2.0% to 8.0%. The census 2001 figures shows that out of the total population of Surat 50.5 per cent are total migrants, 18.8 per cent is inter-district migrants (Table 7.18). Gandhinagar has the maximum migrants of this type 28.3 per cent while Dohad has the least share of 1.9 per cent.

The inter-district migration represents two pattern, i.e. in-migration and out-migration. The extent of which varied from district to district. The difference between in-migration and out- migration gives the net migration. Table 7.19 provide the data regarding inter-district migration for the year 1971. It can be seen from the table that four districts like Ahmedabad had attracted 20 per cent of the inter-district in-migration. The immigration ratio, however, was the highest for Gandhinagar, followed by Ahmedabad, Rajkot, Amreli and Vadodara. It was the lowest in the Kutchchh.

Six districts viz. Mehsana, Ahmedabad, Kheda, Bhavnagar, Rajkot and Vadodara accounted for about 52 per cent of the out-migration. four of these districts are those accounting for about half of the inter-district in-migration. The out-migration ratio, however, were the highest for Gandhinagar, followed by Surendranagar, Amreli and Bhavnagar. The ratio of these districts is closer to the Dangs district the bottom rank in out-migration ratio.

(c) Inter-State and External Migration

Out of the total enumerated population of 34.9 million in 1981 in Gujarat, 1.3 million persons (3.8%) had been born outside the state. Of them, 1.2 million (3.4% of the total population) had been born in other parts of India, especially in neighbouring states of Maharashtra, Madhya Pradesh and Rajasthan. The

proportion of inter-state migration in 1981 was the highest that in 1961 but it was lower than that of observed in the country as a whole. Nearly half of the total inter-state in-migrants in 1971 were enumerated in the district of Ahmedabad and Surat. A net out-migration from Gujarat to the rest of India is shown by both the 1961 and the 1971 censuses. In Table 7.17 Surat shows maximum per centage (38.9) of inter-state migrants from the total inter-state migration in the state. The second highest state in this category is Ahmedabd with 18.3 per cent of the state migration in this group. i.e. more than 50 per cent of total inter-state migrants are located in these two states. . The Dangs is the district having lowest per centage of inter-state migrants. Table 7.18 shows that in Surat out of 50.5 per cent migrants of different types in all, inter-state migrants is the most (19.6%) and . Valsad with 11.7 per cent of its toal migrants are of this type. In the rest of the districts, the inter-state migrant constitute a nominal per centage of the total migrants. Table 7.20 provides details regarding ranking of districts based on their share among migrants of specified category for the year 1971.

One of the important aspects of studying migration is to find out the reasons for which any person leaves his residence and finds a new residence. The question on reason for migration was canvassed for the first time in 1981 in Indian census. But this was confined only to the migrants by last residence and not by place of birth. The same list of reasons continued in 1991 and 2001 census, except that the reason 'Business' was added in 1991 and the reason 'Natural Calamities' was dropped from the list in 2001. An additional reason was also added in this list on 'Moved after birth'. This reason was added in 2001 Census as it was felt that a large number of mothers moved to either their natal residence or to a place with better medical facility for delivery. Whereas the women are not treated as migrants at these temporary place or residence, the children born are treated as migrants when they accompany their parents to their place of normal residence. Though technically, this is migration, the place of birth being different from the place of enumeration for the children born, it was useful to separate this from other categories.

7.13 District-Wise Average Decadal Variation in Total Migrants

The 2001 census figures of migration when compared to the same figures of 1971 has revealed the extend of migration took place in each district of the state of Gujarat. The six new districts added in the state during the decade have not been compared due to lack of sufficient data. The districts of the Dangs, Sabar Kantha and Ahmedabad has shown decrease in the total number of migrants during the period from 1971 to 2001. The total number of migrants decreased in the Dangs by 6.8 per cent while in Sabar Kantha and Ahmedadbad it is 2.00 per cent and 1.9 per cent respectively. The average decadal variation in these districts are (-) 2.27 per cent, (-)0.67 per cent and (-)0.63 per cent respectively. On the other side the districts Surat and Valsad have shown maximum increase in the total migrants 18.10 per cent and 14.70 per cent respectively with an average decadal variation of 6.03 per cent and 4.90 per cent respectively. The industrial city of Ahmedabad has shown a decrease in number of migrants while the other industrial cities like Rajkot, Surendranagar, Jamnagar etc. has registered a very less per centage increase in the total migrants. The total number of the district Kutchchh remain same during the span of these 30 years from 1971-2001. This very high increase in the migration pattern of Surat and Valsad has contributed to the urbanization process of these regions.

7.14 Pattern of Migration in terms of Reasons.

Table 7.22 provides details of reasons for migration in case of migrants by last residence with duration of last residence as 0-9 years. As the statement shows, the reasons for migration in case of males and females vary significantly. Whereas work or employment was the most important reason for migration among males (37.6%), marriage was the most important reason cited by the female migrants (64.9%) to move from the place of last residence. It may be curious to note, that 6.5 million (6.7%) persons cited 'Moved after birth' as the reason for their migration. For comparative assessment of the reasons for

migration between the last two decades, data from 2001 Census and 1991 Census in the preceding ten years (duration 0-9 years) has been presented in Statement 15 India (excluding J&K). Both the censuses present almost similar picture when the reasons are compared in terms of proportion to total migrants. From above comparison, it is evident that marriage continues to remain the most important reason for migration among females in 1991-2001 as was the case in 1981-1991. In India (excluding J&K), out of total 82.1 million migrants (both sexes) by last residence during 1981-1991 about 36.1 million were female migrants who moved due to marriage. In 1991-2001, the proportion of female migrants who had migrated due to marriage declined slightly to 64.9% from 65.9% in 1981 -1991. Among males, however, 'Work/Employment' and 'Family moved' continue to be important reasons. The reason 'Family moved' is dependent upon persons migrating due to work/employment, as in due course of time, the entire dependants had to move to the new place.

Table 7.23 provides details of reasons for migration in case of migrants by last residence with duration of last residence as 0-9 years in India as well as in the state of Gujarat. As per the table 'moved with households' remains the major reason for migration in Gujarat (27.9%). Among female 'marriage' is found the most important reason migrate (42%). In case of male 'work/employment' (42%) is the main reason as in the case of India as a whole. For male (24%) and female (32%) both 'moved with households' remains the second important reason for migration. 'Business' (0) has nothing to do relevance with the migration of female and the 'education' (1%) does the least among them. 'Marriage' (1%) functions as the least important cause among male.

7.15 Pattern of Migration by Reasons in Gujarat.

The main reasons for migration are work and employment, business, education, marriage, migrating to a state after birth, migrating with the household etc. Table 7.24 to table 7.31 gives an elaborate account of migration of different

type by various reasons. The table explains Inter-state, intra-state, inter-district, intra-district migration as well as international migration. In each category rural to rural, rural to urban, urban to rural and urban to urban migration is also highlighted in those tables. In all these type intra-state rural to urban migration Gujarat is found highest followed by intra-district rural to rural migration.

Migration due to marriage is found the highest and the due to education is the least. In case of work and employment and business intra-state migration out number all other types. In the international migrants, out of the total 58874 migrants the number migrated for education purpose is the least and those moved in with households is the highest. In all the type of migrants, the migration to the rural to rural and rural to urban area is 13565184 and to the urban to rural and urban to urban area is 3476159.

Table 7.32 illustrates migrants for different Reasons with Migration type in Gujarat during the year 2001. It can be observed from the table that in rural migration, intra-state rural migration is the highest followed by intra-district rural migration and inter-state rural migration is the least. In urban migration, intra-state urban migration is the highest followed by intra-district urban migration, then inter-district and last inter-state urban migration. The above features of migration in the state of Gujarat clearly reveal the pattern of urbanization takes place in the state and at the same time the predominance of rural sector in the Gujarat economy.

In Table 7.33 Variation in migration profile between 1991 – 2001 for the State of Gujarat based on migrants by last residence (duration 0-9 years) is shown. Compared to the year 1991 the per cent of migrants to the state has increased by 60.8 per cent . At the same time the flow of in-migrants from abroad has been decreased to the extent of 0.1 per cent. Thus the total flow of in-migrants to the state was 59.6 pre cent. Similarly, the out flow of people from Gujarat to other states and abroad has shown an increase. A increase of 47.7

per cent out-migrants is registered in the year 2001 compared to the year 1991. The main reason for increase in in-migrants can be attributed to the development of business and employment opportunities in the state of Gujarat during this decade. Business and education are the main reason for out flow of the people from Gujarat.

TABLE 7.1
TOTAL POPULATION OF ENUMERATED OUTSIDE
THE STATE OF BIRTH AND
PERCENTAGE OF THE TOTAL POPULATION

Sr. No.	Census year	Enumerated Outside the State of Birth	Percent of the Total Population
1	1891	10,652,359	3.80
2	1901	9,360,026	3.30
3	1911	10,811,678	3.60
4	1921	11,197,376	3.70
5	1931	12,079,576	3.60
6	1951	10,502,903	3.10
7	1961	14,524,434	3.30
8	1971	18,637,428	3.40
9	1981	24,599,847	3.60
10	1991	31,225,441	3.70
11	2001	42,341,703	4.12

Source: Different Census Reports

Note: * Quick estimate of census department

TABLE 7.2
ABSOLUTE CHANGE IN MIGRANT POPULATION

No.	Detail	Absolute change
1	Between 1891 and 1901	1292333
2	Between 1901 and 1911	1451652
3	Between 1911 and 1921	385698
4	Between 1921 and 1931	882200
5	Between 1951 and 1961	4021531
6	Between 1961 and 1971	4112994
7	Between 1971 and 1981	5962419
8	Between 1981 and 1991	6625594

Note : Derived from the figures given in Table 7.1.

TABLE 7.3
IN-MIGRATION BY PLACE OF BIRTH AND SEX: INDIA* - 2001

Category	Persons	Males	Females
(a) Total Population	1,028,610,328	532,156,772	496,453,556
(b) Born in India	1,022,442,977	528,981,861	493,461,116
(c) Born in the place of enumeration	721,460,171	441,746,082	279,714,089
(d) Total migrants (a-c)	307,149,736	90,410,496	216,739,240
(e) Born within the state of enumeration	980,101,274	509,306,087	470,795,187
(i) Born elsewhere in the district of enumeration	181,799,637	42,781,678	139,017,959
(ii) Born in other districts of the state	76,841,466	24,778,327	52,063,139
(f) Born in other States in India beyond the state of enumeration	42,341,703	19,675,774	22,665,929
(g) Born abroad	6,166,930	3,174,717	2,992,213
(h) Unclassified	421	194	227

Source: Table D1, Census of India 2001

Note: *'- India excludes 2001 Census data on population and other characteristics for Mao Maram, Paomata and Purul sub-divisions of Senapati district of Manipur

TABLE 7.4
MIGRTANTS BY PLACE OF BIRTH: 1991-2001
(In Millions)

Migrants by place of birth	2001 Including J & K	1991 Excluding J & K	Variation (%) (1991-2001)
Total population	1028.60	838.50	21.50
Total Migrants			
Persons	307.10	229.80	32.90
Migration Type			
Intra-District	181.70	136.20	32.60
Inter-District	76.80	59.10	29.50
Inter-State	42.30	27.20	54.50
International	6.10	6.90	11.60

Note: While computing variation, J&K has been excluded in 200 1 Census
Source: Census of India D1 Tables

TABLE 7.5
MIGRATION BY PLACE OF LAST RESIDENCE
ACCORDING TO DURATION: INDIA 2001

Sr. No.	Duration	Total In Millions
1	Less than 1 year	8.8
2	1 to 4 years	47.2
3	5 to 9 years	42.1
4	10 to 19 years	69.4
5	20 years and above	101.0
6	Duration not stated	45.6
	Total migrants by last residence	314.5

Source: Data Highlights-Table D1, D2&D3 - Census of India 2001

TABLE 7.6
MIGRATION BY PLACE OF LAST RESIDENCE WITH REASONS
INDIA 2001

Sr. No	Reasons for Migration	Total in Millions	In Percentage
1	Work/Employment	14.40	0.15
2	Business	1.10	1.20
3	Education	2.90	3.00
4	Marriage	43.10	43.80
5	Moved after birth	6.50	6.70
6	Moved with household	20.60	21.00
7	Other	9.50	9.70
	Total migrants by last residence (0-9 yrs)	98.30	

Source: Data Highlights-Table D1, D2&D3 - Census of India 2001

TABLE 7.7
MIGRATION STREAMS: INDIA 1991-2001

Sr. No	Migration Type	Total in Millions
1	Rural to rural migration	53.30
2	Rural to urban migration	20.50
3	Urban to rural migration	6.20
4	Urban to urban migration	14.30

Source: Data Highlights-Table D1, D2&D3 - Census of India 2001

TABLE 7.8
SEX-WISE MIGRATION PATTERN IN INDIA: 1961,1971 AND 1981
(In Percentages)

Sr. No.	Types of Migration	1961			1971			1981		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1	Rural to Rural	37.70	56.70	81.30	70.30	53.50	77.80	67.70	50.40	74.30
2	Rural to Urban	14.60	25.70	9.70	15.30	26.00	10.50	16.50	26.50	12.30
3	Urban to Urban	8.10	13.00	8.90	14.00	6.70	6.70	9.70	16.10	7.30
4	Urban to Rural	3.60	3.20	5.50	6.50	5.00	5.20	6.20	7.10	6.10
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note : Derived from data of various Census Reports

TABLE 7.9
SEX AND PLACE-WISE MIGRATION PATTERN IN INDIA:
1961, 1971 AND 1981
(In Percentages)

No	Types	1961		1971		1981	
		Male	Female	Male	Female	Male	Female
I. Intra-District							
1	Rural to Rural	73.75	88.75	71.72	86.62	70.38	84.59
2	Rural to Urban	16.58	6.53	17.58	7.25	18.96	8.31
3	Urban to Urban	5.45	2.24	4.60	2.06	3.85	2.00
4	Urban to Rural	4.22	2.48	6.10	4.07	6.81	5.10
II. Inter-District							
1	Rural to Rural	42.13	65.44	32.22	60.55	36.58	56.44
2	Rural to Urban	32.88	16.58	33.11	19.93	34.48	17.19
3	Urban to Urban	19.48	12.91	22.03	15.06	23.59	18.16
4	Urban to Rural	5.54	5.07	7.64	7.46	4.65	8.02
III Intra-State							
1	Rural to Rural	28.27	46.80	25.89	42.68	23.76	40.21
2	Rural to Urban	41.42	24.41	39.36	23.24	38.18	22.53
3	Urban to Urban	25.94	23.97	28.58	26.46	30.57	29.12
4	Urban to Rural	4.07	5.00	6.17	7.62	7.49	8.14

Source: Data Highlights-Table D1, D2&D3 - Census of India 2001

TABLE 7.10
MIGRANTS BY PLACE OF LAST RESIDENCE INDICATING MIGRATION STREAMS
(DURATION 0-9 YEARS) INDIA 2001

Migration stream	2001			2001 (%)		
	Total	Males	Females	Total	Males	Females
Total Migrants	98,301,342	32,896,986	65,404,356			
Intra state Migrants						
Total	80,733,441	23,998,283	56,735,158	100.0	100.0	100.0
Rural to Rural	48,880,074	9,985,581	38,894,493	60.5	41.6	68.6
Rural to Urban	14,222,276	6,503,461	7,718,815	17.6	27.1	13.6
Urban to Rural	5,213,151	2,057,789	3,155,362	6.5	8.6	5.6
Urban to Urban	9,898,294	4,387,563	5,510,731	12.3	18.3	9.7
Unclassified	2,519,646	1,063,889	1,455,757	3.1	4.4	2.6
Inter state Migrants						
Total	16,826,879	8,512,161	8,314,718	100.0	100.0	100.0
Rural to Rural	4,474,302	1,759,523	2,714,779	26.6	20.7	32.7
Rural to Urban	6,372,955	3,803,737	2,569,218	37.9	44.7	30.9
Urban to Rural	1,053,352	522,916	530,436	6.3	6.1	6.4
Urban to Urban	4,490,480	2,201,882	2,288,598	26.7	25.9	27.5
Unclassified	435,790	224,103	211,687	2.6	2.6	2.5
International Migrants						
Total	740,867	386,461	354,406	100.0	100.0	100.0
To Rural areas	392,807	188,518	204,289	53.0	48.8	57.6
To Urban areas	348,060	197,943	150,117	47.0	51.2	42.4

Source: Table D-2, Census of India 2001

TABLE 7.11
MIGRATION STREAMS FOR TOP TEN STATES FOR INTRA-STATE MIGRATION BY
LAST RESIDENCE (DURATION 0 TO 9 YEARS) INDIA 2001 (EXCLUDES UNION TERRITORIES)

Rank	Rural to rural	Rural to urban	Urban to rural	Urban to urban
1	Bihar (3,799,368; 79.9%)	Mizoram (32,555; 39.1%)	Goa (48,288; 26.7%)	Tamil Nadu (1,001,633; 27.4%)
2	Jharkhand (1,215,941; 75.8%)	Meghalaya (10,823; 27.4%)	Kerala (412,772; 13.3%)	Mizoram (21,271; 25.5%)
3	Assam (1,127,168; 73.0%)	Nagaland (13,782; 26.8%)	Nagaland (6,757; 13.2%)	Goa (39,519; 21.9%)
4	Himachal Pradesh (439,222; 71.8%)	Arunachal Pradesh (31,984; 26.1%)	Sikkim (5,818; 11.8%)	Nagaland (10,447; 20.3%)
5	Sikkim (35,039; 70.8%)	Gujarat (1,420,541; 25.9%)	Tamil Nadu (420,815; 11.5%)	Maharashtra (2,401,703; 19.2%)
6	Uttar Pradesh (6,261,203; 69.8%)	Tamil Nadu (852,824; 23.3%)	Meghalaya (4,343; 11.0%)	Punjab (264,685; 15.5%)
7	Rajasthan (3,285,585; 69.7%)	Haryana (339,483; 21.9%)	Mizoram (7,108; 8.5%)	Karnataka (745,235; 15.3%)
8	Chhattisgarh (1,360,501; 69.2%)	Maharashtra (2,653,862; 21.2%)	Andhra Pradesh (606,004; 8.4%)	Gujarat (801,593; 14.6%)
9	Orissa (2,067,885; 67.5%)	Karnataka (1,033,723; 21.2%)	Maharashtra (1,020,045; 8.2%)	Arunachal Pradesh (15,779; 12.9%)
10	West Bengal (3,982,608; 66.5%)	Jammu & Kashmir (79,163; 21.1%)	Karnataka (363,542; 7.4%)	Manipur (8,024; 12.5%)

Source: Table D-2, Census of India 2001

TABLE 7.12
PERCENTAGE DISTRIBUTION OF POPULATION BY MIGRATION STATUS IN GUJARAT,
WITH CORRESPONDING DISTRIBUTION FOR THE COUNTRY AS WHOLE, 1961,1971 & 1981
CENSUS (BIRTHPLACE CRITERION)

Sr. No	Migration Status	1961			1971			1981		
		Persons	Males	Female	Persons	Males	Females	Persons	Males	Female
1	2	3	4	5	6	7	8	9	10	11
	GUJARAT									
1	Non-Migrants	67.0	79.4	53.8	67.9	79.8	55.2	66.4	79.2	52.9
2	Migrants	33.0	20.6	46.2	32.0	20.2	44.7	33.7	20.8	47.1
3	Unclassifiable	N	N	N	N	N	N	N	N	N
4	Total Population	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	(In Million)	20.6	10.6	10.0	26.7	13.8	12.9	34.1	17.6	16.5
	INDIA									
1	Non-Migrants	67.0	79.2	54.0	69.6	81.1	57.2	69.3	82.0	52.7
2	Migrants	32.9	20.7	45.9	30.4	18.9	42.7	30.7	18.0	44.3
3	Unclassifiable	0.1	0.1	0.1	N	N	0.0	-	-	-
4	Total Population	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	(In Million)	438.9	226.1	212.7	548.2	284.1	264.1	665.3	343.9	321.4

N = Negligible

Source : Census of India 1961, Volume I - India, Part II-C (iii), Census of India 1971, Series I - India part II-D

(i) Census of India 1981, Series I - India, Part-II

TABLE 7.13
PERCENTAGE DISTRIBUTION OF MIGRANTS BY TYPE OF MIGRATION IN GUJARAT,
WITH CORRESPONDING DISTRIBUTION FOR THE COUNTRY AS A WHOLE,
1961,1971 AND 1981 CENSUS (BIRTHPLACE CRITERION)

Sr. No.	Migration Type	1961			1971			1981		
		Total	Males	Female	Total	Males	Females	Total	Males	Female
1	2	3	4	5	6	7	8	9	10	11
	GUJARAT									
1	Intra-District	67.7	52.5	71.9	61.3	48.9	67.3	59.3	47.4	52.7
2	Inter-District	24.1	29.8	21.4	27.7	32.8	25.4	29.1	18.0	44.3
3	Inter-State	7.7	13.6	5.0	9.0	15.2	5.9	10.1	-	-
4	International	2.4	4.1	1.7	2.0	3.1	1.4	1.3	2.0	0.9
5	All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6	Persons (In Million)	6.8	2.2	4.6	8.6	2.8	-5.8	11.4	3.6	7.8
	INDIA									
1	Intra-District	63.6	48.9	70.7	62.2	48.4	68.8	59.3	46.0	65.1
2	Inter-District	20.0	23.8	18.1	21.1	24.7	19.5	25.0	28.8	23.4
3	Inter-State	10.1	16.8	6.9	11.2	17.8	8.0	11.8	18.5	8.8
4	International	6.3	10.5	4.3	5.5	9.1	3.7	3.9	6.7	2.7
5	All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6	Persons (In Million)	144.4	46.8	97.6	166.5	53.7	112.3	204.2	62.0	144.2

Source : As per Table 7.10

TABLE 7.14
GUJARAT: PERCENTAGE DISTRIBUTION OF TOTAL LIFETIME MIGRANTS
BY MIGRATION STREAM, 1961, 1971, 1981

Sr. No.	Migration Type	1961			1971			1981		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1	2	3	4	5	6	7	8	9	10	11
1	Rural to Rural	64.4	45.9	72.9	60.3	42.2	68.9	67.0	39.0	65.3
2	Rural to Urban	19.5	31.3	14.1	21.0	33.0	15.4	22.1	34.3	16.4
3	Urban to Urban	11.1	16.7	8.6	11.9	17.3	9.4	14.1	19.5	11.6
4	Urban to Rural	5.0	6.1	4.4	6.7	7.5	6.3	6.8	7.2	6.7
5	All Streams	100.0	100.0	100.0	100.0	100.6	100.0	100.0	100.0	100.0
6	Absolute Number ('000)	6642	2099	4543	8382	2697	5685	11291	3581	7710

Note: The Unclassifiable migrants in terms of rural-urban origin were redistributed on the pro-rate basis. Source: As per Table 5.1.

TABLE 7.15
GUJARAT: A DISTRICT-WISE PATTERN OF MIGRATION, 1961 & 1971 CENSUS

Sr. No.	District	Census Year	Total Migrants (000)	Percentage to Total Population				
				All Types	Intra-Districts	Inter-Districts	Inter-State	Inter-National
1	2	3	4	5	6	7	8	9
1	Jamnagar	1961	266.00	32.10	20.80	8.50	1.50	1.30
		1971	334.90	30.10	18.60	8.70	1.80	1.00
2	Rajkot	1961	407.60	33.70	21.00	10.40	1.10	1.20
		1971	540.50	33.30	19.90	11.30	1.10	1.00
3	Surendranagar	1961	228.00	34.40	23.20	10.10	0.80	0.30
		1971	274.20	32.40	20.90	10.40	0.90	0.20
4	Bhavnagar	1961	344.10	30.70	23.50	5.80	0.80	0.60
		1971	409.90	29.20	21.20	6.80	0.80	0.40
5	Amreli	1961	217.30	32.50	20.20	11.30	0.80	0.20
		1971	265.30	31.30	19.20	11.30	0.70	0.10
6	Junagadh	1961	394.30	31.70	22.60	6.50	1.20	1.40
		1971	505.70	30.50	21.00	7.40	1.10	0.90
7	Kachchh	1961	221.80	31.80	25.40	1.80	2.20	2.40
		1971	279.80	32.90	25.40	2.60	3.10	1.80

TABLE 7.15 (Cont..)
GUJARAT: A DISTRICT-WISE PATTERN OF MIGRATION, 1961 & 1971 CENSUS

Sr. No.	District	Census Year	Total Migrants (000)	Percentage to Total Population				
				All Types	Intra-Districts	Inter-Districts	Inter-State	Inter-National
1	2	3	4	5	6	7	8	9
8	Banaskantha	1961	288.50	28.90	21.70	4.00	2.50	0.70
		1971	358.90	28.40	20.70	4.50	2.50	0.50
9	Sabarkantha	1961	289.00	31.40	21.70	7.30	2.30	0.10
		1971	367.20	30.90	22.10	6.50	2.20	0.10
10	Mehsana	1961	509.20	30.10	23.90	5.00	0.90	0.30
		1971	637.10	30.40	22.60	6.50	1.10	0.20
11	Gandhinagar	1961	-	-	-	-	-	-
		1971	82.30	41.00	8.30	29.10	3.30	0.30
12	Ahmedabad	1961	967.90	43.80	12.40	20.90	8.60	1.90
		1971	1130.90	38.80	9.20	19.60	8.50	1.50
13	Kheda	1961	645.20	32.60	23.00	8.00	1.10	0.50
		1971	812.20	33.10	22.40	8.80	1.40	0.50
14	Panchmahal	1961	406.00	27.60	23.00	2.70	1.60	0.30
		1971	473.20	25.60	21.40	2.60	1.40	0.20

TABLE 7.15 (Cont.)
GUJARAT: A DISTRICT-WISE PATTERN OF MIGRATION, 1961 & 1971 CENSUS

Sr. No.	District	Census Year	Total Migrants (000)	Percentage to Total Population				
				All Types	Intra-Districts	Inter-Districts	Inter-State	Inter-National
1	2	3	4	5	6	7	8	9
15	Vadodara	1961	535.00	35.00	21.50	9.60	3.00	0.90
		1971	706.70	35.70	20.90	10.60	3.50	0.70
16	Bharuch	1961	292.40	32.80	23.00	7.60	2.00	0.20
		1971	365.90	33.00	22.90	8.20	1.80	0.10
17	Surat	1961	770.30	31.40	24.50	2.90	3.50	0.50
		1971	579.20	32.40	17.20	7.90	6.90	0.40
18	Valsad	1961	-	-	-	-	-	-
		1971	392.70	27.50	19.90	4.10	3.10	0.40
19	TheDangs	1961	29.10	40.60	29.40	6.30	7.80	0.10
		1971	34.70	36.90	23.70	7.30	5.90	0.00
20	All Districts	1961	6811.70	33.00	21.70	7.90	2.60	0.80
		1971	8551.30	32.00	19.60	8.90	2.90	0.60

Source: Census of India 1961, Vol. V, Gujarat; Part II-C; Cultural and Migration Tables; Census of India 1971, Series'5, Gujarat, Part II-D (i), Migration Tables.

TABLE 7.16
DISTRIBUTION OF TOTAL MIGRANTS ON THE BASIS OF TYPE OF MIGRATION : GUJARAT :2001

Sr. No.	Area Name	Total Population	Total Migrants	Intra-District	Inter-District	Inter-State	Inter-national
1	2	3	4	4	5	6	7
0	GUJARAT	50671017	18810592	10706177	5501784	2520676	81955
1	Kachchh	1583225	520190	382487	74364	53740	9599
2	Banas Kantha	2504244	743027	598406	97154	43977	3490
3	Patan *	1182709	367736	229942	126926	9579	1289
4	Mahesana	1837892	689303	506283	156408	25918	694
5	Sabar Kantha	2082531	601488	485408	82787	32831	462
6	Gandhinagar	1334455	648565	205760	378225	62487	2093
7	Ahmadabad	5816519	2148464	728808	938270	461126	20260
8	Surendranagar	1515148	516227	348767	152669	13916	875
9	Rajkot	3169881	1212990	740778	412649	52249	7314
10	Jamnagar	1904278	622235	429351	149915	38717	4252
11	Porbandar *	536835	159007	91750	59530	6905	822
12	Junagadh	2448173	897202	750067	125026	19929	2180
13	Amreli	1393918	498256	350650	139153	8161	292
14	Bhavnagar	2469630	765860	543286	186503	33582	2489
15	Anand *	1856872	731423	450922	245830	32744	1927

TABLE 7.16 (Cont.,...)
DISTRIBUTION OF TOTAL MIGRANTS ON THE BASIS OF TYPE OF MIGRATION : GUJARAT :2001

Sr. No.	Area Name	Total Population	Total Migrants	Intra-District	Inter-District	Inter-State	Inter-national
1	2	3	4	4	5	6	7
16	Kheda	2024216	729523	486003	221279	21158	1083
17	Panch Mahals	2025277	602743	496343	84963	20609	828
18	Dohad *	1636433	412566	356583	31307	24361	315
19	Vadodara	3641802	1524049	811598	475956	227703	8792
20	Narmada *	514404	179401	109408	52315	17598	80
21	Bharuch	1370656	567107	320877	160564	84574	1092
22	Surat	4995174	2523947	593502	941406	981347	7692
23	The Dangs	186729	56212	39791	9453	6940	28
24	Navsari *	1229463	497137	293574	126434	75419	1710
25	Valsad	1410553	595934	355833	72698	165106	2297

Source: Census of India 2001- D Series Tables

TABLE 7.17
DISTRICT-WISE DISTRIBUTION OF MIGRANTS AS A PERCENTAGE OF THE
TOTAL MIGRANTS IN EACH MIGRANT TYPE OF GUJARAT- 2001

Sr. No.	Area Name	Total Population	Total Migrants	Intra-District	Inter-District	Inter-State	Inter-national
1	2	3	4	5	6	7	8
00	GUJARAT	100.0	100.0	100.0	100.0	100.0	100.0
01	Kachchh	3.1	2.8	3.6	1.4	2.1	11.7
02	Banas Kantha	4.9	4.0	5.6	1.8	1.7	4.3
03	Patan *	2.3	2.0	2.1	2.3	0.4	1.6
04	Mahesana	3.6	3.7	4.7	2.8	1.0	0.8
05	Sabar Kantha	4.1	3.2	4.5	1.5	1.3	0.6
06	Gandhinagar	2.6	3.4	1.9	6.9	2.5	2.6
07	Ahmadabad	11.5	11.4	6.8	17.1	18.3	24.7
08	Surendranagar	3.0	2.7	3.3	2.8	0.6	1.1
09	Rajkot	6.3	6.4	6.9	7.5	2.1	8.9
10	Jamnagar	3.8	3.3	4.0	2.7	1.5	5.2
11	Porbandar *	1.1	0.8	0.9	1.1	0.3	1.0
12	Junagadh	4.8	4.8	7.0	2.3	0.8	2.7
13	Amreli	2.8	2.6	3.3	2.5	0.3	0.4
14	Bhavnagar	4.9	4.1	5.1	3.4	1.3	3.0
15	Anand *	3.7	3.9	4.2	4.5	1.3	2.4
16	Kheda	4.0	3.9	4.5	4.0	0.8	1.3
17	Panch Mahals	4.0	3.2	4.6	1.5	0.8	1.0
18	Dohad *	3.2	2.2	3.3	0.6	1.0	0.4
19	Vadodara	7.2	8.1	7.6	8.7	9.0	10.7
20	Narmada *	1.0	1.0	1.0	1.0	0.7	0.1
21	Bharuch	2.7	3.0	3.0	2.9	3.4	1.3
22	Surat	9.9	13.4	5.5	17.1	38.9	9.4
23	The Dangs	0.4	0.3	0.4	0.2	0.3	0.0
24	Navsari *	2.4	2.6	2.7	2.3	3.0	2.1
25	Valsad	2.8	3.2	3.3	1.3	6.6	2.8

Source: Census of India 2001- D Series Tables

TABLE 7.18
DISTRICT-WISE DISTRIBUTION OF TOTAL MIGRANTS AS A PERCENTAGE
OF THE TOTAL POPULATION OF THE DISTRICT ON THE BASIS OF TYPE OF
MIGRATION – 2001

Sr. No.	Area Name	Total Population	Total Migrants	Intra- District	Inter- District	Inter- State	Inter- national
1	2	3	4	5	6	7	8
00	GUJARAT	100.0	37.1	21.1	10.9	5.0	0.2
01	Kachchh	100.0	32.9	24.2	4.7	3.4	0.6
02	Banas Kantha	100.0	29.7	23.9	3.9	1.8	0.1
03	Patan *	100.0	31.1	19.4	10.7	0.8	0.1
04	Mahesana	100.0	37.5	27.5	8.5	1.4	0.0
05	Sabar Kantha	100.0	28.9	23.3	4.0	1.6	0.0
06	Gandhinagar	100.0	48.6	15.4	28.3	4.7	0.2
07	Ahmadabad	100.0	36.9	12.5	16.1	7.9	0.3
08	Surendranagar	100.0	34.1	23.0	10.1	0.9	0.1
09	Rajkot	100.0	38.3	23.4	13.0	1.6	0.2
10	Jamnagar	100.0	32.7	22.5	7.9	2.0	0.2
11	Porbandar *	100.0	29.6	17.1	11.1	1.3	0.2
12	Junagadh	100.0	36.6	30.6	5.1	0.8	0.1
13	Amreli	100.0	35.7	25.2	10.0	0.6	0.0
14	Bhavnagar	100.0	31.0	22.0	7.6	1.4	0.1
15	Anand *	100.0	39.4	24.3	13.2	1.8	0.1
16	Kheda	100.0	36.0	24.0	10.9	1.0	0.1
17	Panch Mahals	100.0	29.8	24.5	4.2	1.0	0.0
18	Dohad *	100.0	25.2	21.8	1.9	1.5	0.0
19	Vadodara	100.0	41.8	22.3	13.1	6.3	0.2
20	Narmada *	100.0	34.9	21.3	10.2	3.4	0.0
21	Bharuch	100.0	41.4	23.4	11.7	6.2	0.1
22	Surat	100.0	50.5	11.9	18.8	19.6	0.2
23	The Dangs	100.0	30.1	21.3	5.1	3.7	0.0
24	Navsari *	100.0	40.4	23.9	10.3	6.1	0.1
25	Valsad	100.0	42.2	25.2	5.2	11.7	0.2

Source: Census of India 2001- D Series Tables

TABLE 7.19
INTER-DISTRICT MIGRATION RATES ACCORDING TO
THE BIRTH PLACE CRITERION, 1971

Sr. No.	Districts	In-Migration Ratios	Out-Migration Ratios	Net Migration Ratios	Percent of In-Migrants	Percent of Out-Migrants
1	Jamnagar	8.9	8.2	0.9	4.1	3.7
2	Rajkot	11.4	11.2	0.3	7.7	7.5
3	Surendranagar	10.5	15.5	5.9	3.7	5.8
4	Bhavnagar	6.8	12.9	6.9	4.0	8.1
5	Amreli	11.3	15.3	4.7	4.0	5.7
6	Junagadh	7.6	7.3	0.3	5.2	4.9
7	Kutchchh	2.7	6.6	4.2	9.0	2.3
8	Banaskantha	4.6	7.3	2.8	2.4	3.9
9	Mehsana	6.6	12.5	6.7	5.7	11.7
10	Sabarkantha	6.6	6.4	0.2	3.2	3.1
11	Panchmahal	2.7	6.0	3.6	2.1	4.8
12	Gandhinagar	30.0	20.1	12.4	2.5	1.4
13	Ahmedabad	21.8	10.0	13.1	24.1	9.6
14	Kheda	9.0	8.6	0.4	9.1	8.7
15	Vadodara	11.0	8.8	2.5	8.8	6.8
16	Bharuch	8.4	11.3	3.3	3.8	5.3
17	Surat	8.5	5.9	2.9	6.0	4.0
18	Valsad	6.4	4.6	0.4	2.4	2.7
19	The Dangs	7.8	4.9	6.0	0.3	N
20	Gujarat	9.2	9.2	-	100.0	100.0

Source: Census of India 1971, Series 5, Gujarat District Census Hand Book (19 volumes)

Note : The In-migration ratio is defined as 100 (in-migration/total Gujarat born resident population). The out-migration ratio is defined as 100 (out-migration/exposed population). The exposed population means the total number of people ever born in that district living in Gujarat. Net migration ratio is defined as 100(net-migration/Gujarat born resident population).

Table 7.20
RANKING OF DISTRICTS BASED ON THEIR SHARE
AMONG MIGRANT OF SPECIFIED CATEGORY, 1971

Sr. No.	Districts	Migrants from Other Districts of the State		Migrants from Other States of India		Migrants from Other Countries	
		Percent	Rank	Percent	Rank	Percent	Rank
1	2	3	4	5	6	7	8
1	Jamnagar	4.10	8	2.60	11	7.00	7
2	Rajkot	7.70	4	2.30	14	9.70	2
3	Surendranagar	3.70	12	1.00	16	1.20	14
4	Bhavnagar	4.00	10	1.40	15	3.50	10
5	Amreli	4.00	9	0.80	18	0.60	17
6	Junagadh	5.20	7	2.50	13	9.20	3
7	Kutch	0.90	18	3.40	8	9.00	4
8	Banaskantha	2.40	16	4.10	6	3.80	9
9	Sabarkantha	3.20	13	3.50	7	0.70	16
10	Mehsana	5.70	6	3.10	10	3.20	12
11	Panchmahals	2.10	17	3.30	9	2.20	13
12	Gandhinagar	2.50	14	0.90	17	0.30	18
13	Ahmedabad	24.10	1	32.40	1	25.20	1
14	Kheda	9.10	2	4.40	5	7.60	6
15	Vadodara	8.80	3	9.00	3	8.60	5
16	Bharuch	3.80	11	2.60	12	0.70	15
17	Surat	6.00	5	16.20	2	4.20	8
18	Valsad	2.40	15	5.80	4	3.30	11
19	The Dangs	0.30	19	0.70	19	N	19
	TOTAL	100.00		100.00		100.00	

N = Negligible

Source: Census of India 1971, Series 5, Gujarat, Part II D (i), Migration Tables

TABLE 7.21
DISTRICT-WISE AVERAGE DECADAL VARIATION IN
PERCENTAGE OF MIGRANTS
TO TOTAL POPULATION OF GUJARAT-1971-2001

Sr. No.	Area Name	Total Migrants (%)		Variation(%) (1971-2001)	Average Decadal Variation (%)
		1971	2001		
1	2	3	4	5	6
0	GUJARAT	32.00	37.10	5.10	1.70
1	Kachchh	32.90	32.90	0.00	0.00
2	Banas Kantha	28.40	29.70	1.30	0.43
3	Mahesana	30.40	37.50	7.10	2.37
4	Sabar Kantha	30.90	28.90	-2.00	-0.67
5	Gandhinagar	41.00	48.60	7.60	2.53
6	Ahmadabad	38.80	36.90	-1.90	-0.63
7	Surendranagar	32.40	34.10	1.70	0.57
8	Rajkot	33.30	38.30	5.00	1.67
9	Jamnagar	30.10	32.70	2.60	0.87
10	Junagadh	30.50	36.60	6.10	2.03
11	Amreli	31.30	35.70	4.40	1.47
12	Bhavnagar	29.20	31.00	1.80	0.60
13	Kheda	33.10	36.00	2.90	0.97
14	Panch Mahals	25.60	29.80	4.20	1.40
15	Vadodara	35.70	41.80	6.10	2.03
16	Bharuch	33.00	41.40	8.40	2.80
17	Surat	32.40	50.50	18.10	6.03
18	The Dangs	36.90	30.10	-6.80	-2.27
19	Valsad	27.50	42.20	14.70	4.90
20	Patan *	-	31.10	-	-
21	Porbandar *	-	29.60	-	-
22	Anand *	-	39.40	-	-
23	Dohad *	-	25.20	-	-
24	Narmada *	-	34.90	-	-
25	Navsari *	-	40.40	-	-

Source: Calculated from the data of Table 7.15 and Table 7.18

TABLE 7.22
MIGRATION BY PLACE OF LAST RESIDENCE WITH REASONS
(Excluding Jammu & Kashmir)
INDIA 1991

Reason for Migration	Number of migrants (0-9 Years)			Percentage to Total Migrants(0-9 Years)		
	Total	Male	Female	Total	Male	Female
Total migrants	82,107,175	27,255,302	54,851,873	100.00	100.00	100.00
Work/Employment	9,937,046	8,286,330	1,650,716	12.10	30.40	3.01
Business	2,245,485	1,809,643	435,842	2.73	6.64	0.79
Education	3,453,065	2,439,795	1,013,270	4.21	8.95	1.85
Marriage	42,925,568	674,884	42,250,684	52.28	2.48	77.03
Moved after birth	6,569,178	3,424,194	3,144,984	8.00	12.56	5.73
Moved with households	20,482,990	8,210,258	12,272,732	24.95	30.12	22.37
Other	9,453,393	5,125,173	4,328,220	11.51	18.80	7.89

INDIA - 2001

Reason for Migration	Number of migrants (0-9 Years)			Percentage to Total Migrants(0-9 Years)		
	Total	Male	Female	Total	Male	Female
Total migrants	97,837,113	32,720,108	65,117,005	100.00	100.00	100.00
Work/Employment	14,372,194	12,309,216	2,062,978	14.69	37.62	3.17
Business	1,131,763	946,921	184,842	1.16	2.89	0.28
Education	2,902,027	2,029,462	872,565	2.97	6.20	1.34
Marriage	42,925,568	674,884	42,250,684	43.87	2.06	64.88
Moved after birth	6,569,178	3,424,194	3,144,984	6.71	10.47	4.83
Moved with households	20,482,990	8,210,258	12,272,732	20.94	25.09	18.85

Other	9,453,393	5,125,173	4,328,220	9.66	15.66	6.65
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Source: Table D3, 2001 and 1991 Census

TABLE 7.23
MIGRATION BY PLACE OF LAST RESIDENCE WITH REASONS
(Excluding Jammu & Kashmir)
INDIA - 2001

Reason for Migration	Number of migrants (0-9 Years)			Percentage to Total Migrants(0-9 Years)		
	Total	Male	Female	Total	Male	Female
Total migrants	97,837,113	32,720,108	65,117,005	100.00	100.00	100.00
Work/Employment	14,372,194	12,309,216	2,062,978	14.69	37.62	3.17
Business	1,131,763	946,921	184,842	1.16	2.89	0.28
Education	2,902,027	2,029,462	872,565	2.97	6.20	1.34
Marriage	42,925,568	674,884	42,250,684	43.87	2.06	64.88
Moved after birth	6,569,178	3,424,194	3,144,984	6.71	10.47	4.83
Moved with households	20,482,990	8,210,258	12,272,732	20.94	25.09	18.85
Other	9,453,393	5,125,173	4,328,220	9.66	15.66	6.65

GUJARAT - 2001

Reason for Migration	Number of migrants (0-9 Years)			Percentage to Total Migrants(0-9 Years)		
	Total	Male	Female	Total	Male	Female
Total Migrants	245968	113930	132038	100.00	100.00	100.00
Work/Employment	51527	47301	4226	20.95	41.52	3.20
Business	3972	3565	407	1.61	3.13	0.31
Education	7563	5721	1842	3.07	5.02	1.40
Marriage	56726	659	56067	23.06	0.58	42.46
Moved after birth	28528	14974	13554	11.60	13.14	10.27

Moved with households	68667	27044	41623	27.92	23.74	31.52
Others	28985	14666	14319	11.78	12.87	10.84

