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Human Development Profile of the Indian States

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FOREWORD

The Human Development Report (HDR) published annually by UNDP has defined development as a process of widening people's choices. Identifying three critical choices, viz., to have access to income and assets needed for a decent standard of living, to acquire knowledge, and to lead a long and healthy life, the HDR proposes a composite index – the Human Development Index (HDI) which combines the critical indicators in some way. The index has been used in ranking the countries according to this new paradigm of development.

The HDI, though superior to the traditional aggregate indices like GDP, is also an aggregate index failing to reveal disparities among population subgroups. It is thus, not useful for policy prescriptions for raising the level of human development. Human development should form an integral part of the overall development plan to ensure successful translation of economic growth into improved quality and content of human life. A prerequisite to identification of the range of social concerns and fixation of goals and priorities for human development strategy is a detailed Human Development Profile (HDP). The profile should address a broad range of national concerns relevant for the country depending on the current status of and deficiencies in various dimensions of human development. It should indicate the positions of various population subgroups in the human development ladder – who stands where, to make it easier to set long and short term goals, decide priorities and identify areas needing micro intervention.

The Council has undertaken a major initiative, in collaboration with the Planning Commission, UNDP and other UN agencies to prepare the required data base for the country. Several studies relating to this are in progress. Outcome of an attempt to prepare a human development profile of the Indian states, out of the data already available from secondary sources, is reported here. Various indicators reflecting aspects of human development disaggregated into states and some population groups within states have been reported in a systematic manner. Gaps and deficiencies in the data available from secondary sources have been indicated. Fresh data are being collected through sample surveys to fill these gaps. A search for linkages among the indicators and certain policy variables have also been pursued. The results will be useful in policy formulation and implementation aimed at higher levels of human development.

Data and indicators presented here are disaggregated at the state level. Separate profiles for individual states disaggregated into districts within the state are being prepared in collaboration with scholars of the networking research organisations and university departments in the respective states. These will be reported in due course.

New Delhi
December 1994

S. L. RAO
Director General

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Chapter 1

Introduction

ONE of the major concerns in development economics has been to assess the level of welfare of human communities and monitor such levels of welfare over time and space. This necessitates both conceptualisation and quantification of welfare in some scale. Assessment of social welfare traditionally proceeded in two steps. In the first step conceptualisation and measurement of welfare of each individual in the community is made. In the second step these individual welfares are combined in some way to get a measure of aggregate level of welfare for the society as a whole. Traditionally, Welfare was taken to be synonymous with, what we now call, *Material Welfare* and was measured by one's command over material resources. Since money is a common measure of all material possessions it was believed that some function of income (or some close proxy of it) would capture most of the aspects of welfare and measure it adequately. Accordingly, welfare of an individual was measured by his income alone. Also, the individual welfares were aggregated in a simple way by adding all the component incomes and dividing the sum by the number of such incomes added to get an estimate of per capita income. Thus, Gross National Product (GNP) per capita or one of its variants remained in use, for long as an indicator of aggregate welfare of a community. In later years inadequacy of GNP as a measure of social welfare was realised and various improvements were suggested.

Though aggregated income indicators such as the GNP, provide a summary picture of the country's productive capacity and its command over material resources, they fail to take account of many other factors which have a bearing on the welfare of society, even if one decides to measure welfare in terms of income alone. For example, a rise in average income is often accompanied by a widening of the disparity in the distribution of income and, thus fails in increasing the level of welfare of all sections of the population. A good measure of social welfare should, therefore, take note of the average as well as the distribution of income among the members of society, the latter usually summarised in a measure of inequality. Higher level of income is preferred while inequality is undesirable. Any social welfare function should, therefore, be an increasing function of average income and a decreasing function of inequality. Numerous such functions can be found. How does one choose

one among these? To resolve this problem of choice scholars looked for a set of *desirable* properties which the social welfare function should have and formulated various sets of axioms that a social welfare function should conform to. This led to a smaller set of such functions to choose from. Some such social welfare functions have been formulated by scholars led by the pioneering work of Prof. Amartya Sen, each conforming to a different set of desirable axioms. (Sen 1974; Kakwani 1980, 1981, 1985; Chakravarty 1982; Chakrabarty 1993).

These sets of axioms, as is well known, incorporate different sets of value judgments. Choosing one social welfare function would then mean accepting the whole set of value judgments incorporated in it. The problem of choice remains, though now confined to a narrower set (Kondor 1975).

Material Well Being and Human Development

In recent years, the traditional concept of social welfare has been intensively scrutinised and modified. The current realisation is that welfare has more than one dimension. Command over material resources is one of these. An ideal measure of welfare should reflect these dimensions, incorporating all such factors that contribute to welfare directly and indirectly. The list of such factors being unmanageably long makes it next to impossible to arrive at a single measure which takes into account all the relevant factors. "To aspire for such a measure is a hopeless task because the typical concept of welfare tends to be extremely complicated to make it operational." (Sen 1973).

A pragmatic approach would be to derive a measure of welfare incorporating only those variables which are easily quantifiable, keeping the number operationally manageable and ignoring the other less important factors.

The importance of social indicators in human development was recognised and attempts were made to measure development in terms of quality and content of growth. Growth is not an end in itself. It, rather, is an instrument necessary for realising the goal of better conditions of life, conceptualised in some way and reflected in various social indicators. One of the earliest efforts by UNRISD (1970), to construct a composite index of development was based on a set of seven indicators and included factors like circulation of newspapers, enrolment ratio, consumption of energy (electricity), steel, and foreign trade. Efforts were also made to construct sophisticated composite indices using factor analysis and taxonomic methods (Adelman and Morris 1973, Miles 1985).

A parallel set of efforts attempted to measure well being by output variables alone like Education, Health and Longevity, avoiding input variables like per capita GNP whose estimation procedure and international comparability have raised a host of controversies in recent years (Iserman, 1980; Summers and Heston, 1988). Popular among these is the Physical Quality of Life Index (PQLI), a simple index based on three indicators – infant mortality, life expectancy at age one and adult literacy rate

(Morris 1979). It has been argued that the measure is simple, easy to comprehend and can be easily computed from available data. However, it has been criticized on the ground that it is too simple a measure to grasp all the important dimensions of development and their distributional aspect. Development indicators are expected to facilitate planning and such simple measures tend to obfuscate instead of elucidating, in their simplification. These and other such measures are found to be inadequate to reflect the multifaceted aspects of human development.

Nevertheless, all these efforts considerably influenced the thinking and activities of individuals and institutions involved in development planning. The Organisation for Economic Cooperation and Development (OECD) initiated presentation of progress reports on social indicators. The World Bank in its annual publication, *The World Development Report*, included data on education, health, fertility, mortality, income distribution and such other indicators in addition to economic indicators. The Bank also began publishing annually a complete volume on *Social Indicators of Development*. Specialised organisations like UNESCO and UNICEF have also been compiling and publishing detailed data on various aspects of human development.

All such data together convey a profile of welfare of various communities. Efforts are on to combine these partial pictures into a single composite index and use it for monitoring development over time and space. Since these indices capture many other aspects of welfare and are conceptually different from the traditional measures of social welfare reflecting command over material resources alone, such a measure has been called *Human Development Index (HDI)*. We shall refer to the traditional measures as *Measures of Material Welfare*.

Certain conceptual differences between the traditional social welfare functions and the Human Development Index are worth noting. The traditional view of social welfare has been modified over the years through consideration of income distribution and basic needs, to approach a wider definition of development than is encompassed by economic growth alone. Nevertheless, this remained a goods-oriented view of development. In the traditional view, development is people's command over resources like flow of income and ownership of assets, or at times measured in terms of expenditures likely to improve quality of life, such as, on education, health, nutrition, housing, safe drinking water, sanitation and other social services. Economic growth is necessary to meet the objective of better quality and content of life. Translation of growth into better quality and content of life is, however, not automatic. It matters whether the resources at its command are efficiently utilised by the society for achieving the cherished goals or used in "wasteful" expenditures, such as on wars, policing, producing and consuming alcohol and other intoxicants. Human Development Indices attempt to assess whether growth has been successfully translated into improvements in various aspects of life and therefore propose to measure development by results or achievements in different spheres of life such as acquisition of knowledge, enjoyment of a healthy and long life. Development here is

people-oriented and viewed as expansion of people's capabilities. The question is: what are people capable of doing or being?

For example:

- Do people live a healthy and long life? Can they read and write?

And not:

- What is the value of GDP or per capita GDP? or How much is spent on primary education and health?

This view recognises that an ignorant person in poor health has much less capabilities than a knowledgeable and healthy person and therefore is at a lower level of development. A human development index, thus, attempts to capture the multidimensional aspects of development in terms of the results achieved and then incorporate these into a composite index. It remains a difficult task to conceptualise and quantify all of such numerous factors in which human development is manifested. One has to be necessarily selective, partly due to difficulties in the conceptualisation and measurement of many of these factors and also to keep the number of factors within manageable dimensions. Combining all such partial indicators of development into a composite index poses a further set of problems: both conceptual and operational. (Arndt 1987, Kelley 1991, Dasgupta and Weale 1992, Pal and Pant 1994). It is therefore, not surprising that the debate around the Human Development Index proposed in the Human Development Reports of the UNDP is yet to converge anywhere near a consensus solution.

UNDP's Human Development Index

United Nations Development Program (UNDP) took the first step in this direction in 1990. Along with the other agencies in the UN system it assembled all available social and human data for each country in a comparable form and initiated publication of an annual report on the human dimensions of development. The *Human Development Report 1990* (HDR 1990) is the first in the series. This also contains various human development indicators computed from the assembled data and makes a contribution to the definition, measurement and policy analysis of human development.

The report proposes a methodology for computation of a human development index (HDI) by combining these partial indicators. It examined a very large set of indicators; but finally took into account only three, namely, life expectancy, adult literacy and (real) gross domestic product to construct the composite index as a weighted average of these three indicators. A large number of countries have been ranked on the basis of this index and some policy analysis attempted. The first Human Development Report (HDR 1990), it is indicated, is of a seminal nature intending to initiate a debate among scholars so that the coverage and the methodology of measurement can be refined in the light of the continuing debate as more and

more aspects of human choice and development are conceptualised and quantified. Many scholars participated in the debate. The subsequent reports, in 1991, 1992 and 1993, took note of some of the points raised in the debate, and made some modifications in the measurement of the indicators of knowledge and material well being. The basic concepts of development and the methodology of computation of the HDI, however, remained unchanged.

Need for a Human Development Profile

The HDR also spells out the need for a new human development order in the nineties woven around people of the country whose quality and content of life should be improved. It especially refers to the plight of the poor who are also likely to be adversely affected by structural reforms. Appropriate human development goals are to be set and a suitable human development strategy has to be formulated to achieve such goals. This in turn would need preparation of a *Human Development Profile* for each country and its periodic updating. The profile should address a broad range of national concerns relevant to the country, depending on the current status of and deficiencies in various dimensions of human development. Such a profile would indicate the position of various population subgroups in the human development ladder – who stands where in terms of various indicators of development, such as, female literacy, maternal and child mortality, expectation of life, old age security, housing and sanitation and consumption and income. Such a profile when available would make it easier to set long term and short term goals, decide priorities in the plan, locate areas where micro intervention would be necessary and also to estimate the growth in GDP needed for achieving the goals set. To ensure successful translation of economic growth into improved quality and content of human life, human development should form an integral part of the overall development plan and must be built into the programme and projects aiming at the focus groups from the outset.

The Present Objective

The present report is the outcome of an attempt to prepare a human development profile of India, to compute various indicators reflecting aspects of development from data already available from secondary sources and also to search for linkages among values of the indicators and the policies followed. These linkages are expected to suggest ways of influencing the values of the social indicators (through appropriate policies and programmes) and hence the level of well being. The report will also indicate the gaps and deficiencies in the available data. And guided by this, in a subsequent stage, another attempt will be made to fill this data gap and deficiencies through a nationwide sample survey of households.

Need for Disaggregation

For assessing the overall level of human development and cross-country comparison, aggregate measures of the individual indicators used in the HDRs were

appropriate. However, in the context of an individual country, such averages would conceal the disparities over sections of population such as, in different regions, age, sex, ethnic groups. Data will be needed in a disaggregated form to reveal these disparities and also for a number of other considerations.

Moral and ethical issues would call for some assessment of equity and justice in the distribution of goods, services and other amenities, and also the achievements in different aspects of life.

This dictates disaggregation of data and indicators by age, sex, racial, and ethnic groups and geographical regions. Such disaggregation would be needed, for example, to check whether differential access to facilities has a bearing on achievements in education, health and other contents of life.

Social indicators disaggregated in terms of the ascribed characteristics will be essential to look into the interrelations among various indicators and also to relate these to policies and programmes of respective governments and other public bodies.

Disaggregation will be useful for identifying the areas needing micro interventions and also for monitoring and evaluating the effects of such interventions.

Keeping these and the limitations of data availability in view, attempts have been made to assemble relevant data disaggregated at the level of states and districts within a state. Data and indicators disaggregated at state level are presented and analysed here. Disaggregated analysis at the level of districts within a state have been pursued in collaboration with scholars in research organisations and university departments in the respective states. Major findings of these analyses are discussed in the appropriate context. Data and analysis disaggregated at the level of districts within a state will be reported in separate volumes.

Areas of Social Concern

Factors affecting well being are numerous. Many of these are presumably, valid indicators of well being in the sense that there exists a one-to-one correspondence between the changes in the values of the indicators and those in the levels of well being conceptualised in some way. Since the concept of well being is subjective in nature, identification of the factors that affect it is fraught with value judgments. The issue is currently being debated and perhaps cannot be resolved by inclusion or exclusion of a few among the factors likely to affect the quality of life of individuals in a society. There is, however, little disagreement with the proposition advanced in HDRs that each individual would desire access to income and assets so as to have a decent standard of living, to be knowledgeable and lead a long and healthy life. The HDRs of UNDP have thus, brought to focus three areas of social concern, viz., *material well being*, *acquisition of knowledge*, and *long and healthy life*. Without denying that the individuals may aspire for many other contents of quality of life (such as individual freedom, pollution free environment), there seems to be a

consensus that these three attributes are among the essential constituents of well being. We have, therefore, confined our attention here to these three areas of social concern and made efforts to

- assemble data already available in these areas of social concern;
- assess reliability of such data;
- compute relevant indicators and present these in a systematic manner; and
- attempt some analysis to identify linkages that may exist among these indicators and other variables amenable to influence by appropriate policy measures.

Appropriate ways of combining all these partial indicators into a composite index suitable for spatial and temporal comparison are still being debated by scholars. While participating in this debate (Pal and Pant 1994), we have not made any attempt here to construct any composite index out of the human development profile prepared in the absence of any consensus solution of the issues involved.

Chapter 2

General Profile of Indian Population

INDIA is a union of 25 states and 7 union territories¹ presenting a picture of unity in diversity and heterogeneity. Occupying 2.4 per cent of total land area on earth in which 16 per cent of the world's population live, this country is the seventh largest in terms of area and second largest in terms of population in the world. There are regional diversities in terms of geographical area, population size and density among states, religious faith, languages spoken, ethnicity, climatic conditions and other social and economic characteristics. Within a state there is generally a four-tier structure of administration — division, district, taluka/tehsil/block and village. The district has been so far the most important unit of administration. At the time of the 1991 Census this country had 466 districts in all. The largest of the states, Uttar Pradesh, had 63 districts while states like Goa, Mizoram and Tripura had two or three districts only.

Growth of Indian Population

The Indian population has grown to 846 millions in 1991 from 361 millions in 1951 (Table 2.1). Despite a decline in the rate of growth in the last decade, Indian population is likely to cross the one billion mark by the turn of this century.

Differences in social, cultural and economic profiles of the states had a reflection in the differential rate of growth of population across states. States like Uttar Pradesh, Bihar, Madhya Pradesh, Andhra Pradesh, Orissa and West Bengal continue to have a relatively higher growth of population while Kerala, Tamil Nadu and Goa have shown substantial decline in growth rate of population in recent years (Table 2.2).

Historical trends indicate that males outnumber females in all the states except Kerala. At the time of the 1991 Census, for every thousand males there were 927 females in the country.

Population Density and Urbanisation

About one fourth of the Indian population live in urban areas. The percentage of the urban population varies from about 9 per cent in Himachal Pradesh and Sikkim

¹ Since then Delhi has become a state - National Capital Territory of Delhi.

to 46 per cent in Mizoram, followed by Goa (41%), Maharashtra (38%), and Tamil Nadu (34%). In some of the states population is very dense while some others are very sparsely populated. The Gangetic plains of West Bengal, Bihar and Uttar Pradesh, and the coastal states of Kerala and Tamil Nadu have high density of population. Some of the Union Territories like Delhi and Chandigarh have even higher density of population due to urbanisation. Hilly terrains and islands are sparsely populated. These include Arunachal Pradesh, Mizoram, Andaman & Nicobar Islands, Sikkim, Nagaland, Meghalaya, Manipur, Himachal Pradesh and Jammu & Kashmir. (Table 2.3). Many of these states have a high concentration of tribal population.

Scheduled Castes and Scheduled Tribes

The Scheduled Caste (SC) population numbering 138 millions in 1991 is widely distributed among the states and union territories (Table 2.4). The distribution is however, not uniform. The five states of Uttar Pradesh, West Bengal, Bihar, Tamil Nadu and Andhra Pradesh together account for about 57 per cent of the total SC population in the country. There has been an increase in the proportion of SC population during the last few decades, indicating a higher rate of growth in SC population compared to others.

In contrast, Scheduled Tribe (ST) population is clustered in some pockets characterised by rugged terrain and dense forest cover. STs numbering 67.8 millions in 1991 and forming about 8 per cent of the total population are concentrated in Madhya Pradesh, Maharashtra, Orissa, Gujarat and Bihar. More than 60 per cent of ST population in the country live in these 5 states. The north eastern states though having a high proportion of tribal population, account for only 12 per cent of the Scheduled Tribe in the country

Religious Communities

Hindus are the largest religious community in this country, accounting for more than 80 per cent of the population in 1981, followed by Muslims, about 11 per cent. (Table 2.6).¹

Sikhs constitute marginally less than 2 per cent of the population and are concentrated in Punjab (77.99%), Haryana (6.13%) and Delhi (3.01%).

More than half of the Muslim population live in the states of Uttar Pradesh (23.38%), West Bengal (15.55%), and Bihar (13.08%). Other states containing a sizeable population of Muslim are Maharashtra (7.69%), Kerala (7.16%), Andhra Pradesh (6.00%) followed by Karnataka and Jammu & Kashmir each having about 5 per cent of Muslim population in the country.

Buddhists constitute less than one per cent of the Indian population. More than four-fifth (83.60%) of them are in Maharashtra, another 3.31 per cent live in West Bengal.

¹ Data from 1991 Census are not yet available.

Languages Spoken

India is a pluri-cultural country; it is also pluri-lingual. People in different parts of the country speak different languages. Total number of languages spoken exceeds hundred. However, more than 95 per cent of the population speak one or the other language specified in schedule VIII of the Constitution of India. Distribution of the population according to the language spoken is shown in Table 2.8.

Table 2.1 : Growth of Indian Population

Year	('000)					Per cent urban
	Persons	Male	Female	Rural	Urban	
1901	238396	120911	117485	212545	25851	10.84
1911	252093 (5.75)	128385 (6.18)	123708 (5.30)	226152 (6.40)	25941 (0.35)	10.29
1921	251321 (-0.31)	128546 (0.13)	122775 (-0.75)	223235 (-1.29)	28086 (8.27)	11.18
1931	278977 (11.00)	142988 (11.23)	135989 (10.76)	245521 (9.98)	33456 (19.12)	11.99
1941	318661 (14.22)	163785 (14.54)	154876 (13.89)	274508 (11.81)	44153 (31.97)	13.86
1951	361088 (13.31)	185528 (13.28)	175560 (13.36)	298645 (8.79)	62443 (41.42)	17.29
1961	439235 (21.64)	226293 (21.97)	212942 (21.29)	360275 (20.64)	78960 (26.45)	17.98
1971	548160 (24.80)	284049 (25.52)	264111 (24.03)	439046 (21.86)	109114 (38.19)	19.91
1981	* 685185 (25.00)	354398 (24.77)	330787 (25.25)	525458 (19.68)	159727 (46.39)	23.31
1991	* 846302 (23.51)	439230 (23.94)	407072 (23.06)	628691 (19.65)	217611 (36.24)	25.71

* Includes the estimated population of Assam (1981) and Jammu & Kashmir (1991).

Note: Figures in parentheses are Decadal Variations.

Sources: (1) *A Handbook of Population Statistics, Census of India, New Delhi, 1988.*

(2) *Census of India, 1992, Series 1, Paper 1, Final Population Totals, 1993.*

Table 2.2 : Population Size and Growth in States and Union Territories

State/ Union Territory	Num- ber of Districts (1991)	Popul- ation in 1981 ('000)	Population in 1991('000)			Decadal Variation (Percent)		% of Female Popu- lation (1991)	Female Per '000 Males
			Persons	Males	Females	1971-81	1981-91		
INDIA	466	665289	846302	439230	407072	24.66	23.85	100.00	927
<i>States</i>									
Andhra Pradesh	23	53549	66508	33725	32783	23.10	24.20	7.86	972
Arunachal Pradesh	11	632	865	465	400	35.15	36.83	0.10	860
Assam	23	*	22414	11658	10756	23.36	24.24	2.65	923
Bihar	42	69915	86374	45202	41172	24.06	23.54	10.21	911
Goa	2	1087	1170	595	575	26.74	16.08	0.14	966
Gujarat	19	34086	41309	21355	19954	27.67	21.19	4.88	934
Haryana	16	12923	16463	8827	7636	28.75	27.41	1.95	865
Himachal Pradesh	12	4281	5171	2618	2553	23.71	20.79	0.61	975
Jammu & Kashmir	14	5987	7719	4014	3705	29.69	28.92	0.91	923
Karnataka	20	37136	44977	22952	22025	26.75	21.12	5.31	960
Kerala	14	25454	29098	14289	14809	19.24	14.32	3.44	1036
Madhya Pradesh	45	52179	66181	34267	31914	25.27	26.84	7.82	931
Maharashtra	30	62784	78937	40826	38111	24.54	25.73	9.33	933
Manipur	8	1421	1837	938	899	32.46	29.29	0.22	958
Meghalaya	5	1336	1775	908	867	32.04	32.86	0.21	955
Mizoram	3	494	690	359	331	48.55	39.70	0.08	922
Nagaland	7	775	1209	641	568	50.05	56.08	0.14	886
Orissa	13	26370	31660	16064	15596	20.17	20.06	3.74	971
Punjab	12	16789	20282	10778	9504	23.89	20.81	2.40	882
Rajasthan	27	34262	44006	23043	20963	32.97	28.44	5.20	910
Sikkim	4	316	406	216	190	50.77	28.47	0.05	880
Tamil Nadu	21	48408	55859	28299	27560	17.50	15.39	6.60	974
Tripura	3	2053	2757	1418	1339	31.92	34.30	0.33	944
Uttar Pradesh	63	110862	139112	74037	65075	25.49	25.48	16.44	879
West Bengal	17	54581	68078	35511	32567	23.17	24.73	8.04	917
<i>Union Territories</i>									
Andaman & Nicobar	2	189	280	154	126	63.93	48.70	0.03	818
Chandigarh	1	452	642	359	283	75.55	42.16	0.08	788
Dadra & Nagar Haveli	1	104	138	71	67	39.78	33.57	0.02	944
Daman & Diu	2	**	102	52	50	26.07	28.62	0.01	962
Delhi	1	6220	9420	5155	4265	53.00	51.45	1.15	827
Lakshadweep	1	40	52	27	25	26.53	28.47	0.01	926
Pondicherry	4	604	808	408	400	28.15	33.64	0.10	980

* Census not taken in 1981.

** Included in Goa.

Sources: (1) *Census of India, 1981, Series 1, Part XII, Census Atlas National Volume, New Delhi, 1988.*

(2) *Census of India, 1991, Series 1, Paper 2, Final Population Totals, New Delhi, 1993.*

Table 2.3 : Urbanisation and Density of Population in States & Union Territories

State/ Union Territory	Population in 1991 ('000)			Urban Population (Per cent)	Persons/Sq.Km	
	Total	Rural	Urban		1981	1991
INDIA	846301	628688	217613	25.71	216	273
<i>States</i>						
Andhra Pradesh	66508	48621	17887	26.89	195	242
Arunachal Pradesh	865	754	111	12.83	8	10
Assam	22414	19926	2488	11.10	230	286
Bihar	86374	75021	11353	13.14	402	497
Goa	1170	690	480	41.03	272	316
Gujarat	41309	27063	14246	34.49	174	211
Haryana	16464	12409	4055	24.63	292	372
Himachal Pradesh	5171	4722	449	8.68	77	93
Jammu & Kashmir	7718	5879	1839	23.83	59	76
Karnataka	44977	31069	13908	30.92	194	235
Kerala	29098	21418	7680	26.39	655	749
Madhya Pradesh	66181	50842	15339	23.18	118	149
Maharashtra	78937	48396	30541	38.69	204	257
Manipur	1837	1331	506	27.54	64	82
Meghalaya	1775	1445	330	18.59	61	79
Mizoram	690	372	318	46.09	23	33
Nagaland	1209	1001	208	17.20	47	73
Orissa	31660	27425	4235	13.38	169	203
Punjab	20282	14289	5993	29.55	333	403
Rajasthan	44006	33939	10067	22.88	100	129
Sikkim	406	369	37	9.11	45	57
Tamil Nadu	55859	36781	19078	34.15	372	429
Tripura	2757	2335	422	15.31	196	263
Uttar Pradesh	139112	111506	27606	19.84	377	473
West Bengal	68078	49370	18708	27.48	615	767
<i>Union Territories</i>						
Andaman & Nicobar	281	206	75	26.69	23	34
Chandigarh	642	66	576	89.72	3961	5632
Dadra & Nagar Haveli	138	126	12	8.70	211	282
Daman & Diu	102	54	48	47.06	705	907
Delhi	9421	949	8472	89.93	4194	6352
Lakshadweep	52	23	29	55.77	1258	1616
Pondicherry	808	291	517	63.99	1229	1642

Note: Population density has been computed from comparable data. In computing population density of India, Jammu & Kashmir has been excluded for non-availability of comparable data on area and population.

Sources: (1) *Census of India, 1981*, Series 1, Part XII, Census Atlas, (National Volume), New Delhi, 1988.
(2) *Census of India, 1991*, Series 1, Paper 1 of 1992, Vol. II, Final Population Totals.

Table 2.4 : Regional Distribution of Scheduled Caste Population

State/ Union Territory	Scheduled Caste (SC) Population in 1991 ('000)	Per Cent of SC Population to Total Population		Distribution Per 100 Members of SC Among States/Union Territories	
		1981	1991	1981	1991
INDIA*	138223	15.81	16.48	100.00	100.00
<i>States</i>					
Andhra Pradesh	10592	14.87	15.93	7.04	7.66
Arunachal Pradesh	4	0.46	0.47	Neg	Neg
Assam	1659	**	7.40	**	1.20
Bihar	12572	14.51	14.55	9.73	9.10
Goa	24	2.08	2.08	0.02	0.02
Gujarat	3060	7.15	7.41	2.34	2.21
Haryana	3251	19.07	19.75	2.36	2.35
Himachal Pradesh	1310	24.62	25.34	1.01	0.95
Jammu & Kashmir	**	8.31	**	**	**
Karnataka	7369	15.07	16.38	5.37	5.33
Kerala	2887	10.01	9.92	2.44	2.09
Madhya Pradesh	9627	14.10	14.55	7.06	6.96
Maharashtra	8758	7.14	11.09	4.30	6.34
Manipur	37	1.25	2.02	0.02	0.03
Meghalaya	9	0.41	0.51	Neg	0.01
Mizoram	1	0.03	0.10	Neg	0.01
Nagaland	**	**	**	**	**
Orissa	5129	14.66	16.20	3.71	3.71
Punjab	5743	26.87	28.31	4.33	4.15
Rajasthan	7608	17.04	17.29	5.60	5.50
Sikkim	24	5.78	5.93	0.02	0.02
Tamil Nadu	10712	18.35	19.18	8.52	7.75
Tripura	451	15.12	16.36	0.30	0.33
Uttar Pradesh	29276	21.16	21.05	22.49	21.18
West Bengal	16081	21.99	23.62	11.51	11.63
<i>Union Territories</i>					
Andaman & Nicobar	**	**		**	**
Chandigarh	106	14.09	16.51	0.06	0.08
Dadra & Nagar Haveli	3	1.97	1.97	Neg	Neg
Daman & Diu	4	3.56	3.83	Neg	Neg
Delhi	1795	18.03	19.05	1.08	1.30
Lakshadweep	**	**	**	**	**
Pondicherry	131	15.99	16.25	0.09	0.09

* Excluding Jammu & Kashmir.