Source: Table D3, 2001 and 1991 Census

TABLE 7.24
TOTAL MIGRANTS BY PLACE OF LAST RESIDENCE
UNDER DIFFERENT MIGRATION TYPES : GUJARAT -2001

Migration Type		Rural	Urban
All type			
	Rural	9,029,662	723,613
	Urban	4,535,522	2,752,546
	Total	13,565,184	3,476,159
Interstate			
	Rural	325,273	66,343
	Urban	1,110,161	591,029
	Total	1,435,434	657,372
Intra state			
	Rural	8,704,389	657,270
	Urban	3,425,361	2,161,517
	Total	12,129,750	2,818,787
Intra District			
	Rural	7,332,290	449,581
	Urban	1,642,863	1,053,162
	Total	8,975,153	1,502,743
Inter District			
	Rural	1,372,099	207,689
	Urban	1,782,498	1,108,355
	Total	3,154,597	1,316,044
International		8681	50063

Source : Compiled from Census of India, 2001, D-Series Tables –
Gujarat

TABLE 7.25
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR WORK/EMPLOYMENT AS REASON : GUJARAT -2001

Migration Type		Rural	Urban
All Types			
	Rural	327,939	56,274
	Urban	965,609	370,037
	Total	1,293,548	426,311
Interstate			
	Rural	89,677	13,584
	Urban	428,978	120,787
	Total	518,655	134,371
Intra state			
	Rural	238,262	42,690
	Urban	536,631	249,250
	Total	774,893	291,940
Intra District			
	Rural	163,803	24,397
	Urban	202,432	100,254
	Total	366,235	124,651
Inter District			
	Rural	74,459	18,293
	Urban	334,199	148,996
	Total	408,658	167,289
International		1675	6616

Source : Compiled from Census of India, 2001, D-Series Tables –
Gujarat

TABLE 7.26
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR BUSINESS AS REASON : GUJARAT -2001:

Migration Type		Rural	Urban
All type			
	Rural	209,714	37,277
	Urban	404,750	198,222
	Total	614,464	235,499
Interstate			
	Rural	34,130	7,458
	Urban	99,931	60,745
	Total	134,061	68,203
Intra state			
	Rural	175,584	29,819
	Urban	304,819	137,477
	Total	480,403	167,296
Intra District			
	Rural	127,948	18,824
	Urban	147,153	62,841
	Total	275,101	81,665
Inter District			
	Rural	47,636	10,995
	Urban	157,666	74,636
	Total	205,302	85,631
International		742	3219

Source : Compiled from Census of India, 2001, D-Series Tables –
Gujarat

TABLE 7.27
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR EDUCATION AS REASON : GUJARAT -2001

Migration Type		Rural	Urban
All type			
	Rural	93,136	10,736
	Urban	72,882	33,716
	Total	166,018	44,452
Interstate			
	Rural	1,853	1,189
	Urban	3,252	5,821
	Total	5,105	7,010
Intra state			
	Rural	91,283	9,547
	Urban	69,630	27,895
	Total	160,913	37,442
Intra District			
	Rural	72,759	5,477
	Urban	42,206	8,561
	Total	114,965	14,038
Inter District			
	Rural	18,524	4,070
	Urban	27,424	19,334
	Total	45,948	23,404
International		94	406

Source : Compiled from Census of India, 2001, D-Series Tables – Gujarat

TABLE 7.28
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR MARRIAGE AS REASON : GUJARAT - 2001

Migration Type		Rural	Urban
All type	Rural	6225836	271606
	Urban	1034070	640217
Total		7259906	911823
Interstate	Rural	72993	11608
	Urban	159486	120455
Total		232479	132063
Intra state	Rural	6152843	259998
	Urban	874584	519762
Total		7027427	779760
Intra District	Rural	5327587	183256
	Urban	491841	231086
Total		5819428	414342
Inter District	Rural	825256	76742
	Urban	382743	288676
Total		1207999	365418
International		5204	1045

Source : Compiled from Census of India, 2001, D-Series Tables – Gujarat

TABLE 7.29
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR MOVED AFTER BIRTH AS REASON : GUJARAT - 2001

Migration Type		Rural	Urban
All type			
	Rural	650035	124194
	Urban	360946	293764
	Total	1010981	417958
Interstate			
	Rural	8091	4284
	Urban	69432	49618
	Total	77523	53902
Intra state			
	Rural	641944	119910
	Urban	291514	244146
	Total	933458	364056
Intra District			
	Rural	524234	92699
	Urban	129274	112951
	Total	653508	205650
Inter District			
	Rural	117710	27211
	Urban	162240	131195
	Total	279950	158406
International		154	1064

Source : Compiled from Census of India, 2001, D-Series Tables – Gujarat

TABLE 7.30
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR MOVED WITH HOUSEHOLDS AS REASON : GUJARAT - 2001

Migration Type		Rural	Urban
All type	Rural	743598	149896
	Urban	1299852	838913
	Total	2043450	988809
Interstate	Rural	94163	21933
	Urban	267594	180353
	Total	361757	202286
Intra state	Rural	649435	127963
	Urban	1032258	658560
	Total	1681693	786523
Intra District	Rural	472648	80290
	Urban	462767	325075
	Total	935415	405365
Inter District	Rural	176787	47673
	Urban	569491	333485
	Total	746278	381158
International		2152	17683

Source : Compiled from Census of India, 2001, D-Series Tables – Gujarat

TABLE 7.31
MIGRANTS BY PLACE OF LAST RESIDENCE
BY DIFFERENT MIGRATION TYPES
FOR OTHER REASONS : GUJARAT - 2001

Migration Type		Rural	Urban
All type			
	Rural	779,404	73,630
	Urban	397,413	377,677
	Total	1,176,817	451,307
Interstate			
	Rural	24,366	6,287
	Urban	81,488	53,250
	Total	105,854	59,537
Intra state			
	Rural	755,038	67,343
	Urban	315,925	324,427
	Total	1,070,963	391,770
Intra District			
	Rural	643,311	44,638
	Urban	167,190	212,394
	Total	810,501	257,032
Inter District			
	Rural	111,727	22,705
	Urban	148,735	112,033
	Total	260,462	134,738
International		2819	15871

Source : Compiled from Census of India, 2001, D-Series Tables – Gujarat

TABLE 7.32
MIGRANTS FOR DIFFERENT REASONS WITH MIGRATION TYPE : GUJARAT – 2001
(in '000)

Reasons of Migration	Intra-State		Inter-State		Intra-District		Inter-District		International	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Work & Employment	286	795	105	556	192	307	94	488	2	7
Business	209	448	42	163	149	213	60	235	1	3
Education	103	100	3	10	80	52	23	48	0	0
Marriage	6506	1417	86	285	5592	735	914	682	1	5
Moved after Birth	776	551	13	122	628	249	148	301	0	1
Moved with Households	799	1750	119	459	570	824	229	926	2	18
Other Reasons	1801	1439	40	181	1611	1047	190	392	3	16
Total	10481	6499	407	1775	8822	3426	1658	3073	9	50

Source : Compiled from Census of India, 2001, D-Series Tables – Gujarat

TABLE 7.33
 VARIATION IN MIGRATION PROFILE BETWEEN 1991 - 2001
 FOR THE STATE OF GUJARAT BASED ON MIGRANTS BY LAST
 RESIDENCE (DURATION 0-9 YEARS)

Migration	2001	1991	Variation (%) 1991-2001
In-Migrants (From other States)	1,125,818	700,060	60.8
In-Migrants (From Abroad)	14,800	14,810	-0.1
Total In-Migrants	1,140,618	714,870	59.6
Out-Migrants	451,458	305,738	47.7
Net Migrants (+/-)	689,160	409,132	68.4

Source: D-Series Tables, Census of India, 2001

CHAPTER-VIII

FERTILITY

8.1 Introduction

Fertility is the most of significant factor which influence population growth. Fertility indicates how many children are born to a female. The birth of a child is determined by several factors like economic, social, cultural, geographical, religious, educational level, etc. Fertility is further influenced by sex and capacity to bear a child. The fertility period of a woman, i.e. that period of life when women menstruate, is to be considered as they alone can be pregnant. The longer this fertility period, generally held to be between 16 and 30 years, the higher is total fertility. Fertility generally decreases with age and hence fertility is not limitless. Fertility is also influenced by infant mortality rate and is directly is proportional to it. Thus, the higher the infant mortality rate, the higher will be fertility. Fertility differs between the rural and urban sectors also. Thus fertility is influenced by several factors, It is argued that it can differ from caste to caste and race to race.

Fertility depends up on

- (i) Age at which females marry
- (ii) Duration of the period of fertile union and
- (iii) The rapidity with which they build their families

Table 8.1 shows the provisional estimate of birth rate, death rate, natural growth rate and infant mortality rate in India during 2001 and Table 8.2 shows the rural-urban distribution of the above variables for the year 2001.

8.2 Factors Influencing Fertility

Numerous studies have been conducted to measure the fertility rate and to analyze and understand the relationship various economic as well as non-

economic factors with fertility rate and so many conclusions were also made. But the influence of all the factors varies from country to country according to the socio-economic-cultural set up of the country. An attempt is made here below to go further into the same problem.

I. Social Structural Determinants of Fertility

Despite falling fertility rates everywhere, significant differences in birth rates still prevail across regions and social groups. To understand divergent fertility rates, we need to look at the Varying needs and desires of social classes as well as the sexes and cultural groups. In this chapter, we explore the social conditions that contribute to high fertility as well as to fertility decline by focusing on the dialectics of social class and gender relations in the contemporary period.

(a) Affluence and low fertility

Among middle and upper social classes, children are economic liabilities not economic assets. Historically, with the shift from large extended families to nuclear families, wealth flows from children to parents declined. As demographer John Caldwell has pointed out, in families where the net intergenerational wealth flow is from parents to children, fertility tends to be low. Such factors as high pressure on women to compete in the paid labor force and high divorce rates make it rational for couples and single women to delay childbearing and to have fewer children. This is reflected in declining birth rates in most industrialized countries in the North. While women are compelled to take up paid employment outside the home, even while raising small children, men are not necessarily sharing in the domestic work. Parenting is not a rewarded occupation; everywhere, the burdens of raising children are borne overwhelmingly by women. To succeed in the competitive, professional world, people have to develop the qualities of mobility, impatience, firmness, efficiency and total commitment to self. But these are often antithetical to qualities such as stability, patience, gentleness,

a tolerance for chaos and commitment to others needed to succeed as a parent. As both men and women are forced to value professional rationality and paid work outside the home before the work of childrearing, the emotional foundation of the entire society weakens. Children are frequently put out of the home in their infancy into 'day care' centers, which tend to regiment them within the mechanical clock and the bureaucratic life-style from a tender age.

For middle and upper classes everywhere, childrearing is increasingly an expensive undertaking. Since the beginning of colonialism, privileged classes in the colonies have emulated the values, consumption patterns and lifestyles of the West. In the Third World, as in Europe, privileged social classes that benefited from capitalism achieved the transition to low fertility first. The globalization of middle-class consumerism along with women's education and the necessity of their paid employment to meet rising aspirations have been decisive factors in the decrease in family size across the world.

Indeed, the fact that adults derive sensuality and joy from children, that children are intrinsically valuable and that women have borne children as a natural part of life to satisfy emotional and biological needs throughout history is rarely mentioned in Malthusian explanations of population growth. While the existential question of why women have children cannot be taken up here, we can seek answers to the more limited question of why relatively high fertility persists among poor women.

(b) Infant mortality and high fertility

In underdeveloped countries mortality is the most important factor determinant of fertility. Higher mortality-foetal and post-birth reduces the possibility of survival of children to the economically productive age level. Hence, in order to insure against the risk of losing the necessary male children a family keeps more children.

Although significant decreases in global mortality and infant mortality have taken place in recent decades, great disparities in mortality still persist between regions and social groups. Higher infant mortality and fertility rates can be observed in the poorer countries and poorer classes and racial groups across the world. High levels of child mortality necessitate that women give birth to several children. Then at least a few will survive into adulthood, ensuring security for parents in their old age. For example, in India, out of the six or seven children that women gave birth to on the average, in the early 1980s only four were expected to survive into adulthood. High infant and maternal mortality, disease and malnutrition are reflections of the poverty. To understand the poverty-fertility nexus, then, women's roles in economic production and reproduction must be explored.

(c) Gender and Fertility

As sociologist Kathryn Ward, has argued, lowered access to resources, conditions conducive to infant mortality and income inequality and other problems located within the world economic system, as well as the persistence of the high social and economic value of children, underlie the close relationship between women's poverty and high fertility. Health researcher Jodi Jacobson, too, has pointed out that insufficient access to productive resources and family income and increased pressure on time and labor make women depend on children for social esteem and economic security. Lacking alternative routes to survival, some women also have children to legitimate claims on income from men. All these conditions contribute to the perpetuation of the cycle of low social status, poverty and high fertility of women. When women cannot increase their own labor any more, they tend to rely more on the labor of their children, particularly girls. In many areas, women are increasingly keeping girls out of school to help with their work. More and more girls are dropping out of both primary and secondary school or just missing school altogether due to increasing

poverty. This will contribute to continued illiteracy, poverty and high fertility in the future generation of women. Externally imposed political and economic forces place contradictory pressures on women's fertility behavior. By increasing women's economic vulnerability, imperialist policies increase women's need for more children while at the same time making it difficult for women to take care of those children. Moreover, family planning programs demand that women reduce their fertility without providing any assurance whatsoever that the children who are born will be able to survive into adulthood. Nevertheless, women's reproductive behavior cannot be attributed simply to poverty induced by the global economy. Material production and human reproduction in the world today are defined by the social and psychological structures of patriarchy as well as capitalism and racism. The subordination of women is a historical phenomenon that predates capitalism and imperialism. Neither women's poverty nor their fertility can be understood outside of patriarchy and the psychological and physical violence directed habitually against them.

(d) Patriarchy and high fertility and preference for sons

Fertility behavior is likely to reflect dominant social class, male and interests. Many countries and international organizations are now beginning to recognize the existence of 'significant' forms of violence against women both within and outside the family, for example incest, rape, sexual harassment, battery, genital mutilation (removal of the clitoris or its parts in some Muslim societies). But what is not addressed by population control-enthusiasts the extent to which sexual violence and coerced sex results in pregnancy and childbirth around the world.

A particular aspect of patriarchal thinking that has a direct bearing on fertility and mortality outcomes is the preference for sons. While son preference is a deep-rooted mentality that has its origin in agricultural societies, it continues to exercise a determining influence on reproductive behaviour in the

contemporary era. Although women are increasingly active in the public sphere and are often the primary breadwinners of families, the ideology of female dependence continues to be strong. The persistence of such traditions as dowry, that is, the giving of wealth by the bride's family to the groom and his family at marriage in South Asia; the patrilocal custom of women living with the husbands' families after marriage; sons' roles at parents' funerals and in ancestor worship, make boys economic and social assets and girls liabilities. Son preference often contributes to high fertility since families continue to have children until they have enough sons, or at least one son.

In patriarchal societies where women receive social status only as the bearers of children, especially sons, women themselves may uphold high fertility norms. Although women bear children, they do not often make fertility decisions. These are usually made by the husbands and are enforced with psychological and sexual control and violence against women. Surveys have found that even in the state of Kerala, where women have high social status and autonomy relative to other states in India, husbands disapproval is a common reason for not using contraceptives on the part of women not wanting another child.

Fertility decisions are made not only by the reproductive generation. Where extended family and kin relations continue to be strong, the older generation may encourage beliefs and customs hostile to fertility control and generally favorable to males. However, extreme preference for sons also leads to population reduction, where female infanticide is widely practiced. Female infanticide has long been a population regulation mechanism. Even today in many villages of India and China it is fairly common. Ironically, it is the women, the mothers themselves, who often initiate 'putting a child to sleep', the euphemism for infanticide. Many believe that it is better to save a girl from a 'lifetime of suffering'.

Besides such outright killing of women, there are other more routine practices based on inequality and neglect that contribute to the lowering of the female population in countries such as India. The disparity in the sex ratio could further widen in countries like China and India due to increased use of sex-selective abortions and other practices directed against female fetuses and baby girls.

There is evidence from around the world that after conception women tend to live longer where both sexes receive similar nutritional attention and health care. However, in many Third World countries, owing to the reduced food and health care received by females, far more girls than boys die during the critical period from infancy until age five.

These disparities are clearly reflected in differences in infant and child mortality rates between the sexes. However, for a number of 'developing countries' for which UN data are available, within the 1-4 age group, female child mortality is higher than male child mortality. Economist Amartya Sen points out, "economic development is quite often accompanied by a relative worsening in the rate of survival of women (even as life expectancy improves in absolute terms for both men women)". Indeed, the phenomenon known as 'missing women' in needs to be approached from within this broad social context of violence against women. Discrimination in health and nutrition, population cone pressures, female infanticide, sex-selective abortions, dowry deaths in India, all contribute in different ways to this phenomenon.

Fertility declines require alleviation of poverty and improvements in the living conditions of the poor, especially women. Where children's labor is not essential for family survival, where women and children have food and nutrition, education, health care- and gainful employment, they are more likely to accept birth control and voluntarily lower their fertility. Across the world, a consistent correlation can be observed between female literacy/schooling and reduced child

mortality and fertility. Education leads women to increase labor force participation, delay marriage and bear fewer children.

(e) Social Justice and Fertility

Studies show that the biggest reductions in fertility occur when the inequalities between economic sectors are reduced and particularly when the income of the poorest groups is increased. A World Bank Staff Report of 1974 based on a study of 64 countries admitted that 50% of income accruing to the richest 15% of households is not as important in influencing overall population growth as the 50% of income received by the poorer 85% of households. This study also showed that when the proportion of income of the poorest group (that is, the bottom 40% of the population in terms of income) increased by just 1%, the overall fertility rate of the country dropped approximately 3%. The same study demonstrated that when literacy rate and life expectancy rates are added to the income analysis, these three factors account for 80% of the variation in fertility in the countries surveyed. The 1984 World Bank World Development Report argued that above the poverty threshold, increases in income tend to be correlated with lower fertility levels.

The experience of Kerala defies the conventional demographic transition theory in many ways. Unlike the developed economies or 'success' economies, Kerala did not have very high levels of economic growth, per capita incomes, industrialization or urbanization. They also defy the neo-Malthusian population control theory in that it did not have strong family planning programs in common. What it did have in common were guarantees of basic necessities, especially access to a basic diet for all. Kerala has provided more extensive food guarantee systems than other Third World countries

Evidence also shows that in Kerala fertility reduction was related not merely to improvements in general population, but also to improvements in the

position of women. Patriarchy is far from being uprooted in these locations and family planning programs in many of them tend to use sterilization and high-tech contraceptives used elsewhere. However, increased health, education and economic opportunities for women have significantly improved women's lives in these countries. In Sri Lanka, despite low economic growth rates and per capita incomes during the 1960s and 1970s, benefits provided by the social welfare state such as universal education and health care and food subsidies helped improve the physical quality of life and lower mortality and birth rates.

Women's Economic and Social Status is also related with fertility. When the economic and social status of women in the society increases, the fertility as well as birth rate tend to decline. In the same way improvement in women's health status has shown also a negative correlation with birth rate but a positive correlation with fertility rate.

(f) Level of Education and Fertility

Level of education develops the awareness and willingness to understand the basic problems affecting the individual, his family, his society and his country in a rational way. Education broadens horizons and breaks the barriers against willingness to restrict family size. Hence, other things remaining same, education ought to be negatively associated with fertility. Research on the relationship with education and fertility in U.S.A. shows that when other variables were controlled education of the father might make 20 per cent difference to the fertility but the education to the mother might make about 40 per cent difference to the fertility. This difference was rapidly declining afterwards. Part of this difference might be because of late marriage, increasing economic activities among women and spread of higher education among women. Even in underdeveloped countries, negative co-relationship is observed between level of education and fertility. Moreover, there is a curvilinear relationship between the number of children and the percentage of literate women. However, the relationship between education

and fertility differs time to time, region to region. In India, association between education and fertility was small at the beginning of the decade, but it become significant at the end of the decade. There is negative correlation between female literacy and fertility. When become more and more literate, the tendency to bear more children decreases as she become more and more attached to the society and her job.

At all levels of education, the mean number of children has shown a reduction during the decade 1991-2001. Maximum reduction has been observed in the category 'literate but below middle' (Table 8.3). The mean number of children ever born has come down from 4.3 in 1991 to 3.7 in 2001 (decrease of 0.6). Thus the impact at this level of education, which happens to be the first level of education in the levels of literacy, seems to be significant in the reduction of the mean number of children. Though the reduction in the mean number of children is observed at further higher levels of education, the rate of decline in the mean number of children is lower. This may be because once the mean number of children reaches a certain minimum level, law of diminishing return will operate and will not go down faster further, in tandem with the increase in level of education.

It is observed that the level of education and the fertility rates are inversely related. The negative correlation between these two is stronger when the fertility is high and as the fertility comes down and reaches a certain minimum level, the intensity of correlation becomes weaker. The data reveals that at the lowest level of education (below middle level), the decline in the mean number of children is 13.7 percent (4.3 to 3.7), whereas among graduates and above, it is 7.0 percent (2.3 to 2.1).

The TFR, which represents the current fertility rate, is 2.52 for all women in 2001, whereas it is 3.09 for illiterates and 2.02 for literates. TFR is going down with the increase in the level of education starting from a high of 2.37 among

'literate but below middle' and reaching a low of 1.35 among 'graduates and above'.

The data suggests that the education is undoubtedly one of the most potent instruments to bring down the total fertility rates, especially, in areas where the fertility rates are higher and the female literacy rates are lower. The data suggest that if the females acquire education up to matric or secondary level, the desired level of fertility rate (replacement level) of 2.1 or even less than that may not be difficult to achieve.

(g) Joint Family System and Fertility

It is a popular belief that joint-family supports high fertility. Joint-family does not have high fertility value in as much as it reduces age at marriage and the need and willingness for voluntary abstinence; it keeps down the use of contraceptive, it may perhaps reduce the incidence of foetal mortality. But joint-family may also reduce fertility by reducing exposure to intercourse within union. It is also said that increase in westernization, modernization, industrialization and nucleation of family, the fertility decline. Even in the joint-family system, coital frequency may be reduced because of lack of privacy and greater hold of religion and custom.

(h) Race, Religion and Fertility

Ethnic, religion and racial cultures have no impact on fertility, but there is effects of these variables on stages of reproductive process. In India, fertility among Muslims has been higher than in Hindus and in the West, it has been observed higher among Rome Catholic than that of Protestant. In case of scheduled caste and scheduled tribes in India, the birth rate as well as fertility rate has shown a positive relationship. i.e. fertility can be observed comparatively higher in these castes than that of other castes in India.

The rates of TFR based on the data of 2001 Census for Scheduled Castes and Scheduled Tribes and religious communities by residence have been computed and presented in Table 8.4.

It may be observed that at the national level, TFRs among Scheduled Castes and Scheduled Tribes are higher than that of the all population in Census 2001, their values being 2.89 and 3.16 respectively compared to 2.52 for the total population. Among the religious communities, TFR is highest for Muslims (3.06) followed by Hindus (2.47) and Buddhists (2.29), the lowest being in case of Jains (1.50).

(i) Urbanization and Fertility

Rate of fertility also differs from rural to urban. On account of increasing urbanization, competition, individualism and economic and physical cost, rate of fertility declined in urban pockets. Moreover, fertility in bigger urban concentrations ought to be lower than in smaller urban concentrations. In rural areas of India, marriage-age is lower than that of urban areas and incidence of voluntary calibacy is also lower. Hence it is postulated that there are rural-urban differences in fertility in India.

(j) Marriage Age and Fertility

There is also relationship between marriage-age and fertility. Fertility is expected to be higher for women marriage below the age of 15 years than for those aged more than 15 years. But in fact, marriage at a low age the result of low education and impact of traditions. There factors are also conducive to higher fertility.

II. Economic determinants of fertility.

(a) Income level and Fertility

Fertility is generally negatively co-related with income. This is because of higher level of income is closely co-related with education, occupation, a balanced consumption pattern, time and money for other recreations. Temporal and spatial studies suggest that, at a very low levels of income, any increase in income may not affect fertility, if it at all affect, the effect will be in the direction of rising it. But after a critical level of income, the fertility declines. However, in developed countries it has been observed recently that fertility may go up again with increase in income.

(b) Non-Agricultural work and Fertility

It is observed that employment in a non-agricultural sector carried on at or very near the residence of the women is conducive to higher fertility, i.e. higher than her fertility would be if she worked away from home. It is also found that fertility among hand and head workers have been higher than white-collar workers, farmers and agricultural labourers have higher fertility than workers of other sector.

(c) Rate of Unemployment and Fertility

Rate of unemployment and fertility is negatively correlated. As the rate of unemployment increases, the fertility rate decrease. This has its connection with income level of the people. An increasing level of unemployment causes a decreasing the income earning capacity of the family. Naturally they may opt for more income earners in the family to support and save the family.

(d) Poverty and High Fertility

A positive correlation is found between the percentage of population below poverty line and fertility. States like Bihar, Uttar Pradesh etc. the percentage of population below poverty line is higher and accordingly the birth rate and fertility rate too. One of the main reason for high fertility rate in India is the influence of large number of poor people.

Many regions, a woman's social status is still linked almost entirely to her reproductive role; for many women, children are the only source of power. Failure to bear children, especially sons, is the cause of "ostracism, divorce and even brutality in areas of Africa and southern Asia". Women in patriarchal agricultural societies who derive their only social status and self-esteem from their roles as mothers and mothers-in-law may be reluctant to give them up where better alternatives are not on the horizon.

A field survey of migrant households in Uttar Pradesh and Tamil Nadu in India conducted by demographic researcher Alaka Basu also revealed that in both regions and in all age categories the percentages of women who expressed happiness with life increased with the number of children. Basu found that although happiness is an "amorphous concept", the "consistent relationship between numbers of living children and general contentment with life" could not be dismissed. In the light of Malthusian depictions of children as simply a drain on adults and the planet, such findings need greater consideration.

The links between poverty and population are varied and complicated. For most poor people in the Third World, children are not only a means of pleasure and hope, they are also a means of survival. Even by official accounts, which tend to underestimate the extent and value of child labor, in the 'developing world', anywhere from 4 to 20% of children in the 5-14 age group are currently working. According to ILO estimates, globally 250 million 5-14 year olds are

employed. Fifty percent of them are full-time employees. To understand the conditions under which households voluntarily opt for large families, we must look at the social relations of production and reproduction, with particular attention to such factors as the economic value of children and the persistence of high levels of infant mortality.

Contrary to the assumptions of Malthusianism, higher fertility among the poor is not the result of ignorance, apathy, irrationality or lack of access to contraceptives. It is not the result of mere persistence of traditional reproductive patterns either. For most poor people, children are economic assets not liabilities. Caldwell's fertility transition theory shows that where wealth flows from children to the parents, fertility tends to be high. The 1984 World Bank World Development Report observed that 80-90% of people surveyed in Indonesia, South Korea, Thailand and Turkey expected to rely on their children for support in their old age.

Since the emergence of settled agricultural societies, children have been an important and often exploited source of labor for adults. For women burdened with the tasks of domestic work and subsistence production, children's, especially girls', labor, is an indispensable and consistent source of support. In many parts of the world, starting as early as 5, girls start helping with typically 'female tasks' such as caring for younger siblings, carrying water, and food production and preparation. Not only is almost all of this labor unrecognized and unpaid, but also, where parents' well-being is "heavily dependent" on children's labor, the relationships between parents and children tend to be marked by clear hierarchy, exploitation and coercion even in agricultural societies that otherwise exhibit marked egalitarian characteristics.

The marginal employment available to the appropriated masses is daily casual labor: in construction, in hawking, as restaurant waiters or cleaners - in

what are euphemistically called the 'service industries'. But, most important, this employment is skewed in favor of child labor. Children shine shoes, open car doors or clean cars, and most of all they beg. In fact, begging becomes a regular occupation: it is organized. ... Once they grow up, these children may desert their families, but as long as they are young and physically unable to leave, these 'innocent ones' in fact support the adults.

Poverty breeds anxiety, conflict and family violence. Yet without mutual support and without each other, the poor could not survive. The existence of non-monetary supports such as exchange of food and services often provides more security and satisfaction to people than meager wages or state aid. Both in the Third World and in the West, extended kin networks are essential for the survival of the poor.

8.3 Analysis of Relationship of Birth Rate with the factors Affecting it

The above discussion is summarized in table 8.4 and corresponding table 8.5 which gives the estimated correlation coefficient between birth rate and different factors influencing it. Table 8.5 tries to establish relationship between birth rate and:

- i) Infant Mortality rate
- ii) Percentage of urban population to total population
- iii) Mean age at marriage
- iv) Density of population
- v) Real per capita income
- vi) Sex ratio
- vii) Percent of SC and St population to total population
- viii) Female literacy rate
- ix) Rate of unemployment
- x) Percentage of population to total population below poverty line

- xi) Women's economic status
- xii) Women's social status
- xiii) Women's health status

The estimate is done taking values of different variable from 14 major states of India and all India figures. The relation between birth rate and infant mortality rate is found not significant at 5% level but in all other cases the relationship is significant at 5% level. But in some other studies the relationship between birth rate and infant mortality rate was found significant. However, a high degree of positive relationship is found between the birth rate and infant mortality rate. As the previous studies revealed, one of the main reason for high birth rate in the country is high infant mortality rate. Likewise, percentage of SC and St population and percentage of population below poverty line affects the birth rate positively.

On the other hand, increase in urban population, increase in the mean age at marriage, high density of population, increase in real per capita income, increase in the number of females in the population, improvement in the female literacy rate, an increase in rate of unemployment, improvement in woman's economic condition, their health condition and their social status will have negative impact on birth rate.

Similarly in Table 8.7, figures of Total Fertility Rate and data pertaining to various factors affecting fertility rate of eight selected state of the country is given and in Table 8.8 coefficient of correlation between these variables are given which are self explanatory. The relationship is found significant at 5% level. Table 8.8 tries to establish relationship between birth rate and:

- i) Percentage of urban population to total population
- ii) Mean age at marriage
- iii) Density of population

- iv) Real per capita income
- v) Sex ratio
- vi) Percent of SC and St population to total population
- vii) Female literacy rate
- viii) Male literacy Rate
- ix) Percentage of population to total population below poverty line
- x) Women's economic status
- xi) Women's social status
- xii) Women's health status

8.4 Multiple Regression Model on Fertility

On the basis of the above analysis as well as the analysis we can derive in to a multiple regression model.

$$Y_i = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \alpha_7 X_7 + \alpha_8 X_8 + \alpha_9 X_9 + \alpha_{10} X_{10} + \alpha_{11} X_{11} + \alpha_{12} X_{12}$$

Where:

Y_i = Total Fertility Rate

X_1 = Percentage of urban population to total population

X_2 = Mean age at marriage

X_3 = Density of Population

X_4 = Real per capita income

X_5 = Sex ratio

X_6 = Percent of SC and St population to total population

X_7 = Female literacy rate

X_8 = Male literacy Rate

X_9 = Percentage of population to total population below poverty line

X_{10} = Women's economic status

X_{11} = Women's social status

X_{12} = Women's health status

This function is not all inclusive. At the same time, covers maximum number of social, economical and cultural factors which affect either positively or negatively the birth rate and fertility rate of a region.

Table 8.8 illustrates that the per cent of SC and ST population, per cent of population below poverty line and improvement in Woman's health status will be able to create positive impact on total fertility rate. At the same time On the other hand, increase in urban population, increase in the mean age at marriage, increase in density of population, increase in real per capita income, increase in the number of females in the population, improvement in the female as well as male literacy rate, an increase in rate of unemployment, improvement in woman's economic condition and their social status will have negative impact on total fertility rate.

A correlation Matrix is given by Table 8.9 which measures the extent of relationship exists in between each of the variable given in Table 8.7

Prabhu J. C. (Social and Cultural Determinants of Fertility in India, Indian International Publication, Allahabad, 1974) discussed all the factors influencing fertility. The discussion is based on reasoning and empirical historical studies with reference to social and economic situation. According to him. one of the most important demographic variables affecting fertility is mortality itself.

Rate of fertility defers country to country, region to region and time to time. It is found higher among underdeveloped and developing countries. The main and the obvious cause is prevailing traditional value system. The contrasting value orientation is dear from the following schematic chart (Table 8.6). The chart was presented by Clifford W. D. in "Modern and Traditional values; Orientations and Fertility Behaviour: A Socio-Demographic Study", Demography 8,1st Feb., 1971.

CHART 8.1
SCHEMATIC CHART

No.	Underlying Question	Traditional High Fertility pattern	Modern Low Fertility pattern
1	What is relation of man to nature?	Man subject to nature and God little control over destiny Fatalism	Man can control the nature God works through man Opinism
2	What is the relation of man to time?	Present Oriented Not much Planning	Future Oriented Planning
3	What is the nature of sex?	Basically evil Defined as duty/gratification Procreative	Basically good Natural gratification Procreative and recreational
4	What is the nature of human activity and work ?	Being Existence Oriented	Doing Work Oriented
5	What is the nature of human relationship?	Familistic- Kinship based Lack of Participation in Social Organization	Individualism - Recognized non-kin criterion Social Participation in non-familial organization

Answers to the questions shown in the above table show the reasons for high fertility and low fertility. As far as country like India is concerned, achievement motivation is low and affiliation is high. Social system and thus, value system conducive to economic development and fertility reduction is absent. In a society where class system is very close and the economic relations are non-specific, in this situation, non-economic factors are more important than purely economic considerations in determining fertility.

8.5 Fertility in Gujarat

In the following paragraphs, a brief analysis of fertility status in the state of Gujarat is discussed. In Gujarat from the very beginning rate of fertility was found higher than that of India. At the same time, the rate of decline was also found slow. It is also clear from the data that rate of fertility declined continuously in Gujarat State. Table 8.11 gives the details of general fertility, total fertility and gross reproduction rate of Gujarat for the years 1981, 1986 and 1993

(a) General Fertility Rate, Total Fertility Rate and Gross Reproduction rate

The general fertility rate (GFR) gives the number of live births occurring to 1000 females during their reproductive span (15-49 years) in a given year. The GFR thus indicates the reduction in fertility due to family planning activities or socioeconomic changes. Table 8.11 compares the general and total fertility and gross reproduction rates of Gujarat and India as a whole during 1981-1993.

As the top panel of Table 8.11 indicates, during 1981-93, the GFR of the state declined at a faster rate than that of the country. The rural GFR followed a similar pattern, which was reversed in the case of the urban GFR in that the national urban GFR decreased at a faster rate than that of Gujarat. The TFR, which gives the average number of children a woman can produce during her childbearing years (i.e. 15-49 years) indicated a trend similar to the GFR (Middle panel of Table 8.11

The bottom panel of Table 8.11 looks at the rural, urban and combined gross reproduction rates (GRR) of Gujarat and all-India in 1981, 1986 and 1993. The GRR gives an idea of the capacity of a woman to produce female children during her fertile period. As seen from Table 2, Gujarat had a lower GRR than India for all the three years and both declined by 0.5 points between 1981 and 1993 (Gujarat: from 2.0 to 1.5; India: from 2.2 to 1.7). The rural-urban

comparison showed that the rural GRR was lower for Gujarat than for India for all the three years, but the urban GRR was lower than the all-India rate only in 1993.

(b) Age-specific Fertility Rate

Table 8.12 presents the age specific fertility rate (ASFR) of Gujarat and India for the years 1981, 1986 and 1993. Table 8.12 shows air ASFR of 56.6 for women aged 15-19 years in Gujarat in 1981; this means that 1000 women in this age group had produced, on average, 57 children in that year. In the same year, women in the next higher age group (20-24 years) had produced 294 children, which was the highest. Thereafter, the ASFR decreased as age increased and was 12 for women who were 45-49 years of age. A similar trend with the ASFR peaking in the 20-24 age group and declining thereafter was observed in 1986 and 1993 for Gujarat, as also for the country as a whole for all the three years.

A comparison of ASFRs across 1981-93 in Gujarat showed a reduction from 56.6 in 1981 to 26.3 in 1993 among women aged 15-19 years. For almost all age groups, the ASFR displayed a similar declining pattern. This was so in the case of India as well, except in the age groups 15-19 and 20-24 years where the ASFR increased slightly. The data also showed that except for the peak childbearing years of 20-29, the ASFRs of Gujarat were lower than the national ASFRs for all the three years. This suggests that the state family welfare planners should direct their efforts to these age groups for lowering the birth rate of the state.

Table 8.13 gives the rural and urban ASFRs for Gujarat for the three selected years. The data shows that in 1981, the rural ASFR was higher than the urban ASFR irrespective of the age group. This was so in 1986 and 1993 as well with the exception of the 15-19 age group in 1986 where the rural ASFR was slightly lower than the urban ASFR.

(c) Distribution of live births by religion

Table 8.14 explain number of women and ever married women by present age, religion, total children ever born by sex in the state of Gujarat during the year 2001. It gives a comparative analysis of the percentage of women and corresponding proportion of child birth. After Hindu, the second largest religious community in Gujarat is Muslims. The fertility rate among Muslim women is higher than that of the Hindu Women. The contribution of other communities is far lower than this level. The proportion of Scheduled Tribe is more that of Scheduled Caste in Gujarat.

(d) Distribution of live births by literacy level

Table 8.15 illustrates the number of women and ever married women by present educational level and total children ever born by sex in Gujarat during the the total live birth in Gujarat. The same figure for literate is 36.17 percent live birth by 49.39 percent women. It can also be noticed form the table that when the level of education increases the number of children born decreases. The secondary but below graduate category the figures are 7.75 percent birth by 10.59 percent women. In the graduate and above level it is 2.00 per cent by 2.81 percent.

(e) District-wise Crude Birth Rate

Table 8.16 gives the figures of number of women and ever married women by present and total children ever born by sex in the year 2001. Total number of women in Gujarat in 2001 is 24285440 out of which 13800434 are ever married. That is 56.83 per cent are ever married women. On an average about 3 children are born for the married women in Gujarat. Table 8.17 gives number of women and currently married women by sex and number of births last year.

Table 8.18 explains the crude birth rate of different districts of Gujarat for the year 2001 as per final population totals of census 2001. The state average is CBR is 38. Eleven districts have CBR below the state average and the remaining 13 districts have the CBR above the state average. The Kachchh district has not been taken into account. The CBR of the Dangs, Dohad and Banas Kantha are fifty two, fifty and fifty respectively while the CBR of Navsari is 29 and the least in the state.

8.6 Birth Rate Model for Gujarat

As analysed earlier in this chapter, the correlation of crude birth rate of Gujarat for the year 2001 and some of the variable influencing it has been calculated in order to establish fertility function. The relationship between crude birth rate and all the variable have been tested and found significant at 5% level except the relationship with sex ratio and percentage of ST population which are found significant at 1% percent level. Some of the variables used to calculate the correlation are:

- i) Percentage of Male Agricultural workers
- ii) Percentage of female agricultural workers.
- iii) Sex ratio
- iv) Work Participation Rate
- v) Literacy rate
- vi) Percentage of SC Population
- vii) Percentage of ST population
- viii) Percentage of Urban population

Literacy rate and percentage of urban population has shown a high negative correlation with crude birth rate highlighting the possibility of a reduction in birth rate by enhancing literacy rate and urbanisation. Sex ratio, work participation rate and percentage of ST population has shown a positive

correlation with birth rate. Percentage of male agricultural workers has shown a very low positive correlation while percentage of female agricultural worker has shown a negative correlation. i.e. the higher the percentage of male agricultural workers, the higher will be the birth rate and vice versa. But the higher the percentage of female agricultural workers, the lower will be the birth rate. A very low negative correlation is found between the birth rate and percentage of SC population. The relationship of birth rate with other variable could not be found due to non availability of enough reliable data. This model is based on the data given in Table 8.17. The relationship calculated is given in Table 8.18.

$$Y_i = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \alpha_7 X_7 + \alpha_8 X_8$$

Where:

- Y_i = Crude Birth Rate
- X_1 = Percentage of Male Agricultural workers
- X_2 = Percentage of female agricultural workers.
- X_3 = Sex ratio
- X_4 = Work Participation Rate
- X_5 = Literacy rate
- X_6 = Percentage of SC Population
- X_7 = Percentage of ST population
- X_8 = Percentage of Urban population

The above model makes clear that as the number of male agricultural labour increases the birth rate increases but the influence is very low. On the contrary there is negative relationship between female agricultural labours and birth rate. Even if it is low, the model says that an increase in female agricultural labours help decrease the birth rate. When number of females increases in the total population, there is chance to increase the birth rate.

Table 8.19 explains the extent of correlation exists in between crude birth rate and different variables influencing it. It is worth to point out here that the birth rate and Total Fertility Rate have shown a negative correlation with number of female per 1000 male in the analysis of relationships based on different states of the country. But in the district level analysis it has shown a positive correlation i.e. the crude birth rate is positively correlated with sex ratio. The total work participation rate has a positive impact on birth rate. There is a high negative correlation between birth rate and literacy rate. i.e. the higher the literacy rate the lesser will be the birth rate. It supports all the fertility theories with establishing the negative impact of education up on birth rate. Similarly a higher percent of urban population can also control the birth rate as per this model. The model further says that when the proportion of ST population increases, the birth rate also increase. Astonishingly, a very low negative correlation is found between per cent of SC population and birth rate. Still there are many factors which influences the birth rate of a country.

Table 8.20 shows the correlation coefficient between the variables given in Table 8.18. The relationship between crude birth rate and the various factors influencing it as well as the relationship exists among them is given in the table.

TABLE 8.1
PROVISIONAL ESTIMATE OF BIRTH RATE, DEATH RATE, NATURAL
GROWTH RATE AND INFANT MORTALITY RATE - 2001

Sr. No.	India/States/ Union territories	Birth Rate	Death Rate	Natural Growth Rate	Infant Mortality Rate
1	2	3	4	5	6
	India *	25.4	8.4	17.0	66.0
1	Andhra Pradesh	20.8	8.1	12.8	66.0
2	Assam	26.8	9.5	17.3	73.0
3	Bihar	31.2	8.2	23.0	62.0
4	Gujarat	24.9	7.8	17.2	60.0
5	Haryana	26.7	7.6	19.1	65.0
6	Karnataka	22.2	7.6	14.6	58.0
7	Kerala	17.2	6.6	10.6	11.0
8	Madhya Pradesh	30.8	10.0	20.8	86.0
9	Maharashtra	20.6	7.5	13.1	45.0
10	Orissa	23.4	10.2	13.1	90.0
11	Punjab	21.2	7.0	14.2	51.0
12	Rajasthan	31.0	7.9	23.0	79.0
13	Tamil Nadu	19.0	7.6	11.4	49.0
14	Uttar Pradesh	32.1	10.1	22.0	82.0
15	West Bengal	20.5	6.8	13.7	51.0
16	Arunachal Pradesh	22.0	5.5	16.5	39.0
17	Chhatisgarh	26.3	8.8	17.5	76.0
18	Goa	13.9	7.5	6.5	19.0
19	Jharkhand	26.3	8.8	17.4	62.0
20	Himachal Pradesh	21.0	7.0	14.0	54.0
21	Jammu & Kashmir	20.1	6.1	14.1	48.0
22	Manipur	18.2	5.1	13.1	20.0
23	Meghalaya	28.3	9.0	19.3	56.0
24	Mizoram	15.7	4.4	11.3	19.0
25	Nagaland	N.A.	N.A.	N.A.	N.A.

TABLE 8.1 (Cont..)
PROVISIONAL ESTIMATE OF BIRTH RATE, DEATH RATE, NATURAL
GROWTH RATE AND INFANT MORTALITY RATE - 2001

Sr. No	India/States/ Union territories	Birth Rate	Death Rate	Natural Growth Rate	Infant Mortality Rate
	1	2	3	4	5
26	Sikkim	21.6	5.1	16.5	42.0
27	Tripura	16.1	5.6	10.5	39.0
28	Uttaranchal	18.5	7.8	10.7	48.0
29	Andaman & Nicobar Is.	16.8	4.7	12.1	18.0
30	Chandigarh	16.1	3.5	12.6	24.0
31	Dadra & Nagar Haveli	29.3	6.5	22.8	58.0
32	Daman & Diu	22.3	6.7	15.6	40.0
33	Delhi	18.7	5.0	13.6	29.0
34	Lakshadweep	20.4	5.0	15.4	33.0
35	Pondicherry	17.9	7.0	10.8	22.0

Notes(1) * Excludes Nagaland (Rural) due to part-receipt of returns.