** Not available

Neg = Negligible

Source: Census of India 1991, Series 1, Paper 2 of 1992, Final Population Totals, New Delhi, 1993.

Table 2.5 : Regional Distribution of Scheduled Tribe Population

State/ Union Territory	Scheduled Tribe (ST) Population in 1991 ('000)	Per Cent of ST Population to Total Population		Distribution Per 100 Members of ST Among States/Union Territories	
		1981	1991	1981	1991
INDIA*	67758	7.83	8.08	100.00	100.00
<i>States</i>					
Andhra Pradesh	4199	5.93	6.31	6.15	6.20
Arunachal Pradesh	550	69.82	63.66	0.85	0.81
Assam	2874	**	12.82	**	4.24
Bihar	6617	8.31	7.66	11.26	9.77
Goa	neg	0.07	0.03		
Gujarat	6162	14.23	14.92	9.39	9.09
Haryana	**	**	**	**	**
Himachal Pradesh	218	4.61	4.22	0.38	0.32
Jammu & Kashmir	**	**	**	**	**
Karnataka	1916	4.91	4.26	3.54	2.83
Kerala	321	1.03	1.10	0.51	0.47
Madhya Pradesh	15399	22.97	23.27	23.22	22.73
Maharashtra	7318	9.19	9.27	11.18	10.80
Manipur	632	27.30	34.41	0.75	0.93
Meghalaya	1518	80.58	85.53	2.09	2.24
Mizoram	654	93.55	94.75	0.89	0.06
Nagaland	1061	83.99	87.70	1.26	1.57
Orissa	7032	22.43	22.21	11.46	10.38
Punjab	**	**	**	**	**
Rajasthan	5475	12.21	12.44	8.10	8.08
Sikkim	91	23.27	22.36	0.14	0.13
Tamil Nadu	574	1.07	1.03	1.01	0.85
Tripura	853	28.44	30.95	1.13	1.26
Uttar Pradesh	288	0.21	0.21	0.45	0.42
West Bengal	3809	5.62	5.59	5.95	5.62
<i>Union Territories</i>					
Andaman & Nicobar	27	11.85	9.54	0.04	0.04
Chandigarh	**	**	**	**	**
Dadra & Nagar Haveli	109	78.82	78.99	0.16	0.16
Daman & Diu	12	12.70	11.54	0.02	0.02
Delhi	**	**	**	**	**
Lakshadweep	48	93.82	93.15	0.07	0.07
Pondicherry	**	**	**	**	**

* Excluding Jammu & Kashmir.

** Not available

Neg = Negligible

Source: Census of India, 1991. Series 1, Paper 2 of 1992. Final Population Totals. New Delhi, 1993.

Table 2.6 : Major Religious Communities in India in 1981*

Religious Community	Population in 1981 ('000)					Decadal Variation (1971-81) (Per cent)	Females Per '000 Males
	Persons	Males	Females	Rural	Urban		
Hindus	549779 (82.64)	284392 (82.69)	265387 (82.58)	429116 (84.54)	120663 (76.52)	24.15	933
Muslims	75512 (11.35)	38990 (11.34)	36522 (11.36)	49834 (9.82)	25678 (16.28)	30.59	937
Christians	16165 (2.43)	8114 (2.36)	8052 (2.51)	11451 (2.26)	4714 (2.99)	16.77	992
Sikhs	13078 (1.97)	6958 (2.02)	6120 (1.90)	10245 (2.02)	2833 (1.80)	26.15	880
Buddhists	4719 (0.71)	2417 (0.70)	2303 (0.72)	3210 (0.63)	1509 (0.96)	22.52	953
Jains	3206 (0.48)	1651 (0.48)	1555 (0.48)	1155 (0.23)	2051 (1.30)	23.69	941
Others	2828 (0.43)	1408 (0.41)	1418 (0.44)	2596 (0.51)	232 (0.15)	-	-
ALL COM-MUNITIES	665287 (100.00)	343930 (100.00)	321357 (100.00)	507607 (100.00)	157680 (100.00)	24.69	934

* Data from 1991 Census are not yet available.

Note: Figures in parentheses are percentages to total.

Source: Census of India, 1981, Series 1, India, Paper 3 of 1984, Household Population by Religion of Head of Household.

Table 2.7 : Regional Distribution of Population in Major Religious Communities, 1981

State/ Union Territory	Population in 1981 ('000)							
	Total	Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Others
INDIA**	665287 (100.00)	549779 (100.00)	75512 (100.00)	16165 (100.00)	13078 (100.00)	4720 (100.00)	3206 (100.00)	2827 (100.00)
Andhra Pradesh	53550 (8.05)	47526 (8.64)	4534 (6.00)	1433 (8.86)	16 (0.12)	13 (0.28)	19 (0.59)	9 (0.32)
Arunachal Pradesh	632 (0.09)	185 (0.03)	5 (0.01)	27 (0.17)	1 (0.01)	86 (1.82)	* (0.00)	328 (11.60)
Assam	Data not available – Census not done in 1981							
Bihar	69915 (10.51)	58011 (10.55)	9875 (13.08)	740 (4.58)	78 (0.60)	3 (0.06)	28 (0.87)	1180 (41.74)
Goa	1087 (0.16)	716 (0.13)	48 (0.06)	318 (1.97)	1 (0.01)	* (0.00)	1 (0.03)	3 (0.11)
Gujarat	34086 (5.12)	30519 (5.55)	2907 (3.85)	133 (0.82)	22 (0.17)	8 (0.17)	468 (14.60)	29 (1.03)
Haryana	12923 (1.94)	11548 (2.10)	523 (0.69)	12 (0.07)	802 (6.13)	1 (0.02)	35 (1.09)	2 (0.07)
Himachal Pradesh	4281 (0.64)	4100 (0.75)	70 (0.09)	4 (0.02)	52 (0.40)	53 (1.12)	1 (0.03)	1 (0.04)
Jammu & Kashmir	5987 (0.90)	1930 (0.35)	3843 (5.09)	8 (0.05)	134 (1.02)	70 (1.48)	2 (0.06)	0 (0.00)
Karnataka	37136 (5.58)	31907 (5.80)	4105 (5.44)	764 (4.73)	6 (0.05)	42 (0.89)	298 (9.30)	14 (0.50)
Kerala	25454 (3.83)	14801 (2.69)	5410 (7.16)	5234 (32.38)	1 (0.01)	* (0.00)	4 (0.12)	4 (0.14)
Madhya Pradesh	52179 (7.84)	48504 (8.82)	2501 (3.31)	352 (2.18)	143 (1.09)	75 (1.59)	445 (13.88)	159 (5.62)
Maharashtra	62784 (9.44)	51109 (9.30)	5805 (7.69)	795 (4.92)	107 (0.82)	3946 (83.60)	939 (29.29)	83 (2.94)
Manipur	1421 (0.21)	853 (0.16)	99 (0.13)	422 (2.61)	1 (0.01)	* (0.00)	1 (0.03)	45 (1.59)
Meghalaya	1336 (0.20)	240 (0.04)	41 (0.05)	703 (4.35)	1 (0.01)	3 (0.06)	1 (0.03)	347 (12.27)
Mizoram	494 (0.07)	35 (0.01)	2 (0.00)	414 (2.56)	* (0.00)	40 (0.85)	* (0.00)	3 (0.11)
Nagaland	775 (0.12)	111 (0.02)	12 (0.02)	622 (3.85)	1 (0.01)	* (0.00)	1 (0.03)	28 (0.99)
Orissa	26370 (3.96)	25162 (4.58)	422 (0.56)	480 (2.97)	14 (0.11)	8 (0.17)	7 (0.22)	277 (9.80)
Punjab	16789 (2.52)	6200 (1.13)	168 (0.22)	185 (1.14)	10199 (77.99)	1 (0.02)	27 (0.84)	9 (0.32)

(Contd.)

Table 2.7 : (Contd.)

State/ Union Territory	Population in 1981 ('000)							
	Total	Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Others
Rajasthan	34262 (5.15)	30604 (5.57)	2492 (3.30)	40 (0.25)	493 (3.77)	4 (0.08)	624 (19.46)	5 (0.18)
Sikkim	316 (0.05)	213 (0.04)	3 (0.00)	7 (0.04)	* (0.00)	91 (1.93)	* (0.00)	2 (0.07)
Tamil Nadu	48408 (7.28)	43016 (7.82)	2520 (3.34)	2798 (17.31)	4 (0.03)	1 (0.02)	50 (1.56)	19 (0.67)
Tripura	2053 (0.31)	1834 (0.33)	139 (0.18)	25 (0.15)	* (0.00)	55 (1.17)	* (0.00)	0 (0.00)
Uttar Pradesh	110862 (16.66)	92366 (16.80)	17658 (23.38)	162 (1.00)	459 (3.51)	55 (1.17)	142 (4.43)	20 (0.71)
West Bengal	54580 (8.20)	42007 (7.64)	11743 (15.55)	320 (1.98)	49 (0.37)	156 (3.31)	39 (1.22)	266 (9.41)
<i>Union Territories</i>								
Andaman & Nicobar	189 (0.03)	122 (0.02)	16 (0.02)	48 (0.30)	1 (0.01)	* (0.00)	* (0.00)	2 (0.07)
Chandigarh	452 (0.07)	340 (0.06)	9 (0.01)	4 (0.02)	95 (0.73)	* (0.00)	2 (0.06)	2 (0.07)
Dadra & Nagar Haveli	104 (0.02)	99 (0.02)	2 (0.00)	2 (0.01)	* (0.00)	* (0.00)	* (0.00)	1 (0.04)
Daman & Diu	Included in Goa							
Delhi	6220 (0.93)	5200 (0.95)	482 (0.64)	62 (0.38)	394 (3.01)	7 (0.15)	74 (2.31)	1 (0.04)
Lakshadweep	40 (0.01)	2 (0.00)	38 (0.05)	* (0.00)	* (0.00)	* (0.00)	* (0.00)	0 (0.00)
Pondicherry	604 (0.09)	517 (0.09)	37 (0.05)	50 (0.31)	* (0.00)	* (0.00)	* (0.00)	0 (0.00)

* Negligible

** Excluding Assam where census could be taken in 1981.

Note: Figures in parentheses are percentages to total population of that community.*Source:* Census of India, 1981, Series 1, India, Paper 3 of 1984, Household Population by Religion of Head of Household.

Table 2.8 : Distribution of Speakers of Schedule VIII Languages, 1981

<i>Language Spoken</i>	<i>Number of Speakers ('000)</i>	<i>Per Cent to Total Population</i>
Hindi	264514	42.88
Bengali	51298	8.32
Telugu	50625	8.21
Marathi	49453	8.02
Urdu	34941	5.66
Gujarati	33063	5.36
Malayalam	25701	4.17
Kannada	25697	4.16
Oriya	23022	3.73
Punjabi	19611	3.18
Tamil	3803	0.62
Kashmiri	3177	0.51
Sindhi	2044	0.33
Assamese	80	0.01
Sanskrit	6	Neg.
TOTAL	587035	95.16

Neg. = Negligible

Note: This statement excludes Assam (no census could be taken in 1981) and Tamil Nadu (the entire records of Tamil Nadu under 'P' sample project have been lost due to flood).

Chapter 3

Material Well Being

MATERIAL well being of an individual, conceptualised in a broad sense, should be measured in terms of his command over resources. It should take account of all possessions such as, land, house, gold and jewellery, cars, money in the bank, bonds and shares, bullocks, tractors, pump sets and every other thing the person has. To aggregate these disparate possessions into a single value in money terms for comparison is not free from problems. Such aggregation, in practice, is done using the ruling market prices (where such markets exist). Whether the current market prices appropriately reflect the relative economic power inherent in these various assets is a subject of debate. Moreover, there are other less tangible assets which, perhaps, have a bearing on such notional measures of command over resources but are omitted in any conventional valuation procedures. One example of this is the prerogative of higher income prospects to those possessing higher training and skills. Like other income yielding assets such as, bonds and shares, these future income rights should also be included in calculation of one's wealth. To do this we need an aggregate of these earnings over one's life span. Such an aggregate *life time income* together with other forms of wealth would, possibly indicate in a comprehensive way the command over resources. This would yield a near ideal indicator of material well being which one would seek and be happy with. Summation of *actual* income receipts over one's life span cannot be performed before the income recipient dies. And this limits its operational usefulness. Therefore, such a summation has to be done over anticipated future incomes. In view of the practical difficulties in forecasting these income prospects and of placing on them a proper valuation that makes appropriate allowance for their uncertainty, it is often expedient to turn to the current income and current asset holdings, the latter representing the past and inherited incomes. This will have the advantages of relatively easy observation and measurement through surveys of earners or households.

The basic concepts of *income* and *income receiving units* are of course important for interpretation of any measured indicator of material well being. Income enables one to sustain a flow of consumption and thereby enjoy a standard of living. *Income is that which can be spent while maintaining intact the value of wealth.* This apparently simple definition does underline the importance of keeping the wealth intact while measuring income – the house kept in good repair, savings not allowed

to dwindle (in real terms) and so on if one's well being is to be assessed in terms of one's income flow. Depreciation and appreciation of capital assets, both physical and financial, should be a part of income flow. In our present context income is taken as a proxy to material well being. The reasoning is on the line – "Well being depends on consumption possibilities and these in turn on income." As individual well being is also influenced by free services received such as subsidised public health and education, any measure of income should include imputed value of such consumption as well. In practice these are hard to adhere to when a statistician goes about actual measurement.

Estimates of income obtained from data collected through sample surveys are, of course, subject to sampling and non-sampling errors. Sampling errors can be minimised and estimated when the survey is scientifically designed and conducted by expert statisticians. Non-sampling errors can be controlled by various techniques. Fortunately, some of the developing countries, including India, have enough expertise to collect such data through sample surveys of households. Such data are quite comprehensive with errors well within the tolerable limits and can be analysed to draw meaningful conclusions.

Data on income are, however, not collected regularly by any agency in India. The National Council of Applied Economic Research (NCAER) collected data on household income in some of its household surveys undertaken occasionally – the latest pertaining to the year 1980-81. The National Sample Survey Organisation (NSS) in its various *rounds* collects data on consumer expenditures on a regular basis. These are available separately for population groups resident in rural and urban areas in states and union territories in grouped form – persons per thousand and mean expenditures for various per capita expenditure classes. In the absence of data on income for any recent year, pending collection of such data through a sample survey, it may be prudent to use NSS data on consumer expenditure for assessment of material well being of various population groups in the country. Such an attempt has been made here utilising the data pertaining to the year 1987-88, collected by NSS in its 42nd round. One opinion is that consumer expenditure gives a better representation of well being since consumption is believed to be influenced by past as well as prospects of income in the foreseeable future. Seen from this angle use of consumption data would be more appropriate.

Data on consumer durables and various productive assets held by households would also measure another aspect of material well being. Several country-wide sample surveys conducted by NCAER have produced data on consumer durables and made assessment of stock and current purchase of consumer durables held by households. These data can be analysed to assess the relative positions of various population subgroups. However, no such comprehensive data set exists for productive assets at the household level. Such data have to be collected through nation-wide sample surveys of households.

Level and Distribution of Consumer Expenditure

Utilising the data obtained from NSS consumer expenditure survey pertaining to the year 1987-88, the states and the union territories in the country have been ranked according to per capita monthly consumer expenditure in rural areas. It is revealed that people living in rural areas of Dadra & Nagar Haveli, Orissa, Bihar, Madhya Pradesh, Uttar Pradesh and Karnataka appear at the lower end of the ranking, in that order. On the other end appears Delhi with highest per capita monthly expenditure of Rs.372.31, followed by Chandigarh, Andaman & Nicobar Islands, Lakshadweep, Mizoram, Punjab, Haryana, Kerala, Himachal Pradesh and Jammu & Kashmir in that order. Per capita expenditure in rural areas of various states and union territories and their rankings are shown in Table 3.1.

As already discussed, average expenditure gives only a partial picture of material well being. A measure of material well being should take note of its distribution as well.

Various measures of income inequality have been proposed in the literature and used in empirical analysis. Popular among these are Gini Coefficient, Coefficient of Variation, the pair of measures advanced by Theil, and Variance of Income Power. As is well known, these measures differ in the set of value judgments contained in these (Kondor 1975, Chakrabarty 1993). Choosing one inequality measure would then mean accepting the whole set of value judgments implied by it. Another set of value judgments enters at the stage of combining the mean income and the chosen measure of inequality to get a measure of (material) welfare. In the absence of any consensus, we have used Gini Coefficient and Sen's Welfare Index for assessing levels of material well being. These measures are simple to comprehend and widely popular in empirical applications. Sen's Welfare Index has also been suggested in the revised Human Development Report, 1992.

A few other measures of inequality and index of welfare based on these have also been computed and presented here. Ranking by different measures of inequality differs in many cases from that by the Gini Coefficient. This is partly because of the differences in the value judgments implied by these measures and partly because the underlying Lorenz Curves intersect in some cases.

The states and union territories have also been ranked according to the Gini Coefficient, in Table 3.1.

Distribution of consumer expenditure, according to this ranking, appears to be more egalitarian in Mizoram, Delhi and Tripura while Lakshadweep, Pondicherry, Chandigarh, Maharashtra, Kerala and Tamil Nadu appear on the other end of the scale with high inequality, in that order.

We have ranked the states according to per capita expenditure adjusted for inequality measured by Gini Coefficient (Sen's Welfare Index) in Table 3.3.

$$W = \mu (1 - G)$$

where μ is mean expenditure per capita and G is the Gini Coefficient.

According to this ranking Delhi tops the list with the highest level of material well being of around 300, while Dadra & Nagar Haveli stands at the bottom with a value 87.95. Regions ranking high in material well being, as measured here, include Delhi, Mizoram, Andaman & Nicobar Islands, Chandigarh, Punjab, Lakshadweep, Manipur, Haryana and Himachal Pradesh in that order, while Dadra & Nagar Haveli, Orissa, Bihar, Madhya Pradesh, Pondicherry, Tamil Nadu, Karnataka, Uttar Pradesh and Maharashtra all appear at the lower end with values lower than that for the country as a whole (110.44).

Results of a similar exercise pursued for urban areas of various states and union territories are presented in Tables 3.2 and 3.4.

Rankings of rural and urban areas of states and union territories according to Mean Expenditure, Gini Coefficient and Sen's Welfare Index are summarised in Table 3.5. A look at this table would indicate that:

- per capita consumption is invariably lower in rural areas of a state compared to that in urban areas. The difference is partly due to difference in prices. Also in rural areas some of the items of consumption are collected freely by the consuming households. In the process of collecting data such items are often missed, thus making the recorded expenditure lower than the actual.
- distribution of consumer expenditure is in general more egalitarian in rural areas compared to its urban counterpart in the state. Exceptions to this are observed in Jammu and Kashmir, Punjab, Arunachal Pradesh, Lakshadweep, and Pondicherry – the difference, however, is not much. This may be due to more or less similar occupations followed by rural people whereas in urban areas there are diverse occupation groups widely different in their level of earnings.
- some states have relatively low ranking in terms of welfare in both rural and urban areas. These include Andhra Pradesh (10,3), Bihar (3,1), Karnataka (7,5), Madhya Pradesh (4,8), Orissa (2,6), Tamil Nadu (6,10), Uttar Pradesh (8,4) and Pondicherry (5,2) – figures in parentheses being ranks in rural and urban areas respectively. Another group of states have high ranks in both the areas. These are Haryana (23,16), Himachal Pradesh (22,25), Meghalaya (16,24), Punjab (26,19), Tripura (21,21), Andaman & Nicobar Islands (28,28), Chandigarh (27,29), Delhi (30,27), Lakshadweep (25,22) and Mizoram (29,22).

Data on consumer expenditure are not available for finer levels of disaggregation beyond rural and urban areas of states and union territories. Assessment of levels of material well being of population subgroups like Scheduled Castes, Scheduled

Tribes, and Religious Communities, to get a comparative picture, can be done only after such data are available from the sample survey being conducted by NCAER in connection with the study *Human Development Profile of India*.

Material well being is one aspect of human development. The above analysis indicates the relative position of states and union territories in the ladder of material well being partially measured by current consumption. A fuller picture can be drawn only after the relevant data on asset holding, both productive and consumer durables, become available from the ongoing sample survey of households. In the mean time we analyse the data available on other areas of social concern – acquisition of knowledge and long and healthy life.

Table 3.1 : Variation in Per Capita Monthly Expenditure and Measures of Inequality in Rural Areas of States and Union Territories, 1987-88

State/ Union Territory (Rural Areas)	2	3	4	5	6	7	8
	Mean Exp. (Rs. month)	Gini Coeff.	CH Measure*	Sqr.d. Coeff. of Variation	Theil's Entropy Measure	Theil's Second Measure	Var. of Income Power
Andhra Pradesh	160.00 (12)	0.301 (22)	0.312 (22)	0.432 (23)	0.165 (22)	0.148 (22)	0.262 (22)
Assam	153.58 (8)	0.222 (5)	0.167 (4)	0.210 (4)	0.087 (4)	0.080 (4)	0.147 (3)
Bihar	136.50 (3)	0.264 (12)	0.250 (15)	0.370 (19)	0.134 (16)	0.116 (12)	0.201 (11)
Gujarat	161.21 (13)	0.233 (7)	0.185 (6)	0.233 (6)	0.096 (6)	0.089 (6)	0.164 (6)
Haryana	214.81 (24)	0.281 (18)	0.268 (18)	0.332 (14)	0.138 (17)	0.130 (18)	0.241 (18)
Himachal Pradesh	209.55 (22)	0.271 (14)	0.252 (16)	0.317 (11)	0.131 (15)	0.121 (15)	0.223 (14)
Jammu & Kashmir	204.22 (21)	0.322 (24)	0.382 (26)	0.611 (28)	0.209 (27)	0.173 (26)	0.279 (24)
Karnataka	149.19 (6)	0.292 (19)	0.300 (21)	0.430 (22)	0.159 (21)	0.141 (20)	0.253 (20)
Kerala	211.20 (23)	0.323 (26)	0.358 (24)	0.477 (24)	0.187 (24)	0.171 (25)	0.305 (27)
Madhya Pradesh	142.52 (4)	0.293 (20)	0.298 (20)	0.421 (21)	0.158 (20)	0.140 (19)	0.247 (19)
Maharashtra	159.44 (11)	0.326 (27)	0.408 (28)	0.760 (30)	0.229 (29)	0.179 (27)	0.278 (23)
Manipur	190.74 (18)	0.175 (2)	0.106 (2)	0.128 (3)	0.055 (2)	0.051 (2)	0.097 (2)
Meghalaya	174.39 (15)	0.259 (11)	0.227 (9)	0.267 (7)	0.115 (8)	0.112 (11)	0.220 (13)
Orissa	127.54 (2)	0.267 (13)	0.246 (12)	0.341 (16)	0.130 (14)	0.116 (13)	0.209 (12)
Punjab	244.28 (25)	0.295 (21)	0.292 (19)	0.358 (17)	0.151 (19)	0.141 (21)	0.261 (21)
Rajasthan	179.65 (16)	0.303 (23)	0.324 (23)	0.413 (20)	0.165 (23)	0.158 (23)	0.306 (28)
Sikkim	169.96 (14)	0.255 (10)	0.235 (11)	0.326 (13)	0.126 (12)	0.110 (10)	0.190 (10)
Tamil Nadu	154.43 (9)	0.323 (25)	0.360 (25)	0.518 (26)	0.191 (25)	0.169 (24)	0.298 (25)

(Contd.)

Table 3.1 (Contd.)

1	2	3	4	5	6	7	8
Tripura	194.05 (19)	0.222 (4)	0.174 (5)	0.230 (5)	0.092 (5)	0.082 (5)	0.148 (5)
Uttar Pradesh	148.59 (5)	0.279 (17)	0.267 (17)	0.364 (18)	0.141 (18)	0.126 (17)	0.227 (15)
West Bengal	150.19 (7)	0.252 (9)	0.227 (10)	0.324 (12)	0.121 (10)	0.106 (9)	0.189 (9)
<i>Union Territories</i>							
Andaman & Nicobar	272.55 (28)	0.272 (15)	0.247 (14)	0.288 (10)	0.126 (13)	0.121 (14)	0.227 (16)
Arunachal Pradesh	203.79 (20)	0.272 (16)	0.247 (13)	0.285 (9)	0.125 (11)	0.121 (16)	0.232 (17)
Chandigarh	275.57 (29)	0.333 (28)	0.385 (27)	0.486 (25)	0.201 (26)	0.184 (28)	0.318 (29)
Daadra & Nagar Haveli	114.41 (1)	0.231 (6)	0.208 (8)	0.341 (15)	0.116 (9)	0.092 (7)	0.147 (4)
Delhi	372.31 (30)	0.192 (3)	0.145 (3)	0.124 (2)	0.067 (3)	0.077 (3)	0.175 (8)
Goa, Daman & Diu	183.77 (17)	0.245 (8)	0.206 (7)	0.270 (8)	0.108 (7)	0.097 (8)	0.174 (7)
Lakshadweep	262.86 (27)	0.351 (30)	0.431 (29)	0.596 (27)	0.228 (28)	0.203 (30)	0.346 (30)
Mizoram	246.04 (26)	0.158 (1)	0.091 (1)	0.098 (1)	0.046 (1)	0.046 (1)	0.091 (1)
Pondicherry	156.16 (10)	0.341 (29)	0.439 (30)	0.754 (29)	0.244 (30)	0.195 (29)	0.302 (26)
ALL INDIA (Rural)	155.75	0.291	0.302	0.444	0.162	0.14	0.246

* The measure is a multiple of the covariance between income and its logarithm. Value judgments implied by this measure are discussed in Chakrabarty, 1993.

Note: Figures in parentheses are ranks.

Source: Estimated from NSS data.