(2) N. A.: Not available due to part-receipt of returns.

(3) Infant mortality rates for Smaller States and Union territories are for the period 1999-2001.

Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.

Office of Registrar General of India.

TABLE 8.2
PROVISIONAL ESTIMATE OF RURAL-URBAN DISTRIBUTION OF
BIRTH RATE, DEATH RATE, NATURAL GROWTH RATE AND
INFANT MORTALITY RATE - 2001

Sr. No.	India/States/ Union territories	Birth Rate		Death Rate		Natural Growth Rate		Infant Mortality Rate	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1	2	3	4	5	6	7	8	9	10
	India *	27.1	20.2	9.0	6.3	18.0	13.9	72.0	42.0
1	Andhra Pradesh	21.3	19.6	8.9	5.6	12.4	14.0	74.0	39.0
2	Assam	27.8	18.5	9.8	6.6	18.0	11.9	76.0	33.0
3	Bihar	32.3	23.4	8.5	6.3	23.7	17.1	63.0	52.0
4	Gujarat	26.6	21.5	8.8	5.6	17.8	15.9	67.0	42.0
5	Haryana	27.8	22.8	7.6	7.4	20.2	15.4	68.0	54.0
6	Karnataka	23.6	19.0	8.2	6.4	15.4	12.6	69.0	27.0
7	Kerala	17.4	16.6	6.8	6.1	10.6	10.5	12.0	9.0
8	Madhya Pradesh	32.8	23.0	10.8	7.2	22.0	15.9	92.0	53.0
9	Maharashtra	21.0	20.1	8.5	5.9	12.5	14.2	55.0	27.0
10	Orissa	23.9	19.6	10.7	6.8	13.2	12.8	94.0	60.0
11	Punjab	22.1	18.7	7.2	6.4	14.8	12.2	55.0	37.0
12	Rajasthan	32.3	24.7	8.3	6.2	24.0	18.5	83.0	57.0
13	Tamil Nadu	19.6	17.8	8.4	6.0	11.2	11.8	54.0	35.0
14	Uttar Pradesh	33.2	27.0	10.6	7.8	22.5	19.2	86.0	62.0
15	West Bengal	22.8	13.8	7.0	6.4	15.8	7.4	53.0	38.0
16	Arunachal Pradesh	22.9	12.8	5.9	2.3	17.0	10.6	41.0	11.0
17	Chhatisgarh	29.0	22.4	10.1	7.0	18.9	15.4	88.0	56.0
18	Goa	14.0	13.9	8.1	6.5	5.9	7.4	21.0	16.0
19	Jharkhand	28.3	19.5	9.7	6.0	18.6	13.4	67.0	40.0
20	Himachal Pradesh	21.3	16.8	7.1	5.3	14.2	11.5	55.0	32.0

TABLE 8.2 (Cont.)
PROVISIONAL ESTIMATE OF RURAL-URBAN DISTRIBUTION OF
BIRTH RATE, DEATH RATE, NATURAL GROWTH RATE AND
INFANT MORTALITY RATE - 2001

Sr. No.	India/States/ Union territories	Birth Rate		Death Rate		Natural Growth Rate		Infant Mortality Rate	
		Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1	2	3	4	5	6	7	8	9	10
21	Jammu & Kashmir	21.1	16.3	6.1	6.0	15.0	10.3	50.0	39.0
22	Manipur	19.0	15.9	4.8	6.1	14.2	9.9	19.0	23.0
23	Meghalaya	30.7	15.0	9.9	3.9	20.7	11.1	57.0	41.0
24	Mizoram	17.7	13.2	5.2	3.4	12.4	9.8	23.0	12.0
25	Nagaland	N.A.	12.4	N.A.	2.6	N.A.	9.9	N.A.	13.0
26	Sikkim	21.8	16.7	5.2	3.2	16.6	13.5	43.0	31.0
27	Tripura	16.6	13.5	5.6	5.2	11.0	8.3	40.0	30.0
28	Uttaranchal	21.1	16.6	10.0	6.1	11.1	10.5	69.0	26.0
29	Andaman & Nico.	17.8	14.2	5.0	4.1	12.8	10.2	21.0	8.0
30	Chandigarh	20.6	15.6	2.2	3.7	18.4	11.9	28.0	23.0
31	Dadra & Nagar H.	30.1	20.0	6.8	2.9	23.3	17.1	62.0	9.0
32	Daman & Diu	22.6	22.0	7.6	5.9	15.0	16.2	42.0	35.0
33	Delhi	23.2	18.1	5.4	5.0	17.8	13.1	34.0	28.0
34	Lakshadweep	22.1	18.7	4.7	5.2	17.4	13.5	34.0	33.0
35	Pondicherry	18.7	17.3	7.7	6.6	11.0	10.7	31.0	15.0

Notes(1) * Excludes Nagaland (Rural) due to part-receipt of returns.

(2) N. A.: Not available due to part-receipt of returns.

(3) Infant mortality rates for Smaller States and Union territories are for the period 1999-2001.

Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.
Office of Registrar General of India.

TABLE 8.3
 MEAN NUMBER OF CHILDREN PER WOMEN IN
 AGE-GROUP 45 - 49 YEARS AND PERCENTAGE CHANGE
 DURING 1991-2001: INDIA

Educational level of women	Mean No. of CEB (45-49)		Change during 1991-2001(%)	TFR 2001
	2001	1991		
1	2	3	4	5
1. All educational levels	3.80	4.30	-10.10	2.52
2. Illiterate	4.20	4.40	-4.90	3.09
3. Literate	3.30	3.80	-14.60	2.02
4. Literate but below middle	3.70	4.30	-13.70	2.37
5. Middle but below matric	3.30	3.80	-14.00	2.09
6. Matriculate but below graduate	2.70	3.00	-8.50	1.67
7. Graduate and above	2.10	2.30	-7.00	1.35

Note : CEB means Children Ever Born and TFR means Total Fertility Rate.

TABLE 8.4
TOTAL FERTILITY RATES BY RESIDENCE
AND SOCIAL GROUP-INDIA ; 2001

Social group	Total Fertility Rates (2001)		
	Total	Rural	Urban
1	2	3	4
All population	2.52	2.83	1.79
Scheduled Castes	2.89	3.10	2.13
Scheduled Tribes	3.16	3.26	2.22
Hindu	2.47	2.77	1.72
Muslim	3.06	3.52	2.29
Christian	2.06	2.37	1.53
Sikh	1.86	2.00	1.49
Buddhist	2.29	2.65	1.80
Jain	1.50	1.90	1.39
Other R.C.	2.99	3.11	2.00

TABLE 8.5
STATE-WISE DATA REGARDING RELATIONSHIP OF DIFFERENT
VARIABLES WITH BIRTH RATE OF 14 MAJOR STATES IN INDIA

States	Birth Rate (2001)*	Infant Mortality Rate (2001)*	Urban to Total Population (2001)**	Mean Age at Marriage (Females)**	Density of Population**	Real Per Capita Income (Rs.)***
	α	1	2	3	4	5
Kerala	17.20	11.00	26.00	22.30	819	2778
Tamil Nadu	19.00	49.00	43.90	20.20	478	3643
Andhra Pradesh	20.80	66.00	27.10	17.80	275	3069
Maharashtra	20.60	45.00	42.40	19.10	314	5283
Karnataka	22.20	58.00	34.00	19.40	275	3590
West Bengal	20.50	51.00	28.00	19.50	904	3745
Punjab	21.20	51.00	33.90	20.30	482	4897
Orissa	23.40	90.00	15.00	19.50	236	1917
Gujarat	24.90	60.00	37.40	20.40	258	4257
Haryana	26.70	65.00	29.00	19.20	477	4485
Bihar	31.20	62.00	13.40	18.60	880	1225
Madhya Pradesh	30.80	86.00	25.00	18.80	196	2084
Rajasthan	31.10	79.00	23.40	18.40	165	2412
Uttar Pradesh	32.10	82.00	20.80	19.30	689	1852
All India	25.40	66.00	27.80	19.40	324	3234

Source : *Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.

Office of Registrar General of India.

** Census of India, 2001

*** National Accounts Statistics,2003- C.S.O. Govt. of India, Economic Survey 2001-2002

Planning Commission, Unemployment figures are on CDS Basis

Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

\$ Ministry of Health and Welfare, Government of India

TABLE 8.5 (Cont.)
STATE-WISE DATA REGARDING RELATIONSHIP OF DIFFERENT
VARIABLES WITH BIRTH RATE OF 14 MAJOR STATES IN INDIA

States	Birth Rate (2001)*	Sex Ratio**	Percent of SC & ST Population**	Female Literacy Rate**	Rate of Unemployment (2000)#	Percent of Population Below Poverty Line (2000)\$
	α	6	7	8	9	10
Kerala	17.20	1058	10.90	87.86	21.00	12.70
Tamil Nadu	19.00	987	20.00	64.55	11.80	21.10
Andhra Pradesh	20.80	978	22.80	51.17	8.00	15.80
Maharashtra	20.60	922	19.10	67.51	7.20	25.00
Karnataka	22.20	965	22.80	57.45	4.60	20.00
West Bengal	20.50	934	28.50	60.22	15.00	27.00
Punjab	21.20	876	28.90	63.55	4.00	6.20
Orissa	23.40	972	38.60	50.97	7.30	47.10
Gujarat	24.90	920	21.90	58.60	4.60	14.10
Haryana	26.70	861	19.30	56.31	4.80	8.70
Bihar	31.20	919	16.60	33.57	7.30	42.50
Madhya Pradesh	30.80	919	35.50	50.28	4.50	37.40
Rajasthan	31.10	921	29.80	44.34	3.10	15.30
Uttar Pradesh	32.10	989	21.20	42.98	4.10	31.20
All India	25.40	933	24.40	54.16	7.30	26.10

Source : *Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.
Office of Registrar General of India.

** Census of India, 2001

*** National Accounts Statistics,2003- C.S.O. Govt. of India, Economic Survey 2001-2002

Planning Commission, Unemployment figures are on CDS Basis

Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

\$ Ministry of Health and Welfare, Government of India

TABLE 8.5 (Cont.)
STATE-WISE DATA REGARDING RELATIONSHIP OF DIFFERENT
VARIABLES WITH BIRTH RATE OF 14 MAJOR STATES IN INDIA

States	Birth Rate (2001)*	Women's Economic Status Index ##	Women's Social Status Index ##	Women's Health Status Index ##
	α	11	12	13
Kerala	17.20	0.714	0.795	0.976
Tamil Nadu	19.00	0.768	0.643	0.643
Andhra Pradesh	20.80	0.661	0.598	0.512
Maharashtra	20.60	0.643	0.429	0.571
Karnataka	22.20	0.768	0.446	0.571
West Bengal	20.50	0.375	0.357	0.333
Punjab	21.20	0.714	0.893	0.786
Orissa	23.40	0.232	0.161	0.214
Gujarat	24.90	0.714	0.893	0.643
Haryana	26.70	0.554	0.750	0.595
Bihar	31.20	0.259	0.268	0.119
Madhya Pradesh	30.80	0.411	0.250	0.357
Rajasthan	31.10	0.188	0.357	0.440
Uttar Pradesh	32.10	0.286	0.143	0.381

Source : *Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.
Office of Registrar General of India.

** Census of India, 2001

*** National Accounts Statistics,2003- C.S.O. Govt. of India, Economic Survey 2001-2002

Planning Commission, Unemployment figures are on CDS Basis

Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

\$ Ministry of Health and Welfare, Government of India

TABLE 8.6

CORRELATION CHART OF TABLE 8.5			
Sr. No.	Variables Birth Rate = α	Correlation Coefficient	Relationship
1*	α and Infant Mortality Rate	(+)0.724	High Positive
2**	α and Percentage of Urban Population	(-)0.562	Moderate Negative
3**	α and Mean at Marriage	(-)0.532	Moderate Negative
4**	α and Density of Population	(-)0.107	Low Negative
5**	α and Real; Per Capita Income	(-)0.567	Moderate Negative
6**	α and Sex Ratio	(-)0.373	Mild Negative
7**	α and Percent of SC & ST Population	(+)0.248	Low Positive
8**	α and Female Literacy Rate	(-)0.823	High Negative
9**	α and Rate of Unemployment	(-)0.646	High Negative
10**	α and Percentage of Population BPL	(+)0.390	Low Positive
11**	α and Women's Economic Status Index	(-)0.716	High Negative
12**	α and Women's Social Status Index	(-)0.537	Moderate Negative
13**	α and Women's Health Status Index	(-)0.616	High Negative

Note:* Not Significant at 5% Level; ** 5% Significance Level;
BPL = Below Poverty Line

TABLE 8.7
STATE-WISE DATA REGARDING RELATIONSHIP OF
DIFFERENT VARIABLES WITH TOTAL FERTILITY RATE
OF SOME SELECTED STATES IN INDIA

States	Total Fertility Rate (2001)*	Urban to Total Population (2001)**	Mean Age at Marriage (Females)**	Density of Population**	Real Per Capita Income (Rs.)***
	α	1	2	3	4
Kerala	1.80	26.00	22.30	819	2778
Maharashtra	3.50	42.40	19.10	314	5283
Karnataka	2.60	34.00	19.40	275	3590
West Bengal	3.10	28.00	19.50	904	3745
Punjab	2.10	33.90	20.30	482	4897
Orissa	3.80	15.00	19.50	236	1917
Gujarat	3.90	37.40	20.40	258	4257
Rajasthan	4.50	23.40	18.40	165	2412

Source : .* Debarati Sarkar; The Relationship Between Fertility and Socio-Economic Development in Selected States of India, 2005; IIPS-Mumbai

** Census of India, 2001

*** National Accounts Statistics, 2003- C.S.O. Govt. of India, Economic Survey 2001-2002

Planning Commission, Unemployment figures are on CDS Basis

Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

\$ Ministry of Health and Welfare, Government of India

TABLE 8.7 (Cont..)
STATE-WISE DATA REGARDING RELATIONSHIP OF
DIFFERENT VARIABLES WITH TOTAL FERTILITY RATE
OF SOME SELECTED STATES IN INDIA

States	Total Fertility Rate (2001)*	Sex Ratio (2001)**	Percent of SC & ST Population (2001)**	Female Literacy Rate (2001)**	Male Literacy Rate (2001)**	Percent of Population Below Poverty Line (2000)\$
	α	6	7	8	9	10
Kerala	1.80	1058	10.90	87.76	94.20	12.70
Maharashtra	3.50	922	19.10	67.51	86.27	25.00
Karnataka	2.60	965	22.80	57.45	76.29	20.00
West Bengal	3.10	934	28.50	60.22	77.58	27.00
Punjab	2.10	876	28.90	63.55	75.63	6.20
Orissa	3.80	972	38.60	50.97	75.95	47.10
Gujarat	3.90	920	21.90	58.60	80.50	14.10
Rajasthan	4.50	921	29.80	44.34	76.46	15.30

Source : .* Debarati Sarkar; The Relationship Between Fertility and Socio-Economic Development in Selected States of India, 2005; IIPS-Mumbai

** Census of India, 2001

*** National Accounts Statistics, 2003- C.S.O. Govt. of India, Economic Survey 2001-2002

Planning Commission, Unemployment figures are on CDS Basis

Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

\$ Ministry of Health and Welfare, Government of India

TABLE 8.7 (Cont..)
STATE-WISE DATA REGARDING RELATIONSHIP OF
DIFFERENT VARIABLES WITH TOTAL FERTILITY RATE
OF SOME SELECTED STATES IN INDIA

States	Total Fertility Rate (2001)*	Women's Economic Status Index ##	Women's Social Status Index ##	Women's Health Status Index ##
	α	11	12	13
Kerala	1.80	0.714	0.795	0.976
Maharashtra	3.50	0.643	0.429	0.571
Karnataka	2.60	0.768	0.446	0.571
West Bengal	3.10	0.375	0.357	0.333
Punjab	2.10	0.714	0.893	0.786
Orissa	3.80	0.232	0.161	0.214
Gujarat	3.90	0.714	0.893	0.643
Rajasthan	4.50	0.188	0.357	0.440

Source : :* Debarati Sarkar; The Relationship Between Fertility and Socio-Economic Development in Selected States of India, 2005; IIPS-Mumbai

** Census of India, 2001

*** National Accounts Statistics, 2003- C.S.O. Govt. of India, Economic Survey 2001-2002

Planning Commission, Unemployment figures are on CDS Basis

Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

\$ Ministry of Health and Welfare, Government of India

TABLE 8.8

CORRELATION CHART OF TABLE 8.7			
Sr. No.	Variables Total Fertility Rate (TFR)= α	Correlation Coefficient	Relationship
1	α and Percentage of Urban Population	(-)0.168	Low Negative
2	α and Mean at Marriage	(-)0.721	High Negative
3	α and Density of Population	(-)0.635	High Negative
4	α and Real Per Capita Income	(-)0.240	Low Negative
5	α and Sex Ratio	(-)0.372	Low Negative
6	α and Percent of SC & ST Population	(+)0.493	Moderate Positive
7	α and Female Literacy Rate	(-)0.773	High Negative
8	α and Male Literacy Rate	(-)0.397	Low Negative
9	α and Percentage of Population BPL	(+)0.394	Low Positive
10	α and Women's Economic Status Index	(-)0.666	High Negative
11	α and Women's Social Status Index	(-)0.503	Moderate Negative
12	α and Women's Health Status Index	(+)0.379	Low Positive

Note: All are significant at 5% Level; BPL = Below Poverty Line

TABLE 8.9
CORRELATION MATRIX
FERTILITY MODEL

Variable	Y _i	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂
Y1	1.00												
X ₁	-0.17	1.00											
X ₂	-0.72	0.01	1.00										
X ₃	-0.63	-0.06	0.57	1.00									
X ₄	-0.24	0.92	-0.01	0.06	1.00								
X ₅	-0.37	-0.41	0.61	0.38	-0.57	1.00							
X ₆	0.49	-0.55	-0.62	-0.37	-0.34	-0.47	1.00						
X ₇	-0.77	0.27	0.85	0.66	0.25	0.58	-0.81	1.00					
X ₈	-0.40	0.20	0.69	0.43	0.08	0.67	-0.85	0.87	1.00				
X ₉	0.39	-0.52	-0.35	-0.15	-0.44	0.19	0.56	-0.34	-0.22	1.00			
X ₁₀	-0.67	0.74	0.56	0.16	0.64	0.08	-0.71	0.63	0.40	-0.57	1.00		
X ₁₁	-0.50	0.50	0.68	0.22	0.48	-0.07	-0.56	0.54	0.35	-0.82	0.74	1.00	
X ₁₂	-0.70	0.43	0.76	0.31	0.35	0.27	-0.80	0.78	0.65	-0.80	0.77	0.85	1.00

Note: Calculated from Table 8.7

TABLE 8.10
SCHEMATIC CHART

No.	Underlying Question	Traditional High Fertility pattern	Modern Low Fertility pattern
1	What is relation of man to nature?	Man subject to nature and God Utte control over destiny Fatalism	Man can control the nature God works through man Opinism
2	What is the relation of man to time?	Present Oriented Not much Planning	Future Oriented Planning
3	What is the nature of sex?	Basically evil Defined as duly/gratification Procreative	Basically good Natural gratification Procreative and recreational
4	What is the nature of human activity and work ?	Being Existence Oriented	Doing Work Oriented
5	What is the nature of human relation-ship?	Familistic- Kinship based Lack of Participation in social organisation	Individualism - Recognised non-kin criterion Social Participation in non-familial organization

Source: Clifford W. D.; "Modern and Traditional values; Orientations and Fertility Behaviour: A Socio-Demographic Study", Demography 8,1st Feb., 1971.

TABLE 8.11
GENERAL AND TOTAL FERTILITY RATES AND
GROSS REPRODUCTION RATE FOR
SELECTED YEARS, GUJARAT AND INDIA

Year	Combined		Rural		Urban	
	Gujarat	India	Gujarat	India	Gujarat	India
GFR						
1981	140.6	140.9	148.4	149.4	118.3	107.2
1986	130.5	136.5	133.9	145.6	122.9	108.1
1993	110.4	116.6	115.7	125.2	100.4	93.5
TFR						
1981	4.3	4.5	4.6	4.8	3.4	3.3
1986	3.8	4.2	4	4.5	3.3	3.1
1993	3.2	3.5	3.3	3.8	3	2.8
GRR						
1981	2	2.2	2.2	2.3	1.7	1.6
1986	1.8	2	1.9	2.2	1.6	1.5
1993	1.5	1.7	1.6	1.8	1.3	1.3

Source: Fertility Trends in Gujarat By Dr. N.D. Ghasura, Dr. P.H. Thakar and Mr. P.S. Pandya

TABLE 8.12
AGE -SPECIFIC FERTILITY RATE IN GUJARAT AND INDIA

Age group (in years)	Gujarat			India		
	1981	1986	1993	1981	1986	1993
15-19	56.6	43.9	26.3	90.4	91.1	69.9
20-24	294.4	277.9	248.2	246.9	252.8	234.4
25-29	239.5	231.9	211.5	232.1	216.4	189.7
30-34	153.2	120.4	100.1	167.7	139.2	114.3
35-39	76.1	49.3	39.7	102.5	78.6	61.1
40-44	29.2	20.7	13.8	44.0	37.9	28.5
45-49	12.0	7.2	5.0	19.6	14.9	10.1

Source: Fertility Trends in Gujarat By Dr. N.D. Ghasura, Dr. P.H. Thakar and Mr. P.S. Pandya

TABLE 8.13
AGE -SPECIFIC FERTILITY RATE IN GUJARAT: RURAL-URBAN

Age group (in years)	1981		1986		1993	
	Rural	Urban	Rural	Urban	Rural	Urban
15-19	58.8	50.2	43.4	45.3	31.4	16.1
20-24	313.0	244.7	283.9	265.2	266.1	209.4
25-29	256.2	198.4	243.2	209.3	207.8	218.1
30-34	165.2	117.3	131.6	97.7	102.6	95.9
35-39	84.4	50.1	58.3	31.0	40.8	37.8
40-44	31.4	22.7	22.1	17.0	16.0	9.5
45-49	14.0	5.9	9.3	2.1	4.1	6.8

Source: Fertility Trends in Gujarat By Dr. N.D. Ghasura, Dr. P.H. Thakar and Mr. P.S. Pandya

TABLE 8.14
NUMBER OF WOMEN AND EVER MARRIED WOMEN BY PRESENT AGE,
RELIGION, TOTAL CHILDREN EVER BORN BY SEX: GUJARAT - 2001

Religion	Total women	Total ever married Women	Total children ever born		
			Persons	Males	Females
Total	29,702,915	16,747,341	48,422,232	25,582,368	22,839,864
Hindu	21,604,304	12,372,131	35,330,306	18,736,733	16,593,573
Muslim	2,222,022	1,151,312	3,592,993	1,892,708	1,700,285
Christian	141,211	80,048	202,008	104,380	97,628
Sikh	20,600	11,814	29,653	16,231	13,422
Buddhist	8,390	4,576	13,191	7,052	6,139
Jain	258,537	162,990	388,644	205,007	183,637
ST	3,691,043	1,992,719	5,868,642	3,027,092	2,841,550
SC	1,726,432	954,188	2,950,964	1,569,585	1,381,379
Others	14,246	8,494	20,256	10,228	10,028
In Percentages					
Religion	Total women	Total ever married women	Total children ever born		
			Persons	Males	Females
Total	100.00	100.00	100.00	100.00	100.00
Hindu	72.73	73.88	72.96	73.24	72.65
Muslim	7.48	6.87	7.42	7.40	7.44
Christian	0.48	0.48	0.42	0.41	0.43
Sikh	0.07	0.07	0.06	0.06	0.06
Buddhist	0.03	0.03	0.03	0.03	0.03
Jain	0.87	0.97	0.80	0.80	0.80
ST	12.43	11.90	12.12	11.83	12.44
SC	5.81	5.70	6.09	6.14	6.05
Others	0.05	0.05	0.04	0.04	0.04

Source: Final Population Totals; Census of India, 2001

TABLE 8.15
NUMBER OF WOMEN AND EVER MARRIED WOMEN
BY PRESENT EDUCATIONAL LEVEL AND
TOTAL CHILDREN EVER BORN BY SEX:2001-GUJARAT

(In Lakhs)					
Educational Level	Total women	Total ever married women	Total children ever born		
			Persons	Males	Females
1	2	3	4	5	6
Total	242.9	138.0	396.0	209.9	186.2
Illiterate	122.9	73.7	252.8	133.5	119.3
Literate	119.9	64.3	143.2	76.4	66.9
Literate but below primary	35.1	13.7	39.6	21.0	18.6
Primary but below middle	35.2	19.1	46.5	24.7	21.8
Middle but below matric or secondary	15.9	8.0	16.0	8.6	7.5
Matric or secondary but below graduate	25.7	17.0	30.7	16.5	14.2
Graduate and above	6.8	5.5	7.9	4.3	3.7
In Percentages					
Educational Level	Total women	Total ever married women	Total children ever born		
			Persons	Males	Females
1	2	3	4	5	6
Total	100.00	100.00	100.00	100.00	100.00
Illiterate	50.61	53.42	63.83	63.60	64.09
Literate	49.39	46.58	36.17	36.40	35.91
Literate but below primary	14.44	9.92	9.99	10.00	9.98
Primary but below middle	14.49	13.85	11.75	11.77	11.72
Middle but below matric or secondary	6.55	5.83	4.05	4.08	4.01
Matric or secondary but below graduate	10.59	12.32	7.75	7.88	7.61
Graduate and above	2.81	3.97	2.00	2.04	1.96

Source: Final Population Totals; Census of India, 2001

TABLE 8.16
NUMBER OF WOMEN AND EVER MARRIED WOMEN BY PRESENT AND
TOTAL CHILDREN EVER BORN BY SEX : GUJARAT : 2001

Dist. Code	Area Name	Total women	Total ever married women	Total children ever born		
				Total	Males	Females
1	2	3	4	5	6	7
0	GUJARAT	24,285,440	13,800,434	39,602,626	20,985,691	18,616,935
1	Kachchh	768,073	407,507	1,323,097	694,679	628,418
2	Banas Kantha	1,206,840	643,722	2,101,276	1,116,231	985,045
3	Patan *	570,609	328,006	1,040,424	552,243	488,181
4	Mahesana	884,050	536,475	1,467,630	788,637	678,993
5	Sabar Kantha	1,012,977	582,023	1,647,082	869,065	778,017
6	Gandhinagar	636,456	387,913	1,029,274	555,681	473,593
7	Ahmadabad	2,741,963	1,612,408	4,109,117	2,226,463	1,882,654
8	Surendranagar	727,498	399,251	1,345,238	709,883	635,355
9	Rajkot	1,527,863	850,750	2,577,884	1,362,180	1,215,704
10	Jamnagar	922,958	498,225	1,590,674	837,619	753,055
11	Porbandar *	261,014	145,533	436,139	228,879	207,260
12	Junagadh	1,195,823	641,456	2,098,689	1,098,889	999,800
13	Amreli	692,325	374,309	1,300,928	679,262	621,666
14	Bhavnagar	1,194,710	634,873	2,067,704	1,091,847	975,857
15	Anand *	884,872	538,917	1,431,264	775,925	655,339

TABLE 8.16 (Cont..)
 NUMBER OF WOMEN AND EVER MARRIED WOMEN BY PRESENT AND
 TOTAL CHILDREN EVER BORN BY SEX : GUJARAT : 2001

Dist. Code	Area Name	Total women	Total ever married women	Total children ever born		
				Total	Males	Females
1	2	3	4	5	6	7
16	Kheda	971,393	599,415	1,579,578	850,872	728,706
17	Panch Mahals	980,340	547,520	1,623,551	850,718	772,833
18	Dohad *	812,225	401,269	1,377,184	711,254	665,930
19	Vadodara	1,744,434	1,046,226	2,664,760	1,417,700	1,247,060
20	Narmada *	250,418	141,595	413,628	213,795	199,833
21	Bharuch	656,980	379,394	1,058,020	553,026	504,994
22	Surat	2,272,635	1,310,056	3,238,661	1,719,810	1,518,851
23	The Dangs	92,755	48,244	156,534	79,914	76,620
24	Navsari *	600,475	354,944	923,840	480,527	443,313
25	Valsad	675,754	390,403	1,000,450	520,592	479,858

Source: Final Population Totals; Census of India, 2001

TABLE 8.17
NUMBER OF WOMEN AND CURRENTLY MARRIED WOMEN BY SEX AND
NUMBER OF BIRTHS LAST YEAR

Dist. Code	Area Name	Total women	Number of births last year			Crude Birth Rate
			Total	Males	Females	
1	2	3	4	5	6	7
00	GUJARAT	24,285,440	924,613	504,153	420,460	38
01	Kachchh	768,073	33,752	18,032	15,720	44
02	Banas Kantha	1,206,840	60,894	32,738	28,156	50
03	Patan *	570,609	25,576	14,061	11,515	45
04	Mahesana	884,050	33,841	19,034	14,807	38
05	Sabar Kantha	1,012,977	41,031	22,249	18,782	41
06	Gandhinagar	636,456	24,243	13,713	10,530	38
07	Ahmadabad	2,741,963	89,190	49,368	39,822	33
08	Surendranagar	727,498	31,992	17,653	14,339	44
09	Rajkot	1,527,863	52,744	29,289	23,455	35
10	Jamnagar	922,958	33,398	18,016	15,382	36
11	Porbandar *	261,014	10,327	5,503	4,824	40
12	Junagadh	1,195,823	44,675	24,529	20,146	37
13	Amreli	692,325	23,554	13,112	10,442	34

Source: Final Population Totals; Census of India, 2001

TABLE 8.17 (Cont...)
NUMBER OF WOMEN AND CURRENTLY MARRIED WOMEN BY SEX AND
NUMBER OF BIRTHS LAST YEAR

Dist. Code	Area Name	Total women	Number of births last year			Crude Birth Rate
			Total	Males	Females	
1	2	3	4	5	6	7
14	Bhavnagar	1,194,710	47,656	26,206	21,450	40
15	Anand *	884,872	31,277	17,323	13,954	35
16	Kheda	971,393	36,612	19,811	16,801	38
17	Panch Mahals	980,340	41,552	22,106	19,446	42
18	Dohad *	812,225	40,259	21,094	19,165	50
19	Vadodara	1,744,434	60,070	33,058	27,012	34
20	Narmada *	250,418	10,617	5,540	5,077	42
21	Bharuch	656,980	23,195	12,492	10,703	35
22	Surat	2,272,635	80,744	44,244	36,500	36
23	The Dangs	92,755	4,845	2,433	2,412	52
24	Navsari *	600,475	17,521	9,384	8,137	29
25	Valsad	675,754	25,048	13,165	11,883	37

Source: Final Population Totals; Census of India, 2001

TABLE 8.18
CRUDE BIRTH RATE AND DIFFERENT FACTORS INFLUENCING FERTILITY:
GUJARAT 2001

Sr. No.	State/District	Crude Birth Rate	% of Agricultural labourers (Male)	% of Agricultural labourers (Female)	Sex Ratio	Work Participation Rate
		α	1	2	3	4
0	Gujarat	38	17.33	39.76	919	47.55
1	Narmada	42	35.31	59.53	948	52.66
2	Bharuch	35	29.99	63.44	920	44.96
3	Anand	35	32.32	45.99	910	45.62
4	Patan	45	25.16	48.63	933	48.32
5	Navsari	29	24.96	48.42	955	47.74
6	Surendranagar	44	22.96	50.39	923	46.78
7	Kheda	38	26.84	38.83	922	48.14
8	Vadodara	34	21.90	52.54	919	49.57
9	The Dang	52	21.10	37.06	986	49.76
10	Sabarkantha	41	19.31	38.29	948	46.84
11	Amreli	34	18.53	36.81	986	46.23
12	Mahesana	38	20.14	31.39	926	48.77

TABLE 8.18 (Cont...)
CRUDE BIRTH RATE AND DIFFERENT FACTORS INFLUENCING FERTILITY:
GUJARAT 2001

Sr. No.	State/District	Crude Birth Rate	% of Agricultural labourers (Male)	% of Agricultural labourers (Female)	Sex Ratio	Work Participation Rate
		α	1	2	3	4
13	Junagadh	37	18.08	37.41	955	45.21
14	Panchmahal	42	14.62	36.69	939	51.01
15	Valsad	37	15.83	38.36	919	49.35
16	Bhavnagar	40	13.42	45.66	936	42.10
17	Banaskantha	50	17.51	29.63	931	45.42
18	Dohad	50	12.39	32.46	985	51.78
19	Surat	36	13.58	47.86	835	51.54
20	Gandhinagar	38	18.24	28.04	911	47.23
21	Porbandar	40	13.41	32.26	946	47.78
22	Rajkot	35	9.76	28.35	930	47.47
23	Jamnagar	36	10.01	24.78	941	44.86
24	Ahmedabad	33	7.50	31.22	892	44.42

TABLE 8.18 (Cont...)
CRUDE BIRTH RATE AND DIFFERENT FACOTRS INFLUENCING FERTILITY:
GUJARAT 2001

Sr. No.	State/District	Crude Birth Rate	Literacy Rate	Percent of SC Population	Percent of ST Population	Percent of Urban Population
		α	5	6	7	8
0	Gujarat	38	69.97	7.09	14.76	37.40
1	Narmada	42	60.37	1.95	78.08	10.10
2	Bharuch	35	74.79	4.49	32.40	25.70
3	Anand	35	74.95	5.30	1.23	27.40
4	Patan	45	60.59	9.88	1.07	20.20
5	Navsari	29	75.98	3.22	48.08	27.40
6	Surendranagar	44	62.46	10.97	95.00	26.60
7	Kheda	38	72.71	5.24	1.60	20.10
8	Vadodara	34	71.32	5.61	26.56	45.20
9	The Dang	52	60.23	0.49	93.76	0.00
10	Sabarkantha	41	67.31	8.32	20.18	10.80
11	Amreli	34	67.72	8.29	0.23	22.50
12	Mahesana	38	75.54	8.09	0.49	22.40

TABLE 8.18 (Cont...)
CRUDE BIRTH RATE AND DIFFERENT FACOTRS INFLUENCING FERTILITY:
GUJARAT 2001

Sr. No.	State/District	Crude Birth Rate	Literacy Rate	Percent of SC Population	Percent of ST Population	Percent of Urban Population
		α	5	6	7	8
13	Junagadh	37	68.35	9.62	0.77	29.10
14	Panchmahal	42	61.50	4.57	27.45	12.50
15	Valsad	37	69.41	2.64	54.76	27.00
16	Bhavnagar	40	66.98	5.76	0.30	37.90
17	Banaskantha	50	51.26	10.84	8.22	11.00
18	Dohad	50	45.65	2.01	72.26	9.60
19	Surat	36	74.99	3.39	28.19	60.00
20	Gandhinagar	38	76.83	8.69	1.32	35.00
21	Porbandar	40	69.09	8.98	1.20	48.70
22	Rajkot	35	75.88	7.71	0.42	51.30
23	Jamnagar	36	67.19	8.13	0.55	43.90
24	Ahmedabad	33	79.89	10.67	1.00	80.20

Source: Final Population Totals; Census of India, 2001

TABLE 8.19

CORRELATION CHART OF TABLE 8.18			
Sr. No.	Variables Crude Birth Rate (CBR) = α	Correlation Coefficient	Relationship
1	α and Percentage of Male Agri. Labours	(+)0.001	Very Low Positive
2	α and Percentage of Female Agri. Labours	(-)0.138	Low Negative
3	α and Sex Ratio	(+)0.379	Low Positive
4	α and Work Participation Rate	(+)0.286	Low Positive
5	α and Literacy Rate	(-)0.854	High Negative
6	α and Percent of SC Population	(-)0.089	Very Low Negative
7	α and Percent of ST Population	(+)0.443	Moderate Positive
8	α and Urban Population	(-)0.617	High Negative

Note: Calculated from Table 8.18

TABLE 8.20
CORRELATION MATRIX
BIRTH RATE MODEL : GUJARAT

Variable	Y _i	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈
Y _i	1.0000								
X ₁	0.0013	1.0000							
X ₂	-0.1376	0.7214	1.0000						
X ₃	0.3787	0.0778	-0.1682	1.0000					
X ₄	0.2865	0.1700	0.1538	0.0203	1.0000				
X ₅	-0.8535	0.0051	0.0532	-0.5395	-0.3026	1.0000			
X ₆	-0.0893	-0.2786	-0.3607	-0.1423	-0.5839	0.1336	1.0000		
X ₇	0.4429	0.2804	0.3957	0.2600	0.5339	-0.4514	-0.5662	1.0000	
X ₈	-0.6175	-0.5131	-0.1478	-0.6288	-0.3093	0.6409	0.3390	-0.4398	1.0000

Note: Calculated from Table 8.18

- Y_i = Crude Birth Rate
- X₁ = Percentage of Male Agricultural workers
- X₂ = Percentage of female agricultural workers.
- X₃ = Sex ratio
- X₄ = Work Participation Rate
- X₅ = Literacy rate
- X₆ = Percentage of SC Population
- X₇ = Percentage of ST population
- X₈ = Percentage of Urban population

CHAPTER - IX

MORTALITY

9.1 Introduction

Mortality plays an important role in the demographic features of any country. The population growth a country is influenced by the status of fertility, mortality of the country concerned. An attempt is made in this chapter to understand the term mortality, infant as well as maternal, what are the factors influencing it and what is the extend of relationship of mortality with various factors determining mortality. This chapter has discussed the levels and trend of mortality in India as well as the State of Gujarat

9.2 Mortality trends in India

In section 4.8 of Chapter 5 – Indian Demography an account of birth rate, death rate and infant mortality rate is given and discussed the level of these variable and their influence on population growth. In the beginning of the 19th century the death rate ranged from 35 to 50 per thousands. It has now come down to 7 to 8 per thousand. Better diet, pure drinking water, improved hospital facilities, better sanitation, control by medicines are the main reasons for this heavy decrease in death rate. Table 4.34 shows the death rates in some selected countries of the world. The least death rates is in China (7 per thousand) followed by Japan and Canada (8 per thousand) and India, U.S.A. and France (9 per thousand), then Australia (10 per thousand) and last Germany and U.K.(11 per thousand). The correlation coefficient between birth rates and Infant Mortality rates among these selected countries is +0.927 which shows there is a very high correlation between the birth rates and Infant Mortality Rates.

Table 9.2 gives the provisional estimate of Death rate, Infant Mortality Rate for 14 major states during the year 2001. Kerala has the lowest infant

mortality rate (11 per thousand). Orissa has the highest Infant Mortality Rate of 90 per thousand.

Kerala is the state which registered least death per thousand i.e. 6.6 per thousand against the national figure of 8.4 per thousand and the state of Orissa has registered the maximum , 10.2 per thousand. Out of the 14 states 11 states have the death rate below the national level, Bihar shows the death rate of 8.2 just below the national level and the remaining three states- Uttar Pradesh, Madhya Pradesh and Orissa have the death rates above the national average.

Provisional estimate of The rural-urban distribution of birth rate, death rate, infant mortality rate and natural growth rate of all the states for 2001 is shown in table 9.2. The death rate, infant mortality rate and natural growth rate is lesser in urban areas compared to rural areas. The national average death rates are rural 9.0 urban 6.3, infant mortality rates are rural 18.0 and urban 13.9 and infant mortality rates are rural 72 and urban 42. In Chandigarh the death rate is the least both in rural 2.2 and urban 3.7 and at the same time it is lesser in rural than in urban against the normal happening of the more death in rural than in urban. The death rate and infant mortality rate in Gujarat is found lesser than the national average.

The relationship between the fertility and infant mortality may be viewed in socio-psychological context in which decline in infant mortality is regarded as one of the factors responsible for creating a climate favourable to the development of family limitation. It is argued that survival of children would be an incentive for the practice of family planning in order to avoid heavier economic burden with the increased number of children. On the contrary, the prevailing high infant mortality fosters a feeling of insecurity of life at early age in which more births are favoured to make up the loss. This important relationship between infant mortality and fertility has received very little attention up till now in this country. It was not even

recognised before it became apparent that high infant mortality served as a great deterrent to the promotion of small family norm.

9.3 Level of Infant Mortality Rate in India

Before 1921, the Indian demographic situation was marked by high birth and death rates. Infant mortality was evidently very high. It attracted the attention of some public health research workers and administrators even before the beginning of the present century. For example, Satur and Bhatia, mention that the first information on infant mortality rate appeared in the Annual Report of the Sanitary Commissioner of India in 1864, which showed that annual infant mortality rate in some provinces of British India was as high as 400 per 1000 live births in some years of the last two decades of the nineteenth century.

Since 1920, reports of the Public Health Commissioner of the Government of India are perhaps the only historical source of information about the infant mortality rates in India. In considering these data, it is necessary to keep in mind the fact that vital statistics in India are grossly deficient due to under-registration. There existed also a great deal of confusion about the compilation of infant mortality rate particularly regarding still births which were included as infant deaths in some States and considered both as births and deaths in some other States.

For a time series, a preliminary idea of the trend can be obtained by combining the figures computed by Kingsley Davis from 1911 onwards, those quoted by Chandrasekhar for the period 1946-1950 and those of the Sample Registration System for the period 1968-71 as shown in Table 9.3.

It would appear that there has been a decline in infant mortality rate in recent times. This impression is strengthened and the generality of decline

among States is confirmed by the rates published in the Sample Registration System different volumes. The birth rate, death rate, infant mortality rate and natural growth rate is given in Appendix Table 1 published in Sample Registration System Buletin.Vol.36 No.2, October 2002. Office of Registrar General of India.

Table 9.4 gives the death rate of fourteen major states in India. We see that in India during 1972-74, average mortality rate was estimated at 15.7. The highest death rate was found in state of Uttar Pradesh (21.5) followed by Orissa (18.0). While the lowest rate was found in Kerala (8.1). There were states like Uttar Pradesh, Orissa, Madhya Pradesh, Bihar, Assam and Andhra Pradesh in which the death rate was higher than the rate of India. In the rest of the states, it remained less than the rate of the country as a whole.

During 1974-76, death rate in India remained at 15.0, which was a little less than the rate seen in the previous period. In this period, death rate increased in Haryana, Punjab, Tamil Nadu and Uttar Pradesh. During 1976-1978, death rate was registered at 14.5 in India which was less than the previous years. During this year, death rate was found the highest in state of Uttar Pradesh (20.0), followed by Madhya Pradesh (16.5). While the lowest was observed in Kerala (7.5), During 1978 to 1980, death rate in India was 13.1. The rate did not change. During this period the highest birth rate was seen in Uttar Pradesh (17.7) followed by Madhya Pradesh (15.2). Between 1980 and 1982, average death rate of the country was 12.3, showing a further decline over previous years. In this period the highest rate was seen in Uttar Pradesh (16), followed by Madhya Pradesh (15.6).

It is interesting to point out that there was a significant change in rank, now Uttar Pradesh ranked at second position. However, there was a very significant and remarkable decline in death rate of Uttar Pradesh. It declined from 16.1 to 11.9. In this period, the lowest death rate was seen in Nagaland (3.7), followed

by Kerala (6.0). In the year 1996, death rate in the country was 8.9. The highest was in Madhya Pradesh (11.1), followed by Orissa (10.9). The rate of death in Kerala was the lowest (6.2). During the year 2001 the average death rate in India is 8.4 and Kerala retains the lowest (6.6), Orissa with the highest (10.2) followed by Uttar Pradesh (10.1). The death rate in Gujarat is 7.8 during this period.