Table 3.2 : Variation in Per Capita Monthly Expenditure and Measures of Inequality in Urban Areas of States and Union Territories, 1987-88

State/ Union Territory (Urban Areas)	1	2	3	4	5	6	7	8
		Mean Exp. (Rs./month)	Gini Coeff.	CH Measure*	Sqrd. Coeff. of Variation	Theil's Entropy Measure	Theil's Second Measure	Var. of Income Power
States								
Andhra Pradesh		227.63 (7)	0.364 (27)	0.485 (27)	0.855 (28)	0.267 (27)	0.218 (27)	0.353 (25)
Assam		269.64 (17)	0.337 (21)	0.471 (26)	1.130 (29)	0.275 (28)	0.196 (21)	0.279 (15)
Bihar		186.32 (1)	0.297 (11)	0.321 (14)	0.531 (18)	0.176 (15)	0.146 (12)	0.242 (8)
Gujarat		240.32 (10)	0.285 (7)	0.280 (6)	0.387 (11)	0.147 (7)	0.132 (6)	0.238 (6)
Haryana		255.31 (14)	0.297 (12)	0.303 (11)	0.414 (13)	0.159 (12)	0.144 (11)	0.259 (10)
Himachal Pradesh		345.78 (26)	0.296 (10)	0.289 (10)	0.355 (7)	0.149 (9)	0.141 (10)	0.262 (11)
Jammu & Kashmir		270.79 (18)	0.282 (6)	0.264 (5)	0.331 (5)	0.136 (5)	0.127 (5)	0.237 (5)
Karnataka		221.26 (5)	0.336 (20)	0.402 (20)	0.661 (24)	0.217 (21)	0.186 (20)	0.321 (22)
Kerala		266.20 (15)	0.387 (28)	0.509 (28)	0.710 (25)	0.266 (26)	0.243 (28)	0.430 (28)
Madhya Pradesh		235.99 (8)	0.331 (19)	0.370 (19)	0.506 (16)	0.194 (18)	0.177 (19)	0.318 (21)
Maharashtra		279.88 (22)	0.352 (25)	0.422 (22)	0.572 (20)	0.218 (22)	0.204 (26)	0.378 (27)
Manipur		200.35 (2)	0.165 (2)	0.091 (1)	0.108 (1)	0.047 (1)	0.044 (1)	0.084 (1)
Meghalaya		334.25 (25)	0.286 (8)	0.282 (7)	0.371 (9)	0.148 (8)	0.134 (7)	0.241 (7)
Orissa		224.53 (6)	0.323 (17)	0.354 (16)	0.485 (15)	0.185 (16)	0.169 (17)	0.307 (18)
Punjab		267.44 (16)	0.275 (5)	0.251 (4)	0.307 (4)	0.129 (4)	0.122 (4)	0.229 (4)
Rajasthan		238.01 (9)	0.346 (22)	0.448 (25)	0.827 (27)	0.249 (25)	0.199 (23)	0.316 (20)
Sikkim		277.45 (21)	0.310 (14)	0.319 (13)	0.381 (10)	0.162 (13)	0.157 (14)	0.303 (17)
Tamil Nadu		249.34 (13)	0.350 (23)	0.427 (24)	0.641 (22)	0.227 (24)	0.200 (24)	0.349 (23)

(Contd.)

Table 3.2 (Contd.)

1	2	3	4	5	6	7	8
Tripura	271.18 (19)	0.261 (4)	0.224 (3)	0.240 (3)	0.111 (3)	0.113 (3)	0.229 (3)
Uttar Pradesh	217.07 (4)	0.329 (18)	0.367 (17)	0.517 (17)	0.193 (17)	0.174 (18)	0.311 (19)
West Bengal	248.33 (12)	0.352 (26)	0.426 (23)	0.622 (21)	0.226 (23)	0.200 (25)	0.350 (24)
Andaman & Nicobar	419.32 (27)	0.310 (15)	0.333 (15)	0.428 (14)	0.173 (14)	0.160 (15)	0.291 (16)
Arunachal Pradesh	240.56 (11)	0.301 (13)	0.304 (12)	0.389 (12)	0.157 (11)	0.147 (13)	0.271 (13)
<i>Union Territories</i>							
Chandigarh	437.19 (28)	0.290 (9)	0.284 (8)	0.336 (6)	0.144 (6)	0.140 (9)	0.268 (12)
Delhi	485.63 (29)	0.412 (29)	0.592 (29)	0.794 (26)	0.307 (29)	0.285 (29)	0.501 (29)
Goa, Daman & Diu	329.07 (24)	0.350 (24)	0.409 (21)	0.535 (19)	0.212 (20)	0.197 (22)	0.357 (26)
Lakshadweep	276.58 (20)	0.229 (3)	0.287 (9)	0.364 (8)	0.149 (10)	0.139 (8)	0.253 (9)
Mizoram	324.13 (23)	0.164 (1)	0.101 (2)	0.128 (2)	0.054 (2)	0.048 (2)	0.084 (2)
Pondicherry	210.51 (3)	0.317 (16)	0.370 (18)	0.655 (23)	0.203 (19)	0.167 (16)	0.279 (14)
ALL INDIA (Urban)	249.93	0.352	0.433	0.657	0.230	0.202	0.351

* The measure is a multiple of the covariance between income and its logarithm. Value judgments implied by this measure are discussed in Chakrabarty, 1993.

Note: Figures in parentheses are ranks.

Source: Estimated from NSS data.

Table 3.3 : Measures of Material Welfare for Rural Areas of States and Union Territories, 1987-88

<i>State/ Union Territory (Rural Areas)</i>	<i>Measure of Welfare Based On*</i>			
	<i>Gini Coeff. (Sen's Index)</i>	<i>CH Measure</i>	<i>Sqrd. Coeff. of Variation</i>	<i>Theil's Entropy Measure</i>
<i>States</i>				
Andhra Pradesh	111.79 (10)	110.02 (10)	90.88 (10)	133.63 (11)
Assam	119.49 (12)	127.88 (14)	121.30 (17)	140.17 (12)
Bihar	100.49 (3)	102.36 (7)	85.99 (9)	118.17 (4)
Gujarat	123.60 (13)	131.36 (16)	123.58 (18)	145.67 (13)
Haryana	154.52 (23)	157.30 (23)	143.41 (23)	185.13 (24)
Himachal Pradesh	152.73 (22)	156.85 (22)	143.09 (22)	182.18 (23)
Jammu & Kashmir	138.49 (17)	126.14 (13)	79.47 (5)	161.45 (17)
Karnataka	105.63 (7)	104.44 (8)	85.06 (8)	125.52 (8)
Kerala	142.99 (19)	135.58 (18)	110.48 (15)	171.61 (19)
Madhya Pradesh	100.79 (4)	100.10 (6)	82.59 (6)	120.03 (5)
Maharashtra	107.49 (9)	94.32 (3)	38.19 (1)	122.90 (6)
Manipur	157.39 (24)	170.53 (26)	166.35 (27)	180.30 (22)
Meghalaya	129.27 (16)	134.85 (17)	127.90 (19)	154.39 (16)
Orissa	93.48 (2)	96.12 (4)	84.06 (7)	110.96 (2)
Punjab	172.22 (26)	172.90 (27)	156.85 (26)	207.46 (26)
Rajasthan	125.18 (14)	121.49 (12)	105.45 (13)	149.93 (15)
Sikkim	126.67 (15)	129.96 (15)	114.50 (16)	148.60 (14)
Tamil Nadu	104.62 (6)	98.89 (5)	74.38 (3)	125.00 (7)
Tripura	151.00 (21)	160.22 (24)	149.41 (25)	176.19 (20)
Uttar Pradesh	107.10 (8)	108.93 (9)	94.43 (11)	127.71 (9)
West Bengal	112.40 (11)	116.14 (11)	101.59 (12)	132.08 (10)
<i>Union Territories</i>				
Andaman & Nicobar	198.45 (28)	205.20 (28)	193.97 (28)	238.12 (29)
Arunachal Pradesh	148.26 (20)	153.54 (21)	145.76 (24)	178.26 (21)
Chandigarh	183.85 (27)	169.48 (25)	141.60 (21)	220.10 (27)
Dadra & Nagar Haveli	87.95 (1)	90.62 (2)	75.43 (4)	101.19 (1)
Delhi	300.83 (30)	318.48 (30)	326.06 (30)	347.26 (30)
Goa, Daman & Diu	138.75 (18)	145.98 (19)	134.09 (20)	163.85 (18)
Lakshadweep	170.58 (25)	149.53 (20)	106.10 (14)	202.83 (25)
Mizoram	207.18 (29)	223.56 (29)	221.91 (29)	234.76 (28)
Pondicherry	102.98 (5)	87.56 (1)	38.34 (2)	118.03 (3)
ALL INDIA (Rural)	110.44	108.64	86.66	130.58

* These welfare measures have been obtained as $W = \mu (1 - E)$, where μ is mean expenditure and E is the measure of inequality. Value judgments inherent in these measures are discussed in Chakrabarty, 1993.

Note: Figures in parentheses are ranks.

Table 3.4 : Measures of Material Welfare for Urban Areas of States and Union Territories, 1987-88

State/ Union Territory (Rural Areas)	Measure of Welfare Based On*			
	Gini Coeff. (Sen's Index)	CH Measure	Sqrd. Coeff. of Variation	Theil's Entropy Measure
<i>States</i>				
Andhra Pradesh	144.85 (3)	117.24 (1)	33.06 (2)	166.94 (2)
Assam	178.85 (15)	142.67 (9)	-35.17 (1)	195.46 (13)
Bihar	131.04 (1)	126.49 (2)	87.47 (7)	153.62 (1)
Gujarat	171.74 (14)	173.11 (15)	147.43 (16)	204.92 (15)
Haryana	179.54 (16)	178.06 (16)	149.55 (17)	214.75 (16)
Himachal Pradesh	243.50 (25)	245.71 (26)	223.02 (26)	294.33 (25)
Jammu & Kashmir	194.54 (20)	199.43 (22)	181.06 (22)	233.93 (20)
Karnataka	146.94 (5)	132.24 (5)	74.90 (5)	173.35 (4)
Kerala	163.25 (11)	130.70 (3)	77.15 (6)	195.41 (12)
Madhya Pradesh	157.96 (8)	148.62 (12)	116.54 (13)	190.28 (8)
Maharashtra	181.48 (17)	161.66 (13)	119.85 (14)	218.77 (17)
Manipur	167.37 (12)	182.04 (17)	178.75 (21)	190.91 (9)
Meghalaya	238.72 (24)	240.00 (25)	210.39 (25)	284.83 (24)
Orissa	151.92 (6)	145.06 (11)	115.61 (12)	183.02 (7)
Punjab	193.77 (19)	200.21 (23)	185.37 (23)	232.88 (19)
Rajasthan	155.72 (7)	131.48 (4)	41.10 (3)	178.79 (6)
Sikkim	191.48 (18)	188.93 (18)	171.67 (19)	232.60 (18)
Tamil Nadu	162.09 (10)	142.87 (10)	89.50 (8)	192.74 (11)
Tripura	200.52 (21)	210.55 (24)	206.09 (24)	241.17 (22)
Uttar Pradesh	145.74 (4)	137.43 (7)	104.92 (11)	175.20 (5)
West Bengal	160.80 (9)	142.52 (8)	93.82 (9)	192.29 (10)
<i>Union Territories</i>				
Andaman & Nicobar	289.30 (28)	279.87 (27)	240.05 (27)	346.85 (28)
Arunachal Pradesh	168.08 (13)	167.55 (14)	147.02 (15)	202.79 (14)
Chandigarh	310.29 (29)	312.91 (29)	290.30 (29)	374.04 (29)
Delhi	285.67 (27)	198.09 (21)	100.09 (10)	336.53 (27)
Goa, Daman & Diu	213.80 (23)	194.40 (19)	152.90 (18)	259.30 (23)
Lakshadweep	213.24 (22)	197.07 (20)	175.89 (20)	235.39 (21)
Mizoram	270.82 (26)	291.26 (28)	282.66 (28)	306.72 (26)
Pondicherry	143.70 (2)	132.67 (6)	72.58 (4)	167.88 (3)
ALL INDIA (Urban)	161.92	141.81	85.64	192.34

* These welfare measures have been obtained as $W = \mu (1 - E)$, where μ is mean expenditure and E is the measure of inequality. Value judgments inherent in these measures are discussed in Chakrabarty, 1993.

Note: Figures in parentheses are ranks.

Table 3.5 : Sen's Welfare Index for States and Union Territories, 1987-88

State/ Union Territory	Rural				Urban		
	Mean Expd. (Rs./Month)	Gini Coeff.	Sen's Welfare Index	Mean Expd. (Rs./Month)	Gini Coeff.	Sen's Welfare Index	
1	2	3	4	5	6	7	
<i>States</i>							
Andhra Pradesh	160.00 (12)	0.301 (22)	111.79 (10)	227.63 (7)	0.3637 (27)	144.85 (3)	
Assam	153.58 (8)	0.222 (5)	119.49 (12)	269.64 (17)	0.3367 (21)	178.85 (15)	
Bihar	136.50 (3)	0.264 (12)	100.49 (3)	186.32 (1)	0.2967 (11)	131.04 (1)	
Gujarat	161.21 (13)	0.233 (7)	123.60 (13)	240.32 (10)	0.2853 (7)	171.74 (14)	
Haryana	214.81 (24)	0.281 (18)	154.52 (23)	255.31 (14)	0.2968 (12)	179.54 (16)	
Himachal Pradesh	209.55 (22)	0.271 (14)	152.73 (22)	345.78 (26)	0.2958 (10)	243.50 (25)	
Janmu & Kashmir	204.22 (21)	0.322 (24)	138.49 (17)	270.79 (18)	0.2816 (6)	194.54 (20)	
Karnataka	149.19 (6)	0.292 (19)	105.63 (7)	221.26 (5)	0.3359 (20)	146.94 (5)	
Kerala	211.20 (23)	0.323 (26)	142.99 (19)	266.20 (15)	0.3867 (28)	163.25 (11)	
Madhya Pradesh	142.52 (4)	0.293 (20)	100.79 (4)	235.99 (8)	0.3307 (19)	157.96 (8)	
Maharashtra	159.44 (11)	0.326 (27)	107.49 (9)	279.88 (22)	0.3516 (25)	181.48 (17)	
Manipur	190.74 (18)	0.175 (2)	157.39 (24)	200.35 (2)	0.1646 (2)	167.37 (12)	
Meghalaya	174.39 (15)	0.259 (11)	129.27 (16)	334.25 (25)	0.2858 (8)	238.72 (24)	
Orissa	127.54 (2)	0.267 (13)	93.48 (2)	224.53 (6)	0.3234 (17)	151.92 (6)	
Punjab	244.28 (25)	0.295 (21)	172.22 (26)	267.44 (16)	0.2754 (5)	193.77 (19)	
Rajasthan	179.65 (16)	0.303 (23)	125.18 (14)	238.01 (9)	0.3457 (22)	155.72 (7)	
Sikkim	169.96 (14)	0.255 (10)	126.67 (15)	277.45 (21)	0.3098 (14)	191.48 (18)	
Tamil Nadu	154.43 (9)	0.323 (25)	104.62 (6)	249.34 (13)	0.3499 (23)	162.09 (10)	

(Contd.)