9.4 Trends of Infant Mortality Rate in India

Mortality trend in each state and also in both urban and rural areas of each state is in line with the whole country and show a continued fall (Table 9.5, Table 9.6 and Table 9.7). The extent of fall, however, differed from state to state, it is generally steeper in states with initial higher levels of mortality. The decline in crude death rate over the period of twenty years varied between 8.1 points in Uttar Pradesh to 2.3 points in the state of Kerala, The fall in infant mortality rate varied between the highest 63 points again in Uttar Pradesh to no decline in Jammu and Kashmir and 14 points in the states of Karnataka and 17 points in Orissa. The improvement in the life expectancy at birth during the period 1971-75 and 1981-85 for which the figures are available reveal the highest 9.6 points improvement in Andhra Pradesh, from 48.8 to 58.4, and the lowest 2.8 points in Haryana, from 57.5 to 60.3. The notable feature of changes in different states over the period is that the comparative position of states in respect of the level of mortality initially and at the end of the period remained materially unchanged. Kerala and Uttar Pradesh has the lowest and the highest levels of mortality amongst the spectrum of Indian states both at the beginning as well as at the close of this twenty year period from 1971 to 1991.

The separate figures for rural and urban areas of each state, again clearly show continued downward trend in mortality in both. Table 9.6 gives the rural distribution and 9.7 gives urban distribution of death rate for a period from 1975-80 to 1986-90. The only exception may be the urban areas in the state of Jammu

& Kashmir where the level of mortality did not register any improvement. Further as in the country as whole the declines has been higher in rural as compared to urban areas in almost all states resulting in reducing rural urban gap. Another notable feature revealed here is the levelling off the interstate differentials in the level of mortality in urban areas of different states. It is clear from Table 9.7 that the crude death rate in urban areas varied only marginally between 6.1 to 9.3 for different states in 1986- 90 as compared to the corresponding variation indicated by 6.5 to 13.5 in 1971-75.

If the years 1916, 1917 and 1920 are taken as base, it can be observed that the average general mortality decreased 27.6 per cent by 1936-40, whereas infant mortality declined only 19.6 per cent. But despite its failure to drop quite as fast as general mortality, infant mortality has nevertheless been reduced substantially according to official returns.

The improvement in mortality conditions, which was initiated in the 1920's, appears to have been carried forward with greater speed since Independence. With the introduction of planning and increased investment on medical and public health, the gap between the declining mortality and stationary fertility widened considerably. The death rate has fallen and there was also a fall in infant mortality but the relation between these declines in the two rates has not been systematically investigated at the national level.

There has been an all round improvement in the level of mortality in India during the period between 1970 to 1990. All indicators of mortality at different time points over this period consistently indicate this declining trend in the whole country as well in its rural and urban population segments separately.

The trend in the crude death rate, the infant mortality rate and the expectation of life at birth during the 20 year period is shown in Table 9.8. The information is given for the country as a whole and also separately for rural and urban areas. The over all crude death rate has declined from around 15 in early seventies, to around 10 by 1990. The

infant mortality rate dropped sharply from around 140 to 80 over the same period. The expectation of life at birth horded an increase of roughly 8 years; from an estimated level of 49.7 years for the quinquennium 1970-75 it rose to 57.8 years for the four year period 1985-89.

The separate figures for both rural and urban areas again reveal declining mortality trend in line with the country as a whole. However, higher decline in the rural as compared to urban areas has resulted in somewhat reducing the rural urban gap. In rural areas, the crude death rate fell from around 17-18 in early seventies (1971-75) to 10-11 in late eighties (1985-90) as compared to corresponding decline from around 9-10 to 6-7 in urban areas. The decline recorded in infant mortality rate in rural areas during the same period was from around 140-150 to 85-105 as compared to from 75-85 to 55-65 in urban areas. Likewise the improvement revealed in expectation of life at birth was larger in rural areas (from 48 to 56) as compared to urban areas (from 59 to 64).

9.5 Causes of Infant Mortality

The gross inadequacies of data severely restricts the analysis of mortality by cause of death. However, attempts have been made from time to time to identify the causes of death by administrators in the health departments as well as by individual scholars, expert groups and committees. We will refer to a few of these experiences for an appreciation of the general situation.

Public Health Commissioner in 1934 attributed the high infant mortality rates to several general factors like poor nutrition of mother, over-crowding, high birth rate, high maternal mortality rate, premature births, prevalence of respiratory and communicable diseases like malaria, syphilis etc. He also found that both birth rate and infant death rate were high in the poorer classes. The report of the Special Committee for review of

Maternity and Child Health Welfare Work in India observed that during 1932-36 prematurity, malnutrition, high maternal mortality were the causes for high mortality in neonatal period, whereas the respiratory diseases were the leading causes in post neonatal period. Dasgupta's analysis of infant deaths in Bombay threw up the same conclusions for 1946-48.

Rao analysed by age and cause infant deaths registered in the city of Madras during 1964. His observations did not deviate from those of the above Special Committee. He found that the infantile debility, malnutrition and premature births accounted for the largest number of deaths during neo-natal period and the respiratory diseases in the post neo-natal. Likewise, Chandrasekhar pronounced immaturity, congenital malformation and respiratory diseases as the major causes of infant deaths in India. He contends that "the basic causes of excess of infant mortality in India are poor nutritional status of infants and their over exposure to the large doses of pathogenic and micro-organism and the community's excessive fertility."

Data on cause of death are also collected under the Model Registration Scheme of the Registrar General of India. Only those primary health centre villages are covered by the scheme which have medical officers and para-medical personnel for investigation. The causes thrown up by these data are birth injuries, pre-maturity, infection of the new born, diseases peculiar to infancy, broncho-pneumonia and pneumonia.

(i) Fertility and Infant Mortality

In India, children and specially sons, are valued for reasons of economic security and support, especially in old age and the women's status depends on her becoming a mother of a son or sons. Satisfaction in family life lies in having children around. This cultural context, in the face of high infant mortality, impels couples to go for more births

than they want. An appreciable reduction of infant mortality is not unlikely to infuse confidence in the survival of the children already born and to encourage the practice of family planning.

(ii) Infant Mortality in Relation to the Age of Mother and Parity

Health and physiological aspects of the relationship between fertility and infant mortality have aroused greater interest among the public health workers in this country. This relationship has been studied by considering the impact of reproductive behaviour and health of mothers on the health and survival of infants and vice-versa. The variables considered, singly or jointly, in these studies are : age of the mother, parity, interval between two successive pregnancies, breast-feeding, period of amenorrhoea, premature births, birth weight of infant and reproductive wastage.

(iii) Maternal Health and Nutrition

Maternal health is a factor of considerable importance in infant mortality. In the developing countries like India with high maternal mortality rates, the relationship between mother's health and child survival cannot be ignored. Not only her health but her attitude, care and concern for the child also play an important role in the survival of children. This is particularly important as children and infants are mostly brought up on breast feeding. It is at the same time true that repeated pregnancies involving continuous breast feeding tell upon mother's health resulting, in turn, in some reproductive wastage.

(iv) Infant Mortality in Relation to Spacing of Births

The influence that the death of an infant has on the interval between successive live births has been analysed on the basis of inter-pregnancy intervals of the mothers

experiencing infant deaths and of those who had no such experience. The results of this analysis show correspondence between short intervals between the successive pregnancies and greater risk of the child dying within one year; alternatively, the resumption of menstruation earlier on account of the stopping of breast feeding following an infant death might result in an earlier conception. Thus pregnancy interval and infant death may be mutually interrelated. The finding agrees with observation of Sen and Mathen that the inter-pregnancy interval was the smallest where obstetrics and neo-natal mortality were the highest. Their general finding was that next pregnancy was accorded earlier when the child died before completing one year than when he survived for one year.

(v) Birth Weight in Relation to Fertility

Birth weight is an important factor in the survival of infants. An analysis of the data pertaining to 6272 single live births made during the period 1968-70 in a Baroda hospital, which indicated that for babies with low birth weight there was a higher risk of death in first year of life. The risk of baby's death within a week of birth was greater than the average for mothers of less than 25 years or more than 35 years old. It was, however, suggested that maternal age by itself was not significantly associated with mortality within the first week of birth.

Several other studies of Indian data broadly suggest that (i) the risk of death is the highest for the first order births, it is much lower for the second order but thereafter tends to increase progressively; (ii) the shorter the interval between births, the greater is the risk and (in) the risk was positively related to the size of family, which often varied inversely with the social and economic status of the family.

We may finally refer to the following conclusions of an attempt to relate parity specific data on birth rates and infant deaths obtained from 11 villages in Punjab to the

1961 Census data and to estimate age specific death rates by applying appropriate life table probabilities :

(1) About 23 per cent of the babies born in India were the result of sixth seventh and even higher pregnancies which accounted for over nine points of the estimated birth rate of 41.3 per thousand population;

(2) Infants form less than 4 per cent of the population, but account for about 28 per cent of all deaths in a community in a year. Higher mortality is associated with order of birth. The risk of death afflicts the first born child and then the fourth and higher orders of birth much more sharply than second and third;

(3) Childhood malnutrition is related to the order of birth. Children of the fourth or a higher parity are at a distinct disadvantage as compared with those of the first three parties;

(4) The birth rate is directly related to the number of couples practising contraception for the purpose of limiting family size. As noted earlier, the group of women responsible for the sixth and higher parities in any given year account for about 23 per cent of all live births;

(5) Contraception for the purpose of preventing pregnancy after the fifth live birth, involving about 25 per cent of all fertile couples, would reduce the incidence of infant deaths by about 28 per cent; and

(6) The predominant causes of infant deaths in India are diarrhoea, pneumonia and measles. These common diseases often result in death because of low resistance of the infant child, which is associated with low birth weight.

About 20 per cent of all infant deaths could be prevented by increasing the birth weight of the unborn child through supplemental diet for mothers in the last three months of pregnancy and other types of ante-natal and post-natal care. About 28 per cent of infant deaths could be prevented through contraception of 25 per cent of the fertile mothers. Together, these two measures may help in securing a substantial reduction in infant mortality.

(vi) Maternal Education

The higher the level of educational attainment of the mother the lower is the infant and child mortality. The educated mothers are more likely to use the health services, feed their children better and act in various ways to improve the traditional means of health care. These mothers may also use relatively higher contraception for birth spacing purposes. The use of immunization of the children is also higher by educated mothers because of their better exposure of immunization.

(vii) Urban-Rural Differential

Infant and child mortality are also higher in the rural areas than that of the urban areas. However, urban-rural differential is not noteworthy. This may be attributed to the fact that about 80 percent of the population of Bangladesh live in rural areas.

(viii) Sex Differential

Sex differentials in child mortality are particularly important because traditional bias associated with son preference. It has been found that infant mortality is higher for male children while child mortality is higher for female children. Child mortality is higher among female children than those of male children. The difference in child mortality may

be explained in terms of biases towards health care, food distribution to the female children and treatment of female children in case of their illness.

(ix) Place of Delivery

An important determinant of child survival is the place of delivery. Traditional birth attendants attend most of the deliveries with risks to both mother and the newborn baby. Infant and child mortality rates are higher if the children born in unhealthy place and attended by traditional birth attendant than those who born in hygienic condition and attended by professional doctor/nurse. This information may imply that more counselling services during pregnancy may increase the mothers awareness regarding risks of having a baby by the assistance of a traditional birth attendant.

(x) Breast-feeding

Breastfeeding saves the lives of million of infants. Infants who are breastfed for at least six months are significantly less likely to become ill or die due to diarrhoea and acute respiratory infections. Breastfeeding also improves women's health. For instance, breastfeeding can improve a woman's ability to space her births. Full breastfeeding is associated with lactational amenorrhoea, the natural breastfeeding suppresses the menstrual cycle causing delay in the resumption of menstrual cycle. Feeding practices are important determinant of children's nutritional status and many studies have shown the beneficial effects of breastfeeding on nutritional status, morbidity and mortality of young infants. Breast-feeding also has an indirect effect on the postpartum fecundity of mothers. In particular, more frequent breast-feeding is associated with longer periods of post postpartum amenorrhoea, which in turn are related to longer birth intervals, and then lower fertility levels.

(xi) Immunization Effect

Immunizations provide protection to the children against specific and serious infectious diseases. The level of immunization may be used not only to assess the prevalence of specific disease protection but also to provide an indicator of the parental attention given to children to protect their health and welfare. The immunization status of the children is a factor for differential survival status of the children. The effect of immunization in case of neonatal, infant and child mortality is higher than those children who were not immunized.

(xii) Age of the Mother at Birth

The age of mother also affects the risk of death for a child. Children born to mothers a under age 20 are more likely to die before their first birthday. Babies born to young mothers are more likely to be premature, have low birth weights, and suffer from complications of delivery. Infant mortality is lower for the children whose mothers are of aged between 20-29 years than for the children whose mothers are aged 40 years and above. Children born to mothers over age 40 years, about one fourth-of their children born are also likely to die. Older mothers are more likely to give birth to children with congenital abnormalities who may be less likely to survive childhood. The child mortality increases with the increase age of the mothers. Infant mortality among the children born to mothers below age 20 years is higher than those born to mothers of ages 20-29 years.

(xiii) Birth Order of the Child

The association between birth order and neonatal, infant and child mortality risks shows upward trend with the increase of birth order from 1 to 4+, the infant mortality also increases. For example, in Bangladesh generally birth order one belongs to young

mothers of aged less than 20 years. Therefore, the higher is the birth order of a mother the higher is the age of the mother. Mortality risks are high among first births, which are predominately to younger mothers. Similarly higher order births belong to mothers of higher ages. Infant mortality is higher for mothers with age 35 years and above than mothers aged below 35 years.

(xiv) Birth Interval

The interval between births is the most consistent reproductive factor associated with high infant and child mortality. Children born after short intervals (less than two years) are more likely to die than children born after relatively long birth intervals (two to three years). The present analysis shows that short birth intervals significantly reduce children's probabilities of survival. For instance, the neonatal, infant and child mortality rates for children born to mothers at short birth intervals are higher than those born at long birth intervals. The association (birth interval between two births) prevails in all the age groups of the children but it is most pronounced in case of neonatal mortality. The findings support the significance of child spacing practices as a means of reducing mortality of the under-five children.

9.6 Trends of Maternal Mortality in India

The department of Health and Family Welfare of Government of Gujarat in its report gives an account of mortality in the global level. According to the report 5.29 lakhs maternal deaths takes place in the world .Out of this, 1.36 lakhs (25.7%) in India, the highest burden in any country. Maternal Mortality Rate is found higher in Scheduled Caste & Tribal communities and among those living in less developed villages. There are variations in maternal mortality rate between region & States as well as socio-economy groups. It further states that in every minute 380 women become pregnant and 190 women face unplanned or unwanted pregnancy. 110 women experience a

pregnancy related complication and 40 women have unsafe abortions. 1 woman dies from a pregnancy-related complication

Table 9.9 gives the data regarding Live Births, Maternal Deaths, Maternal Mortality Ratio in India by State from 1999-2001 SRS Prospective Household Reports. As per the table the total maternal death in India during the period 1991-2001 was 1512 and maternal mortality ratio was 327 and the maternal mortality rate was 31. The life time risk stated as 0.011. In EAG states and Assam the same figures was 937, 461, 58 and 0.02 respectively which was the highest compared to other regions. In the southern region the maternal death registered was least (168) and maternal mortality ratio was 206 and maternal mortality rate was 15. The life time risk calculated was 0.005. Punjab registered the lowest maternal death (20) and UP/Uttaranchal reported the highest maternal death (337). The lowest maternal mortality ratio and maternal mortality rate was registered by the state of Kerala 149 and 9 respectively. During this period Uttar Pradesh registered the highest in both (539) and (66) respectively.

Table 9.10 explains the Age Distribution of Maternal Deaths from 2001-03 Special Survey of Deaths. The percentage of maternal death is highest in the age group of 20-24 (29%) followed by the age group of 25-29 (21%) and 30-34 (20%). The lowest maternal death is registered by the age group 45-49 (1%) followed by 40-44 (4%). As against this, in case of non-maternal death the age group 45-49 has highest percentage of death (17%) and the lowest is in 30-34 group (12%). However, it can be observed that the deviation among all the group is in between 1% to 3%. The table clearly shows that more than two-third of the maternal deaths are of women in the age group 20-34. In contrast, non-maternal deaths are more evenly distributed over the reproductive age span of 15-49.

9.7 Causes of Maternal Mortality

The causes of death and its distribution among different regions is given in Table 9.11. As per the Special Survey of Deaths, the leading cause of death is haemorrhage

(38%), followed by sepsis (11%), and abortion (8%). The patterns are similar in all the three categories namely 'EAG states and Assam', 'Southern' and 'Others', except that 'hypertensive disorders' and 'abortion deaths' are more in the category 'Southern' and 'EAG states and Assam' respectively. An analysis of the table shows that the highest percent of maternal death is caused by Haemorrhage. In India it is 38%, EAG states and Assam it is 37% north Indian states including Gujarat the death caused by Haemorrhage is 40% and the south reported the lowest in the category 30%. Obstructed labor as a reason for maternal death is shown more in south 9%, lowest in northern side 4%. Abortion as a Cause, EAG state and Assam registered the highest 10% and the lowest 3% in northern parts and 4% in south. The all India average in case of abortion is 8%.

Figure 9.1

Chart 3: Causes of Maternal Death in India

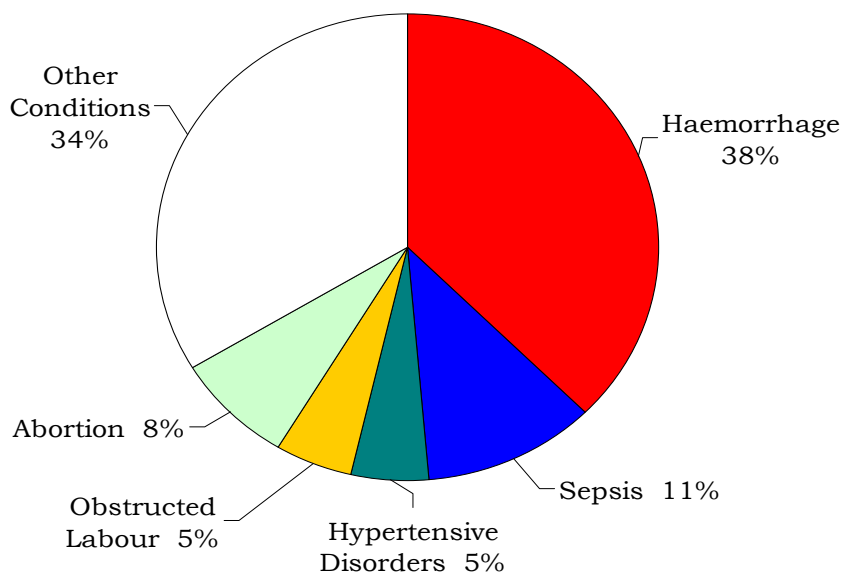


Table 9.12 illustrates the Type of medical attention at birth (Institutional) from the year 1991 to 2001. Right from 1991 to 2001, Kerala tops the list by providing medical attention at birth. 91.1% during 1991 and 97.1% from 1992 to 2001. During 1991 the

lowest attention was given by UP/Uttaranchal 4.5% followed by Rajasthan 5%. For Gujarat the percentage was 23.5. This situation has been changed in Gujarat and the percentage of attention increased to 36.6% during the subsequent years. An increase in the medical attention provided by different states can be noticed from the table. During the year 2001 also the lowest position in the list was held by UP and Rajasthan.

The above analysis brings out many points. Firstly, there is a need to do so periodically within the SRS, using at least 3 years of deaths to aggregate results. The new SRS sample since 2004 will, besides recording the type of institution where the birth took place and the attention received, be able to track the outcomes of individual pregnancies more efficiently. This will facilitate monitoring and recording of the maternal deaths much effectively.

A substantial decline of maternal mortality rate can be noticed during this period. However the pace of decline is insufficient to achieve the major development goals for maternal deaths. The patterns of causes of death reinforce the key finding that rapid expansion of institutional and skilled birth attendance, especially in the EAG states and Assam is needed to further reduce maternal mortality in India.

9.8 Mortality and Women's economic, social and health status

It is now common practice to infer the social status of women from their demographic characteristics. Yet it is not so easy to read through demographic progress, in terms of declines in mortality and fertility, to make unambiguous judgments about trends in women's social standing. Some of the issues involved in the context of maternal mortality, an important but as yet relatively neglected component of female mortality. Declines in maternal mortality may occur in the absence of any change in women's relative social standing or health status simply as the mechanical counterpart of fertility decline. An attempt is made here to distinguish the comparative contributions

of fertility decline and relative status improvement to trends in maternal mortality in India.

Successive censuses have revealed an overall decline in mortality accompanied by an increase in the population male: female ratio. This may suggest that as the absolute mortality position of both sexes has improved, the relative longevity of women has worsened. Census estimates show a sex ratio (the population ratio of males to females) of 1.047 in 1921, 1.058 in 1941, 1.075 in 1971, 1.070 in 1981 and 1.077 in 1991 [Dyson 1987]. The decline of the ratio between 1971 and 1981 is important since although partly attributed to the deficient 1971 Census coverage which disproportionately under-enumerated women so biasing the 1971 sex ratio upwards, many demographers also take it to convey some moderation of the long-term trend of increasing masculinisation.

These determinants of female mortality disadvantage have been argued to reflect gender differences in social status. In this way female mortality experience and female social status are linked. Importantly, women's mortality disadvantage has largely, been taken to be indicative of their poor relative social status and has therefore been viewed as its proxy. Debate has occurred as to the relative importance of economic versus cultural factors in explaining female status. Geographical differences in status have been used to explain India's regional demography and the age-specific patterns discussed above. Some writers perceive demographic patterns as primarily the consequence of economic determinants of female social status, particularly the extent of female participation in the economy.

It seems plausible to argue that the link between female mortality experience and social status may be extended to the dynamic situation in which India's demographic progress in the form of narrowing excess female mortality may be taken to reflect improvement in women's relative social status. If this is the case, mortality trends can be

seen to represent status trends as declines in status-determined mortality risk factors are primarily responsible for improvements in female mortality. Also, women's morbidity patterns are likely to mirror mortality patterns as women's health improves as a result of declines in relative as well as absolute levels of sex-selective discriminatory behaviour. Fertility decline may also be seen as indirect evidence of women's status improvement so that once the demographic transition is underway, a virtuous circle is implied with respect to changes in women's status and fertility and mortality declines. Status improvement may be associated with diminishing fertility and mortality which then themselves feed into further status improvement. This may well impart some degree of complacency with regard to interventions aimed specifically at improving the social standing of women as it suggests automatic improvement merely as an outcome of demographic progress.

Fertility decline will operate to reduce maternal mortality via a reduction in the maternal mortality rate by reducing the average number of children born to each woman (i.e. by reducing the incidence of exposure to demographically-determined risk factors). Fertility decline may also operate to reduce maternal mortality via reduction in the maternal mortality ratio by reducing risk per birth as childbearing is concentrated into lower risk age and parity groups

The conventional wisdom would find support from evidence showing a significant decline in the maternal mortality ratio. This would imply that a decline in risk per birth brought about by declines in status determined risk factors associated with improvements in women's relative status had been important in reducing maternal mortality. This effect is assumed to be additional to and independent of any improvement in the demographically determined component of risk per birth brought about by fertility decline. Table 9.13 gives the Maternal Mortality Rate, Maternal Mortality Ratio, Woman's economic status index, woman's social status index, woman's health status index, gender disparity index and gross gender development index for

fourteen major state in the country for the purpose of analyzing their influence on mortality rate.

Table 9.14 clearly indicates the extend of relationship and influence of different economic variable with maternal mortality rate. High negative correlation exists in between maternal mortality rate and women's economic, social and health status in the society. This indicates that when the status of women in the society increases, the mortality rate comes down. It can also be found from the table that gender development is another medicine for decreasing female mortality rate in the country. When the gender disparity increases, the mortality rate also increases (correlation coefficient (+) 0.882) which means establishment of gender equality will reduce the mortality rate. For a comparative study relationship of maternal mortality ratio and these variables is also given in the same table.

9.9 Trends of Mortality in Gujarat

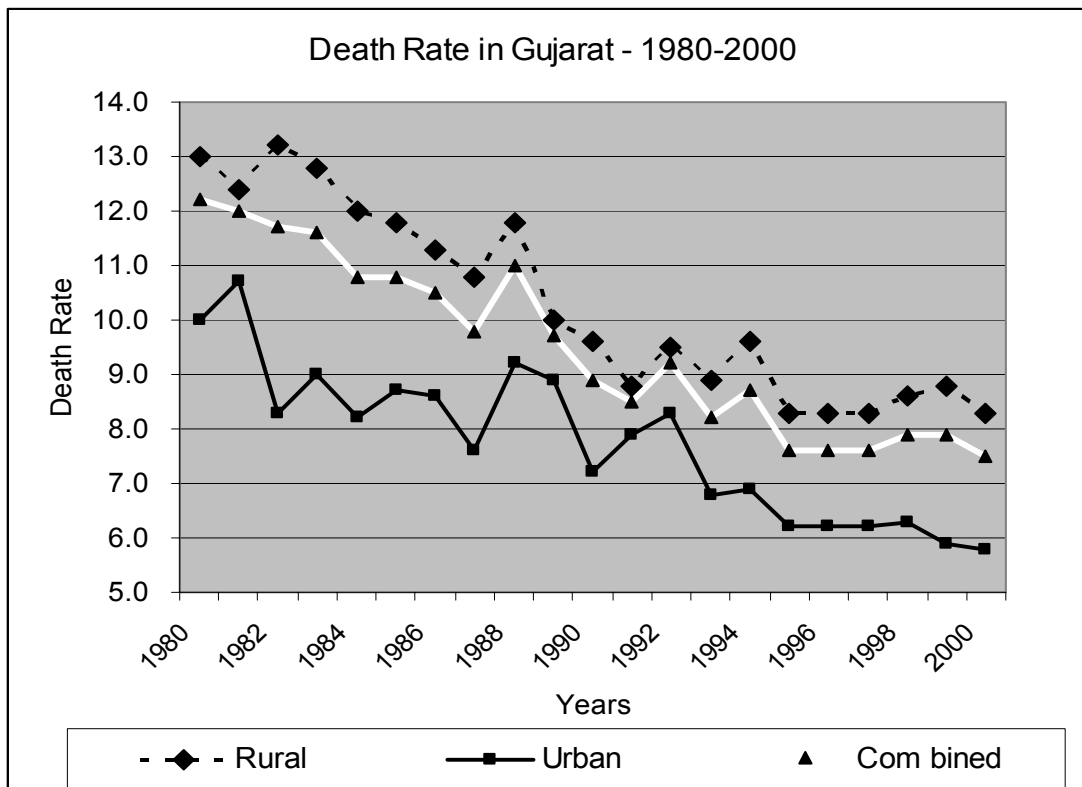
There is significant impact of mortality on population growth, population structure and fertility. Mortality differs age group to age- group, area to area and cast to cast. hence, in this chapter an attempt is made to explain mortality differentials on the basis of the differentials in natural conditions and socio-economic development.

The mortality is a burning issue in Gujarat also. There are three main variables having impact on population charge. The infant mortality rate and maternal mortality rate are not far below the national average. Table 9.15 shows that the infant mortality rate in India is 63 per thousand while that of Gujarat is 57 per thousand against this the maternal mortality rate is 453 and 389 respectively. Total infant death is 25 lakhs in India and the same in Gujarat is 72 thousand, i.e. 2.88 per cent and yearly maternal death is registered as 120000 in India and 5000 in Gujarat (4.2%).

(a) Death Rate in Gujarat

No reliable and perfect direct data on death are available but by using the reverse survival method death rate is calculated. In Table 9.16 death rate in Gujarat for the years 1901 to 2001 is given. It can be seen from the table that survival method death rate in Gujarat was 55.57 in 1901, which decline to 30.32 in 1941 and only 12 in 1980-82 and in the year 2001 it reaches to 7.70. Even though the decline in the death rate is not uniform in all the years, it shows a downward trend. The highest decline of 16 per cent was observed in 1921-1931 followed by 15.15 per cent in the decade 1901-1911.

Figure 9.2



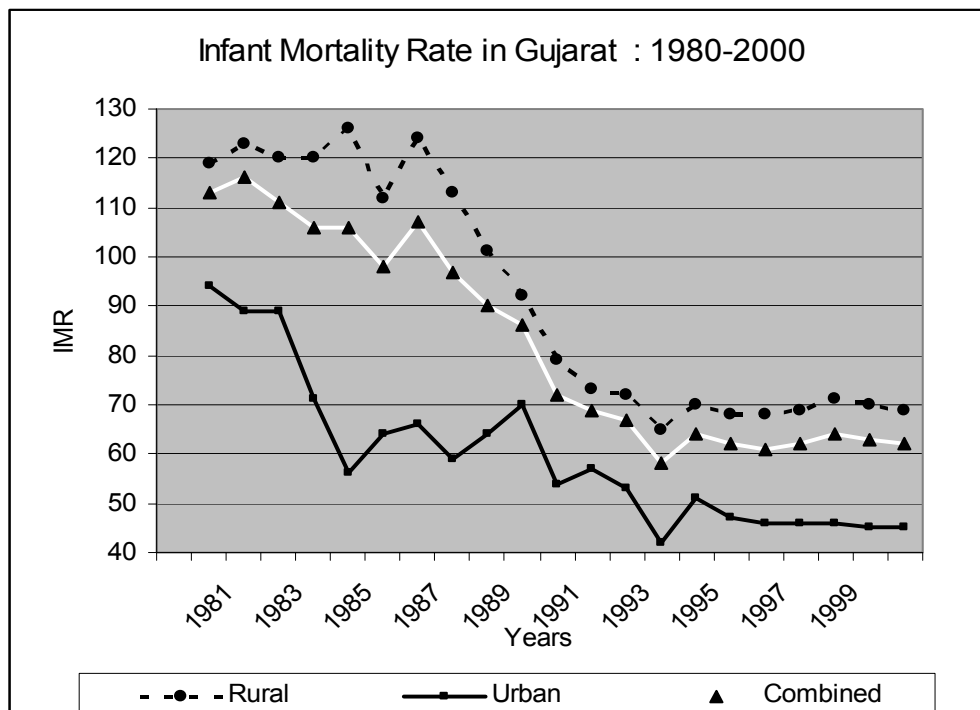
In Table 9.17 the death rate for the period from 1980 to 2000 is given with rural-urban classification. It can be observed from the table that the rate of fall of death rate is

higher in urban area than that of rural area. The Improvement in the medical facilities, hospitals, better sanitation supported by the primary health consciousness of the people in urban area etc. are the reasons behind this fast rate of fall (Figure 9.2).

9.10 Infant Mortality in Gujarat.

The infant mortality rate in Gujarat has registered an uneven nature especially in urban area. In 1983 the IMR was 71 and a sudden decrease has occurred in 1984 to 56 a decrease of 15 (Table 9.18). The same trend can be seen in the years 1989 and 1990 which has decreased from 70 in 1989 to 54 in 1990, a decrease of 16 in a year. Both in rural and urban areas after several ups and downs from 1980 to 1989, the IMR slowed down continuously from 1989 to 1994. Thereafter, it remains more or less constant up to the year 2000 (Figure 9.3).

Figure 9.3



9.11 Death Rate in Districts of Gujarat

Availability and reliability of data regarding death rate depends on registration of death by the people in local Government administrative offices. Most of the people do not find time to have the death of relatives registered in concerned offices. The section below make an analysis of the data available from the previous studies

There are wide differences in death rate in district to district. Table 9.19 provides data on death rate in districts of Gujarat. The data are presented for the year 1961-70 and 1971 to 1980.

It can be seen from the table that during 1961 to 1971, the death rate was the highest in the Dangs (12.77) followed by Bharuch (12.65), while the lowest was found in Sabarkantha (6.43) followed by Junagadh (8.33). There is a change between the average death rate for the year 1961 to 1971 and 1971 to 1981. During 1961 to 1971 the highest death rate was found in the Dangs (12.77), while the highest was found in Ahmedabad (9.58). The lowest average death rate was found is Sabarkantha (6.43), for the year 1961-71 while, the same was found in the same district with 4.61 average death rate.

Moreover, it is also clear from the table that as compared to 1961-71 with 1971-81, the average death rate was declined in each district of Gujarat State. Not only that but same trend was observed for Gujarat State also.

9.12 Factors determining mortality

The relationship analysis of mortality and various factors determining it has been done in the following section. The death rate of any country is influenced by the

percentage of urban population of the country, the density of population, the per capita income, female literacy rate, percentage of SC and ST population in the country, percentage of population below poverty line etc. Due to non-availability of reliable data for a district-wise analysis of the state of Gujarat, this relationship analysis is done taking into account India and its 14 major states. The result of the analysis is summarised in Table 9.20.

9.13 Mortality Model

From the above relationship analysis a mortality model can be developed as under:

$$Y_i = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \alpha_7 X_7$$

Where:

Y_i = Death Rate

X_1 = Percentage of Urban population

X_2 = Density of Population

X_3 = Real Per capita Income

X_4 = Female Literacy rate

X_5 = Percentage of SC & ST Population

X_6 = Percentage of population below poverty line

X_7 = Sex Ratio

The result of this relationship model in a correlation matrix is given in Table 9.22.

The correlation coefficient between death rate and percentage of urban population is found moderately negative (-)0.524. This means that the death has a tendency come down with an increase in the degree of urbanisation. There is low negative correlation between death rate and density of population (-)0.334, showing that density of population affects death rate adversely but at a very low rate. The higher the per capita income the lesser will be the death rate. Per capita income is attached to the standard of living of the people. As per capita income increases people would be able to live in a better and hygienic manner which will reduce the number of death eventually. The mortality rate is naturally higher among those with low income groups with poor living conditions. The percentage of people below poverty line also plays an important role in determining death rate of a country and a very high positive correlation is found with death rate (+)0.710. This shows that the death rate is a increasing function of percentage of people below poverty line.

Female literacy rate is also related with death rate negatively. The higher the female literacy rate the lesser the death rate. A high positive correlation is found between female literacy and death rate. As stated earlier in this chapter the improvement in the economic and social status of women has positive impact in maternal mortality rate. This, in turn, works for the reduction of death rate in the country.

On the contrary to the above findings, death rate and the percentage of population in Scheduled Castes and Scheduled Tribes is positively related. Earlier estimate of death rate has already proved this fact.

It is well established that throughout the 20th century the Indian sex ratio has been both masculine and characterised by a process of increasing masculinisation. This has been argued to demonstrate female mortality disadvantage which is claimed to operate via influences associated with poor female social status.

In the above analysis sex ratio has shown a slight positive relationship with overall mortality rate. But successive censuses have revealed an overall decline in mortality accompanied by an increase in the population male: female ratio. This may suggest that as the absolute mortality position of both sexes has improved, the relative longevity of women has worsened. Census estimates show a sex ratio (the population ratio of males to females) of 1.047 in 1921, 1.058 in 1941, 1.075 in 1971, 1.070 in 1981 and 1.077 in 1991 [Dyson 1987]. The decline of the ratio between 1971 and 1981 is important since although partly attributed to the deficient 1971 Census coverage which disproportionately under enumerated women so biasing the 1971 sex ratio upwards, many demographers also take it to convey some moderation of the long-term trend of increasing masculinisation. Similarly, demographers point to particularly deficient 1991 Census coverage in certain states as partially responsible for inflating the 1991 sex ratio [Dyson 1992].

All these finding explained above is matching with the findings of the Department of Health and Family Welfare, government of Gujarat on socis-economic variations in MMR which is given in 9.23 This table illustrates the distribution of MMR by different socio-economic group of the country. Compared to other castes, the MMR is found very high in case of ST (652) than SC (584). Among the different economic groups in the country, the MMR among poor (555) is found higher than that of non-poor (484). The development of the area - whether it is urban or rural - of living also has its own bearing on the MMR. According to the analysis, in low developed areas the MMR is found 646 and in the high developed areas it is 488.

TABLE 9.1
BIRTH, DEATH AND INFANT MORTALITY RATES
FOR 14 MAJOR STATES OF INDIA-2001

State	Death Rate	Infant Mortality Rate
Kerala	6.6	11
Tamil Nadu	7.6	49
Andhra Pradesh	8.1	66
Maharashtra	7.5	45
Karnataka	7.6	58
West Bengal	6.8	51
Punjab	7.0	51
Orissa	10.2	90
Gujarat	7.8	60
Haryana	7.6	65
Bihar	8.2	62
Madhya Pradesh	10.0	86
Rajasthan	7.9	79
Uttar Pradesh	10.1	82
All India	8.4	66

Source: Sample Registration System Buletin.Vol.36 No.2,
October 2002.Office of Registrar General of India.

TABLE 9.2
PROVISIONAL ESTIMATE OF RURAL-URBAN DISTRIBUTION OF
DEATH RATE, NATURAL GROWTH RATE AND
INFANT MORTALITY RATE - 2001

Sr. No.	India/States/ Union Territories	Death Rate		Natural Growth Rate		Infant Mortality Rate	
		Rural	Urban	Rural	Urban	Rural	Urban
1	2	5	6	7	8	9	10
	India *	9.0	6.3	18.0	13.9	72	42
1	Andhra Pradesh	8.9	5.6	12.4	14.0	74	39
2	Assam	9.8	6.6	18.0	11.9	76	33
3	Bihar	8.5	6.3	23.7	17.1	63	52
4	Gujarat	8.8	5.6	17.8	15.9	67	42
5	Haryana	7.6	7.4	20.2	15.4	68	54
6	Karnataka	8.2	6.4	15.4	12.6	69	27
7	Kerala	6.8	6.1	10.6	10.5	12	9
8	Madhya Pradesh	10.8	7.2	22.0	15.9	92	53
9	Maharashtra	8.5	5.9	12.5	14.2	55	27
10	Orissa	10.7	6.8	13.2	12.8	94	60
11	Punjab	7.2	6.4	14.8	12.2	55	37
12	Rajasthan	8.3	6.2	24.0	18.5	83	57
13	Tamil Nadu	8.4	6.0	11.2	11.8	54	35
14	Uttar Pradesh	10.6	7.8	22.5	19.2	86	62
15	West Bengal	7.0	6.4	15.8	7.4	53	38
16	Arunachal Pradesh	5.9	2.3	17.0	10.6	41	11
17	Chhatisgarh	10.1	7.0	18.9	15.4	88	56
18	Goa	8.1	6.5	5.9	7.4	21	16
19	Jharkhand	9.7	6.0	18.6	13.4	67	40
20	Himachal Pradesh	7.1	5.3	14.2	11.5	55	32
21	Jammu & Kashmir	6.1	6.0	15.0	10.3	50	39
22	Manipur	4.8	6.1	14.2	9.9	19	23
23	Meghalaya	9.9	3.9	20.7	11.1	57	41
24	Mizoram	5.2	3.4	12.4	9.8	23	12

TABLE 9.2 (cont..)
PROVISIONAL ESTIMATE OF RURAL-URBAN DISTRIBUTION OF
DEATH RATE, NATURAL GROWTH RATE AND
INFANT MORTALITY RATE - 2001

Sr. No.	India/States/ Union Territories	Death Rate		Natural Growth Rate		Infant Mortality Rate	
		Rural	Urban	Rural	Urban	Rural	Urban
1	2	5	6	7	8	9	10
25	Nagaland	N.A.	2.6	N.A.	9.9	N.A.	13
26	Sikkim	5.2	3.2	16.6	13.5	43	31
27	Tripura	5.6	5.2	11.0	8.3	40	30
28	Uttaranchal	10.0	6.1	11.1	10.5	69	26
29	Andaman & Nico.	5.0	4.1	12.8	10.2	21	8
30	Chandigarh	2.2	3.7	18.4	11.9	28	23
31	Dadra & Nagar Ha.	6.8	2.9	23.3	17.1	62	9
32	Daman & Diu	7.6	5.9	15	16.2	42	35
33	Delhi	5.4	5.0	17.8	13.1	34	28
34	Lakshadweep	4.7	5.2	17.4	13.5	34	33
35	Pondicherry	7.7	6.6	11	10.7	31	15

Source: Sample Registration System Buletin.Vol.36 No.2, October 2002.Office of Registrar General of India.

Notes(1) * Excludes Nagaland (Rural) due to part-receipt of returns.

(2) N. A.: Not available due to part-receipt of returns.

(3) Infant mortality rates for Smaller States and Union territories are for the period 1999-2001.

TABLE 9.3
INFANT MORTALITY RATE FOR REGISTRATION IN INDIA

Sr. No	Period	Infant Mortality Rate
1	1911-1915	204 5 year Average
2	1916-1920	219 5 year Average
3	1921-1925	174 5 year Average
4	1926-1930	178 5 year Average
5	1931-1935	174 5 year Average
6	1936-1940	161 5 year Average
7	1941-1945	161 5 year Average
8	1946-1950	134 5 year Average
9	1951-1961	146 Acturial Report
10	1963	146 Rural India
11	1968	137 Rural India
12	1969	140 Rural India
13	1970	133 Rural India
14	1971	131 Rural India

Source: eCENSUSIndia

TABLE 9.4
DEATH RATE OF 14 SELECTED STATES IN INDIA FROM 1972-74 TO 2001

Sr. No.	India/State	1972-74	1974-76	1976-78	1978-80	1980-82	1982-84	1984-86	1985-91	1996	2001
1	2	3	4	5	6	7	8	9	10	11	12
0	INDIA	15.7	15.0	14.5	13.1	12.3	12.1	11.8	10.1	8.9	8.4
1	Kerala	8.5	8.1	7.5	7.0	6.7	6.6	6.3	6.0	6.2	6.6
2	Tamil Nadu	14.4	14.5	13.7	12.0	11.4	11.5	9.9	8.7	8.0	7.6
3	Andhra Pradesh	16.0	14.9	14.0	12.4	10.9	10.7	10.4	9.4	8.3	8.1
4	Maharashtra	12.6	11.4	11.5	10.3	9.4	9.1	8.0	7.8	7.4	7.5
5	Karnataka	12.0	11.2	11.6	10.6	9.3	9.4	9.0	8.6	7.6	7.6
6	West Bengal	-	12.4	11.7	11.5	10.8	10.5	9.7	7.8	7.8	6.8
7	Punjab	11.7	10.8	11.1	9.9	8.8	9.0	8.7	8.0	7.4	7.0
8	Orissa	18.0	15.1	15.5	14.4	13.5	13.3	13.8	12.3	10.8	10.2
9	Gujarat	14.6	14.6	14.3	12.6	12.0	14.4	10.7	9.0	7.6	7.8
10	Hariyana	12.1	12.6	13.3	11.7	10.6	9.7	9.6	8.4	8.1	7.6
11	Bihar	16.2	13.5	12.5	14.5	14.3	13.9	14.4	10.2	10.2	8.2
12	Madhya Pradesh	17.1	16.9	16.5	15.2	15.6	14.6	14.6	13.1	11.1	10.0
13	Rajasthan	15.7	15.0	15.0	13.9	13.3	13.3	13.1	10.0	9.1	7.9
14	Uttar Pradesh	21.5	20.9	20.0	17.7	16.0	16.2	16.1	10.3	10.3	10.1

Source: (i) Figure for the years 1972-74 to 1985-91, Family Welfare programme in India, 1987-88, Ministry of Health, New Delhi. pp 115-124

(ii) Figure for the year 1996, "Social Economic Review," 1997-98, Government of Gujarat, June, p.c-78

(iii) Planning Commission, Ninth Five Year Plan (1997-2002), Vol. I, pp 23 and Registrar General of India

TABLE 9.5
TRENDS IN MORTALITY LEVEL DIFFERENT STATES: 1975-90

States/India	Crude Death Rate			Infant Mortality Rate			Expectation of Life at Birth		
	75-80	81-85	86-90	75-80	81-85	86-90	75-80	81-85	86-90
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	13.2	10.7	9.6	112	80	79	53.1	58.4	NA
Karnataka	11.0	9.2	8.6	82	70	75	56.3	60.6	NA
Kerala	7.3	6.6	6.2	46	32	24	65.5	68.4	NA
Tamil Nadu	12.9	11.0	9.2	102	84	73	53.4	56.9	NA
Gujarat	13.6	11.4	10.0	128	107	90	51.4	57.6	NA
Maharashtra	11.0	9.1	8.2	87	74	63	56.3	60.6	NA
Madhya Pradesh	16.0	14.9	13.3	143	129	117	49.0	51.6	NA
Uttar Pradesh	18.5	16.1	13.4	169	150	120	46.2	50.0	NA
Bihar	13.5	14.1	12.4	NA	106	93	NA	51.8	NA
Rajasthan	14.3	13.5	11.5	127	109	98	51.4	53.5	NA
Orissa	15.1	13.4	11.5	140	131	123	49.1	53.0	NA
West Bengal	11.6	10.4	8.4	NA	82	70	NA	57.4	NA
Assam	10.3	11.7	11.2	113	102	96	51.1	51.9	NA
Haryana	11.3	9.9	8.9	107	94	83	54.8	60.3	NA
Himachal Pradesh	11.6	10.3	8.8	101	79	79	56.6	60.4	NA
Jammu & Kashmir	10.6	9.1	8.0	70	74	72	56.8	60.4	NA
Punjab	10.3	9.0	8.1	102	75	62	60.5	63.1	NA
India	13.9	11.1	10.6	124	104	91	52.3	55.5	57.8

Source: Census of India, 1981, Occasional Paper, No.1 of 1984, SRS Based Abridged Life-Tables, 1970-75.

Census of India, Occasional Paper No. 1 of 1985, SRS Based Abridged Life-Tables, 1976-80. Census of India,

Occasional Paper No. 1 of 1989, SRS Based Abridged Life-Tables, 1981-85. Census of India, 1981, Paper No.

1 of 1984, Population projections for India 1981-2000. Registrar Generals Office, Sample Registration Bulletin, I-XXVI:

New Delhi.

TABLE 9.6
TRENDS IN MORTALITY LEVEL IN RURAL AREAS OF DIFFERENT STATES: 1975-90

States/India	Crude Death Rate			Infant Mortality Rate			Expectation of Life at Birth		
	75-80	81-85	86-90	75-80	81-85	86-90	75-80	81-85	86-90
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	14.3	11.6	10.4	121	87	84	51.7	57.1	NA
Karnataka Kerala	12.4	10.3	9.4	90	78	84	53.9	58.7	NA
Kerala	7.3	6.5	6.1	48	33	84	65.5	68.5	NA
TamilNadu	14.4	12.6	10.4	144	97	85	51.0	54.6	NA
Gujarat	14.6	12.4	10.7	137	120	102	51.0	56.2	NA
Maharashtra	12.2	10.2	9.3	97	84	71	54.0	59.0	NA
Madhya Pradesh	17.2	16.2	14.5	152	138	125	47.6	50.0	NA
Uttar Pradesh	19.5	17.4	14.4	175	159	128	45.2	48.7	NA
Bihar	14.1	14.7	11.9	NA	110	95	NA	52.1	NA
Rajasthan	15.4	14.6	12.5	138	117	104	50.3	52.1	NA
Orissa	15.6	14.8	13.1	144	136	127	48.5	52.4	NA
West Bengal	12.8	11.7	9.8	NA	90	76	NA	55.1	NA
Assam	13.0	13.1	11.5	115	103	98	50.4	51.2	NA
Haryana	13.2	10.6	9.4	115	101	88	53.6	58.5	NA
Himachal Pradesh	11.0	10.6	9.0	102	80	81	56.2	60.0	NA
Jammu& Kashmir	11.7	9.8	8.5	76	81	76	55.4	59.6	NA
Punjab	10.8	9.8	8.6	108	82	65	59.8	61.7	NA
India	15.1	13.3	11.5	135	113	101	50.6	53.7	56.3.0

Source: Census of India, 1981, Occasional Paper, No.1 of 1984, SRS Based Abridged Life-Tables, 1970-75.
Census of India, Occasional Paper No. 1 of 1985, SRS Based Abridged Life-Tables, 1976-80. Census of India,
Occasional Paper No. 1 of 1989, SRS Based Abridged Life-Tables, 1981-85. Census of India. 1981, Paper No. 1 of 1984,
Population projections for India 1981-2000. Registrar Generals Office, Sample Registration Bulletin, I-XXVI: New Delhi.

TABLE 9.7
TRENDS IN MORTALITY LEVEL IN URBAN AREAS OF DIFFERENT STATES: 1975-90

States/India	Crude Death Rate			Infant Mortality Rate			Expectation of Life at Birth		
	75-80	81-85	86-90	75-80	81-85	86-90	75-80	81-85	86-90
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	8.2	7.2	7.0	56	56	56.0	60.6	63.8	NA
Katnataka	7.3	6.3	6.5	56	43	45.0	64.0	67.1	NA
Kerala	6.8	6.6	6.3	35	26	20.0	65.7	67.6	NA
TamilNadu	9.2	7.9	7.0	70	54	47.0	59.7	62.5	NA
Gujaral	10.6	9.0	8.3	98	72	63.0	57.1	60.7	NA
Maharashtra	8.2	6.9	6.1	60	54	46.0	62.2	64.0	NA
Madhya Pradesh	9.5	9.1	8.5	84	78	77.0	58.3	60.3	NA
Uttar Pradesh	11.7	10.3	9.3	111	94	78.0	54.9	57.8	NA
Bihar	8.4	8.2	7.8	NA	65	64.0	NA	61.0	NA
Rajasthan	9.0	9.0	8.0	67	69	65.0	60.3	61.1	NA
Orissa	9.4	8.6	7.6	79	75	73.0	58.2	59.6	NA
West Bengal	7.9	6.9	6.6	NA	49	47.0	NA	64.5	NA
Assam	7.8	8.1	7.7	81	78	62.0	60.8	60.2	NA
Haryana	8.1	7.0	6.9	59	61	60.0	62.4	66.1	NA
Himachal Pradesh	8.1	5.7	6.1	57	45	40.0	65.9	68.2	NA
Jammu& Kashmir	6.4	6.7	6.4	40	45	53.0	64.4	62.4	NA
Punjab	8.4	6.7	6.7	74	52	53.0	63.0	68.1	NA
India	8.9	7.9	7.3	74	64	59.0	60.1	62.8	64.0

Source: Census of India, 1981, Occasional Paper, No.1 of 1984, SRS Based Abridged Life-Tables, 1970- 75. Census of India, Occasional Paper No. 1 of 1985, SRS Based Abridged Life-Tables, 1976-80. Census of India, Occasional Paper No. 1 of 1989, SRS Based Abridged Life-Tables, 1981-85. Census of India, 1981, Paper No. 1 of 1984, Population projections for India 1981-2000. Registrar Generals Office, Sample Registration Bulletin, I-XXVI: New Delhi.

Table 9.8
TRENDS IN MORTALITY LEVEL, INDIA: 1971-90

Year	Rural			Urban			Combined		
	Crude Death Rate	Infant Mortality Rate	Expectation of Life at Birth	Crude Death Rate	Infant Mortality Rate	Expectation of Life at Birth	Crude Death Rate	Infant Mortality Rate	Expectation of Life at Birth
1971	16.4	138		9.7	82		14.9	129	
1972	18.9	150		10.3	85		16.9	139	
1973	17.0	143	48.0	9.6	89	58.9	15.5	134	49.7
1974	15.9	136		9.6	74		14.5	126	
1975	17.3	151		9.2	84		15.9	140	
1976	16.3	139		10.0	80		15.0	129	
1977	16.0	140		9.5	81		14.7	130	
1978	15.3	137	50.6	9.4	74	60.1	14.2	127	52.3
1979	14.1	130		9.4	72		13.0	120	
1980	13.7	124		8.1	65		12.6	114	
1981	13.7	119		7.9	62		12.5	110	
1982	13.1	114		7.4	65		11.9	105	
1983	13.1	114	53.7	7.9	66	62.8	11.9	105	55.5
1984	13.8	113		8.6	66		12.6	104	
1985	13.0	107		7.8	59		11.8	97	
1986	12.2	105		7.6	62		11.1	96	
1987	12.0	104		7.4	61		10.9	95	
1988	12.0	102	56.3	7.7	62	64.0	11.0	94	57.8
1989	11.1	98		7.2	58		10.3	91	
1990	10.4	86	NA	6.7	51	NA	9.6	80	NA

Source: Census of India, 1981, Occasional Paper, No.1 of 1984, SRS Based Abridged Life-Tables, 1970-75. Census of India, Occasional Paper No. 1 of 1985, SRS Based Abridged Life-Tables, 1976-80. Census of India, Occasional Paper No. 1 of 1989, SRS Based Abridged Life-Tables, 1981-85. Census of India, 1981, Paper No. 1 of 1984, Population projections for India 1981-2000. Registrar Generals Office, Sample Registration Bulletin, I-XXVI: New Delhi.

TABLE 9.9
LIVE BIRTHS, MATERNAL DEATHS, MATERNAL MORTALITY RATIO IN INDIA BY
STATE FROM 1999-2001 SRS PROSPECTIVE HOUSEHOLD REPORTS

India & Major States	Sample Female Population	Live Births	Maternal Deaths	MMR	Maternal Mortality Rate	Life-time risk
INDIA TOTAL	4,839,402	462,335	1,512	327	31	0.0110
Assam	191,190	19,365	77	398	40	0.0140
Bihar/Jharkhand	302,264	41,467	166	400	55	0.0190
M. P./ Chhattisgarh	211,770	27,772	113	407	53	0.0190
Orissa	242,424	20,978	89	424	37	0.0130
Rajasthan	236,611	30,910	155	501	66	0.0230
U.P./Uttaranchal	436,440	62,542	337	539	77	0.0270
Subtotal	1,620,699	203,034	937	461	58	0.0200
Andhra Pradesh	243,725	19,506	43	220	18	0.0060
Karnataka	288,407	24,768	66	266	23	0.0080
Kerala	269,571	16,800	25	149	9	0.0030
Tamil Nadu	295,980	20,310	34	167	12	0.0040
Subtotal	1,097,683	81,384	168	206	15	0.0050
Gujarat	216,197	21,317	43	202	20	0.0070
Haryana	157,771	17,023	30	176	19	0.0070
Maharashtra	260,412	21,330	36	169	14	0.0050
Punjab	139,212	11,308	20	177	14	0.0050
West Bengal	371,121	29,766	65	218	18	0.0060
Other	976,307	77,173	213	276	22	0.0080
Subtotal	2,121,020	177,917	407	229	19	0.0070

Source: Sample Registration System; Maternal Mortality in India 1997-2003; Trends, Causes and Risk Factors; Registrar General of India

TABLE 9.10
AGE DISTRIBUTION OF MATERNAL DEATHS
FROM 2001-03 SPECIAL SURVEY OF DEATHS

Age Groups	Maternal Deaths	Non-maternal Deaths
	Proportion	Proportion
15-19	12%	14%
20-24	29%	15%
25-29	21%	13%
30-34	20%	12%
35-39	12%	14%
40-44	4%	14%
45-49	1%	17%
15-49	100%	100%

Source: Sample Registration System; Maternal Mortality in India 1997-2003; Trends, Causes and Risk Factors; Registrar General of India

TABLE 9.11
CAUSES OF MATERNAL DEATHS FROM 2001-03
SPECIAL SURVEY OF DEATHS

Maternal Causes	India	EAG and Assam	South	Other
1	2	3	4	5
Haemorrhage	38%	37%	30%	40%
Sepsis	11%	11%	17%	10%
Hypertensive Disorders	5%	4%	13%	6%
Obstructed Labour	5%	5%	9%	4%
Abortion	8%	10%	4%	3%
Other Conditions	34%	33%	26%	37%
Total	100%	100%	100%	100%

Source: Sample Registration System; Maternal Mortality in India 1997-2003; Trends, Causes and Risk Factors; Registrar General of India

TABLE 9.12
TYPE OF MEDICAL ATTENTION AT BIRTH (INSTITUTIONAL), 1991-2001

India and States	1991	1996	1997	1998	1999	2000	2001
1	2	3	4	5	6	7	8
India	24.3	25.2	25.4	25.4	26.6	25.2	26.3
Assam	18.3	20.9	21.2	21.1	21.0	21.2	21.4
Bihar/Jharkhand	11.7	15.1	15.3	15.4	15.8	15.9	15.9
M.P./Chhattisgarh	13.2	14.2	14.5	14.7	16.4	16.5	16.3
Orissa	9.8	13.3	13.6	13.9	14.1	14.3	14.9
Rajasthan	5.0	7.8	8.0	8.0	8.1	8.4	9.0
U.P./Uttaranchal	4.5	7.5	7.7	7.8	8.0	8.4	8.7
Subtotal	10.4	13.1	13.4	13.5	13.9	14.1	14.4
Andhra Pradesh	37.7	42.1	42.5	42.8	43.0	43.2	43.3
Karnataka	40.6	49.2	49.3	49.2	49.0	49.2	49.1
Kerala	91.5	97.1	97.1	97.1	97.1	97.1	97.1
Tamil Nadu	56.8	64.7	65.2	64.8	64.7	64.8	64.5
Subtotal	56.7	63.3	63.5	63.5	63.5	63.6	63.5
Gujarat	23.5	36.6	36.5	36.3	36.3	36.4	36.6
Haryana	19.9	24.3	24.6	24.7	24.8	25.1	25.1
Maharashtra	34.3	47.4	47.7	47.8	48.6	48.9	48.6
Punjab	7.3	12.5	12.6	12.7	12.8	13.1	16.2
West Bengal	30.7	35.9	36.2	36.2	35.8	35.8	36.1
Subtotal	23.1	31.3	31.5	31.5	31.7	31.9	32.5

Source: Sample Registration System; Maternal Mortality in India 1997-2003; Trends, Causes and Risk Factors; Registrar General of India

TABLE 9.13
ANALYSIS OF MATERNAL MORTALITY RATE AND FACTORS INFLUENCING MMR
OF 14 SELECTED STATES IN INDIA: 2001

India & Major States	MMR (1999- 2001)*	Maternal Mortality Rate (1999- 2001)*	Women's Economic Status Index (2001)**	Women's Social Status Index (2001)**	Women's Health Status Index (2001)**	Gender Disparity Index (2001)#	Gross Gender Development Index (2001)##
		a	1	2	3	4	5
Kerala	149	9	0.714	0.795	0.976	3.64	0.8
Tamil Nadu	167	12	0.768	0.643	0.643	12.64	0.7
Maharashtra	169	14	0.643	0.429	0.571	12.68	0.57
Haryana	176	19	0.554	0.75	0.595	17.46	0.57
Gujarat	202	20	0.714	0.893	0.643	16.34	0.65
West Bengal	218	18	0.375	0.357	0.333	13.09	0.45
Andhra Pradesh	220	18	0.661	0.598	0.512	16.81	0.58
Punjab	177	14	0.714	0.893	0.786	12.14	0.71
Karnataka	266	23	0.768	0.446	0.571	14.67	0.61
Bihar	400	55	0.259	0.268	0.119	24.8	0.23
Madhya Pradesh	407	53	0.411	0.25	0.357	21.6	0.33
Orissa	424	37	0.232	0.161	0.214	20.5	0.28
Rajasthan	501	66	0.188	0.357	0.44	27.48	0.29
Uttar Pradesh	539	77	0.286	0.143	0.381	24.8	0.26

Source: * Sample Registration System; Maternal Mortality in India 1997-2003; Trends, Causes and Risk Factors; Registrar General of India

** and ## Indian Economic Association 89th Annual Conference Volume, Part II, pp.1129

Indian Economic Association 89th Annual Conference Volume, Part II, pp.946, .

ABL Srivastava(2002), Mahendra K. Premi (2002) and P.K.Bhargava (2002)

TABLE 9.14
ANALYSIS OF CORRELATION OF MATERNAL MORTALITY RATE AND
MATERNAL MORTALITY RATIO BETWEEN VARIOUS FACTORS

Correlation Chart		
Influencing Factors	Maternal Mortality Rate	Maternal Mortality Ratio
Women's Economic Status Index	(-)0.807	(-)0.846
Women's Social Status Index	(-)0.722	(-)0.797
Women's Health Status Index	(-)0.636	(-)0.694
Gender Disparity Index	(+)0.882	(+)0.871
Gross Gender Development Index	(-)0.870	(-)0.901

Note: Calculated from data given in Table 9.13

TABLE 9.15
 INFANT MORTALITY RATE AND MATERNAL
 MORTALITY RATE IN INDIA AND GUJARAT -2001

Indicator	India	Gujarat
Infant Mortality Rate	63	57
Maternal Mortality Rate	453	389
Infant Deaths in one year	2,500,000	72,000
Maternal Deaths in one year	120,000	5,000

Source: Department of Health and Family Welfare,
 Government of Gujarat

TABLE 9.16
CRUDE DEATH RATE IN GUJARAT
1901 TO 2001

Sr. No.	Year	Death Rate
1	1901	55.57
2	1911	40.42
3	1921	49.51
4	1931	33.51
5	1941	30.32
6	1951	29.31
7	1961	22.24
8	1970-72	16.20
9	1980-82	12.00
10	1991	9.00
11	2001	7.70

Source:

(i) For 1901 to 1961, Mukherjee, "The Age Distribution of Indian Population" Tables 9-1 p. 241, in "India's Population Aspects of Quality & Control", by Ashok.Mitra (ed.) p. 241.

(ii) For 1970-72 and 1980-82, "Family welfare Programme in India" Year Book 1983-84, pp. 60-66.

TABLE 9.17
DEATH RATE IN GUJARAT FROM 1980 TO 2000

Sr. No.	Year	Death Rate		
		Rural	Urban	Combined
1	2	3	4	5
1	1980	13.0	10.0	12.2
2	1981	12.4	10.7	12.0
3	1982	13.2	8.3	11.7
4	1983	12.8	9.0	11.6
5	1984	12.0	8.2	10.8
6	1985	11.8	8.7	10.8
7	1986	11.3	8.6	10.5
8	1987	10.8	7.6	9.8
9	1988	11.8	9.2	11.0
10	1989	10.0	8.9	9.7
11	1990	9.6	7.2	8.9
12	1991	8.8	7.9	8.5
13	1992	9.5	8.3	9.2
14	1993	8.9	6.8	8.2
15	1994	9.6	6.9	8.7
16	1995	8.3	6.2	7.6
17	1996	8.3	6.2	7.6
18	1997	8.3	6.2	7.6
19	1998	8.6	6.3	7.9
20	1999	8.8	5.9	7.9
21	2000	8.3	5.8	7.5

Source :-(1) Sample Registration Bulletin, Registrar General of India, Ministry of Home Affairs, New Delhi.

(2) Commissionerate of Health, Medical Services and Medical Education (Health), Gujarat State, Gandhinagar.

TABLE 9.18
INFANT MORTALITY RATE IN GUJARAT FROM 1980 TO 2000

Sr. No.	Year	Infant Mortality Rate		
		Rural	Urban	Combined
1	2	3	4	5
1	1980	119	94	113
2	1981	123	89	116
3	1982	120	89	111
4	1983	120	71	106
5	1984	126	56	106
6	1985	112	64	98
7	1986	124	66	107
8	1987	113	59	97
9	1988	101	64	90
10	1989	92	70	86
11	1990	79	54	72
12	1991	73	57	69
13	1992	72	53	67
14	1993	65	42	58
15	1994	70	51	64
16	1995	68	47	62
17	1996	68	46	61
18	1997	69	46	62
19	1998	71	46	64
20	1999	70	45	63
21	2000	69	45	62

Source :-(1) Sample Registration Bulletin, Registrar General of India, Ministry of Home Affairs, New Delhi.

(2) Commissionerate of Health, Medical Services and Medical Education (Health), Gujarat State, Gandhinagar.

TABLE 9.19
DISTRICT-WISE DEATH RATE OF GUJARAT
ACCORDING TO REGISTRATION 1961-71 AND 1971-81

Sr. No.	State/District	Average Death Rate	
		1961 to 1971	1971 to 1980
0	Gujarat	9.55	8.83
1	Jamnagar	7.85	5.61
2	Rajkot	8.81	6.27
3	Surendranagar	8.97	7.20
4	Bhavnagar	9.47	6.29
5	Amreli	9.78	5.51
6	Junagadh	8.33	5.29
7	Kachchh	9.27	6.80
8	Banaskantha	8.94	6.95
9	Sabarkantha	6.43	4.61
10	Mahesana	9.29	6.18
11	Gandhinagar	N.A.	6.97
12	Ahmedabad	11.90	9.58
13	Kheda	11.16	7.79
14	Panchmahal	7.72	5.02
15	Vadodara	10.40	7.74
16	Bharuch	12.65	8.33
17	Surat	10.97	7.19
18	Valsad	N.A.	5.18
19	The Dangs	12.77	7.21

Source : Department of Health, Gandhinagar, Office Record for 1961 to 1980.

TABLE 9.20
ANALYSIS OF MATERNAL MORTALITY RATE AND FACTORS
INFLUENCING MMR OF 14 SELECTED STATES IN INDIA: 2001

India/States	Death Rate (2001) ¹	Urban to Total Population (2001) ¹	Density of Population (2001) ¹	Real Per Capita Income (Rs.) ²	Female Literacy Rate (2001)	Percent of SC & ST Population ²	Percent of Population Below Poverty Line (2000) ²	Sex Ratio (2001) ¹
	a	1	2	3	4	5	6	7
Kerala	6.60	26.00	819	2778	87.86	10.90	12.70	1058
Tamil Nadu	7.60	43.90	478	3643	64.55	20.00	21.10	987
Andhra Pra.	8.10	27.10	275	3069	51.17	22.80	15.80	978
Maharashtra	7.50	42.40	314	5283	67.51	19.10	25.00	922
Karnataka	7.60	34.00	275	3590	57.45	22.80	20.00	965
West Bengal	6.80	28.00	904	3745	60.22	28.50	27.00	934
Punjab	7.00	33.90	482	4897	63.55	28.90	6.20	876
Orissa	10.20	15.00	236	1917	50.97	38.60	47.10	972
Gujarat	7.80	37.40	258	4257	58.60	21.90	14.10	920
Haryana	7.60	29.00	477	4485	56.31	19.30	8.70	861
Bihar	8.20	13.40	880	1225	33.57	16.60	42.50	919
Madhya Pra.	10.00	25.00	196	2084	50.28	35.50	37.40	919
Rajasthan	7.90	23.40	165	2412	44.34	29.80	15.30	921
Uttar Pra.	10.10	20.80	689	1852	42.98	21.20	31.20	989
All India	8.40	27.80	324	3234	54.16	24.40	26.10	933

Source: * Sample Registration System; Maternal Mortality in India 1997-2003; Trends, Causes and Risk Factors; Registrar General of India

Note: (a) Urbanisation percentage for Bihar has been recalculated to include Jharkhand and that for Madhya Pradesh to include Chattisgarh (b) States have been arranged in the descending order on the basis of degree of urbanisation Source: 1. Census of India (2001) 2. Economic Survey (2001-2002) 3. Planning Commission (1998), Ninth Five Year Plan (1997-2002)

TABLE 9.21

Correlation Chart of Table 9.20			
Sr. No.	Variables Death Rate = α	Correlation Coefficient	Relationship
1	α and Percentage of Urban Population	(-)0.524	Moderate Negative
2	α and Density of Population	(-)0.334	Low Negative
3	α and Real Per Capita Income	(-)0.628	High Negative
4	α and Female Literacy Rate	(-)0.607	High Negative
5	α and Percent of SC & ST Population	(+)0.535	Moderate Positive
6	α and Percentage of Population BPL	(+)0.710	High Positive
7	α and Sex Ratio	(+)0.059	Very Low Positive

Note: Calculated from Table the data given in 9.20

TABLE 9.22
CORRELATION MATRIX

Variables	Y_i	X_1	X_2	X_3	X_4	X_5	X_6	X_7
Y_i	1.000							
X_1	-0.524	1.000						
X_2	-0.334	-0.250	1.000					
X_3	-0.628	0.837	-0.171	1.000				
X_4	-0.607	0.567	0.134	0.560	1.000			
X_5	0.535	-0.262	-0.505	-0.182	-0.364	1.000		
X_6	0.710	-0.573	0.083	-0.675	-0.514	0.387	1.000	
X_7	0.059	-0.101	0.231	-0.395	0.375	-0.306	0.148	1.000

Note: Calculated from Table the data given in 9.18

Y_i = Death Rate X_1 = Percentage of Urban Population X_2 = Density of Population X_3 = Real Per Capita Income X_4 = Female Literacy Rate X_5 = Percent of SC & ST Population X_6 = Percentage of Population BPL X_7 = Sex Ratio

TABLE 9.23
SOCIO-ECONOMIC VARIATION IN MMR

Socio-Economic Group	MMR
Caste	
SC	584
ST	652
Socio-Economic Status	
Poor	555
Non-Poor	484
Village Development	
Low	646
High	488

Source: Department of Health and Family Welfare, Government of Gujarat

CHAPTER X

DEMOGRAPHY - TRENDS AND PROJECTIONS

10.1 Introduction

Detailed discussion has been carried out in the previous chapters about population growth, sex ratio, literacy rate, birth rate, death rate, infant mortality rate, urbanization, migration etc. This chapter measures trends of these variables and gives the projections for all those variables as it is not only inevitable to understand their influence on socio-economic development of the country concerned but useful in planning future policies and programmes.

The projections given below is base don the report published by the technical group of population projections constituted by the National Commission on Population during May, 2006.

Population projection is a scientific attempt to peep into the future population scenario, conditioned by making certain assumptions, using data relating to the past available at that point of time. Assumptions used and their probability of adhering in future, forms a critical input in this mathematical effort. Predicting the future course of human fertility and mortality is not easy, especially when looking beyond in time as medical and health intervention strategies, food production and its equitable availability, climatic variability, socio-cultural setting, politico economic conditions and a host of other factors influence population dynamics, making it difficult to predict the growth with certainty. Therefore, caution must be exercised while making or using the population projections in the context of various conditions imposed.

The Component Method is the universally accepted method of making population projections because growth of population is determined by fertility, mortality and migration rates. The data used are 2001 Census and Sample Registration System (SRS). SRS provides time series data of fertility and mortality, which has been used for predicting their future levels.

The salient features of the population projections at the national level and particularly for the state of Gujarat is given below

10.2 Population Projections at National Level

The technical group of population projections constituted by the National Commission on Population during May, 2006 has made some conclusions which has been displayed in Table 10.1 and Table 10.2

- a) The population of India is expected to increase from 1029 million to 1400 million during the period 2001-2026 - an increase of 36 percent in twenty- five years at the rate of 1.2 percent annually. As a consequence, the density of population will increase from 313 to 426 persons per square kilometer. The population growth rate was 1.6 per cent per annum during 2001-05 expected to decrease to 0.9 per cent per annum.
- b) The crude birth rate will decline from 23.2 during 2001-05 to 16.0 during 2021-25 because of falling level of total fertility. In contrast, the crude death rate is expected to fall marginally due to changing age structure of the population with the rising median age as a result of continuing decline in fertility and increase in the expectation of life at birth. It will drop from 7.5 during 2001-05 to 7.2 during 2021-25.

- c) The infant mortality rate of the country, which is reported to be 63 in 2002, is estimated to decline to 61 during the period 2001-05 and is expected to go down to 40 by the end of the period 2021-25.
- d) Between 2001 and 2026, because of the declining fertility, the proportion of population aged under 15 years is projected to decline from 35.4 to 23.4 percent; the proportion of the middle (15-59 years) and the older ages (60 years and above) are set to increase considerably. With the declining fertility, along with the increases in life expectancy, the number of older persons in the population is expected to increase by more than double from 71 million in 2001 to 173 million in 2026 - an increase in their share to the total population from 6.9 to 12.4 percent. The proportion of population in the working age-group 15-59 years is expected to rise from 57.7 percent in 2001 to 64.3 percent in 2026.
- e) Another important consequence of the declining fertility will be that, at the national level, the population in the school-going age of 5-14 years is expected to decline from 243 million in 2001 to 222 million in 2026. The share of the population aged 5-14 years to total population of all ages is expected to decrease by 5 percent from 24 percent in 2001 to 19 percent in 2011 and by 3 percent between 2011 to 2026 (19 to 16 percent).(Table 10.6)
- f) The youth population in the age- group 15-24 years is expected to increase from 195 million in 2001 to 240 million in 2011 and then continue to decrease to 224 million in 2026. Its proportion to total population is expected to fall from 19 percent in 2001 to 16 percent in 2026. A table showing projected population aged 5-14 years and 15-24 years at the national and state levels is enclosed as Appendix at the end of the report.(Table 10.7)

- g) From the above, it is evident that, 54 percent of the population in the country, are aged 24 years and below in 2001, constituting 35 percent and 19 percent in the ages 0- 14 years and 15-24 years respectively. The combined proportion of these two age-groups is expected to fall from 54 percent in 2001 to 39 percent in 2026. The average Indian will be expected to be of 31 years old in 2026 compared to 23 years old in 2001.(Table 10.5 to Table 10.7)
- h) The total population in the age group of 15-19 is expected to increase by 6.5 per cent by 2026 from 57.8 per cent in 2001 to 64.3 per cent in 2006. Out of the total population increase of 371 million between 2001 and 2026, the share of the workers in the age-group 15-59 years in this total increase is 83 percent. This has implication in the productivity of labour in future.(Table 10.8)
- i) The sex ratio of the total population (females per 1000 males) is expected to decrease (i.e. become less feminine) from 933 in 2001 to 930 during 2026.
- j) The Total Fertility Rate (TFR) is expected to decline from 2.9 during 2001-2005 to 2.0 during 2021-25. The assumption is that the Total Fertility Rate (TFR) would decline steadily and would touch the floor value of 1.8 in some states. With this, the weighted TFR is projected to reach the replacement level of 2.1 by the period 2021.
- k) The urban population in the country, which is 28 percent in 2001, is expected to increase to 38 percent by 2026. The urban growth would account for over two-thirds (67 percent) of total population increase by 2026. Out of the total population increase of 371 million during 2001-2026 in the country, the share of increase in urban population is expected to be 249 million.

- I) The life expectancy of male is expected to increase from 63.8 years in 2001-05 to 69.8 years in 2021-25 while that of female is from 66.1 years to 72.3 years during the same period.

10.3 Population Projections of Gujarat

- a) The population of Gujarat is expected to increase from 50 million to about 70 million during the period 2001-2026 - an increase of 36.7 percent in twenty- five years at the rate of 1.5 percent annually. As a consequence, the density of population will increase from 258 to 353 persons per square kilometer against the national average of 426 per square kilometer. The population growth rate was 1.6 per cent per annum during 2001-05 expected to decrease to 0.9 per cent per annum, the same rate of increase at national level. 39.4 per cent increase in male population is projected for the year 2026 while in female, it is only 33.68 percent signifying the fact that the sex ratio declines alarmingly. As per projections, the sex ratio for the year 2026 will be 882 female per thousand male in the state.+
- b) The population between the age group of 0-14 is showing a 11.8 per cent decrease by the year 2026 while that of the male population between 15-59 is 4.9 per cent increase and female in the same age group, a decrease of 0.4 per cent during the span of 25 years. The population of 60 years and above will increase by 7 per cent over this time period pin pointing the burden of dependants from the unproductive age group is expected to increase in the coming year in the state of Gujarat.
- c) The dependency ratio of the age group of young between 0-14 years of age will decrease to 321 from 543 registering a decrease of 40.88

per cent from 2001 to 2026 while that of the age group of 60 and above will increase by 88 per cent from 111 in 2001 to 209 in 2026.

- d) The median age is expected to increase by 9.7 years from 23.6 years 2001 to 33.3 years in 2026 while the increase in the national level will be 8.9 years. A change in the age structure in the state of Gujarat is expected during this time period.
- e) The crude birth rate will decline from 21.5 during 2001-05 to 14.3 during 2021-25 because of falling level of total fertility. In contrast to this, the crude death rate remains the same due to changing age structure of the population with the rising median age as a result of continuing decline in fertility and increase in the expectation of life at birth. The projected crude death rate remains at the same of 6.7 per thousand during 2001-05 and during 2021-25.
- f) The infant mortality rate of the state, is expected to decrease to 32.1 in 2021-25 from 54.3 in 2001-05. The projected infant mortality rate 40 at the national level during 2021-25.
- g) Between 2001 and 2026, because of the declining fertility, the proportion of population aged under 15 years is projected to decline from 32.8 to 21.0 percent; and considerable increase is expected in the proportion of the middle (15-59 years) and the older ages (60 years and above). With the declining fertility, along with the increases in life expectancy, the number of older persons in the population is expected to increase by more than double - an increase in their share to the total population from 6.7 to 13.7 percent. The proportion of male population in the working age-group 15-59 years is expected to rise from 60.5 percent in 2001 to 65.4 percent in 2026 But in case of female a

decline is expected to happen from 53.6 per cent to 53.2 per cent in 2026

- h) Another important consequence of the declining fertility will be that, at the national level, the population in the school-going age of 5-14 years is expected to decline. The share of the population aged 5-14 years to total population of all ages is expected to decrease by 7.9 percent from 22.0 percent in 2001 to 14.1 percent in 2026. (Table 10.6)
- i) The proportion of youth population in the age-group 15-24 years is expected to decrease from 19.8 per cent in 2006 to 15.5 per cent in 2026 despite of the mild increase of 0.1 per cent that had been shown between 2001-2006. (Table 10.7)
- j) From the above, it is evident that, 42 percent of the population in the country, are aged 24 years and below in 2001, constituting 32.9 percent and 19.7 percent in the ages 0- 14 years and 15-24 years respectively. The combined proportion of these two age-groups is expected to fall from 42 percent in 2001 to 36.4 percent in 2026. The average Indian will be expected to be of 33 years old in 2026 compared to 24 years old in 2001.
- k) The total population in the age group of 15-19 is expected to increase by 4.8 per cent by 2026 from 60.4 per cent in 2001 to 65.2 percent in 2026. Out of the total population increase of 18 million between 2001 and 2026, 65.2 per cent is from this productive age group is implication of the productivity of labour in future.
- l) The sex ratio of the total population (females per 1000 males) is expected to decrease (i.e. become less feminine) from 920 in 2001 to 822 during 2026. The decreasing trend of sex ration gives serious implications on the lopsided growth of population of Gujarat ultimately

decreasing the reproductive capacity of the state as whole in the future.

- m) The Total Fertility Rate (TFR) is expected to decline from 2.6 during 2001-2005 to 1.9 during 2021-25. The fertility rate in Gujarat is expected to touch the floor value of the fertility of 1.8. (Table 10.4)
- n) The urban population in the state of Gujarat, which is 37.4 percent in 2001, is expected to increase to 53 percent by 2026. The urban growth would be more than two times of total population increase by 2026. Out of the total population increase of 18.6 million during 2001-2026 in the country, the share of increase in urban population is expected to be 17.8 million contributing 95.6 per cent of the increased population will be urbanites (Table 10.9).
- o) The life expectancy of male is expected to increase from 64.9 years in 2001-05 to 71.9 years in 2021-25 while that of female is from 69.0 years to 74.9 years during the same period (Table 10.4).

10.4 District-wise Projected Population

We have also projected district-wise population for the year 2001 and 2011. The projected population is given in Table 10.10.

The district-wise estimation of population is based on population growth between 1971 and 1981. Here, we have made an assumption that the growth rate of population will remain the same. Under this assumption this projection is made. It can be seen from the table that in each district during the three decades, the population of each district will double or it will increase more than one and half time. It shows that there will be a serious adverse effects on economy of the state. Facilities of employment, transport, education, health etc., must be

increased at the same rate to keep present position. In terms of economic development, the state have to increase these facilities at faster rate than that of population growth. Otherwise, the economic growth will be negative.

10.5 Graphs of Trends on different demographic variables : Gujarat

The graphs given below are made on the assumption of straight line trend taking the absolute values of the variables under study. These graphs gives only the movement of the time series data of the relevant variable and can be used to understand the growth or decline in the variable in question during the passage of time.