Table 3.5 (Contd.)

1	2	3	4	5	6	7
Tripura	194.05 (19)	0.222 (4)	151.00 (21)	271.18 (19)	0.2606 (4)	200.52 (21)
Uttar Pradesh	148.59 (5)	0.279 (17)	107.10 (8)	217.07 (4)	0.3286 (18)	145.74 (4)
West Bengal	150.19 (7)	0.252 (9)	112.40 (11)	248.33 (12)	0.3525 (26)	160.80 (9)
<i>Union Territories</i>						
Andaman & Nicobar	272.55 (28)	0.272 (15)	198.45 (28)	419.32 (27)	0.3101 (15)	289.30 (28)
Arunachal Pradesh	203.79 (20)	0.272 (16)	148.26 (20)	240.56 (11)	0.3013 (13)	168.08 (13)
Chandigarh	275.57 (29)	0.333 (28)	183.85 (27)	437.19 (28)	0.2903 (9)	310.29 (29)
Dadra & Nagar Haveli	114.41 (1)	0.231 (6)	87.95 (1)	—	—	—
Delhi	372.31 (30)	0.192 (3)	300.83 (30)	485.63 (29)	0.4118 (29)	285.67 (27)
Goa, Daman & Diu	183.77 (17)	0.245 (8)	138.75 (18)	329.07 (24)	0.3503 (24)	213.80 (23)
Lakshadweep	262.86 (27)	0.351 (30)	170.58 (25)	276.58 (20)	0.2290 (3)	213.24 (22)
Mizoram	246.04 (26)	0.158 (1)	207.18 (29)	324.13 (23)	0.1645 (1)	270.82 (26)
Pondicherry	156.16 (10)	0.341 (29)	102.98 (5)	210.51 (3)	0.3174 (16)	143.70 (2)
ALL INDIA	155.75	0.291	110.44	249.93	0.3522	161.92

Note: Figures in parenthesis are ranks.

Chapter 4

Acquisition of Knowledge

PEOPLE in general, aspire to be knowledgeable. Level of knowledge acquired would therefore, be a valid indicator of human development. Level of knowledge of an individual has been traditionally measured by the input of formal education he has received. Relevant social indicators according to this view would include percentage of literates and the proportion reaching various levels such as primary and secondary in the ladder of formal education. However, in India and many other developing countries where a large part of the population lives in rural areas, formal education is not the only source (perhaps, not even the major source) for acquisition of knowledge. A large part of knowledge, in the form of technical know-how in hereditary trades like crop cultivation, carpentry, blacksmithy, goldsmithy, and pottery gets imparted from one generation to another through contacts and interactions outside the system of formal education. Knowledge in history, literature and philosophy are acquired by people, often not formally educated, by attending and taking part in various religious and cultural gatherings, especially in rural areas.

It is not uncommon to find a carpenter knowing a lot of geometry or a motor mechanic knowing many laws of physics, although he may not be able to name or present these in a systematic manner. More often than not such individuals occupy low positions in terms of formal education, being merely literate or so. Usual measures of knowledge such as literacy and years of schooling would omit such knowledge from its purview of measurement. *Adequate attention from competent scholars would be needed to find ways of incorporating such informally acquired knowledge into measured indicators.* Operational difficulties compel us to consider only formally acquired knowledge in constructing any indicator. Consequently, we have confined our attention here to effective literacy rate and other levels of formal education.

In census enumeration a person is counted as literate if he or she can read and write in any language with understanding. In earlier censuses the whole population has been classified into literates and illiterates. From 1951 the questions on literacy have been canvassed among those aged 5 and above only and in 1991 classification has been confined to the age group 7 years and above. Allowance to be made for these changes in definition while making any temporal comparison of literacy rates is, perhaps, marginal.

Growth of Literacy

Growth of literacy in India over the years is depicted in Table 4.1. At the beginning of this century the level of formal education was low – the entire population in (undivided) India was practically illiterate. Fewer than one in ten among males could read and write. Among females hardly one in a hundred was literate. At the time of the first Census enumeration in 1951 after independence, about one fourth of male population (above 5 years) could read and write. Female literacy was, however, lower at 8.83 per cent. Literacy, both among males and females, has increased considerably after independence. According to the latest (1991) Census figures, 64 per cent among males and 39 per cent among females are literates. Literacy is higher among residents in urban areas (73%) than among those resident in rural areas (45%).

Disparities in literacy rate between females and males and between rural and urban are still quite high, though showing a decreasing trend in recent years. As measures of these disparities the following indices have been computed and displayed in Table 4.1.

Female-male disparity index (*FMDI*)

$$= \frac{\text{Per cent literates among females}}{\text{Per cent literates among males}} \times 100$$

Rural-urban disparity index (*RUDI*)

$$= \frac{\text{Per cent literates in rural areas}}{\text{Per cent literates in urban areas}} \times 100$$

A look at the values of these indices presented in Table 4.1 indicates a rising trend in both *FMDI* and *RUDI* implying reduced disparities over time. Current (1991) values of both the indices are about 61 per cent – there is still a long way to go before we reach the goal of 100 per cent, with no disparity.

Literacy in States and Union Territories

The country as a whole has made impressive progress in literacy – contributions of female and rural literacy in this are considerable. In this rising trend various states, however, have unequal contributions. Performance of Kerala is quite impressive while states like Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh leave much to be desired (Table 4.2). More than 40 per cent of the Indian population live in these five states (Table 2.2).

In many of these states *RUDI* as well as *FMDI* in rural areas are quite low indicating high disparities (Table 4.3); *FMDI* is lower in rural areas compared to that in urban areas in majority of the states.

Table 4.2 displays the states and union territories ranked by effective literacy rates obtained from the 1991 Census. Achievements in acquisition of knowledge, as indicated by effective literacy rates, are different from their relative positions in terms of material well being. Kerala ranks highest with 89.81 per cent of literacy though its rank in terms of material well being is 19 rural, 11 urban. Kerala is followed by Mizoram, Lakshadweep, Chandigarh, Goa, Delhi, Pondicherry and Andaman & Nicobar Islands, in that order.

Literacy Among Scheduled Castes and Tribes

Achievement in education is, however, not the same for all population subgroups within a state. Disparities between the SC, ST and others are unacceptably high. Various social forces are responsible for educational backwardness of the SCs while the STs outside the tribal dominated regions (of the North East and some Islands) are isolated from the mainstream.

Literacy rates among SCs, as observed in 1991 Census, are shown statewise for males and females separately in Table 4.4. Disparities between SCs and total population in achieved literacy rates are alarmingly high in many of the states like Bihar (50.65), Uttar Pradesh (64.54), Karnataka (67.92), Rajasthan (68.20). More than 40 per cent of the SC population of the country are in these states. The situation in some other states, though marginally better, is not yet satisfactory. These include Haryana (70.22), Punjab (70.23), Andhra Pradesh (71.65), West Bengal (73.15), Tamil Nadu (74.59) and Orissa (74.92).

In some of the smaller states and union territories like Arunachal Pradesh, Dadra & Nagar Haveli, Daman & Diu, SCs are ahead of others in terms of literacy. However, proportion as well as absolute number of SC population in these areas are low. States like Assam, Gujarat, Manipur, Mizoram and Tripura show much less disparity – the index attaining values of more than 90 per cent.

Literacy rates among SCs are lower than those among others. Female literacy among SCs is much lower at 23.76 per cent compared to 39.29 per cent among the total female population. Female-male disparity among SCs is quite high and more pronounced in rural areas except in Mizoram. In the three states, viz., Bihar, Rajasthan and Uttar Pradesh, FMDI among rural SC population is very low – per cent literates among rural female SCs are as low as 5.54, 4.73 and 8.47 respectively.

Literacy rates among Scheduled Tribes show a regional pattern different from that among Scheduled Castes. One reason for this may be that the STs are not a homogeneous sub-group of population and differ from each other in terms of culture, life style and geographical location. Tribal population in the North Eastern Region, except Tripura, are almost at par with others in terms of literacy. Overall literacy rates in many of these states are also high.

Scheduled Tribes in states like Andhra Pradesh (38.92), Gujarat (59.47), Madhya

Pradesh (48.73), Orissa (45.45), Rajasthan (50.43), Tamil Nadu (44.51), and West Bengal (48.15) are far behind others in terms of achievements in literacy as indicated by the disparity index displayed in Table 4.6. Even Kerala, despite an impressive performance in literacy, has a wide gap between overall literacy (89.81%) and literacy among Scheduled Tribes (57.22%) – the index assuming a value as low as 63.71 per cent. Kerala, however, contains a small proportion (0.47%) of Scheduled Tribes in the country.

There is a high female-male disparity among STs in many states. North Eastern states have a comparatively lower female-male disparity among STs.

Data on literacy among population subgroups by religion, occupation and other socio-economic attributes are not available from secondary sources.

Factors Influencing Educational Achievements

For acquiring literacy and other achievements in formal education it is necessary to get enrolled in schools and not discontinue before achieving the desired standard. Enrolment and drop out rates, thus are likely to influence literacy (and other educational achievements). Analysis of interrelations among these variables would have been useful in formulation of policies to achieve higher level of literacy (and other achievements in formal education). However, information gathered and published by government departments on these are of doubtful quality, making these not amenable to any meaningful analysis.

Enrolment ratios are obtained as the ratio of recorded number of students in primary classes and the estimated number of children in the relevant age group (6 to 11 years).

Number of children in the age group 6-11 does not constitute the universe of primary school going children and the recorded number of students in primary section includes many who are below and above this age group. Consequently, enrolment ratios estimated and published by government departments turn out to be gross over estimates. Enrolment ratios crossing 100 are a common phenomenon. Reasons for this include

- enrolment earlier than age 6, especially among urban elites,
- students beyond age of 11 years also enrol in primary classes, and
- fictitious enrolment (for receiving the material incentives offered).

Quality of estimated drop out rates is no better. Methodology adopted for estimating drop outs are based on certain assumptions. For example, it assumes that all students enroll only in Class I and either continue or drop out. The reality is, however, known to be different. As a result of this, drop out rates available from secondary sources are underestimated to the extent that in many cases the estimates turn out to be negative.

These estimated enrolment and drop out rates are sometimes given due consideration for release of material incentives, grants etc. These often make them subject to purposeful manipulation thus, further lowering the quality of basic data. Enrolment in records does not necessarily mean attendance in class and effective utilisation of facilities.

Indicators like mean years of primary schooling computed using these enrolment and drop out data will, naturally, share many of these deficiencies.

Keeping in view the basic quality of these data available from secondary sources, we have made limited use of these data for computing some correlation coefficients to indicate the direction of influence. No attempt has been made to arrive at a quantitative estimate of the magnitude of influence. Our findings, reported in a subsequent section are in conformity with observations made by scholars acquainted with the reality.

NCAER Study on Non-enrolment and Discontinuation Rates

For generating reliable data on enrolment rates and drop out rates periodic sample surveys may be conducted. These surveys may also collect information on factors likely to influence enrolment and drop out. Recently NCAER in one of its studies has collected information on non-enrolment, drop out and private expenditure on education from a sample of over 18000 households in both rural and urban areas of various states. Information on a number of other socio-economic aspects of the households have also been collected. The study is now at its final stage. Some data on non-enrolment and discontinuation rates for states, obtained from the NCAER study, are presented in Tables 4.8 and 4.9. Table 4.10 gives the annual private expenditure on education at the elementary level per student. Detailed analysis of the NCAER data is in progress. Some tentative observations can, however, be made based on the primary tabulation of the data:

- The non-enrolment rate, defined as the percentage of children aged 6-14 years and not enrolled in schools is quite high. As indicated earlier, the available secondary data on enrolment rates are not reliable as, more often than not one finds that such rates are either close to 100% or even exceed 100%. The survey data indicate that enrolment rates, except in Kerala and Haryana, are much less than 100%.
- The non-enrolment rate varies across states, income groups and occupation groups. In the states of Bihar, Madhya Pradesh, Rajasthan and West Bengal the non-enrolment rate is very high (exceeding 20%). The urban-rural disparity in the non-enrolment rate is very high in all the states except in Kerala, Haryana and Punjab. It has been noted that non-enrolment rate is lower in high income groups compared to that in low income groups. The non-enrolment rate is very high among wage earners in all the states and among cultivators in some states.

- The annual discontinuation (drop out) rate is very high in Assam and West Bengal and low in Kerala and Delhi. The gender disparity in the drop out rates is high in West Bengal and Madhya Pradesh. Financial constraint appears to be the single most important reason for both non-enrolment and dropout.
- Annual expenditure per student at the elementary level in some states is quite high. It ranges between a low of Rs.290 in Bihar and a high of Rs.1029 in Delhi. It has been observed that this expenditure is more in high income groups than in low income groups, implying a positive income elasticity.
- The variations in non-enrolment and drop out rates are higher across income groups within a state than that between states. This tends to suggest that suitable micro interventions targeting the children belonging to the low income groups are necessary for raising enrolment and retention rates in schools. This observation is in tune with the finding that financial constraints is the dominant reason for non-enrolment and drop out and that the private expenditure at the elementary level is prohibitive for low income groups.

Observations on Enrolment and Drop Out

Per cent literate bears a positive association with enrolment ratio while high drop out lower educational attainments in terms of years of schooling. Early drop outs often lead to relapse to illiteracy. Enrolment and drop outs, in turn, are influenced by various social and economic factors. Economic and social factors operating are likely to be different in different regions and socioeconomic groups. Detailed localised studies on these aspects will be necessary before policies for micro intervention can be formulated and successfully implemented. Observations made by individual scholars, based on localised studies may be of interest.

Low enrolment and high drop outs are, perhaps, caused by

- poor economic conditions of the family to which the child belongs,
- necessity on the part of the child to earn in order to supplement low family income,
- detention of the child in the house to look after other younger children and household chores so that adults can work for longer hours, and
- lack of interest in education on the part of the child and parents.