FIGURE 10.1

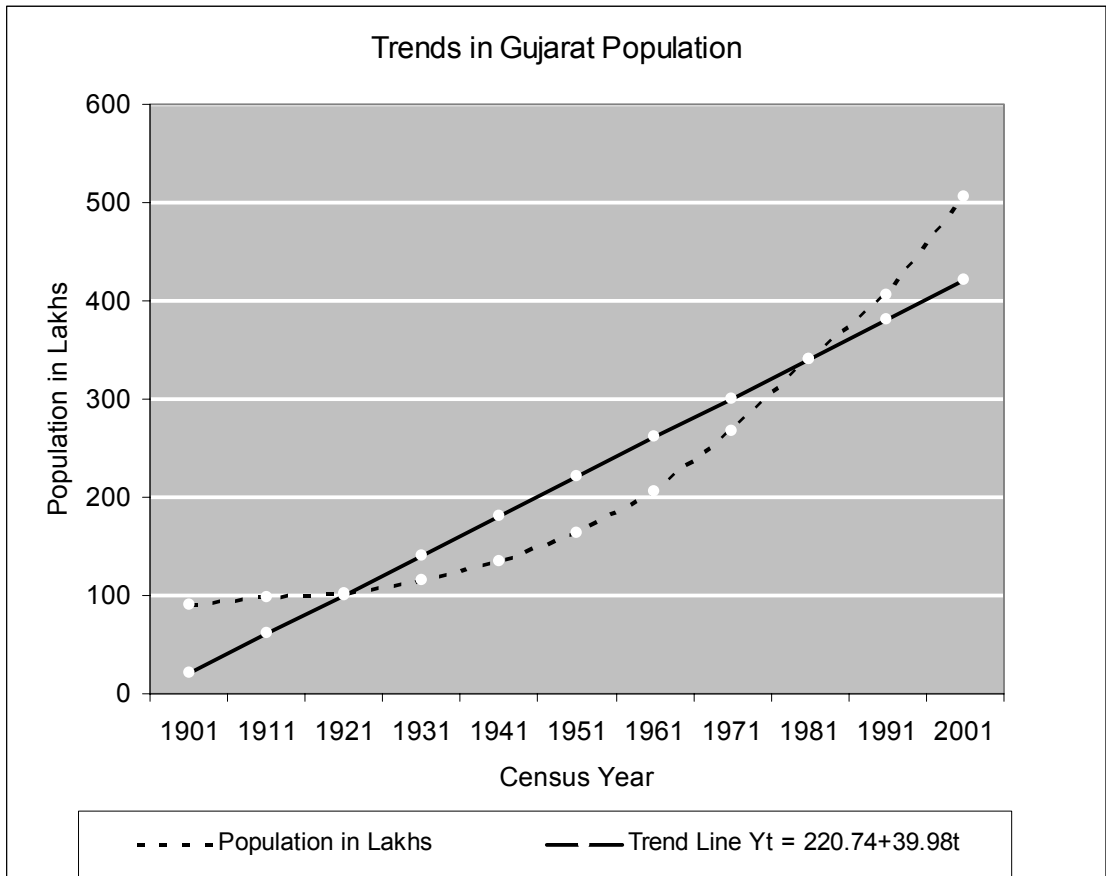


FIGURE 10.2

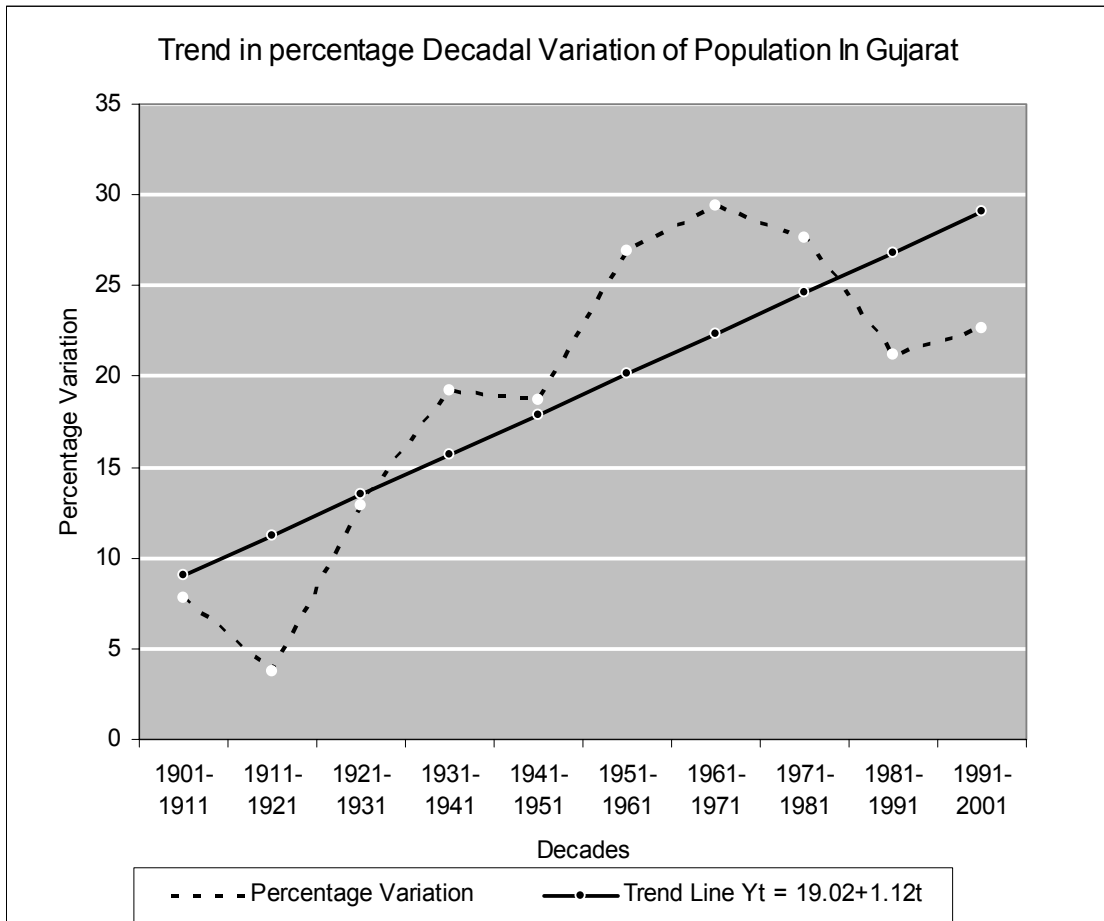


FIGURE 10.3

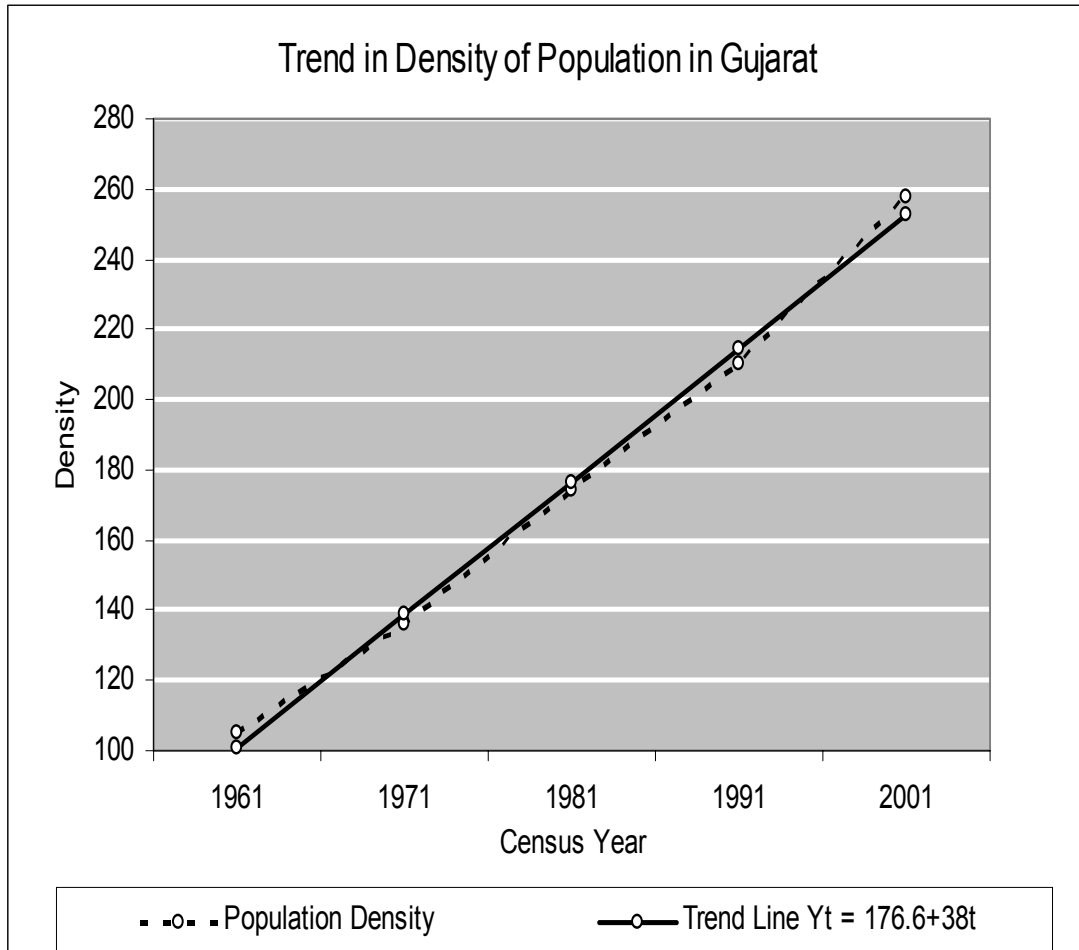


Figure 10.4

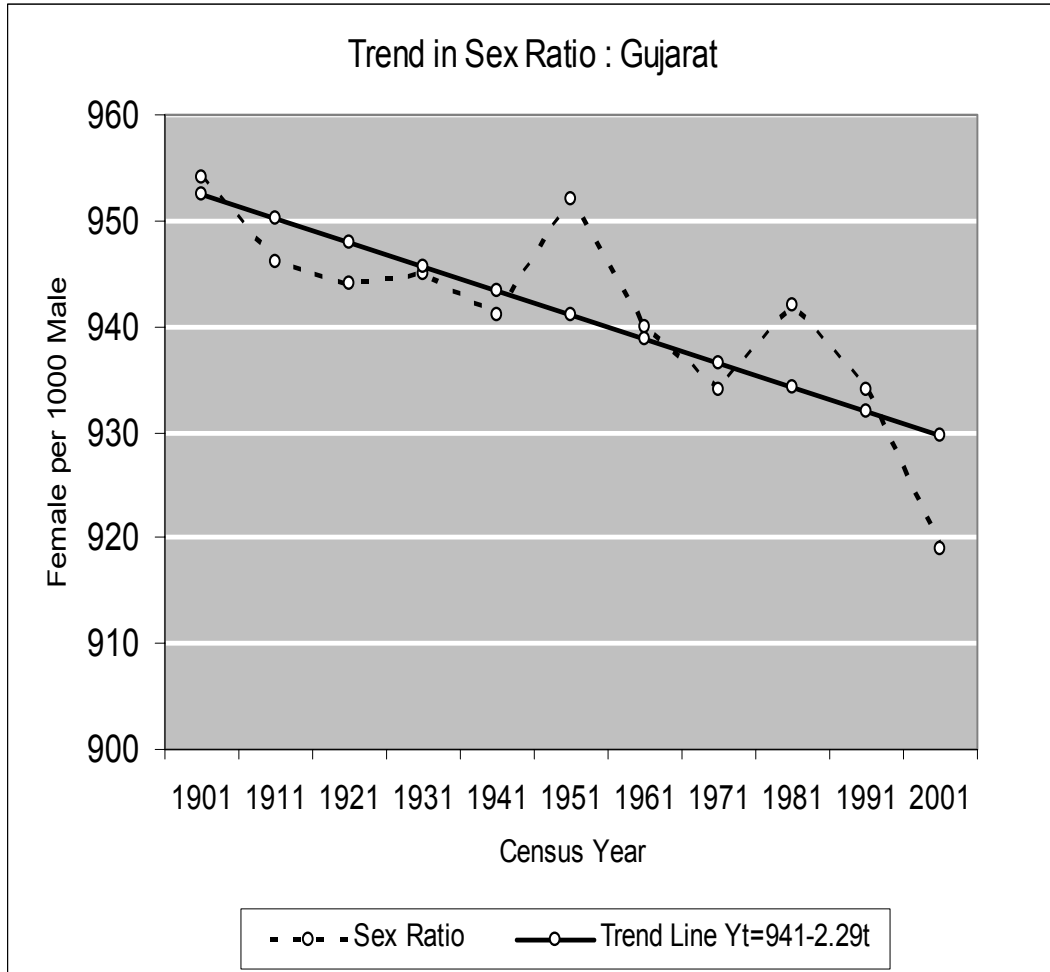


FIGURE 10.5

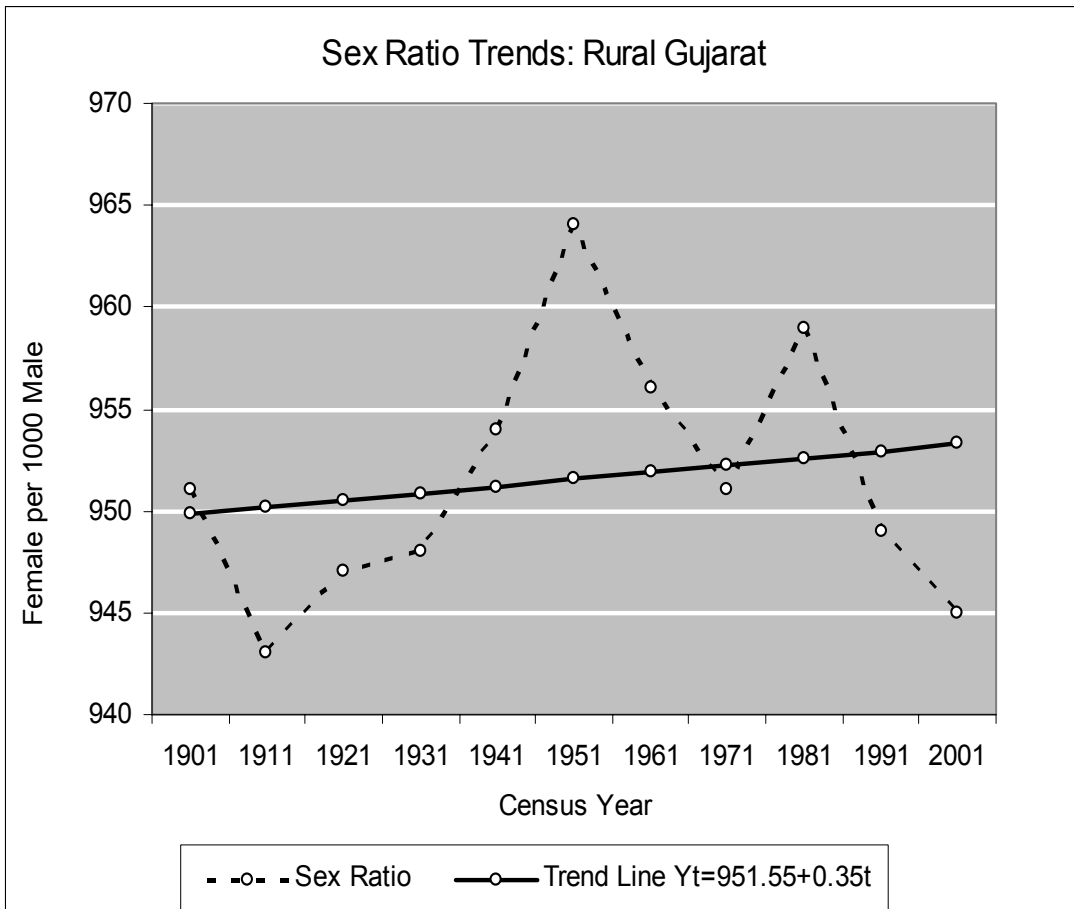


Figure 10.6

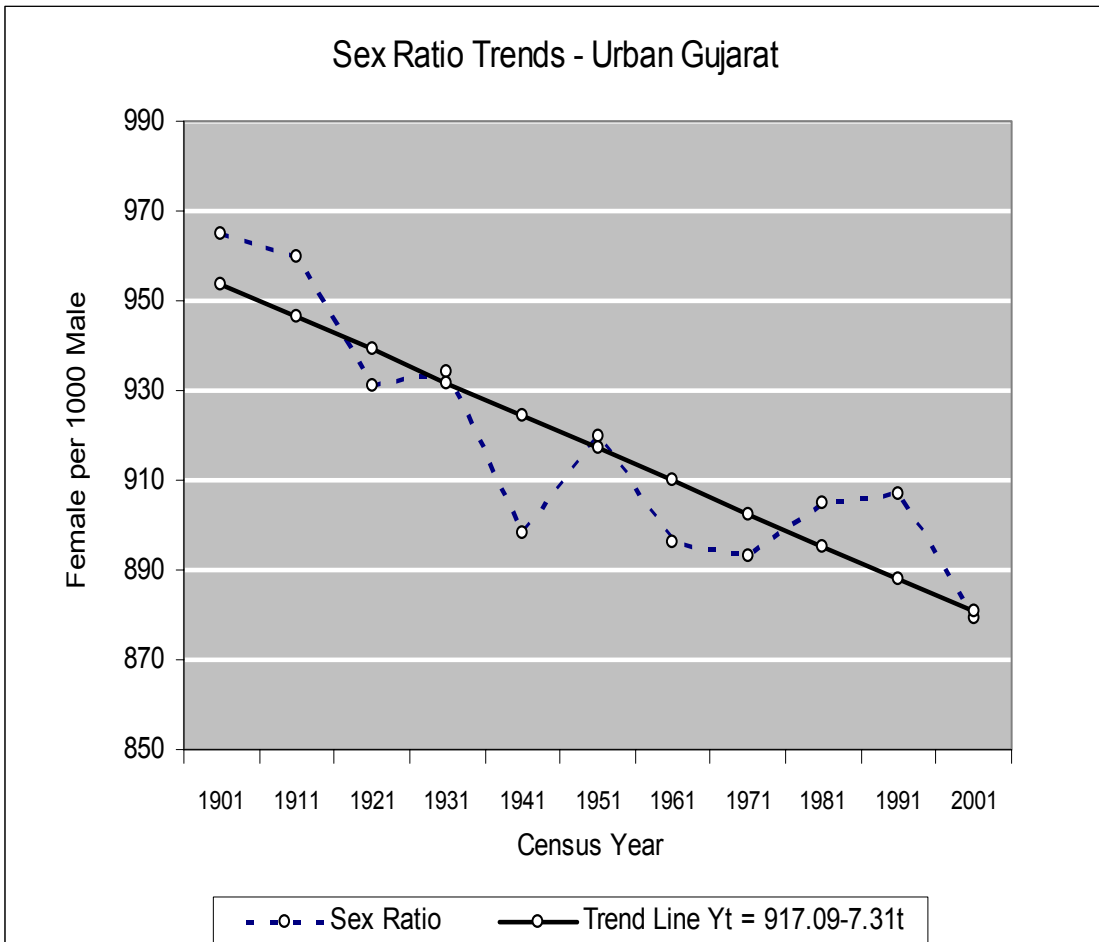


FIGURE 10.7

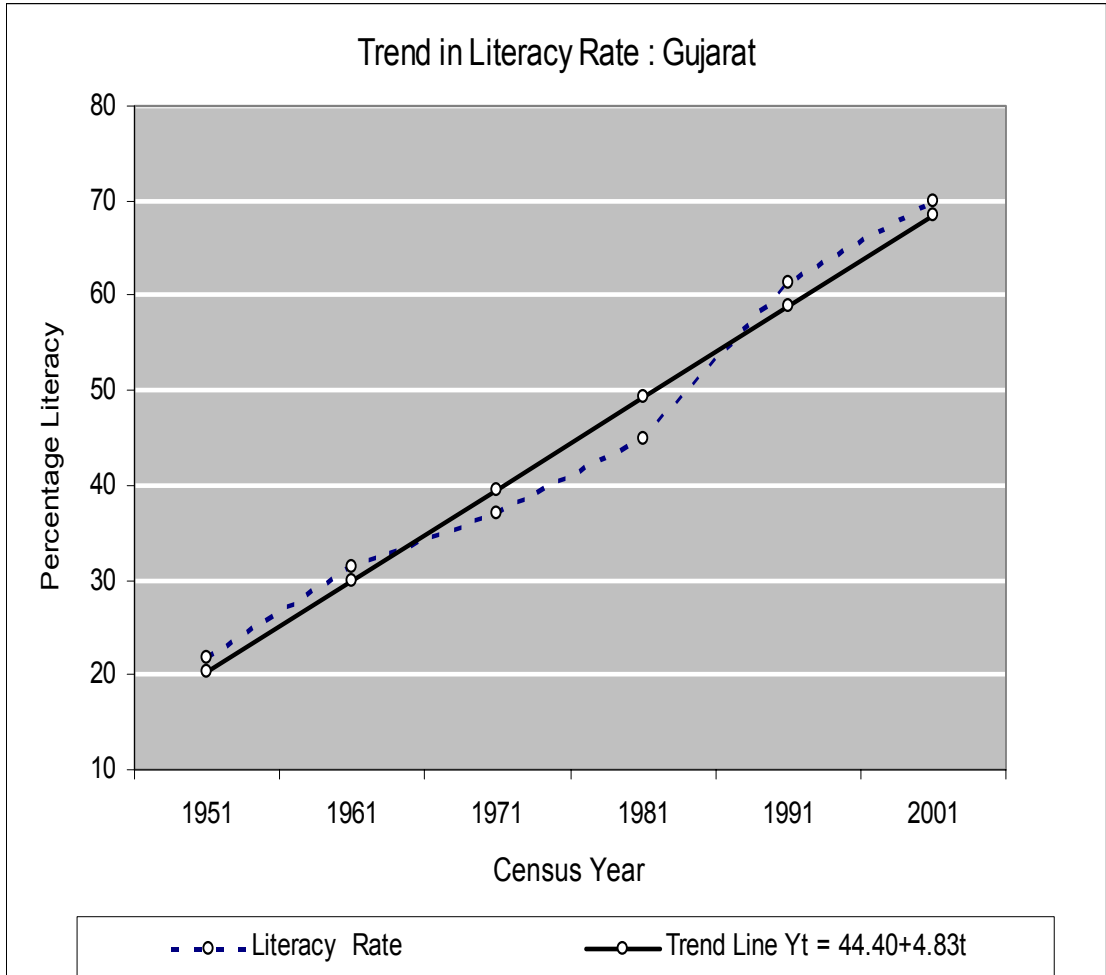


FIGURE 10.8

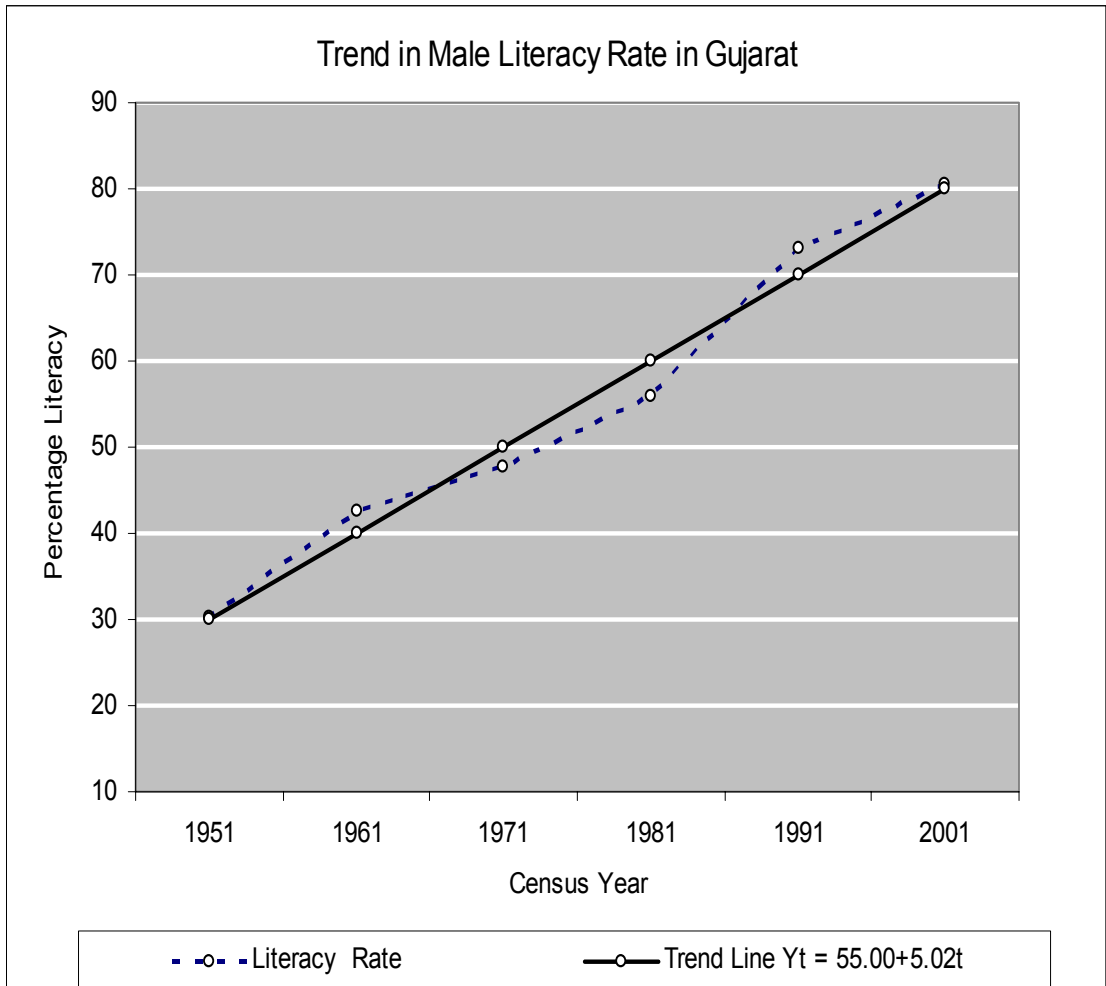


FIGURE 10.9

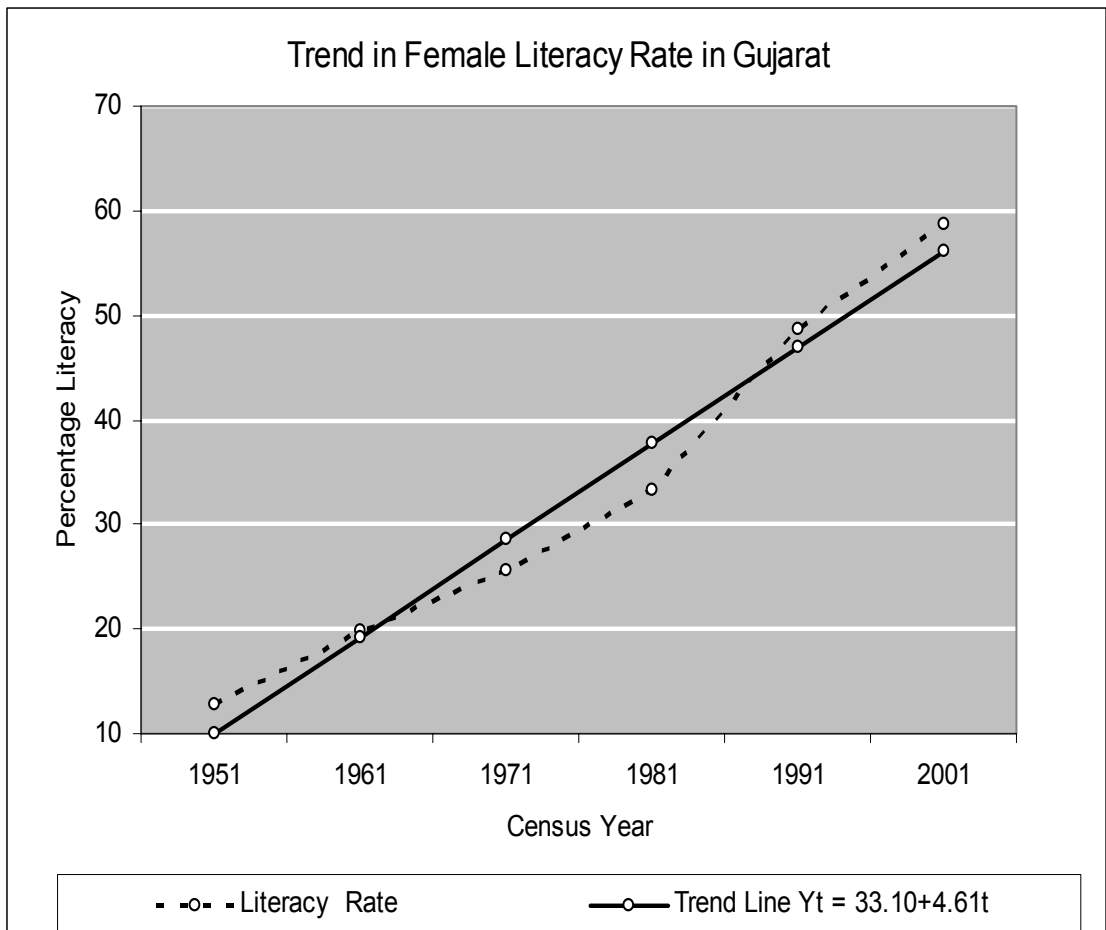


FIGURE 10.10

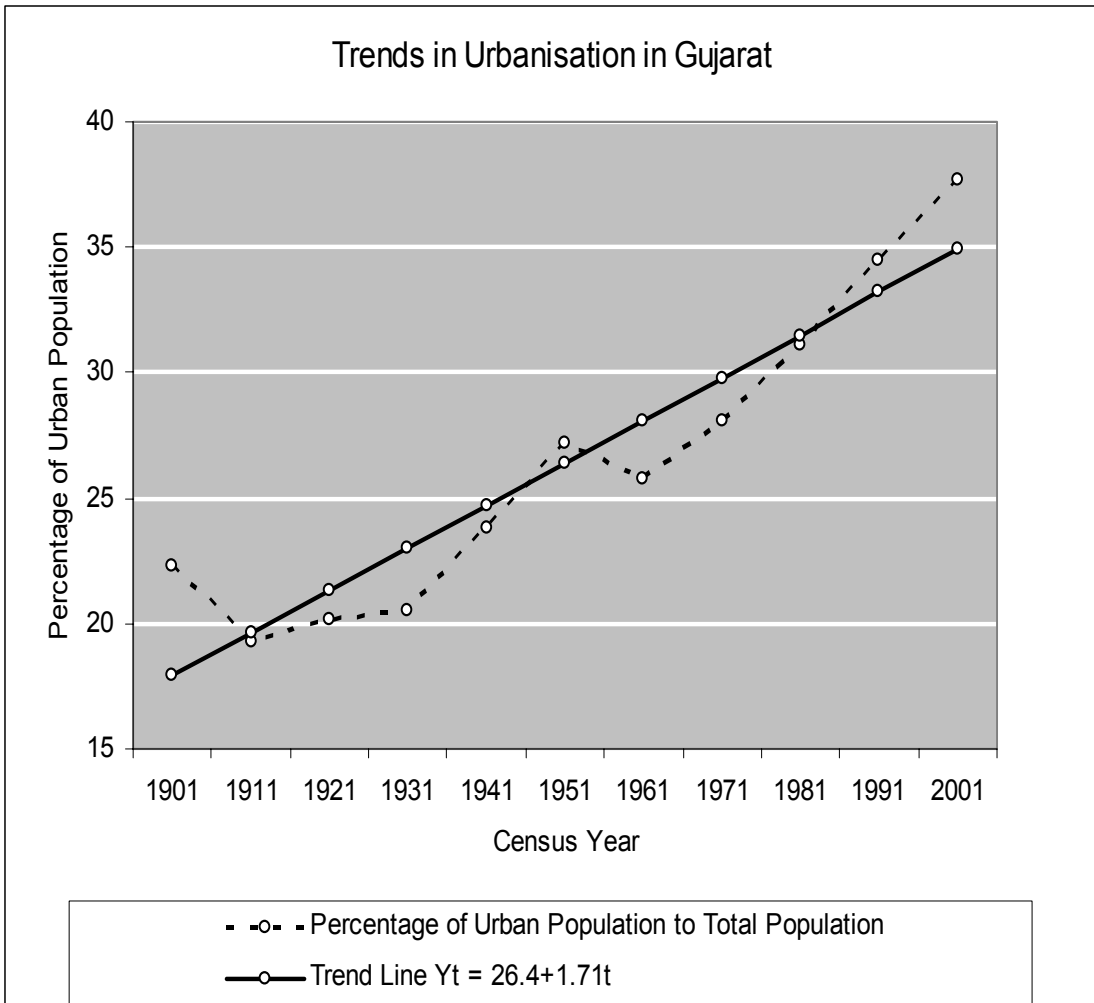


FIGURE 10.11

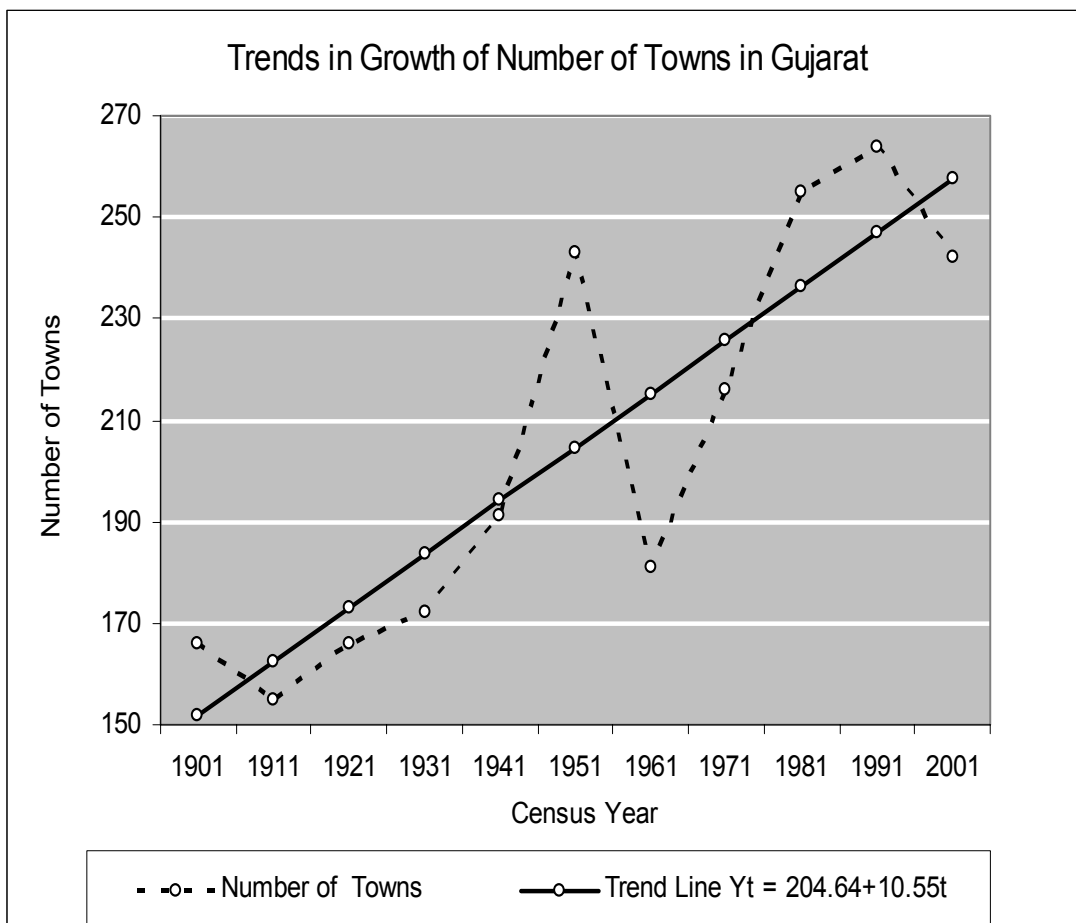


FIGURE 10.12

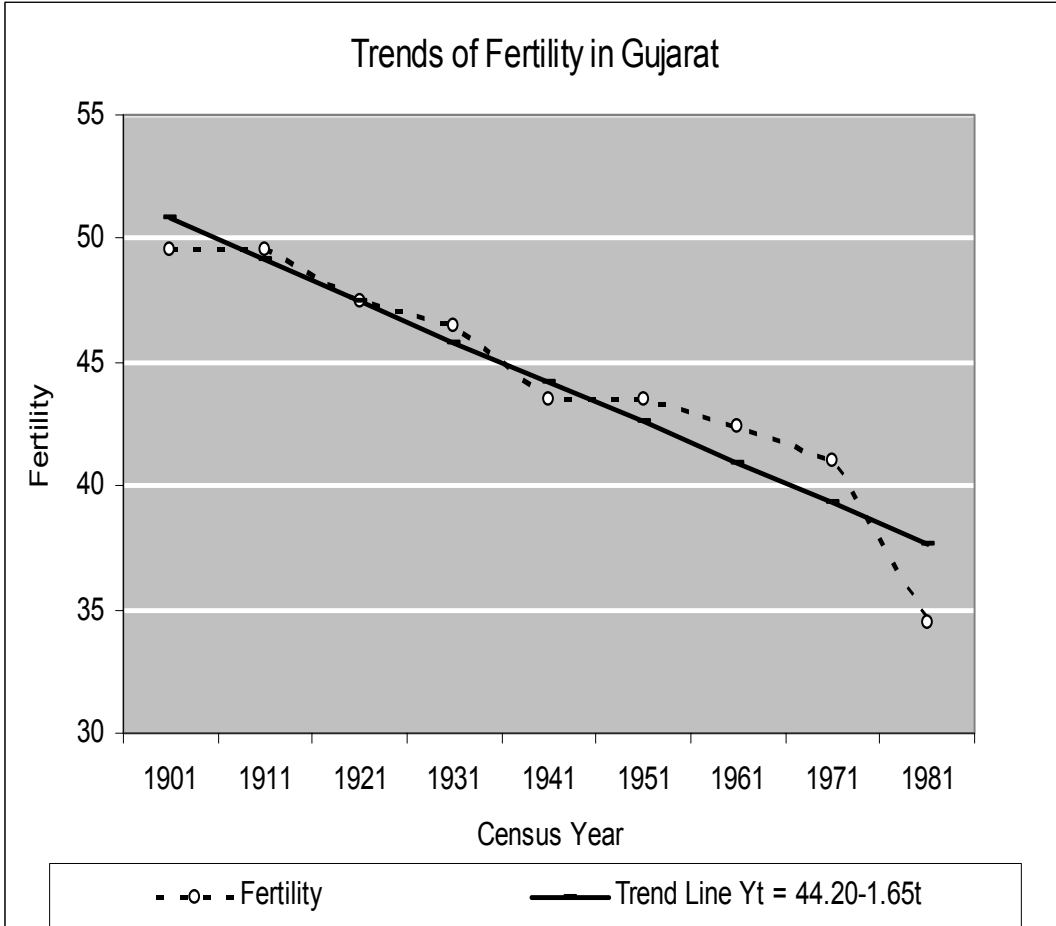


FIGURE 10.13

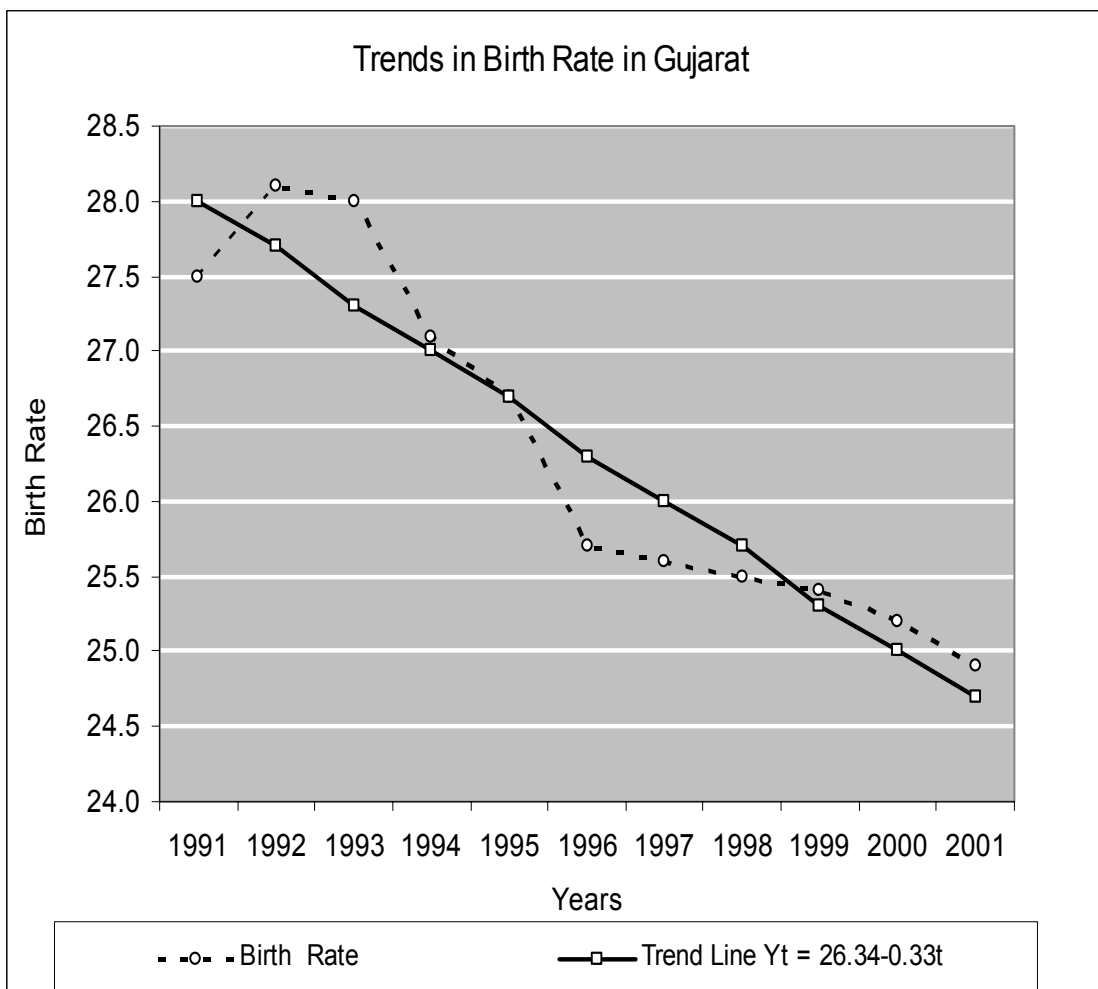


FIGURE 10.14

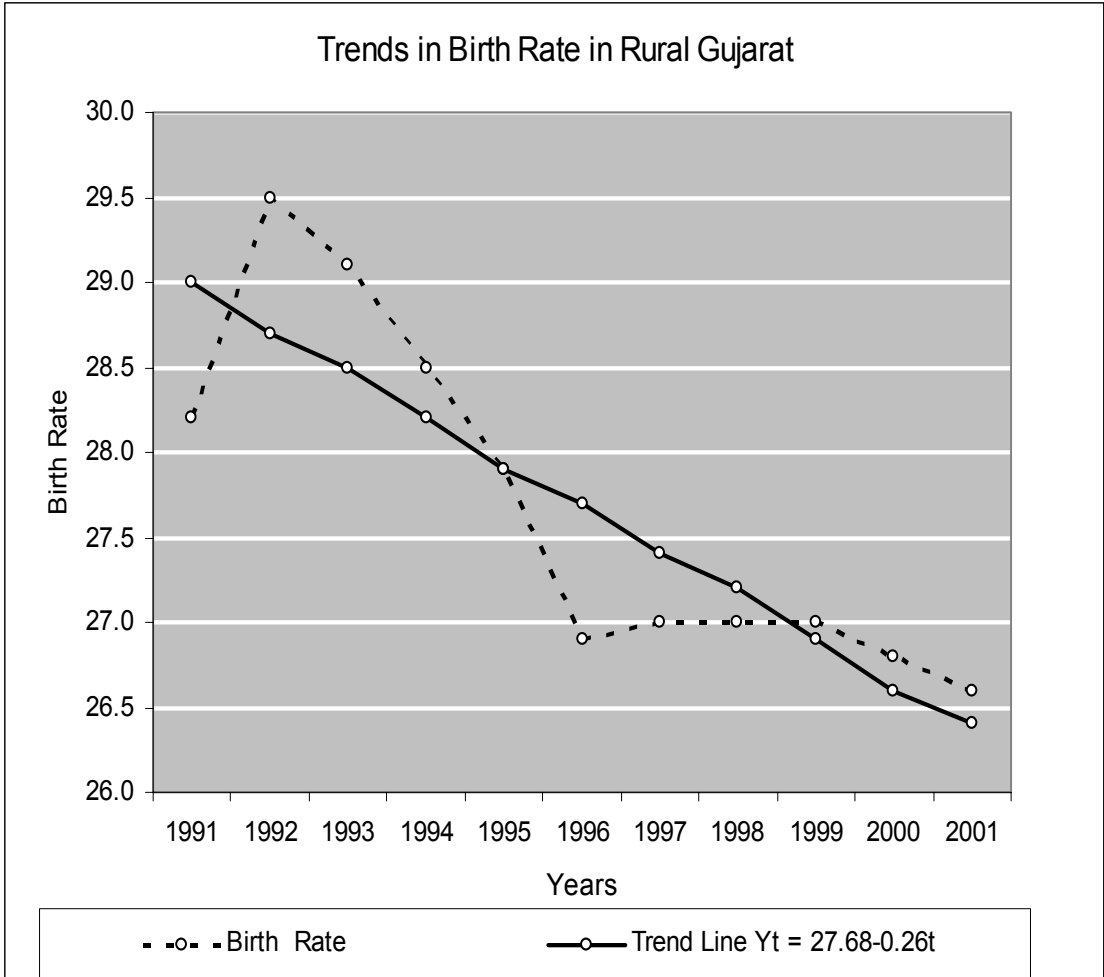


Figure 10.15

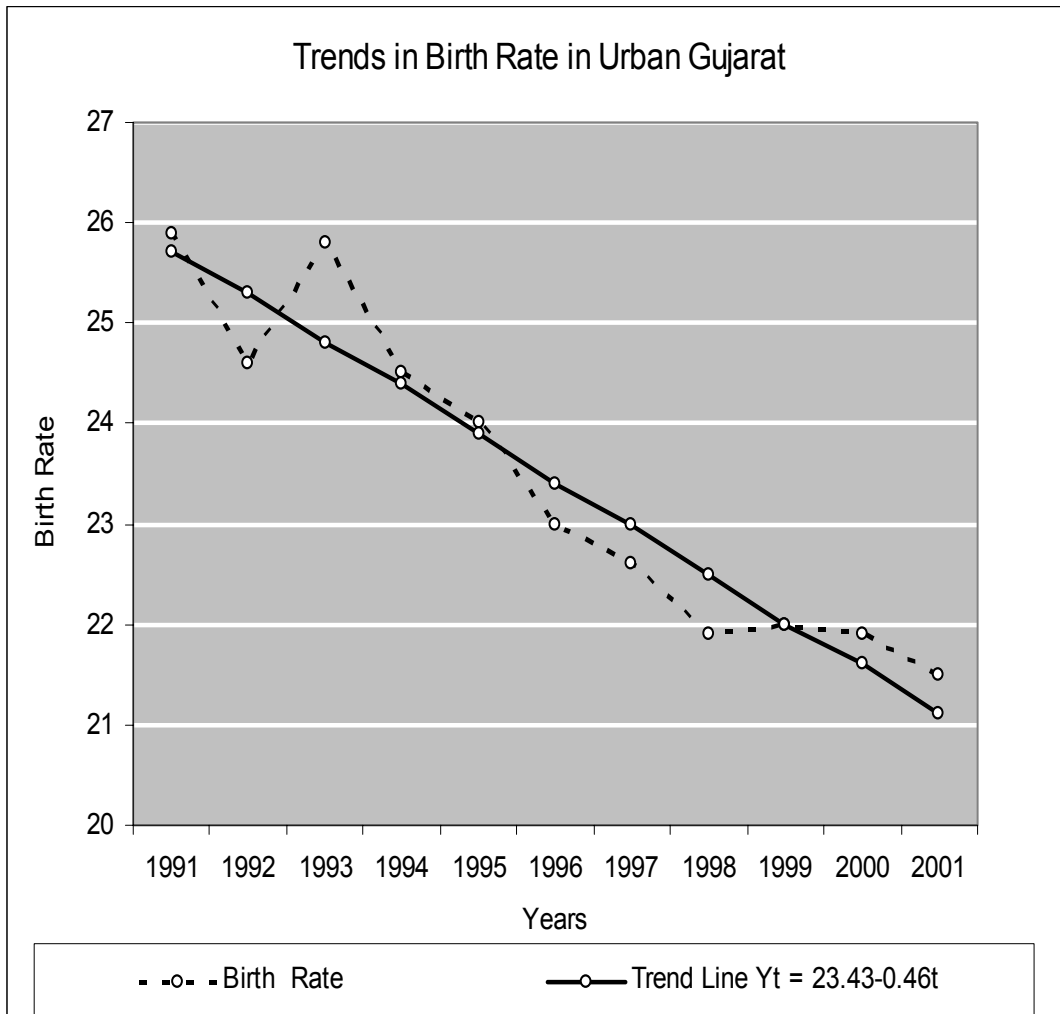


FIGURE 10.16

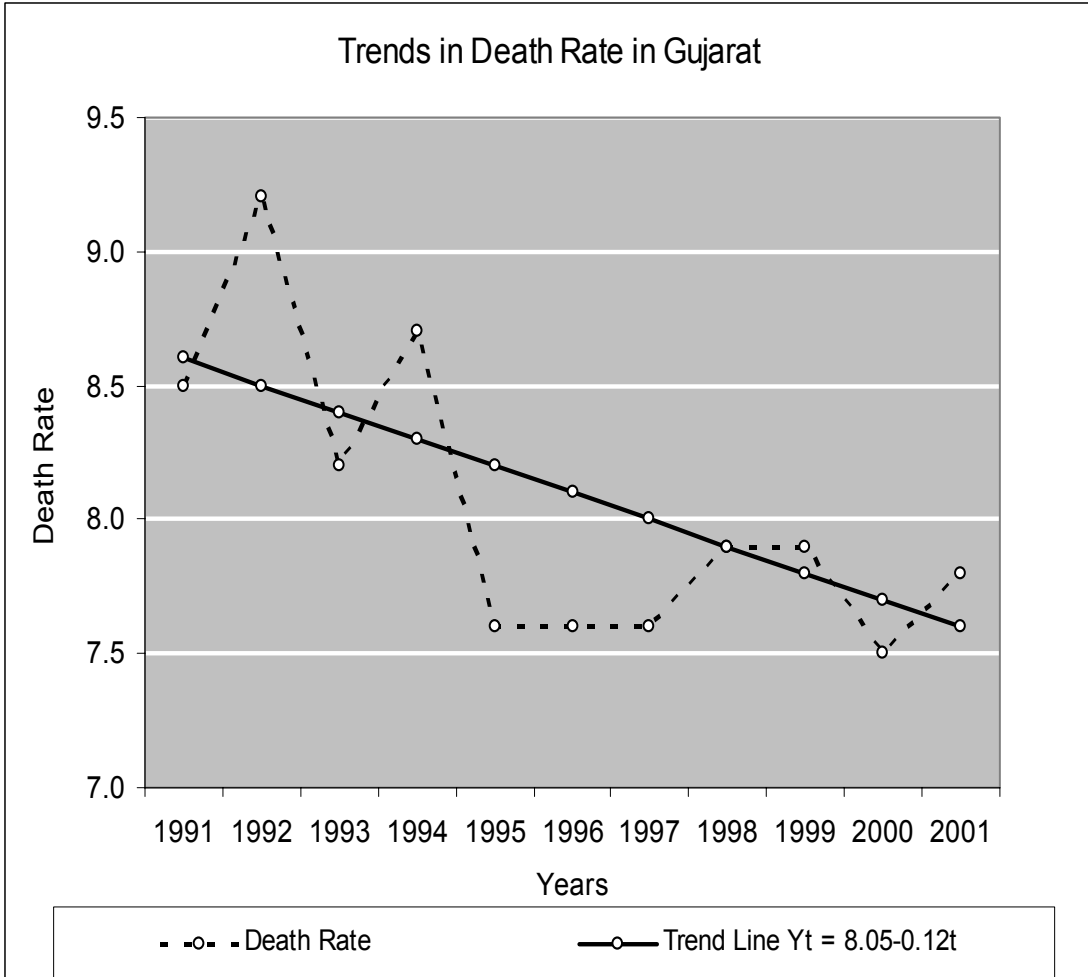


FIGURE 10.17

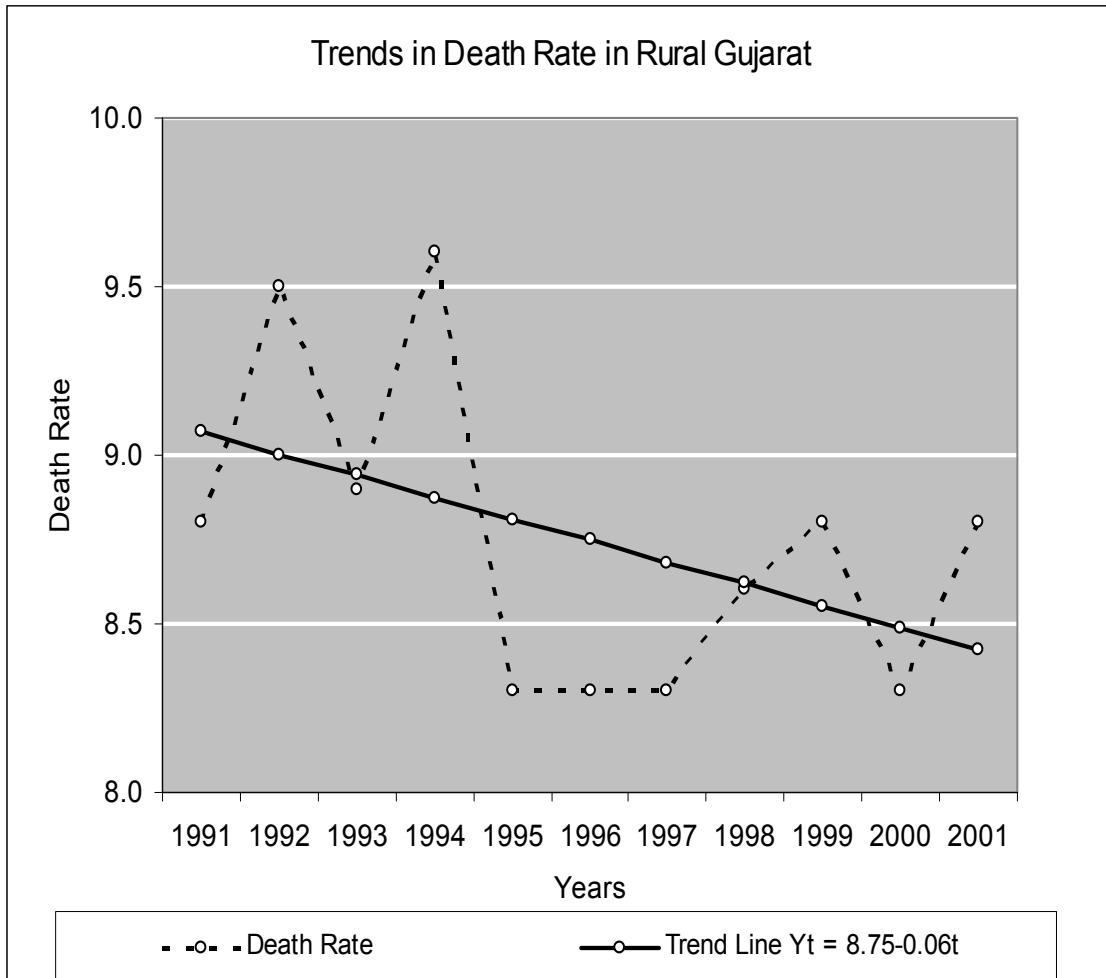


FIGURE 10.18

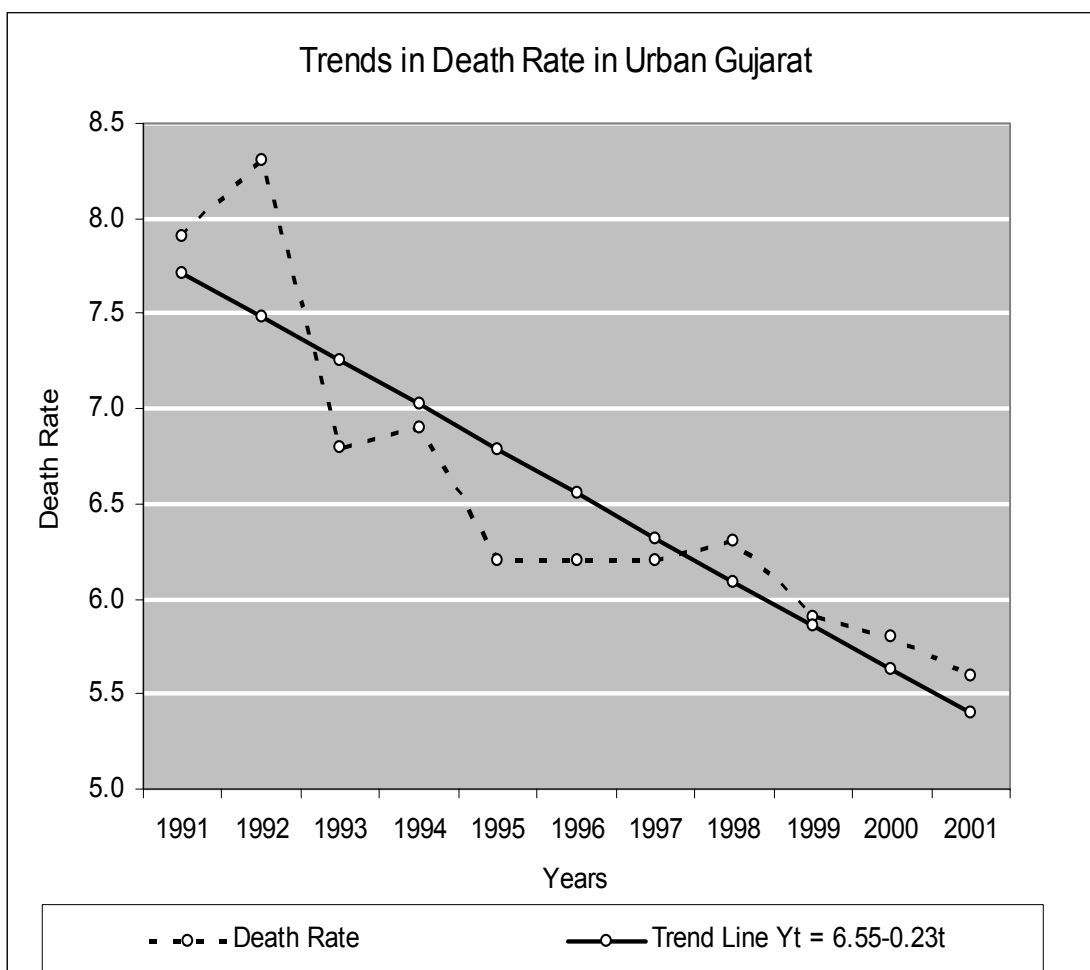


FIGURE 10.19

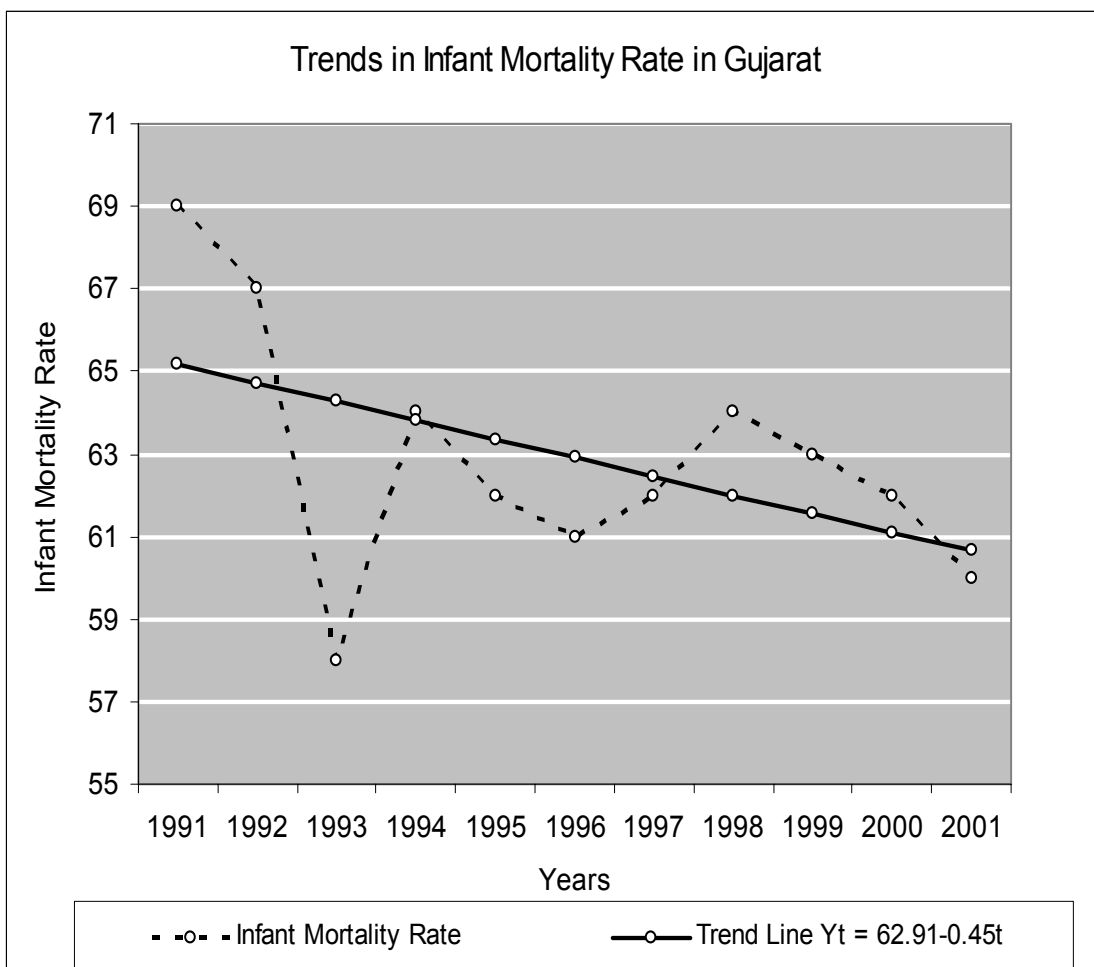


FIGURE 10.20

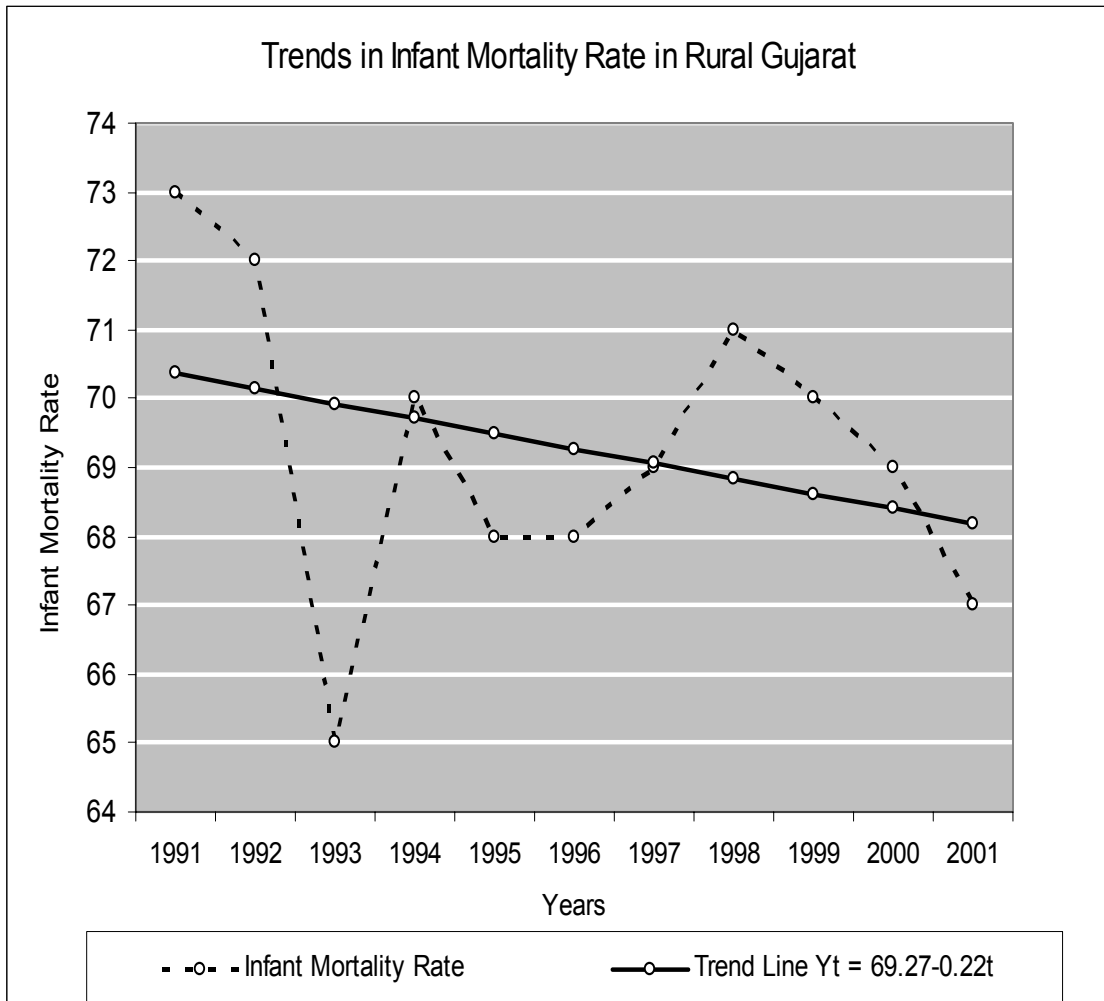


FIGURE 10.21

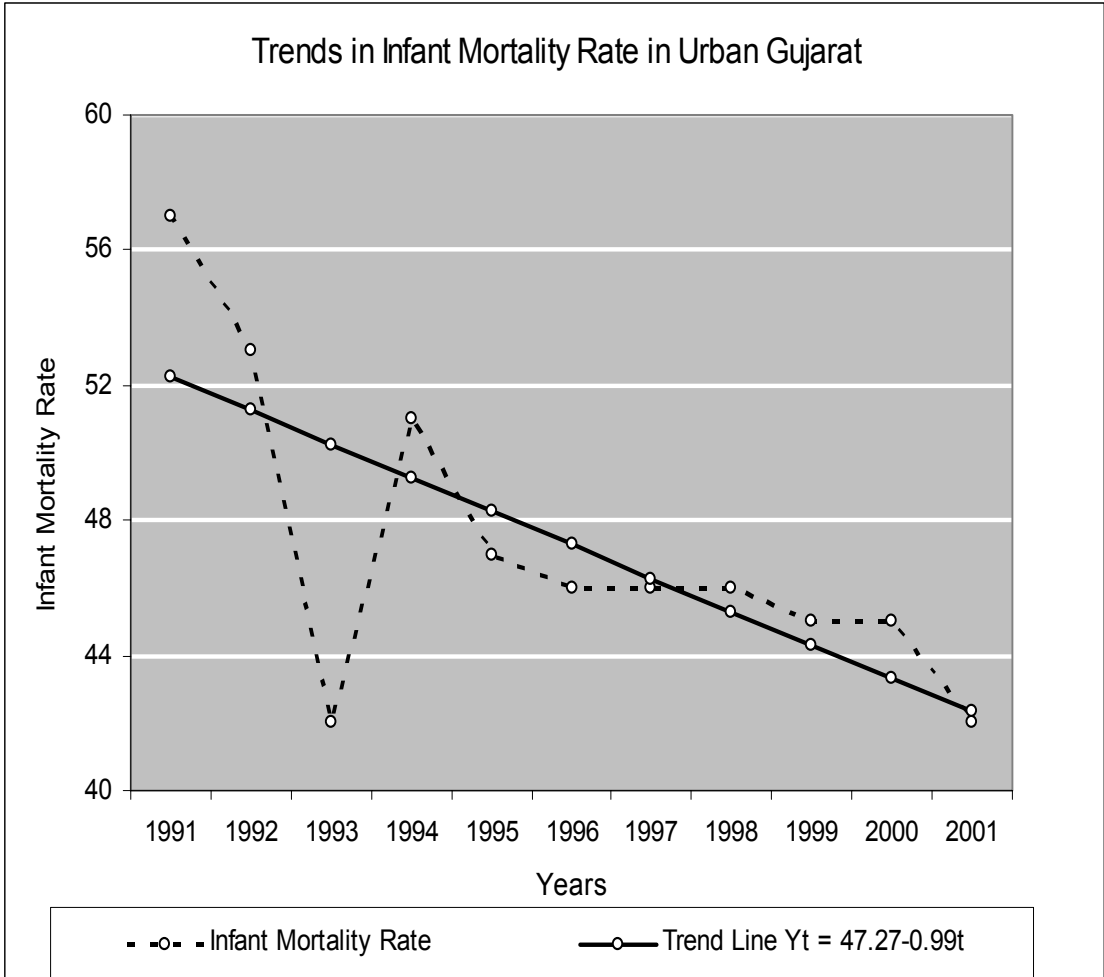


TABLE 10.1
PROJECTED POPULATION CHARACTERISTICS AS ON 1ST MARCH 2001-2026 : INDIA

Indicator	2001	2006	2011	2016	2021	2026
1	2	3	4	5	6	7
Population (000')						
Total	1028610	1112187	1192507	1268961	1339741	1399838
Male	532157	575529	617317	657168	694080	725176
Female	496454	536657	575190	611793	645660	674662
Sex Ratio	933	932	932	931	930	930
Population density (Sq. km.)	313	338	363	386	408	426
Population by broad age-groups (000')						
18 years and above	599909	682439	772414	858361	935759	1005425
0-14	364582	356998	346942	340291	336906	327004
15-59	593342	671608	747094	810571	859590	899651
60+	70686	83580	98470	118099	143244	173182
Proportion (percent)						
0-14	35.4	32.1	29.1	26.8	25.1	23.4
15-59	57.7	60.4	62.6	63.9	64.2	64.3
15-49 (Female population)	51.1	53.1	54.5	54.8	54.1	53.3
60+	6.9	7.5	8.3	9.3	10.7	12.4
Median age (years)	22.5	23.9	25.5	27.4	29.3	31.4
Dependency Ratio						
Young (0-14)	614	532	464	420	392	363
Old (60+)	119	124	132	146	167	192
Total (Young and old)	734	656	596	566	559	556

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.2
DEMOGRAPHIC INDICATORS: 2001-2025 - INDIA

Indicator	2001-05	2006-10	2011-15	2016-20	2021-25
Population growth rate	1.6	1.4	1.3	1.1	0.9
Crude Birth Rate (CBR)	23.2	21.3	19.6	18.0	16.0
Crude Death Rate (CDR)	7.5	7.3	7.2	7.1	7.2
Infant Mortality Rate (IMR)	61.3	54.3	49.2	44.0	40.2
Under-5 mortality rate (q ₅)	82.0	72.8	65.9	59.0	54.0
Total Fertility Rate (TFR)	2.9	2.6	2.3	2.2	2.0
Life expectancy of males	63.8	65.8	67.3	68.8	69.8
Life expectancy of females	66.1	68.1	69.6	71.1	72.3

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.3
PROJECTED POPULATION CHARACTERISTICS AS ON 1ST MARCH 2001-2026 : GUJARAT

Indicator	2001	2006	2011	2016	2021	2026
1	2	3	4	5	6	7
Population (000')						
Total	50671	54979	59020	62825	66139	69258
Male	26386	28760	31005	33140	35020	36793
Female	24285	26220	28016	29685	31119	32465
Sex ratio	920	912	904	896	889	882
Population density (Sq. km.)	258	280	301	320	337	353
Population by broad age-groups (000')						
18 years and above	30848	35217	39697	43986	47965	51616
0-14	16640	16386	15959	15566	14963	14521
15-59	30638	34506	38096	41096	43489	45265
60+	3393	4087	4965	6164	7687	9472
Proportion (percent)						
0-14	32.8	29.8	27.0	24.8	22.6	21.0
15-59	60.5	62.8	64.5	65.4	65.8	65.4
15-49 (Female population)	53.6	55.1	55.7	55.3	54.5	53.2
60+	6.7	7.4	8.4	9.8	11.6	13.7
Median age (years)	23.6	25.3	27.2	29.1	31.3	33.3
Dependency Ratio						
Young (0-14)	543	475	419	379	344	321
Old (60+)	111	118	130	150	177	209
Total (Young and old)	654	593	549	529	521	530

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.4
DEMOGRAPHIC INDICATORS: 2001-2025 - GUJARAT

Indicator	2001-05	2006-10	2011-15	2016-20	2021-25
Population growth rate	1.6	1.4	1.3	1.0	0.9
Grade Birth Rate (CBR)	21.5	19.1	17.3	15.1	14.3
Grade Death Rate (CDR)	6.7	6.5	6.3	6.4	6.7
Infant Mortality Rate (IMR)	54.3	46.9	40.9	36.2	32.1
Under-5 mortality rate (q5)	77.2	66.7	58.1	51.4	45.6
Total Fertility Rate (TFR)	2.6	2.3	2.1	1.9	1.9
Life expectancy of males	64.9	67.2	69.2	70.7	71.9
Life expectancy of females	69.0	71.0	72.5	73.7	74.9

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.5
PROJECTED POPULATION UNDER THE AGE GROUP OF 0-4 BY SEX :
INDIA AND GUJARAT

Year	India			Gujarat		
	Total	Male	Female	Total	Male	Female
2001	11.8	11.8	11.8	10.9	11.0	10.7
2006	10.4	10.6	10.1	9.8	10.1	9.3
2011	9.6	9.8	9.4	8.8	9.1	8.5
2016	9.0	9.2	8.8	8.1	8.3	7.8
2021	8.3	8.5	8.1	7.2	7.4	6.9
2026	7.5	7.6	7.3	6.8	7.0	6.6

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.6
PROJECTED POPULATION UNDER THE AGE GROUP OF 5-14 BY SEX :
INDIA AND GUJARAT

Year	India			Gujarat		
	Total	Male	Female	Total	Male	Female
2001	23.7	24.0	23.3	22.0	22.4	21.5
2006	21.7	21.8	21.6	20.1	20.3	19.7
2011	19.4	19.6	19.3	18.2	18.8	17.7
2016	17.8	18.2	17.4	16.7	17.3	16.0
2021	16.8	17.2	16.4	15.4	16.0	14.8
2026	15.9	16.3	15.5	14.1	14.6	13.6

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.7
PROJECTED POPULATION UNDER THE AGE GROUP OF 15-24 BY SEX :
INDIA AND GUJARAT

Year	India			Gujarat		
	Total	Male	Female	Total	Male	Female
2001	19.0	19.3	18.7	19.7	20.0	19.4
2006	20.0	20.4	19.5	19.8	20.0	19.4
2011	20.1	20.4	19.8	19.1	19.4	18.8
2016	18.8	18.9	18.7	17.8	18.1	17.6
2021	25.5	17.3	16.9	16.6	16.9	16.1
2026	16.0	16.4	15.6	15.5	16.0	14.9

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.8
PROJECTED POPULATION UNDER THE AGE GROUP OF 15-59 BY SEX :
INDIA AND GUJARAT

Year	India			Gujarat		
	Total	Male	Female	Total	Male	Female
2001	57.8	58.0	57.7	60.4	60.6	60.3
2006	60.4	60.5	60.3	62.7	62.9	62.7
2011	62.7	62.9	62.7	64.6	64.7	64.5
2016	63.9	63.8	63.9	65.3	65.3	65.5
2021	72.4	64.1	64.4	65.7	65.8	65.5
2026	64.3	64.4	64.1	65.2	65.8	64.7

Source: Compiled from Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.9
 PERCENT OF PROJECTED URBAN POPULATION TO TOTAL POPULATION
 BY SEX AS ON
 1ST MARCH - 2001-2026: INDIA AND GUJARAT

Year	India			Gujarat		
	Persons	Males	Females	Persons	Males	Females
2001	27.8	28.3	27.3	37.4	38.2	36.5
2006	28.9	29.4	28.4	38.8	39.8	37.8
2011	30.0	30.5	29.5	40.3	41.4	39.1
2016	31.1	31.7	30.6	41.8	43.1	40.4
2021	32.3	32.8	31.7	43.4	44.8	41.8
2026	38.2	38.9	37.4	53.0	54.7	51.2

Source: Population Projections; Technical Group; National Commission on Population Projections

TABLE 10.10
DISTRICT-WISE POPULATION PROJECTIONS

Sr. No. 1	District 2	2001 3	2011 4
1	Jamnagar	2188912	2743816
2	Rajkot	3476607	4480630
3	Surendranagar	1547145	1892738
4	Bhavnagar	3361145	4494945
5	Amreli	1744385	2217856
6	Junagadh	3377707	4283020
7	Kutchchh	1603858	1982079
8	Banaskantha	2897857	3919695
9	Sabarkantha	2403747	3040584
10	Mahesana	3781664	4606358
11	Gandhinagar	600132	864679
12	Ahmedabad	6873920	9154326
13	Kheda	4560893	5609565
14	Panchmahal	3661259	4597731
15	Vadodara	4269624	5516026
16	Bharuch	1769843	2067873
17	Surat	4853611	6772015
18	Valsad	2735603	3396927
19	The Dangs	165541	199778

Source: Gujarat Population Growth (District-wise Analysis of Census Data of this Century); Feb. 1999.

CHAPTER- XI

SUMMARY

11.1 Introduction

Demographic features of India and the state of Gujarat are discussed in detail in the previous chapters. Even though the scope of the study is limited to the state of Gujarat, it will be incorrect to say anything about the state of Gujarat without mentioning the country as a whole. Through out the study, the data published by the Registrar General of Census, Government of India and other organisations and private researchers are used for making analysis and subsequent inferences. The data used from various sources for this analysis is found inconsistent in some areas. Despite of these difficulties the following conclusions are made on the basis of findings with respect to India and the state, Gujarat.

11.2 Nature of Indian Demography – Findings

(a) Population Growth

The population base of India is very high and it feeds about one-sixth of the world population. The percentage decadal growth during 1991-2001 has registered the sharpest decline since independence. Two-third of the India's population lives in States and Union territories which show a declining trend in population growth. As many as fourteen States and Union territories have shown a decline in absolute growth in 1991-2001 as compared to the previous decade. The percentage growth of density was shown a decrease in 1991-2001. The population of India is expected to increase from 1029 million to 1400 million during the period 2001-2026 - an increase of 36 percent in twenty- five years at the rate of 1.2 percent annually.

Even though the rate of growth of population has been decreased, compared to the present level of population the per-year increase is very high. The current projections also reveal a future increase in population still further.

(b) Birth Rate and Death Rate

The birth rate also registered a fall due to the family planning programmes. But the rate of fall of birth was comparatively less. Therefore the gap between high birth and falling death increased with the passage of time and this was reflected in the high survival rate. Thus, the high rate of growth of population can be attributed in terms of a persistently high birth rate but a relatively fast declining death rate.

Both birth and death rates remain at a low level in urban areas compared to rural areas. The main reason for high birth rate in rural area is illiteracy and for the death rates is improper functioning of the health facilities.

As per the projections the crude birth rate will decline from 23.2 during 2001-05 to 16.0 during 2021-25 because of falling level of total fertility. The crude death rate is expected to fall marginally from 7.5 during 2001-05 to 7.2 during 2021-25. The infant mortality rate of the country is expected to go down from during 2001-05 and to 40 by the end 2021-25.

A positive relationship is found between Birth Rate and IMR (+) 0.711 but between Birth Rate and Mean Age at Marriage (Females) =(-)0.528 is relationship found is negative

Correlation between literacy rate and birth rate has been calculated taking twelve major states in India. The correlation coefficient between total literacy rate and birth rate, Male literacy rate and birth rate and female literacy rate and birth rate are found high negative. It means when the literacy rate increases the birth

rate tends to decrease. The above analysis proves that improvement in both male and female literacy rate is one of the best way to decrease the birth rate.

(c) Sex Ratio

A declining trend in the Sex ratio could be observed in India since 1901. The reason for the general disparity in the sex ratio and the declining trend over the years need further examination. The preference for male children resulting in neglect of female babies and the relative gap in the health conditions between males and females is considered as one of the main reason. Another explanation for a declining sex ratio lies in the poverty of the Indian People. In a country where even now nearly 26 percent of the population lives below the poverty line, high infant mortality, poor medical facilities, extremely unhygienic conditions of living and absence of pre-natal and post-natal care, high death rate among women are all manifestations of the abjectly low level of living of the people. The preference of providing good food to the bread winner is again the manifestation of the much sought after modicum of economic security that the bread winner provides. Neglect of the girl child resulting in their higher mortality at younger ages, high maternal mortality, sex selective female abortions, female infanticide, change in sex ratio at birth etc. contributed for this declining sex ration over the past 100 years.

The relationship between sex ratio and women's economic status, women's social status and women's health status is found positive in analysis done taking some selected states of India.

Sex ratio is negatively related to gender disparity index showing the necessity of serious efforts to be put in to make gender equality.

Sex ratio has positive relationship with gross gender development index . This means that improvement in the status of women in the country economically, socially and in health can rectify the defective sex ratio.

(d) Age distribution

The proportion of child population in India is found high. The main reasons for the higher child population in India are high birth rate and decline in infant mortality. This leads to higher level of unproductive consumers in the country adding the burden of the productive age group. The number of persons above the age of 60 is shown as 6.3 percent of the total population. The fact is that the 58.2 percent of productive people of the country are to make food for not only themselves but for the remaining 41.8 percent of the unproductive population also.

The age classification of population clearly shows a high dependency ratio compared to the number of bread winners. This ultimately affects the nations all over efficiency to save and thus the process of capital formation. Unproductive social expenditure becomes a constant burden to the national exchequer. With improved health conditions of the population, life expectancy at birth is increasing, changing the age and sex structure of the population. An increase in their proportion is expected in the subsequent years. Similarly an increase in the proportion of population between 15-59 years is expected in future. But the same in the age group of 5-14 is expected to decrease.

(e) Literacy Rate

Literacy rate has shown an upward trend during the decade compared to the last decades. The female literacy rates have increased at faster rate than male literacy rates in all the states and union territories except Dadra and Nagar Haveli during 1991-2001. Even though the literacy rate is showing an upward

trend, about 38 percent of the population is illiterate at present, largely of females signifying poor quality of human capital. India is blessed with human resource compared to any other country in the world. But due to illiteracy, those resources can not be used in a proper way.

(f) Rural-Urban distribution of population

After fifty five years of economic planning still a significant percent of the total population is the rural population which dominate the economy. The urban population in the country, which is 28 percent in 2001, is expected to increase to 38 percent by 2026. The urban growth would account for over two-thirds (67 percent) of total population increase by 2026.

(g) Life expectancy

The life expectancy of male is expected to increase from 63.8 years in 2001-05 to 69.8 years in 2021-25 while that of female is from 66.1 years to 72.3 years during the same period.

11.3 Nature of Gujarat Demography – Findings

Gujarat stands at 10th rank among the States of India in respect of population and rank 21st in population Density. In terms of percentage, Gujarat accounts 6.19 per cent of the area of India. The decadal growth rate of population is 22.66 percent which higher than that of the national average of 21.54 per cent. The percent progressive growth reached 456.00 per cent. Human Development Index Value 2001 calculated for fifteen major states, the rank of Gujarat is 6 and the HDI is 0.479.

(a) Population Growth

The growth rate of population is attributed to a combination of high fertility and a declining mortality rate in Gujarat. The density of population is 258 persons per square kilometres. The lowest increase in density is shown in Kachchh district 200 per cent compared to 1901 while the Dangs has shown highest growth in terms of density 863.64 per cent from 1901 to 2001. The population of Gujarat is expected to increase from 50 million to about 70 million during the period 2001-2026 - an increase of 36.7 percent in twenty-five years at the rate of 1.5 percent annually. The population growth rate was 1.6 per cent per annum during 2001-05 expected to decrease to 0.9 per cent per annum, the same rate of increase at national level. The population of 60 years and above will increase by 7 per cent over this time period pin pointing the burden of dependants from the unproductive age group is expected to increase in the coming year in the state of Gujarat.

The dependency ratio of the age group of young between 0-14 years of age will decrease to 321 from 543 registering a decrease of 40.88 per cent from 2001 to 2026 while that of the age group of 60 and above will increase by 88 per cent from 111 in 2001 to 209 in 2026.

(b) Birth Rate and Death Rate

Birth rate is found lower in cities and higher in villages where there are better urges for a better standard of living, higher income and wealth, ambitious and progressive ideals, better knowledge, thinking and rationality and a constant and intense desire for progress, position and prestige. Due to all these, birth rate remains lower.

On the contrary birth rate is found higher in rural areas where there are ignorance, casteism, illiteracy, absence of progressive ideals, fatalism, traditional

thinking, conservatism and poverty. Lack of ambition and of the desire of progress, status and position is the main cause of higher birth rate and population problem. The crude birth rate will decline from 21.5 during 2001-05 to 14.3 during 2021-25 because of falling level of total fertility.

A fall in birth rate, death rate and infant mortality rate could be observed from the comparative analysis of census data of last few decades. A fall in total fertility rate also could be noticed during this time period. The infant mortality rate of the state, is expected to decrease to 32.1 in 2021-25 from 54.3 in 2001-05. The projected infant mortality rate is 40 at the national level during 2021-25. The Total Fertility Rate (TFR) is expected to decline from 2.6 during 2001-2005 to 1.9 during 2021-25. The fertility rate in Gujarat is expected to touch the floor value of the fertility of 1.8.

(c) Sex Ratio

The sex ratio in the state is 921 female per 1000 male against the national average of 930. It is, in case of children between the age group of 0-6 is 878 female per 1000 male, showing a further fall in the sex ratio in the near future. Even after implementation of various policies and programmes in Government as well as Non- Governmental level much improvement could not be seen in the sex ratio of the country. 39.4 per cent increase in male population is projected for the year 2026 while in female, it is only 33.68 percent signifying the fact that the sex ratio declines alarmingly. As per projections, the sex ratio for the year 2026 will be 882 female per thousand male in the state. The decreasing trend of sex ratio gives serious implications on the lopsided growth of population of Gujarat ultimately decreasing the reproductive capacity of the state as whole in the future.

In the state of Gujarat, the correlation analysis pertaining to sex ratio and other variables revealed sex ratio has negative relation with Male literacy,

Female literacy, Percentage of female agricultural workers, Percentage of urban population to total population, Work participation rate in urban areas, Male work participation rate in rural areas and Male work participation rate in urban areas. It is implied from the above coefficient that the districts in which the presence above variable is high the sex ratio is found less and the districts in which their presence is low sex ratio is found more. It is amazing that despite of increasing female and male literacy rate the sex ratio is found less. It is mainly attributable to the fact that the sons are still preferred in educated society also.

A low and in some cases slightly moderate positive relationship exists in between sex ratio and Percentage of male agricultural workers, Female work participation rate in rural area, female work participation rate in urban area in the state of Gujarat.

(d) Age distribution

It is found that the population under the productive age is more in urban sector than in rural sector and the age group of 10-14 has the highest percentage of population among all the different age groups. This reveals the favourable trends in urbanisation. The highest percentage of population is in the age group of 10-14 means that, even though they are unproductive now, they constitute the strong hold of the state if they are brought up educationally high.

(e) Literacy Rate

- Out of the total population only 69.97 per cent is literate in which the male literacy is 80.50 per cent and that of female is 58.60 per cent. Measures to increase the female education is one of the way by which the state can come up with higher literacy standards. In literacy the state has to go far more ahead with 15 districts having literacy rate below the state average. This can be considered as one of the important reasons for the low

economic growth of the economy. The rural sector, while dominating the economy, is also a low-productivity area.

- The index number of the literacy rate over the past 50 years gives a clear picture of the efforts put there in for the improvement in the literacy rate. On 1951 base the index number of the literacy rate in Gujarat for the year 2001 is 320.67 showing a net average percentage increase of 220.67 percent in the total literacy rate of Gujarat. The index number of male and female literacy rate is 265.50 and 455.32 respectively showing a net average percentage increase in literacy rate of male and female 165.50 and 355.32 percent respectively. The above figures clearly indicate the efforts which are being made to improve the female literacy rate.
- Gujarat has again 15th position in male literacy rates and 21st position in female literacy rates indicating the need for further enhancement in the educational and other literacy programmes.
- Still 30 per cent of the population is illiterate signifying poor quality of human capital. Because of this Gujarat has to absorb large number of people from other states to utilise the vast resources in a proper way. The literacy in rural sector still contributes to the problem of under employment and disguised unemployment in the country.
- In Gujarat the total work participation rate is negatively related with literacy level and percentage of urban population to total population. The correlation is also highly significant. It can be said that if development occurred then work participation declines. These two variables are negatively related with work participation and also positively related with increased level of development. In main worker category, the male work participation rate is negatively correlated with sex ratio and density of population, but positively related with literacy and percent urban. In all

these case correlation is highly significant. This implies that in urban areas more educated males are working. In case of the marginal workers the female work participation rate is correlated positively with sex ratio and negatively with literacy and percent urban. This means in rural areas the illiterate women are working more as marginal workers. The same thing is also happening with the total female work participation rate.

(f) Gender Development and Gender Disparity

- The Gross gender development index and Gender disparity index in this state is 0.65 and 16.34 respectively while that of the southern state Kerala, where the sex ratio is 1058 female per 1000 male is 0.80 and 3.64 respectively. The state should strive to improve the gender equality drives and allocate enough resources for improvement of women's economic, social and health standards.

(g) Life expectancy

- The life expectancy of male is expected to increase from 64.9 years in 2001-05 to 71.9 years in 2021-25 while that of female is from 69.0 years to 74.9 years during the same period (Table 10.4).

11.4 Urbanisation – Findings

- A high positive correlation is found between urbanisation and per capita income implying the higher the rate of urbanisation the higher will be the per capita income
- The relationship between percentage of urban population and rate of unemployment is very low negative which means urbanisation brings down the rate of unemployment at a very low level.

- The correlation between the proportion of urban population and the rate of daily status unemployment is found negative though its impact was weak. It implies that a higher degree of urbanisation did reduce the degree of unemployment to some extent by absorbing the surplus labour force released from rural areas in urban employment.
- A mild negative correlation is found between percentage of urban population and percentage of people below poverty line. Obviously, the pattern of urbanisation that has developed in India did not make a deep impact on reduction of poverty.
- The correlation between the proportion of urban to total population and Birth Rate is found low and negative. This indicates that urbanisation causes a fall in Birth Rate.
- The relationship between percentage of urban population and Infant Mortality Rate is found negative but weak i.e. when the percentage of population in urban area increases the Infant Mortality Rate decrease slightly.
- The positive relation between urban population and literacy rate shows increase in urban population causes an increase Literacy rate. When percentage of population in urban area increases the literacy rate also increases.
- The correlation coefficient between Natural growth rate and urbanisation is found negative and therefore when percentage of population in urban area increases the natural growth rate decreases. This is due to fall in fertility rate and subsequent decrease in birth rate and death rate.

- Urbanisation influences positively the human development index. An increase in urban to total population increases the physical quality of human life. In urban areas the human development index is more than that of rural areas.
- It is found that there is moderate positive correlation between percentage increase in urban population during the decade (1991-2001) and percentage of urban population in total population (2001).
- Percentage decadal growth of population and percentage of non-agricultural workers in total work force are positively related to urbanisation.
- The percentage of total working population in total population has shown a moderate negative correlation with urbanisation.
- The positive impacts of urbanisation are Increased economic growth, exposure to mass Media, industrial development and provision for basic amenities, expanded employment opportunities, gains of external economies of scale, change in attitude of the people etc.
- The unfavourable impacts of urbanisation are the problem of congestion, excess population in urban area and subsequent emergence of slums, large scale rural to urban migration, The problem of infrastructure, the problem of energy, the problem of Transport, the problem of pollution, the problem of water, the problem of Sewerage, the problem of solid waste, the problem of housing, the problem of poverty.
- The urban population in the state of Gujarat, which is 37.4 percent in 2001, is expected to increase to 53 percent by 2026. The urban growth would be more than two times of total population increase by 2026. Out of

the total population increase of 18.6 million during 2001-2026 in the country, the share of increase in urban population is expected to be 17.8 million contributing 95.6 per cent of the increased population will be urbanites.

- The projection says that 95 percent of the increase in population during the year 2026 will be by urbanites. This shows the intensity of urbanisation that takes place in the state of Gujarat.
- The process of urbanisation does not bring down the rate of unemployment as expected. The reasons behind this situation are:
 - (a) Neglect of slums in urban areas by government body
 - (b) Weak bargaining power of organised migrants
 - (c) Increasing use of capital-intensive technologies in urban areas and
 - (d) last, but not the least, the benefits of growth may be unequally shared by various sections of the society and the resulting concentration of income and wealth may lead to an increase in per capita income without either improving the economic condition of the poor or enlarging employment at higher wage levels.

11.5 Migration – Findings

- A structural change can be observed in the economy of Gujarat in the form of migration from rural to urban for the last few years especially during the last decade. Due to high level illiteracy a high level of inter-state migration can be noticed in the state. However, large scale rural-urban migration is to be controlled for balancing the input-output relationship of primary and secondary sectors.

11.6 Fertility – Findings

- The Total Fertility Rate (TFR) is expected to decline from 2.9 during 2001-2005 to 2.0 during 2021-25 in India. The assumption is that the Total Fertility Rate (TFR) would decline steadily and would touch the floor value of 1.8 in some states. With this, the weighted TFR is projected to reach the replacement level of 2.1 by the period 2021.
- TFR is going down with the increase in the level of education starting from a high of 2.37 among 'literate but below middle' and reaching a low of 1.35 among 'graduates and above'. The TFR for all women in Gujarat is 3.90 in 2001
- The data suggests that the education is undoubtedly one of the most potent instruments to bring down the total fertility rates, especially, in areas where the fertility rates are higher and the female literacy rates are lower. The data suggest that if the females acquire education upto matric or secondary level, the desired level of fertility rate (replacement level) of 2.1 or even less than that may not be difficult to achieve.
- It may be observed that at the national level, TFRs among Scheduled Castes and Scheduled Tribes are higher than that of all population in Census 2001. Among the religious communities, TFR is highest for Muslims followed by Hindus and Buddhists. The lowest being in case of Jains.
- The correlation between birth rate and infant mortality rate, birth rate and percentage of SC & ST population, birth rate and percentage of population below poverty line is found positive.

- The correlation between while birth rate with the factors like percentage of urban population, mean age at marriage, density of population, sex ratio, real per capita income, female literacy rate, rate of unemployment, women's economic status, women's social status and women's health status are found negative.
- The correlation between total fertility rate and percentage of SC & ST population, total fertility rate and percentage of population below poverty line and total fertility rate and women's health status is found positive.
- The correlation between total fertility rate with the factors like percentage of urban population, mean age at marriage, density of population, sex ratio, real per capita income, female literacy rate, male literacy rate, rate of unemployment, women's economic status and women's social status are found negative.
- Gujarat showed a reduction ASFR from 56.6 in 1981 to 26.3 in 1993 among women aged 15-19 years. For almost all age groups, the ASFR displayed a similar declining pattern. This was so in the case of India as well, except in the age groups 15-19 and 20-24 years where the ASFR increased slightly. Except for the peak childbearing years of 20-29, the ASFRs of Gujarat were lower than the national ASFRs for all the three years. This suggests that the state family welfare planners should direct their efforts to these age groups for lowering the birth rate of the state.
- The data shows that in 1981, the rural ASFR was higher than the urban ASFR irrespective of the age group. This was so in 1986 and 1993 as well with the exception of the 15-19 age group in 1986 where the rural ASFR was slightly lower than the urban ASFR.