Low enrolment and drop out among girls are often influenced by various social customs and taboos prevalent in many social groups especially in traditional and rural societies. To quote some observation by scholars working on the subject:

“The critical factors attributed to large scale drop outs are lack of adequate facilities in primary schools and less emphasis on qualitative aspects of primary

education. These have been, further, acting as a disincentive for enrolment itself.” (Subrahmanyam and Rama Raju, 1988)

“Relatively less emphasis on teacher-student ratio and transfer of experienced teachers from backward regions to developed areas, little usage of modern methods of teaching are partly responsible for irregularity in attendance and also lack of achievement motivation among the wards. The teacher-student ratios in some backward areas have been reported to be very high (more than 50). Most of the primary schools are manned by single teacher (or in a few cases by two teachers) which is affecting the performance in the schools with large enrolment.” (Human Development Profile of Tamil Nadu, NCAER, 1994).

“The curriculum, working hours and vacation are found to be incompatible with the requirements, time disposition pattern and agricultural seasons in rural areas leading to high incidence of drop outs, low achievements and also to non-enrolment.” (Human Development Profile of Tamil Nadu, NCAER, 1994).

Availability of schools, as such, does not seem to have much influence on literacy. There is no dearth of schools in urban areas. Most of the villages throughout the country are reported to have a primary school within walking distance of children.

Better quality of teaching may have encouraging effects on enrolment and discourage drop outs. However, quality of teaching is an elusive concept and difficult to measure. In the absence of any suitable measure for quality of teaching physical facilities like student-teacher ratio and availability of black boards have been examined. Average student-teacher ratio along with overall literacy rates for states and union territories are shown in Table 4.11. Interrelations based on correlation are discussed in a subsequent chapter.

Relative quality of teaching in a state is, perhaps, reflected in the performance of the students from that state in various competitions such as Pre Medical Test (PMT), IIT-Joint Entrance Examination (IIT-JEE) after completion of school education. Data on these, if collected, can be analysed. We could lay our hands on one such set of data pertaining to National Talent Search Scholarship and presented in Table 4.12.

Most of the indicators in the areas of education are favourable to urban areas and males compared to rural areas and females. Higher literacy, enrolment ratio and lower drop outs are influenced by the difference in urban-rural difference in occupation pattern and migration of literate and educated people to urban areas. Higher demand for education in urban areas inducing development of facilities for education and its consequent utilisation lead to a higher level of achievement.

Socio-economically backward classes such as SCs and STs are in general educationally backward as well. Female population among SCs and STs are in an awfully disadvantaged position. Data and information necessary for locating the

impediments are not available from secondary sources. Such data including information on social customs and taboos need to be collected and analysed for formulating and successfully implementing policies for micro intervention.

Table 4.1 : Growth of Literacy in India, 1901 to 1991

Year	Age Group	Per Cent Literate Among					Female-Male Disparity Index † (FMDI)	Rural-Urban Disparity Index ‡ (RUDI)
		Persons	Males	Females	Rural	Urban		
1901*	All Population	5.39	9.83	0.60	-	-	6.10	-
1911*	All Population	5.92	10.56	1.05	-	-	9.94	-
1921*	All Population	7.16	12.21	1.81	-	-	14.82	-
1931*	All Population	9.50	15.59	2.93	-	-	18.79	-
1941*	All Population	16.10	24.90	7.30	-	-	29.32	-
1951	5 & above	18.33	27.16	8.86	12.10	34.59	32.62	34.98
1961	5 & above	28.30	40.39	15.33	22.46	54.43	37.95	41.26
1971	5 & above	34.45	45.59	21.97	27.89	60.22	48.19	46.31
1981**	7 & above	43.67	56.50	29.85	36.09	67.34	52.83	53.59
1991***	7 & above	52.21	64.13	39.29	44.69	73.09	61.27	61.14

* For undivided India.

** Excluding Assam where Census could not be conducted in 1981.

*** Excluding Jammu & Kashmir where census could not be conducted in 1991.

‡ Female literacy as percentage to male literacy.

† Rural literacy as percentage to urban literacy.

Sources: (1) *A Hand Book of Population Statistics*, Census of India, New Delhi, 1988.

(2) *Census of India, 1991*, Series 1, Paper 2 of 1992, Final Population Totals, New Delhi, 1993.

Table 4.2 : Literacy Rates in States and Union Territories, 1981 and 1991

State/ Union Territory	Percentage of Literates (Aged 7 years & above) in					
	1981			1991		
	Persons	Males	Females	Persons	Males	Females
INDIA*	43.67	56.50	29.85	52.21	64.13	39.29
<i>States</i>						
Andhra Pradesh	35.66	46.83	24.16	44.09 (26)	55.13 (26)	32.72 (25)
Arunachal Pradesh	25.55	35.12	14.02	41.59 (28)	51.45 (31)	29.69 (26)
Assam	—	—	—	52.89 (22)	61.87 (23)	43.03 (22)
Bihar	32.05	46.60	16.52	38.48 (31)	52.49 (30)	22.89 (30)
Goa	65.71	76.01	55.17	75.51 (5)	83.64 (5)	67.09 (5)
Gujarat	52.21	65.14	38.46	61.29 (14)	73.13 (13)	48.64 (16)
Haryana	43.88	58.51	26.93	55.85 (21)	69.10 (16)	40.47 (23)
Himachal Pradesh	51.18	64.27	37.72	63.86 (11)	75.36 (11)	52.13 (12)
Jammu & Kashmir	32.68	44.18	19.55	—	—	—
Karnataka	46.21	58.73	33.17	56.04 (20)	67.26 (19)	44.34 (21)
Kerala	81.56	87.73	75.65	89.81 (1)	93.62 (1)	86.17 (1)
Madhya Pradesh	34.23	48.42	19.00	44.20 (25)	58.42 (24)	28.85 (27)
Maharashtra	55.83	69.65	41.01	64.87 (10)	76.56 (10)	52.32 (11)
Manipur	49.66	64.15	34.67	59.89 (16)	71.63 (14)	47.60 (17)
Meghalaya	42.05	46.65	37.17	49.10 (23)	53.12 (29)	44.85 (20)
Mizoram	74.26	79.36	68.61	82.27 (2)	85.61 (3)	78.60 (2)
Nagaland	50.28	58.58	40.39	61.65 (13)	67.62 (18)	54.75 (10)
Orissa	40.97	56.45	25.14	49.09 (24)	63.09 (22)	34.68 (24)
Punjab	48.17	55.56	39.70	58.51 (17)	65.66 (21)	50.41 (14)
Rajasthan	30.11	44.77	14.00	38.55 (30)	54.99 (27)	20.44 (31)
Sikkim	41.59	53.00	27.38	56.94 (19)	65.74 (20)	46.69 (18)
Tamil Nadu	54.39	68.05	40.43	62.66 (12)	73.75 (12)	51.33 (13)
Tripura	50.11	61.49	38.01	60.44 (15)	70.58 (15)	49.65 (15)
Uttar Pradesh	33.35	47.45	17.19	41.60 (27)	55.73 (25)	25.31 (29)
West Bengal	48.65	59.93	36.07	57.70 (18)	67.81 (17)	46.56 (19)
<i>Union Territories</i>						
Andaman & Nicobar	63.19	70.29	53.19	73.02 (8)	78.99 (9)	65.46 (8)
Chandigarh	74.81	78.89	69.31	77.81 (4)	82.04 (7)	72.34 (4)
Dadra & Nagar Haveli	32.70	44.64	20.37	40.71 (29)	53.56 (28)	26.98 (28)
Daman & Diu	59.91	74.47	46.50	71.20 (9)	82.66 (6)	59.40 (9)
Delhi	71.94	79.28	62.60	75.29 (6)	82.01 (8)	66.99 (6)
Lakshadweep	68.24	81.24	55.32	81.78 (3)	90.18 (2)	72.89 (3)
Pondicherry	65.14	77.09	53.03	74.74 (7)	83.68 (4)	65.63 (7)

— Not available

* Literacy rates for 1981 exclude Assam where the 1981 Census could not be held and the literacy rates for 1991 exclude Jammu & Kashmir where Census could not be conducted in 1991.

Note: Figures in parentheses are ranks.

Source: Census of India, 1991, Series 1, Paper 2 of 1992, Final Population Totals, New Delhi, 1993.

Table 4.3 : Urban Rural Differentials in Literacy

State/Union Territory	Percentage of Literates (Aged 7 years & above)									
	Rural		Female-Male Disparity		Urban		Female-Male Disparity*		Rural-Urban Disparity**	
	Persons	Males	Females	Disparity	Persons	Males	Females	Disparity*	Disparity**	Disparity**
1	2	3	4	5	6	7	8	9	10	10
INDIA***	44.69	57.87	30.62	52.91	73.08	81.09	64.05	78.99	61.15	61.15
<i>States</i>										
Andhra Pradesh	35.74	47.28	23.92	50.59	66.35	75.87	56.41	74.35	53.87	53.87
Arunachal Pradesh	37.02	47.00	25.31	53.85	71.59	77.99	62.23	79.79	51.71	51.71
Assam	49.32	58.66	39.19	66.81	79.39	84.37	73.32	86.90	62.12	62.12
Bihar	33.83	48.31	17.95	37.16	67.89	77.72	55.94	71.98	49.83	49.83
Goa	72.31	81.71	62.87	76.94	80.10	86.33	73.38	85.00	90.27	90.27
Gujarat	53.09	66.84	38.65	57.82	76.54	84.56	67.70	80.06	69.36	69.36
Haryana	49.85	64.78	32.51	50.19	73.66	81.96	64.06	78.16	67.68	67.68
Himachal Pradesh	61.86	73.89	49.79	67.38	84.17	88.97	78.32	88.03	73.49	73.49
Jammu & Kashmir	—	—	—	—	—	—	—	—	—	—
Karnataka	47.69	60.30	34.76	57.65	74.20	82.04	65.74	80.13	64.27	64.27
Kerala	88.92	92.91	85.12	91.62	92.25	95.58	89.06	93.18	96.39	96.39
Madhya Pradesh	35.87	51.04	19.73	38.66	70.81	81.32	58.92	72.45	50.66	50.66
Maharashtra	55.52	69.74	40.96	58.73	79.20	86.41	70.87	82.02	70.10	70.10
Manipur	55.79	67.64	43.26	63.96	70.53	82.11	58.67	71.45	79.10	79.10
Meghalaya	41.05	44.83	37.12	82.80	81.74	85.72	77.32	90.20	50.22	50.22

(Contd.)

Table 4.3 (Contd.)

1	2	3	4	5	6	7	8	9	10
Mizoram	72.47	77.36	67.03	86.65	93.45	95.15	91.61	96.28	77.55
Nagaland	57.23	63.42	50.36	79.41	83.10	85.94	79.10	92.04	68.87
Orissa	45.46	60.00	30.79	51.32	71.99	81.21	61.18	75.34	63.15
Punjab	52.77	60.71	43.85	72.23	72.08	77.26	66.12	85.58	73.21
Rajasthan	30.37	47.64	11.59	24.33	65.33	78.50	50.24	64.00	46.49
Sikkim	54.38	63.49	43.98	69.27	80.89	85.19	74.94	87.97	67.23
Tamil Nadu	54.59	67.18	41.84	62.28	77.99	86.06	69.61	80.89	70.00
Tripura	56.08	67.07	44.33	66.10	83.09	89.00	76.93	86.44	67.49
Uttar Pradesh	36.66	52.05	19.02	36.54	61.00	69.98	50.38	71.99	60.10
West Bengal	50.50	62.05	38.12	61.43	75.27	81.19	68.25	84.06	67.09
<i>Union Territories</i>									
Andaman & Nicobar	69.73	75.99	61.99	81.58	81.69	86.59	75.08	86.71	85.36
Chandigarh	59.12	65.67	47.83	72.83	79.87	84.09	74.57	88.68	74.02
Dadra & Nagar Haveli	37.00	50.04	23.30	46.56	78.44	86.35	68.42	79.24	47.17
Daman & Diu	61.55	75.23	46.70	62.08	81.61	91.14	72.35	79.38	75.42
Delhi	66.90	78.46	52.15	66.47	76.18	82.39	68.54	83.19	87.82
Lakshadweep	78.89	88.66	68.72	77.51	83.99	91.31	76.11	83.35	93.93
Pondicherry	65.36	76.44	53.96	70.59	79.88	87.70	71.98	82.08	81.82

-- Data not available.

* Female literacy as percentage to male literacy.

** Rural literacy as percentage to urban literacy.

*** Excluding Jammu and Kashmir

Source : *Census of India, 1991, Series 1, Paper 2, 1992, Final Population Totals, New Delhi, 1993.*

Table 4.4 : Literacy Among Scheduled Castes, 1991

State/Union Territory	Percentage of Literates (7 years and above) Among												SC Disparity Index *
	Total Population			Rural ST Population			Urban ST Population			Total ST Population			
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	
1	2	3	4	5	6	7	8	9	10	11	12		
INDIA**	52.21	37.41	49.91	23.76	33.25	45.95	19.46	55.11	66.60	42.29	71.65		
States													
Andhra Pradesh	44.09	31.59	41.88	20.92	26.80	37.02	16.19	54.10	64.88	43.04	71.65		
Arunachal Pradesh	41.59	57.27	66.25	41.42	55.29	65.02	37.25	61.99	69.39	50.40	137.70		
Assam	52.89	53.94	63.88	42.99	51.95	62.19	40.72	65.71	73.72	56.66	101.99		
Bihar	38.48	19.49	30.64	7.07	17.49	28.30	5.54	39.23	52.74	22.90	50.65		
Goa	75.51	58.73	69.55	47.51	56.05	67.67	43.94	61.76	71.69	51.53	77.78		
Gujarat	61.29	61.07	75.47	45.54	55.59	71.21	38.96	70.06	82.35	56.53	99.64		
Haryana	55.85	39.22	52.06	24.15	37.67	50.62	22.48	46.42	58.69	31.89	70.22		
Himachal Pradesh	63.86	53.20	64.98	41.02	52.00	63.95	39.78	70.32	78.87	60.16	83.31		
Jammu & Kashmir	-	-	-	-	-	-	-	-	-	-	-		
Karnataka	56.04	38.06	49.69	25.95	31.42	43.21	19.23	59.18	70.05	47.64	67.92		
Kerala	89.81	79.66	85.22	74.31	78.55	84.22	73.09	84.47	89.56	79.60	88.70		
Madhya Pradesh	44.20	35.08	50.51	18.11	30.22	45.70	13.30	52.26	67.29	35.38	79.37		
Maharashtra	64.87	56.46	70.45	41.59	50.27	65.86	33.99	67.07	78.17	54.94	87.04		
Manipur	59.89	56.44	65.28	47.41	56.69	65.43	47.52	56.22	65.14	47.32	94.24		
Meghalaya	49.10	44.27	54.56	31.19	37.11	47.28	24.35	53.05	63.34	39.70	90.16		

(Contd.)