- District-wise study of the relationship of crude birth rate and other variables in Gujarat reveals that CBR and percentage of male agricultural workers has shown a very insignificant positive correlation
- Sex ratio, work participation rate and percentage of ST population are positively affecting the crude birth rate. Percentage of female agricultural labours, literacy rate, percentage of SC population has shown a negative impact on crude birth rate.

11.7 Mortality – Findings

- The maternal mortality rate in India in 1999-2001 is found 31 and in Gujarat it is 20 while the maternal mortality ratio in India in 2001 is found 327 and in Gujarat it is 202. Similarly, The infant mortality rate and all over death rate found in Gujarat is lesser than that of the national average.
- High negative correlation exists in between maternal mortality rate and women's economic, social and health status in the society. This indicates that when the status of women in the society increases the maternal mortality comes down.
- It is also found that gender development is another way by which female mortality rate in the country can be reduced.
- When the gender disparity increases, the mortality rate also increases which means establishment of gender equality will reduce the mortality rate.
- The correlation coefficient between death rate and percentage of urban population is found negative. Better medical facilities, sanitation, drainage

and better standard of living and after all the health-conscious living style in urban areas bring down the death rate in urban area.

- There is low negative correlation between death rate and density of population showing that density of population affects death rate adversely but at a very low rate. Low per capita availability of living amenities is the route cause of this negative relationship between density of population and death rate.
- The higher the per capita income the lesser will be the death rate. Per capita income is attached to the standard of living of the people. As per capita income increases people would be able to live in a better and hygienic manner which will reduce the number of death eventually. The mortality rate is naturally higher among those with low income groups with poor living conditions. The percentage of people below poverty line also plays an important role in determining death rate of a country and a very high positive correlation is found with death rate. This shows that the death rate is a increasing function of percentage of people below poverty line.
- Female literacy rate is also related with death rate negatively. The higher the female literacy rate the lesser the death rate. A high positive correlation is found between female literacy and death rate.
- An improvement in the economic and social status of women has positive impact in maternal mortality rate. This, in turn, works for the reduction of death rate in the country.
- On the contrary to the above findings, death rate and the percentage of population in Scheduled Castes and Scheduled Tribes is positively related. Earlier estimate of death rate has already proved this fact.

- Compared to other castes, the MMR is found very high in case of ST than SC. Among the different economic groups in the country, the MMR among poor is found higher than that of non-poor. The development of the area - whether it is urban or rural - of living also has its own bearing on the MMR. According to the analysis, in less developed areas the MMR is found higher than that of in the high developed areas.

11.8 Suggestions

A study of the demographic trends in Gujarat along with the demography of India has been done in the previous chapters. Even though the study is not claimed to be all-inclusive, from the discussions made, the nature and features of the demography of India as well as the state of Gujarat is found and the prevailing trends of various demographic variables is explored. In the light of the above analysis and subsequent findings the following suggestions can be made. Much variation is not shown in the nature of the demography of Gujarat and relationship found with that of the demography of India. Therefore, this section is made common for both.

(1) The fast growing population always stand as a barricade in the way of economic development of the country by increasing the burden of unproductive consumers, contributing to the unemployment, putting more burden on education, medical care and housing. All this affect the process of capital formation of the country adversely. Hence the first and foremost challenge is to reduce the population growth rate and population stabilisation in poorly performing states. As stated in National Population Policy, the poorly performing states need to work on reducing population growth and infant mortality. Population stabilisation in India mainly depends on population stabilisation in these states.

(2) Many states of India including the state of Gujarat is experiencing declining sex ratio i.e. these states are showing a rising masculine nature and thus India with the proportion of women in the total population gradually falling. This is a direct indication of low physical quality of life of the female folk of the country which indicated the need for more efforts in this area. As revealed in the above study, the physical quality of life of female is to be improved to solve this problem. The current policies for the enhancement of women's economic status, social status and health status are to be revised with new dimensions. Policies are to be framed to decrease the gender disparity and to establish gender equality in the society. Enhancement of gender development programmes must be part of the state policy. Women empowerment programmes are required to uphold the position of women in the society. Most of the demographic problems like high fertility rate, high birth rate, high maternal mortality rate, defective sex ratio will be solved by empowering women. The economic, sociological and cultural underpinnings of this phenomenon have to be grasped properly to tackle this problem effectively.

The first step to empower women is removing the social, economical and cultural barriers in female literacy in the state. These barriers are:

(a) The prevailing social system is the main barrier in promoting women education in India. Due to impact of customs and traditions the mentality of the society is indifferent towards women education. The society do not encourage women education. The attitude of the society is to neglect women education.

(b) The tradition of early marriages is also obstacle in the process of female literacy. Due to early marriages the women are unable to complete their education. After marriage the women are away from their rights and duties.

(c) There is more impact of religion and traditions among the rural people. In the rural areas, the women have to perform many duties and due to that they are away from the process of education. The rural people deliberately neglect women education.

(d) The economic backwardness is an important barrier in the process of women education in India. The poor families cannot afford to pay high education fees. This problem is more severe in the rural areas as the percentage of rural poverty is more.

(e) In the rural areas primary educational facilities are inadequate so the non-availability of high school and higher educational facilities are also responsible for low female literacy in the rural areas.

(f) The non-availability of infrastructure facilities like school building, sufficient and trained teachers are responsible low female literacy rate.

(g) The high rate of dropouts in the rural areas is the principal factor for to low female literacy rate.

(3) A major percentage of rural population is still illiterate. In terms of productivity the contribution of rural sector remains low and is not encouraging. This can be considered as one of the important reasons for the low economic growth of the economy. The rural sector, while dominating the economy, is also a low-productivity area. The low literacy rate in rural sector still contributes to the problem of under employment and disguised unemployment in the country. In urban sector also the case is not so different. Literacy enhancement programmes are needed to be revised and implemented properly according to the need of the time as unutilised and under utilised human resource is not only an economic evil but a social evil too. One of the corollaries of low human development is illiteracy

and low quality of education. Similarly, the middle and secondary school dropout rate is quite high. Further, our education is not much oriented towards the requirements of the domestic or global. There is a need to expand technical and professional education, taking into account the future need and globalisation of Indian economy. The state of human development signifies the quality of life of people and of a nation. The World Human Development Report of 1990s placed India with a low value in human development index. This showed that the productivity and quality of life of our population is low. Thus, heavy investment in key human development components like education and employment is called for.

(4) One of the reasons for high fertility rate and hence high population growth is unemployment. The current trends in the job market it could be noticed that the one with skill and know how to apply it properly will never remain unemployed in India. Irrespective of educational qualification, the one acquired skill and application skill gets in to the job market quickly. This indicates that a thorough change is required in the present education system. The ways and methods are to be explored for a change in the system. Wide scope of research is hidden in this area also. There are two main reasons of growing unemployment. The first and foremost is the rapid growth of population followed by low job absorption rate in non-agricultural sector, particularly in industrial sector. The elasticity of employment in industrial sector is very low. As a result, there is only a marginal rise in proportion of population working in industrial sector. It is of prime importance to our government and policy makers to create more employment opportunities for the masses.

(5) Controlling rural to urban migration is another area of concern. Population growth has caused large-scale migration to rural to urban sectors. The migrants are largely unskilled labour in search of employment. They work in unorganised sector with low wages in hazardous situations and with no job security or other benefits. Most of them live in slums in unhygienic conditions.

They are also creating a heavy burden on public infrastructure and civic amenities. A suitable strategy to control migration to metropolises has to be evolved.

(6) The process of urbanisation does not bring down the rate of unemployment as expected. Necessary steps must be taken at the government level to the upliftment of slum dwellers to increase their living standards by providing public works.

(7) Government may strengthen the incentive schemes given to those entrepreneurs who employ labour intensive techniques.

(8) Employment opportunities can be increased in rural sector by exploring markets opportunities of traditional items of the area concerned. This will help the rural folk to put up their standard of living.

(9) Government may look in to widening the scope of functioning of primary cooperative societies, regional rural banks, block development offices and other regional bodies by giving work-based incentives to those who strive to promote rural employment and standard of living by exploring market opportunities.

(10) Government may give necessary support and promotion to NGOs and self help groups working in rural as well as urban areas.

(11) The approach towards urbanization has to be one that integrates it in the development plans of the country. The emergence of towns is inevitably associated with industrial development. The non-agricultural activities like manufacturing, services and infrastructure, are in nature such that unless these get concentrated, these cannot be economically viable. In fact, as against agricultural activities which, being basically land-based, get spread over vast

spans of geographical areas, the industrial activities, being essentially man-based, get concentrated in small areas like in factories, other work-places etc. Since the substance of economic development consists of the expansion of non-agricultural activities, the emergence of urban areas is inevitable and desirable. It is, therefore, necessary that the urbanization is assigned an important role in the development process of the country.

(12) The urbanisation policy needs to be one that promotes urban areas of certain size but not of any size. It has been seen in the developing countries, (as also in the developed countries) that most of the evils are associated with big-sized towns or cities. The reason largely is that, while economic activity in these urban areas is very large, the population tends to be larger than these areas can support in healthy conditions. This is partly due to the reason that medium and small-sized towns do not get adequate attention by the governments. To avoid and to minimize the disadvantages of big towns, it is essential to devise a policy that limits the size of towns. For example, a policy that restricts the setting up of new industries in towns, with say a million population, would indirectly encourage the development of small towns. The National Commission on Urbanisation has, for example, recommended that, instead of devoting resources to backward areas, it is more desirable to develop intermediate and small towns. This will facilitate entrepreneurial decision-making, resulting in economic expansion. The towns selected should be ones that are marked by rapidly growing population and which have shown signs of economic growth or have the potential for such growth. It is argued that with the development of such towns in urbanized districts the economic activity would gravitate to these towns.

(13) National Commission suggests to develop towns in densely populated highly rural districts. This would, through the creation of non-agricultural employment opportunities, siphon-off surplus labour of rural areas into productive urban employment and help localize migration within the region. Injecting urban elements into the predominantly rural areas with large

concentration of population can thus bring growth-points near the labour that is unemployed in villages. This will thus promote productive employment with no or little possibility of big towns emerging. The policy of developing existing intermediate and small towns, as also creating new urban centres in the highly rural districts as suggested above, will ease pressures on the big towns or cities. Such an approach suits ideally the Indian situation where there are a number of districts, highly rural in character with excessive population, and widespread poverty.

- (14) Decreasing the pressure on big urban areas will help,
- the policy of birth control be effectively pursued in these urban areas to drastically reduce their population-growth. T
 - the efforts to improve the living conditions in rural areas be intensified. Such essentials as drinking water, electricity, elementary education, primary medical and health services should be made available to reduce the attractions of towns.
 - the development of agriculture and small agro-based industries (largely connected with the processing of agricultural products) be promoted in villages to create employment opportunities so as to prevent many from moving out of the rural areas
 - A Radical change can be made in the rural self employment scenario through Micro financing and entrepreneurial development programmes
 - the fast population-growth in rural areas be curbed with suitable family-planning measures.

11.9 Policy implications

- To create more non-farm employment opportunities for women especially in the rural areas so that the income level of the rural families can be increased.
- The Government should provide more attention towards the compulsory education programmes. It will help in improving the literacy rate.
- The Government should promote more higher and technical educational facilities in the rural areas. There should be special incentive packages for women education.
- It is necessary to develop infrastructure facilities in the rural areas. It will accelerate the education process.
- The Anti-Dowry Act should be strictly implemented.
- It is necessary to ensure registration of marriages to arrest marriages below the age is legally permissible. The tradition of early marriages should be prohibited.
- To create more awareness about women education in the rural areas.
- The network of distance education should be developed in the rural areas
- It is essential to focus special efforts towards rural women.

- Special policies to reduce gender gap emancipated participation of females in rural employment by making a conscious effort for a gender mainstream approach that would operate expeditiously and efficiently to bring about change in the employment scenario in all the sectors at all levels in addition to requirement of efficacious change that is expected with regard to employment situation which needs diversification towards non-farm sector which appears as a campaigner against unemployment, appropriate technology pioneer and a development catalyst.
- The rural non-farm sector which emerges as the measure of last resort precipitately calls for the reorientation of the Rural Development Policy aiming at assigning a significant role to the allied rural farm and rural non-farm activities in the overall strategy.
- To contend with the existing deficiencies prevalent in our system together with technical change that has created a competitive environment, a revolutionary transmutation is required which will act as a catalyst leading to external exposure and fostering female overall growth.
- Literacy with technical skill for rural women can be a tool for empowerment in a strive against inequality which can be strengthened through dissemination of information regarding agriculture and other sectors through audio visual and mass media communications which will facilitate them to improve their earning potential and address their survival needs.
- Electrification of rural areas is another boon which would pave the way for building infrastructure and creation of micro enterprises through

designing strategies that would enhance access to finance for rural poor.

- There is a need to further pursue effective implementation of poverty reduction and employment generation policies under strict governance that would create a pleasant atmosphere for the female lobby to survive.
- Therefore, if novel targets are to be attained, attempts, resources and organizational capacity must be significantly scaled up and better coordinated to grapple the future. There is corroboration pointing to the requisite to amplify women's right and representation to bring about modulation in the rural social and employment environment to reap full benefits of economic growth.
- Special laws may be enacted for decreasing the burden of the slum dwellers by operational policies to control excess migration. This can be achieved by enhancing the employment opportunities in the rural sector.
- Government may look in to widening the scope of functioning of primary cooperative societies, regional rural banks, block development offices and other regional bodies by giving work-based incentives to those who strive to promote rural employment and standard of living by exploring market opportunities.
- The urban policy should thus be such as promotes urbanization for the sake of development. In addition, the policy should be such as improves living conditions in rural areas, fosters the development of agriculture and small agro-based industries, as also curbs the rapid population-growth.

11.10 Hints to a rational population policy for Gujarat

The well-to-do sections in Gujarat society living in urban areas are largely free from the worry of life risks due to schemes of social security like provident fund, gratuity, old age pension, life insurance etc. The rich and elite classes have a large command over property, and income from this property provides adequate security against life risks. So the motivation for small family exists among the well-to-do sections. As against it, the poorer classes consider 'son' as the most important social security. Consequently, the motivation to have one or two sons results in having a large family. It is vitally important that in order to induce the poor to have small family, employment guarantee schemes and old age security measures are strengthened.

A school of thought among the demographers believes that our socio-economic policies must integrate population and development goals. For instance, V.P. Pethe argues : "The masses cannot be expected, rationally and morally, to undergo hardships that may result from a small family under the current environment, unless the educated and well off classes also effectively demonstrate that they are willing to make sacrifices (in terms of reducing conspicuous consumption, sharing income and property benefits, etc.) in the common commitment to economic development, social transformation and creating an egalitarian social order."

The family planning programmes must go ahead independently of the programmes of development and egalitarian distribution. There is, however, no doubt that the two together reinforce the creation of a better social and economic order.

The following facts are to be remembered in this connection

(a) Nearly 14 per cent of the population of India is living below poverty line and 41 per cent of female are illiterate in Gujarat in 2001. It is this group which is registering a very high birth rate—mainly due to ignorance and illiteracy.

(b) Even in a democratic set-up reasonable restrictions can be placed by the legislature on all or some sections of the community in the interests of economic growth. In this connection, the prescription of sterilisation in the country and a minimum age for marriage point to the same fact—the right of the State to influence the restriction of the size of the family.

I Sterilisation is the most important mode of family planning but the main disincentive is the high infant mortality. Measures to reduce infant mortality are a necessary condition for a successful sterilisation programme.

(d) Increase investment in education at each level, from primary, secondary, to tertiary levels and ensure equity, efficiency and quality in education and health sectors

(e) Government should ensure equal opportunities of education for all girls. Girl's education should be free and compulsory up to secondary level. Health education should be necessary for all women, adolescent girls and lactating/serving mothers.

(f) Investment in access to safe drinking water and improved sanitation facilities in both rural and urban sectors are to be ensured.

(g) Increase in investment in health sector is a prime need of the State. Health policy should be decentralised and its changes from place to place. Primary health facilities should focus more on preventive health measures rather than curative care. Government should implement health insurance schemes for the BPL people.

(h) Women's political participation should be guaranteed through reservation up to 50 percent.

(i) Grass root level awareness is necessary to be given to major sections of society of Gujarat especially to some castes for their orthodox approach towards son preference as bread winners. The time is changed. The woman performs as good as man in the present day society. Thus establishment of gender equality through legislation is desirable in Gujarat. Therefore, a change in attitude along with policies and programmes are required for fulfilling these objectives.

(j) The experience of Kerala indicates that without the use of compulsion, birth rate has been brought down to a level of 17 per thousand by 2001. Mainly the high literacy rate in Kerala coupled with an organisational better programme of family planning and health care explain the social transformation. It would be, therefore desirable that programmes of poverty alleviation should run along with those of family planning so that the poor develop greater credibility in the sincerity of the state. Only then will they accept the small family norm more willingly. Kerala stands in the first place in Human Development index as well as physical quality of life index. The state of Gujarat must learn from this experience. As suggested by many economists, Kerala model development is required for these states so that the entire problem of population could be vanished.

11.11 Limitations of the study

1. Even though this study used some of the demographic parameters of demography at national level for analytical as well as comparative purpose, the scope is restricted to only one state of the country, viz. the State of Gujarat.

2. The limitations inherent of secondary data may affect the study. The data used in this study is collected from various sources and subsequent sampling and non-sampling errors. Right from Census Publications, Sample Registration System, Books, Research works and other publications. Some of the data are found inconsistent. The errors due to this can be observed in this study.

3. Non-availability of sufficient data for some of the parameters of the population of the State of Gujarat especially district-wise data on Migration, Urbanisation, Fertility etc. may affect the study.

4. The data for entire Kutch district , Morvi, Maliya-Miyana and Wankaner talukas of Rajkot district and Jodiya taluka of Jamnagar district are not available where the population enumeration of Census of India 2001 could not be conducted due to natural calamity. Therefore only estimated population figures of these places could be used for the study.

11.12 Conclusion

Number of studies have been made earlier in the area of demography pertaining to the world nations and various states with in the nations. The field of demography is a never ending field as far as research is concerned. Population study always has an important place in the study of any economy because human beings are both ends and means for economic activities. As it has social, economical, political and cultural implications, utmost care has been taken during the course of this research to incorporate maximum reliable data and information with respect to the demography of India as well as the state of Gujarat. Many

areas are left behind in which there is much scope for further research. With in the limited scope of this study, the available data are assimilated and analysed and inferences are made. The inferences made in this study are found supporting the inferences made in the previous studies.

APPENDIX I

SOME DEFINITIONS

1. What is Census?

Population Census is the total process of collecting, compiling, analyzing or otherwise disseminating demographic, economic and social data pertaining, at a specific time, to all persons in a country or a well-defined part of a country. As such, the census provides a snapshot of the country's population and housing at a given point of time.

2. Literate :

A person who can read and write in any language is literate. A person who can merely read but cannot write is not literate. It is not necessary that the person should have received any formal education or should have passed any minimum educational standard. All children of age below seven years have been treated as illiterate even though some of them may be attending schools and may be able to read and write a few words.

3. Illiterate

A person, who can neither read nor write or can only read but cannot write in any language, is treated as illiterate. All children of age 6 years or less, even if going to school and have picked up reading and writing, are treated as illiterate.

4. Literacy Rate

Literacy rate of the population is defined as the percentage of literates in the age group seven years and above. For different age groups the percentage of literates in that age group gives the literacy rate.

5. Work

Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical

and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. It even includes part time help or unpaid work on farm, family enterprise or in any other economic activity. All persons engaged in 'work' as defined above are workers.

6. Sex ratio

It is expressed as 'number of females per 1000 males' and this is the basic attribute for meaningful demographic analysis of the human population.

7. Child Sex Ratio (0-6 years)

Child sex ratio (0-6 years) is the number of females in age-group 0-6 years per 1000 males in the same age-group in the population.

8. Crude Birth Rate

Ratio of the number of live births in a year to the mid year population, normally expressed per 1000 population.

9. Crude Death Rate

Ratio of the number of deaths in a year to the mid year population, normally expressed per 1000 population.

10. Infant Mortality Rate

Ratio of the number of infant deaths (deaths of children below one year) in a year per thousand live births in that year.

11. Maternal Mortality Ratio (MMR) =
$$\frac{\text{Number of maternal deaths to women (15-49 years)}}{\text{Number of live births to women (15-49 years)}} \times 100000$$

$$12. \text{ Maternal Mortality Rate (MM_rate)} = \frac{\text{Number of maternal deaths to women (15-49 years)}}{\text{Number of living women (15-49 years)}} \times 100000$$

$$13. \text{ Lifetime Risk of Maternal Death} = 1 - (1 - \text{MM_rate}/1,00,000)^{35}$$

14. Village

The basic unit for rural areas is the revenue village which has definite surveyed boundaries. The revenue village may comprise several hamlets but the entire village is treated as one unit for presentation of data. In unsurveyed areas, like villages within forest areas, each habitation area with locally recognized boundaries within each forest range officer's beat is treated as one village.

15. Urban Area

The definition of urban area, as per the 2001 Census is as follows:

I Towns:

The following are treated as towns:

- (a) Statutory towns, i.e., municipal corporation, municipal board, cantonment board, notified area etc.
- (b) Census towns which are non-statutory towns and are actually rural areas but satisfy the following criteria:
 - (i) Minimum population of 5,000
 - (ii) Density of population of at least 400 per sq.km.
 - (iii) Seventy-five per cent of the male working population engaged in non agricultural activity

II Cities

Towns with population of 1,00,000 and above are called cities.

III Urban Agglomerations

Sometimes two or more towns may be contiguous to each other making it necessary to consider them together for studies on urbanisation in the area. In some other cases there are large railway colonies, university campuses, port areas, military camps, etc, just outside the statutory limits of a town but adjoining it. Though these areas may not themselves qualify to be treated as towns, it would be realistic to treat them as urban. Such areas are termed as outgrowths' (O.G.) and may cover the whole or part of a village. The above two types of contiguous urban areas are called 'Urban Agglomerations'. An urban agglomeration may comprise.

- (a) A town and contiguous outgrowths; or
- (b) Two or more towns and their outgrowths, if any; all of them forming a contiguous spread of urban area.

Besides, the Directors of Census Operations in State/Union Territories were allowed to include, in consultation with the concerned State Governments/Union Territory Administrations and the Census Commissioner of India, some places having distinct urban characteristics as urban even if such places did not strictly satisfy all the criteria mentioned under category (b) above.

Apart from these, the outgrowths of cities and towns also have been treated as urban. These outgrowths include "fairly large well organised railway colony, university campus, port area, military camp, etc., which might have come up" around a core city of statutory town... "since such areas are already urbanised... although a few of them may not satisfy some of the prescribed eligibility tests to qualify themselves as independent urban units... have been termed as outgrowth (OGs) and reckoned along with town" (Census of India. 1991). Each such town together with its outgrowth(s) is treated as an 'urban agglomeration.' This concept of urban agglomeration was adopted in 1971 in lieu of the old concept of town group which was introduced in 1961. An "urban

agglomeration" denotes "a continuous urban spread and normally consists of a town and its adjoining urban outgrowths (OGs), or two or more physiologically contiguous towns together with contiguous well recognised outgrowths if any, of such towns" (Census of India. 1991).

16. Economic Status of the State

It denotes level of economic development of the state concerned. It comprises four variables, namely, per capita net SDP at current prices, HDI, Poverty Ratio (PR) and Credit-Deposit Ratio (CDR) in the state.

17. Economic Status of the Women

It also comprises four variables, namely, proportion of women who worked during the last 12 months, proportion of women with access to money, and of those who are regularly exposed to any media and having education up to High School and above.

18. Social Status of Women

Computation of this is also based on four indicators, namely, proportion of women involved in decision making in the family, proportion of women who need no permission to go to market, those who have never been beaten or physically mistreated since age 16 and who are involved in decision taking about their own health.

19. Health Services available to Women

This is computed by three indicators, namely, proportion of women with Body Mass Index not less than 18.5 Kg/m², proportion without any anemia and proportion of mothers receiving at least one anti-natal check up in the state.

20. Equal Treatment to Female Child (ETFC)

It is a crucial factor to determine gender equality. It is consisted of four variables, namely, proportion of women who likes to have child of either sex to

complete her ideal number of children, Infant Mortality Rate (F/M), Gross Enrolment Ratio (F/M) and Sex Ratio of Children 0-6 (F/M).

21. Economic Development Score

The state with highest SDP, lowest PR, highest CDR and HDI have been assigned numeral one. Likewise, the state at next level has been assigned two and the state at the end 15 in respect to all the four variables. Thus, the economic development score ranges from 4 (1x4) to 60 (15x4).

22. Economic Status of Women Score

The state with highest proportion of working women, women with access to money, regularly exposed to any media and having education up to .High School and above have been assigned 1 and to the states with lowest proportion 15. Thus, this score also ranges from 4 to 60.

23. Social Status of Women Score

Likewise, having four variables as stated before, this score also ranges from 4 to 60.

24. Score for Health Services to Women

It comprises three variables and hence this score ranges from 3 (1x3) to 45 (15x3).

25. Score for Equal Treatment to Female Child

The status of women with highest proportion of liking either sex child, lowest IMR (F/M), highest GER (GROSS Enrolment Ratio) and Sex Ratio have been assigned numeral 1 and its opposite numeral 15. Thus, score for this also ranges from 4 to 60.

The scores have been converted into index using following formula

$$\text{Index} = \frac{\text{Highest Score} - \text{Actual Score}}{\text{Highest Score} - \text{Lowest Score}}$$

$$\text{Gross Gender Development Index} = \frac{\text{Economic Status Index} + \text{Social Status Index} + \text{Health Service Index} + \text{ETFC Index}}{4}$$

4

APPENDIX II
: GUJARAT POPULAITON POLICY :
- A Glimpse –

1. Population Stabilization: Goals and Objectives

(a) Goal

In accordance with India's National Population Policy, Gujarat's population policy will also focus on improving the quality of life of the people. It also aims at reducing gender discrimination, empowering women, and ensuring extensive service support to achieve replacement level fertility by 2010. Respecting the reproductive rights of men and women will be the underlying principle of the population policy.

(b) Objectives

The objective of the State Population Policy is to provide integrated reproductive health care services, including addressing the unmet need for contraception. The state will strengthen health care infrastructure and support systems to improve access to these services to reduce the total fertility rate (TFR) from its current level of 3.0 to replacement level of fertility 2.1 by the year 2010. In achieving these objectives, an inter-sectoral approach will be adopted. The specific objectives to be achieved by the year 2010 are:

- Increase contraceptive prevalence from 54.2 per cent to an average of 70 per cent.
- Reduce infant mortality rate from 63 to 16 per 1000 live births.
- Reduce maternal mortality rate from 389 in 1992-93 to less than 100 per 100,000 live births.

(c) Health and Population Goals for Gujarat

Health Indicators	Current status	2010
Total fertility rate 1998	3.00	2.10
Couple protection rate 2001 (%)	54.2	70.00
Maternal mortality rate 1 992-93	3.89	<1.00
Infant mortality rate 1 999	63.00	16
Under 5 mortality rate 1996	20.40	< 10.00
% Children fully immunized 1998-99	48.00	100.00
% Deliveries by trained attendants 1998-99	74.20	100.00
% Institutional deliveries 1998-99	46.00	80.00

Source: SRS
National Family Health Survey -2

2. Strategic Themes

In order to achieve the objectives, the following are the key strategies;

- (a) Paradigm shift from population control to reproductive and child health approach:

The Family Welfare programme will be changed from the population control focus based on targets and incentives to a comprehensive reproductive and child health (RCH) programme. The RCH services will be treated as the rights of the people. The programme will be strengthened to meet the needs of women, men, adolescents and children as close to the community as possible. The focus will be on:

- Decentralized client centered approach to meet the needs of the people in all stages of their life-cycle.
- Addressing the needs of a variety of clients, expanding the range and improving the quality of RCH services.
- Enabling the newly married couples to delay child bearing, making informed choices of spacing method, offering alternatives to sterilizations, improving access to permanent and emergency contraception, and providing safe abortion services.
- Managing reproductive tract infections and sexually transmitted diseases including HIV/AIDS, and providing counseling to adolescents.
- Increasing the participation of men in family planning, encourage responsible sexual and reproductive health behaviour among men, and promote responsible fatherhood.
- Assessing and addressing the special need of migratory and aging population.
- Incorporating Indigenous system of medicine (ISM) in RCH and population programmes.

Considering the inter-regional variation and other disparities in service utilization and development, area and group specific approaches will be adopted to reach out to sections needing special attention.

(b) Improving quality of services and make them more client focused:

One of the reasons for limited achievements of the past policies and programmes in the population and health field has been the lack of quality of services. The new policy will pay special attention to the quality of services and ensure that they meet the needs of the population leading to widespread acceptance of the services. Some of the measures include:

- Setting quality standards including systems of measuring quality, ranking of

PHCs based on performance and providing recognition for better performance.

- Giving recognition to health service personnel for improving quality and availability of services.
- Providing greater autonomy to health service institutions.
- Strengthening the core competencies of staff by developing a training policy to improve the quality of services and management.
- Discontinuing of cash incentives for family planning acceptors.

(c) Promote gender equality, women's empowerment, and male participation:

Realizing that causes of many reproductive and other health problems arise from gender imbalances in the society, the policy and programmes will institutionalize gender perspectives in all education and training programmes, and communication media. The focus will be on:

- Protecting women and girls against violence, neglect and destitution.
- Enforcing laws against sex determination vigorously.
- Enforcing legal age of marriage, increasing it for girls and ensuring compulsory registration of all marriages, births and deaths in practice.
- Promoting gender equality, improving the nutritional status of females through the life cycle approach and universalizing primary education for girls for helping them to improve their self-esteem.
- Encourage men to share the responsibility of contraception. Vasectomies will be re-popularized, in particular non-scalpel vasectomy and condoms. Information and education campaigns will also address men to enhance their understanding of reproductive health concerns.
- Incorporating family life education in school curriculum and providing orientation training to teachers to impart RH education.

(d) Decentralization: structural changes and financial reform:

The state has constituted a Gujarat Population Commission (GPC) under the chairmanship of Chief Minister. The Commission comprises of elected representatives, members from concerned departments, experts, representatives from non-governmental organizations, corporate sector and international agencies. The commission will oversee the implementation of the policy; review the progress to ensure that the set goals as envisaged in the policy document are achieved. It will also act as an advisory body to the government on population and development matters. For furthering decentralized planning and programme implementation, Panchayatiraj institutions are important means. In Gujarat, panchayats have been active at district, taluka and village level since 1963. Under this, appropriate support will be given to local bodies to carry out their responsibility in the health and population area. Local bodies will have to do community need assessments, resource planning and resource mobilization. Some other areas for action are:

- Encouraging local bodies including the panchayats to more purposefully get involved in health, population and development programmes by sharing resources with accountability.
- Involving *arogya samitis* in conducting need assessment surveys, carrying out resource planning, conducting health and hygiene programmes, monitoring collection of vital data/statistics with special emphasis on infant and maternal deaths, organizing population education and information building programmes and act as pressure groups to enable mobilization of personnel.
- Involving Panjayati raj training institutes in capacity building of panchayat members particularly women members for management of health and population programmes.
- Constitution of Gujarat Population Commission to oversee the implementation of the policy; review the progress to ensure that the set goals as envisaged in the policy document are achieved.

(e) Promoting inter-sectoral coordination and partnership between governmental organizations, non-governmental organizations, corporate sector, co-operatives and private sector.

Partnerships will be promoted between and among government, non-governmental organisations, corporate and private sectors, and co-operatives. In Gujarat, the network of cooperatives is well spread. In some areas linkages exist between health workers and cooperatives. Inter-sectoral coordination within government will also be enhanced. These efforts will promote synergy, minimize duplication, and facilitate effective utilization of resources. To enable this, the thrust areas will be:

- Transparency and coordination between governmental organizations and Non-governmental organizations.
- Involving local community organization such as mahila mandals, yuvak mandals and health committees.
- Uniformity of goals and objectives of programmes between Non-governmental organizations and Governmental organizations to avoid duplication of efforts.
- Support from the government to non-governmental organizations based
- on mutual agreement regarding broad policy and programmatic objectives.
- Encouraging Cooperatives to take up population and RCH agenda as part of their developmental activities.
- Setting up a state level coordination forum to promote inter-sectoral partnership among the GOs, NGOs, corporate and cooperatives and treating them as equals.
- Utilizing the existing network of cooperatives to promote health and population programmes.
- Encouraging private institutions and providers to get actively involved in realizing population policy objectives.
- Encouraging corporate forums to promote the objectives and

programmes of the population policy through their network and workers.

(f) Enforcing accountability of public, private health and social service sector:

Success of Population and RCH policies are largely dependent on the accountability and efficiency of the health and related social services. The government will set up effective mechanisms to ensure that health and other social services that are supportive to population stabilization and RCH objectives are performing as per the expectations. Such mechanisms will involve the government, the academic community and social organizations in reviewing and monitoring the programs.

(g) Resource mobilization, alternative financing and better financial utilization:

Government resources have always been less than the requirement in most social programmes. The government will make efforts to develop partnership with various agencies and other sectors, and mobilize more resources from various sectors. Various innovative systems such as community cost sharing, health insurance, health cooperatives, corporate and philanthropic donations etc will be tried out. But the guiding principle in all this will be maintaining social equity in providing services.

(h) Social mobilization and Information Education & Communication: Social mobilization is important for the success of all programmes. This will lead to generate more demand for the services and thereby better utilization. The following will be the thrust areas;

- Prioritizing IEC as an important programme for the state.
- Reactivating state and district level IEC bureaus and developing IEC strategies through these bureaus. a Providing adolescents with proper

and scientific information on reproductive health.

- Gender-sensitizing the community through appropriate IEC.

3. Conclusion

This policy deals with the goals, objectives and strategic themes of the population policy of the state. While emphasizing the need to improve the health status of the people through integrated RCH services, adequate attention will be given to women's empowerment, male participation and population stabilization. Partnership and inter-sectoral coordination between governmental organizations, non-governmental organizations, corporate, and private sector as well as active involvement of panchayats will be emphasized. The state has constituted a Gujarat Population Commission (GPC) to oversee the implementation of the policy; review the progress and to act as an advisory body to the government on population and development matters. The details of operational strategies/action plans, institutional mechanisms and budgetary allocations for operationalizing the strategic themes will be regularly addressed in the course of implementation.

APPENDIX III

THE NATIONAL POLICY OF EMPOWERING WOMEN

- A Glimpse -

1. Introduction

The national policy of empowerment of women has set certain clear cut goals and objectives:

The goal of this Policy is to bring about the advancement, development and empowerment of women. The Policy will be widely disseminated so as to encourage active participation of all stakeholders for achieving its goals.

2. Objectives of the policy

- i. Creating an environment through positive economic and social policies for full development of women to enable them to realize their full potential,
- ii. The de-jure and defector enjoyments of all human rights and fundamental freedom by women on equal basis with men in all spheres political, economic social, cultural and civil,
- iii. Equal access to participation and decision making of women in social, political and economic life of the nation,
- iv. Equal access to women to healthcare, quality education at all levels, career and vocational guidance, employment, equal remuneration, occupational health and safety, social security and public office etc.
- v. Strengthening legal systems aimed at elimination of all forms of discrimination against women.
- vi. Changing societal attitudes and community practices by active participation and involvement of both men and women.

- vii. Ministering a gender perspective in the development process,
- viii. Elimination of discrimination and all forms of violence against women and the girl child; and
- ix. Building and strengthening partnerships with civil society, particularly women's organizations.

3. Suggestions of the policy

1. Legal-judicial system will be made more responsive and gender sensitive to women-'s needs especially in cases of domestic violence and personal assault. New laws will be enacted and existing laws reviewed to ensure that justice is quick and the punishment meted put to the culprits is commensurate with the severity of the offence.

2. At the initiative of and with the full participation of all stakeholders including community and religious leaders, the Policy would aim to encourage changes in personal laws such as those related to marriage, divorce, maintenance and guardianship so as to eliminate discrimination against women.

3. The evolution of property rights in a patriarchal system has contributed to the subordinate status of women. The Policy would aim to encourage changes in laws relating to ownership of property and inheritance by evolving consensus in order to make them gender just.

Although extremely challenging, guaranteeing the right of the majority of women of access to and control of land is one of the most significant steps that can contribute towards empowerment of women in rural India.

The women in rural area tend to outnumber the males involved in primary activities such as agriculture, hunting, forestry, fishing etc. The numerical

preponderance of women in the category of marginal workers could be noticed among all the age groups.

Despite the fact that women form the greater percentage of the work force the precariousness and ambiguity of women's legal status remains a leading cause of disempowerment and associated kind of poverty. As property rights shape the allocation of resources and decision-making authority, especially in the household, the ownership of land can considerably improve women's ability to bargain and gain access to credit and also achieve higher levels of productivity. The social welfare policies are built on the premise that women lack power, they are denied basic rights as individuals, have limited income and access to resources. It is clear that efforts to improve income and living conditions (the basis of the early social welfare approach) are insufficient in empowering women unless considerations of the basic patrilocal features of society are brought into the equation and the responsibility of states to address its negative effects, Policy makers must also take note of the resistance women have faced in their entry into public space, and coordinate vigorous efforts to continue legal reform and enhance women's participation in social, economic and political spheres.

As we see the discrimination is deep rooted and perpetuated through patriarchy the task to empower women becomes even core challenging. While women in India have the legal right to own land, very few do. For those women who do own land, ownership rarely translates into control of the land or of the assets flowing from the land.

The policy prescriptions and legislations assure the equality of right over land for women in India, such as the Article 25 of the Indian Constitution permits freedom to all. Indian constitution mandates gender equality. The theoretically nondiscriminatory nature of law that guide issues and ideologies on status and treatment of women, property rights related to inheritance, marriage, divorce etc.

The patriarchal ideologies get fanned by denying women the control over property and land. It helps the patriarch to systematically dominate the females, exploit their labor and further accentuate their position in family and society at large. Despite large number of women involved in agricultural and associated activities, the ability of women in rural India to access and manage the benefits from the land to which they are tied remains largely limited.

The constitutional provisions and amendments to the inheritance laws are not sufficient in themselves to change the patterns of rural land ownership. Increasing women's property rights not just in theory but in practice can positively contribute towards the welfare of poor and would help in bringing about effective change in the nature of current status of poverty as women are more likely to spend income from land on education and meeting the basic need of children and family. In fact the right over property and land can be an important source of alleviating poverty from rural India.

President A.P.J. Abdul Kalam, said empowering women was a prerequisite for creating a good nation, "when women are empowered, society with stability is assured. Empowerment of women is essential as their thoughts and their value systems lead the development of a good family, good society and ultimately a good nation".

Education plays an important role in bringing about awareness on women's rights. There is no easy or quick fix to the problems related to women's empowerment and property rights in rural India. The real solution lies in a holistic approach that deals with all the major interrelated issues of economic welfare, social justice, education, health, religious and customary traditions.

Efforts should be made to move beyond land policy and law reform to reforming the laws of succession which continued to disadvantage women even when progressive land and property rights have been enacted. We must also

improve land administration and management, secure tenure, and property rights by undertaking practical steps to bring about real benefits to women. In order for legislative amendments to change patterns of inheritance, the social and religious norms that impact inheritance (like dowry practices) must be considered, the public amendments, a plan must be developed for their enforcement, and an effort made to assure that inheritance practices change in accordance with the amendments.

APPENDIX IV

GUJARAT – HUMAN DEVELOPMENT FACT SHEET

Sr. No	Human Development Indices	Gujarat	India
1	Human Development Index Value 2001(calculated only for fifteen major states)	0.479	0.472
2	Human Development Index Rank 2001 (out of 15)	6	3
3	Human Development Index Value 1991	0.431	0.381
4	Human Development Index Rank (out of 32)	17	5
5	Human Poverty Index 1991	29.46	39.36
6	Human Poverty Index Rank (out of 32)	13	7
7	Gender Disparity Index Value 1991	0.714	0.676
8	Gender Disparity Index Rank (out of 32)	18	-
Demography Indicators			
9	Total Population – 2001	50,596,992	1,027,015,247
10	Sex Ratio – 2001	921	933
11	Dependency Ratio -1991	11	12
12	Dependency Ratio Rural – 1991	12	13
13	Dependency Ratio Urban – 1991	9	10
14	Sex Ratio Children 0-6 years – 2001	878	927

Source:

- (1) Indices - Government of India(2001), ' National Human Development Report', Planning Commission, New Delhi
- (2) Demography - Total Population and Sex Ratio -Registrar General of India (2001), ' Provisional Population Tables", Census of India, New Delhi';
- (3) Dependency Ratio - National Human Development Report (NHDR)

GUJARAT - HUMAN DEVELOPMENT FACT SHEET

Sr. No	Education	Gujarat	India
15	Literacy Rate - 2001 (%)	66	65
16	Male Literacy Rate - 2001 (%)	76	76
17	Female Literacy Rate - 2001 (%)	56	54
18	Rural Literacy Rate - 2001 (%)	59	59
19	Rural Male Literacy Rate - 2001 (%)	71	71
20	Rural Female Literacy Rate - 2001 (%)	46	47
21	Urban Literacy Rate - 2001 (%)	79	80
22	Urban Male Literacy Rate - 2001 (%)	85	86
23	Urban Female Literacy Rate - 2001 (%)	72	73
24	Gross Enrolment Ratio Class I-V (6-11 years),1999-2000	113	95
25	Boys-Gross Enrolment Ratio Class I-V (6-11 years), 1999-2000	125	104
26	Girls -Gross Enrolment Ratio Class I-V (6-11 years), 1999-000	101	85
27	Teacher-Pupil ratio (Primary School), 1999-2000	51	43

Source:

(4) Education - Literacy rate - Census (2001), Gross Enrolment Ratio and Teacher Pupil Ratio - Ministry of HRD, 'Selected Educational Statistics' 2001

GUJARAT - HUMAN DEVELOPMENT FACT SHEET

Sr. No	Health	Gujarat	India
28	Life Expectancy at Birth, 1992-96 (yrs.)	61	61
29	Life Expectancy at Birth (Rural), 1992-96 (yrs.)	61	59
30	Life Expectancy at Birth (Urban), 1992-96 (yrs.)	64	66
31	Infant Mortality Rate - 2000	62	68
32	Under 5 Mortality Rate - 1991	101	94
33	Under 5 Mortality Rate - Male -1991	97	91
34	Under 5 Mortality Rate - Female -1991	104	101
35	Maternal Mortality Rate - 1999-2001 (per 100,000 live births)	20	31
36	Maternal Mortality Ratio - 2001 (per 100,000 live births)	202	327
37	Birth Rate (2001)	24.9	25.4
38	Death Rate (2001)	7.8	8.4
39	Total Fertility Rate - 1998	3	3
40	Percentage of children underweight (-2SD), 1998-99	45	47
41	Percentage of houses with access to safe drinking water - 1991	70	62
42	Percentage of houses with access to toilet facilities - 1997	67	49

Source:

(5) Health - IMR and TFR -Planning Commission, Tenth Plan (2003-2007); LEB, MMR, Children underweight, Under 5 Mortality Rate, % of houses with access to safe drinking water, % houses with toilet facilities - NHDR

GUJARAT - HUMAN DEVELOPMENT FACT SHEET

Sr. No	Income	Gujarat	India
43	Per Capita Net State Domestic Product (at 1993-94 prices, Rs.), 1998-99	13493	9647
44	Percentage of Persons in Labour Force, 1999-2000	65	62
45	Percentage of Female in Labour Force, 1999-2000	45	39
46	Percentage of Population Below Poverty Line - 1999-2000	14	26
	Environment		
47	Percentage of Recorded Forest Area to Total Geographical Area-1996-98	10	23

Source:

(6) Income - PCNSDP -Planning Commission,'Tenth Plan (2002-2007)', Vol. III, Annex 3.1 , Persons in Labour Force, % of Population living below poverty line - NHDR

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