Table 4.4 (Contd.)

1	2	3	4	5	6	7	8	9	10	11	12
Mizoram	82.27	77.92	77.54	81.25	75.76	74.81	85.00	82.30	83.24	75.00	94.71
Nagaland	61.65	-	-	-	-	-	-	-	-	-	-
Orissa	49.09	36.78	52.42	20.74	35.45	51.22	19.39	47.80	62.10	32.30	74.92
Punjab	58.51	41.09	49.82	31.03	39.55	48.54	29.20	47.04	54.76	38.14	70.23
Rajasthan	38.55	26.29	42.38	8.31	22.06	37.63	4.730	43.35	61.37	22.88	68.20
Sikkim	56.94	51.03	58.69	42.77	47.53	55.28	39.13	76.58	84.20	68.70	89.62
Tamil Nadu	62.66	46.74	58.36	34.89	42.5	54.47	30.30	62.24	72.58	51.68	74.59
Tripura	60.44	56.66	67.25	45.45	55.24	66.07	43.69	64.06	73.43	54.40	93.75
Uttar Pradesh	41.60	26.85	40.80	10.69	24.76	38.87	8.47	42.30	54.79	27.36	64.54
West Bengal	57.70	42.21	54.55	28.87	39.98	52.72	26.32	53.98	63.90	42.71	73.15
<i>Union Territories</i>											
Andaman & Nicobar	73.02	-	-	-	-	-	-	-	-	-	-
Chandigarh	77.81	55.44	64.74	43.54	48.57	57.55	35.79	56.48	65.88	44.63	71.25
Dadra & Nagar Haveli	40.71	77.64	88.03	66.61	77.17	87.42	66.52	79.90	90.74	67.30	190.71
Daman & Diu	71.20	79.18	91.85	67.62	82.22	94.32	71.48	74.29	88.02	61.15	111.21
Delhi	75.29	57.60	68.77	43.82	55.50	68.99	38.50	57.86	68.74	44.49	76.50
Lakshadweep	81.78	-	-	-	-	-	-	-	-	-	-
Pondicherry	74.74	56.26	66.10	46.28	50.07	60.07	39.94	65.05	74.67	55.30	75.27

* Literacy among SC population as percentage to literacy among Total population.

** Excluding Jammu and Kashmir

Notes : 1. There is no SC population in Andaman & Nicobar, Nagaland and Lakshadweep.

2. Census could not be conducted in Jammu & Kashmir.

Source: Computed from data given in *Primary Census Abstract, Scheduled Castes, 1993*.

Table 4.5 : Female-Male Disparity in Literacy Among SC Population, 1991

State/Union Territory	Female-Male Disparity Index Among					
	Total SC Population	Rural SC Population	Urban SC Population	Total Population	Rural Population	Urban Population
INDIA*	47.61	42.35	63.50	61.27	52.91	78.99
<i>States</i>						
Andhra Pradesh	49.95	43.73	66.34	59.35	50.59	74.35
Arunachal Pradesh	62.52	57.29	72.63	57.71	53.85	79.79
Assam	67.30	65.48	76.86	69.55	66.81	86.90
Bihar	23.07	19.58	43.42	43.61	37.16	71.98
Goa	68.31	64.93	71.88	80.21	76.94	85.00
Gujarat	60.34	54.71	68.65	66.51	57.82	80.06
Haryana	46.39	44.41	54.34	58.57	50.19	78.16
Himachal Pradesh	63.13	62.20	76.28	69.17	67.38	88.03
Jammu & Kashmir	-	-	-	-	-	-
Karnataka	52.22	44.50	68.01	65.92	57.65	80.13
Kerala	87.20	86.78	88.88	92.04	91.62	93.18
Madhya Pradesh	35.85	29.10	52.58	49.38	38.66	72.45
Maharashtra	59.03	51.61	70.28	68.34	58.73	82.02
Manipur	72.63	72.63	72.64	66.45	63.96	71.45
Meghalaya	57.17	51.50	62.68	84.43	82.80	90.20
Mizoram	104.78	113.62	90.10	91.81	86.65	96.28
Nagaland	-	-	-	80.97	79.41	92.04
Orissa	39.57	37.86	52.01	54.97	51.32	75.34
Punjab	62.28	60.16	69.65	76.77	72.23	85.58
Rajasthan	19.61	12.57	37.28	37.17	24.33	64.00
Sikkim	72.87	70.79	81.59	71.02	69.27	87.97
Tamil Nadu	59.78	55.63	71.20	69.60	62.28	80.89
Tripura	67.58	66.13	74.08	70.35	66.10	86.44
Uttar Pradesh	26.20	21.79	49.94	45.42	36.54	71.99
West Bengal	52.92	49.92	66.84	68.66	61.43	84.06
<i>Union Territories</i>						
Andaman & Nicobar	-	-	-	82.87	81.58	86.71
Chandigarh	67.25	62.19	67.74	88.18	72.83	88.68
Dadra & Nagar Haveli	75.67	76.09	74.17	50.37	46.56	79.24
Daman & Diu	73.62	75.78	69.47	71.86	62.08	79.38
Delhi	63.72	55.81	64.72	81.69	66.47	83.19
Lakshadweep	-	-	-	80.83	77.51	83.35
Pondicherry	70.02	66.49	74.06	78.43	70.59	82.08

* Excluding Jammu and Kashmir

Source: Computed from data displayed in Tables 4.2 and 4.4.

Table 4.6 : Literacy Among Scheduled Tribes, 1991

State/Union Territory	Total Population (Persons)	Percentage of Literates (7 years and above) Among												ST Disparity Index **
		Total ST Population				Rural ST Population				Urban ST Population				
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	
1	2	3	4	5	6	7	8	9	10	11	12			
INDIA*	52.21	29.60	40.65	18.19	27.38	38.45	16.02	56.6	66.56	45.66	56.69			
States														
Andhra Pradesh	44.09	17.16	25.25	8.68	15.44	23.26	7.29	37.48	48.18	23.65	38.92			
Arunachal Pradesh	41.59	34.45	44.00	24.94	32.14	41.50	22.89	71.68	81.97	60.17	82.83			
Assam	52.89	49.16	58.93	38.98	48.09	57.93	37.90	78.18	84.53	70.66	92.95			
Bihar	38.48	26.78	38.40	14.75	24.8	36.46	12.78	52.28	62.53	40.98	69.59			
Goa	75.51	42.91	54.43	29.01	25.37	36.59	37.90	48.20	60.68	34.29	56.83			
Gujarat	61.29	36.45	48.25	24.20	35.21	47.06	22.96	50.32	61.21	38.42	59.47			
Haryana	55.85	-	-	-	-	-	-	-	-	-	-			
Himachal Pradesh	63.86	47.09	62.74	31.18	46.17	61.96	30.26	80.72	87.49	71.43	73.74			
Janmu & Kashmir	-	-	-	-	-	-	-	-	-	-	-			
Karnataka	56.04	36.01	47.95	23.57	32.57	44.57	20.11	55.08	66.34	43.03	64.26			
Kerala	89.81	57.22	63.38	51.07	56.71	62.86	50.60	71.16	77.06	64.73	63.71			
Madhya Pradesh	44.20	21.54	32.16	10.73	20.33	30.80	9.74	44.68	56.82	30.96	48.73			
Maharashtra	64.87	36.79	49.09	24.03	32.67	45.05	19.96	64.58	75.40	52.61	56.71			
Manipur	59.89	53.63	62.39	44.48	51.44	60.32	42.15	77.07	84.82	69.12	89.55			
Meghalaya	49.10	46.71	49.78	43.63	40.94	44.13	37.71	81.53	85.16	78.13	95.13			

(Contd.)

Table 4.6 (Contd.).

1	2	3	4	5	6	7	8	9	10	11	12
Mizoram	82.27	82.71	86.86	78.70	72.93	78.52	67.13	94.26	96.50	92.04	100.53
Nagaland	61.65	60.59	66.27	54.51	57.44	63.63	50.85	84.52	85.94	82.94	98.28
Orissa	49.09	22.31	34.44	10.21	21.29	33.38	9.3	40.85	52.19	27.73	45.45
Punjab	58.51	-	-	-	-	-	-	-	-	-	-
Rajasthan	38.55	19.44	33.29	4.42	18.2	31.74	3.64	44.50	62.19	21.85	50.43
Sikkim	56.94	59.01	66.80	50.37	56.81	64.71	48.13	81.79	87.38	74.95	103.64
Tamil Nadu	62.66	27.89	35.25	20.23	25.24	32.38	17.8	47.29	56.32	37.94	44.51
Tripura	60.44	40.37	52.88	27.34	39.52	52.17	26.38	86.27	89.95	82.05	66.79
Uttar Pradesh	41.60	35.70	49.95	19.86	33.81	48.20	17.94	64.34	74.91	51.06	85.82
West Bengal	57.70	27.78	40.07	14.98	26.95	39.37	14.08	42.53	52.05	31.76	48.15
<i>Union Territories</i>											
Andaman & Nicobar	73.02	56.62	64.16	48.74	55.92	63.39	48.19	90.67	94.06	84.76	77.54
Chandigarh	77.81	-	-	-	-	-	-	-	-	-	-
Dadra & Nagar Haveli	40.71	28.21	40.75	15.94	27.37	39.82	15.22	52.13	66.58	37.14	69.30
Daman & Diu	71.20	52.91	63.58	41.49	52.43	63.13	40.81	54.64	65.25	43.87	74.31
Delhi	75.29	-	-	-	-	-	-	-	-	-	-
Lakshadweep	81.78	80.58	89.50	71.72	77.94	88.1	67.95	82.67	90.60	74.74	98.53
Pondicherry	74.74	-	-	-	-	-	-	-	-	-	-

* Excluding Jammu and Kashmir

** Literacy among STs as percentage to literacy among Total population.

- There is no ST population in Haryana, Punjab, Chandigarh, Delhi and Lakshadweep.

Note: Census could not be conducted in Jammu & Kashmir.

Source: Computed from data given in *Primary Census Abstract, Scheduled Tribes, 1993*.

Table 4.7 : Female-Male Disparity in Literacy Among ST Population, 1991

<i>State/ Union Territory</i>	<i>Female-Male Disparity Index Among</i>					
	<i>Total ST Population</i>	<i>Rural ST Population</i>	<i>Urban ST Population</i>	<i>Total Population</i>	<i>Rural Population</i>	<i>Urban Population</i>
INDIA*	44.75	41.66	68.60	61.27	52.91	78.99
<i>States</i>						
Andhra Pradesh	34.38	31.34	53.24	59.35	50.59	74.35
Arunachal Pradesh	56.68	55.16	73.40	57.71	53.85	79.79
Assam	66.15	65.42	83.59	69.55	66.81	86.90
Bihar	38.41	35.05	65.54	43.61	37.16	71.98
Goa	53.30	21.02	56.51	80.21	76.94	85.00
Gujarat	50.16	48.79	62.77	66.51	57.82	80.06
Haryana	—	—	—	58.57	50.19	78.16
Himachal Pradesh	49.70	48.84	81.64	69.17	67.38	88.03
Janmu & Kashmir	—	—	—	—	—	—
Karnataka	49.16	45.12	64.86	65.92	57.65	80.13
Kerala	80.58	80.50	84.00	92.04	91.62	93.18
Madhya Pradesh	33.36	31.62	54.49	49.38	38.66	72.45
Maharashtra	48.95	44.31	69.77	68.34	58.73	82.02
Manipur	71.29	69.88	81.49	66.45	63.96	71.45
Meghalaya	87.65	85.45	91.74	84.43	82.80	90.20
Mizoram	90.61	85.49	95.38	91.81	86.65	96.28
Nagaland	82.25	79.92	96.51	80.97	79.41	92.04
Orissa	29.65	27.86	53.13	54.97	51.32	75.34
Punjab	—	—	—	76.77	72.23	85.58
Rajasthan	13.28	11.47	35.13	37.17	24.33	64.00
Sikkim	75.40	74.38	85.77	71.02	69.27	87.97
Tamil Nadu	57.39	54.97	67.37	69.60	62.28	80.89
Tripura	51.70	50.57	91.22	70.35	66.10	86.44
Uttar Pradesh	39.76	37.22	68.16	45.42	36.54	71.99
West Bengal	37.38	35.76	61.02	68.66	61.43	84.06
<i>Union Territories</i>						
Andaman & Nicobar	75.97	76.02	90.11	82.87	81.58	86.71
Chandigarh	—	—	—	88.18	72.83	88.68
Dadra & Nagar Haveli	39.12	38.22	55.78	50.37	46.56	79.24
Daman & Diu	65.26	64.64	67.23	71.86	62.08	79.38
Delhi	—	—	—	81.69	66.47	83.19
Lakshadweep	80.13	77.13	82.49	80.83	77.51	83.35
Pondicherry	—	—	—	78.43	70.59	82.08

* Excluding Jammu and Kashmir.

— There is no ST population in Haryana, Punjab, Chandigarh, Delhi and Lakshadweep.

Source: Computed from data displayed in Tables 4.2 and 4.6.

Table 4.8 : Non-enrolment Ratio of Children Aged 6-14 Years, 1992-93

(Per Cent)

State	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Andhra Pradesh	16.63	21.31	18.68	6.01	5.54	5.75	12.45	15.08	13.62
Assam	10.65	13.84	12.15	6.59	4.08	5.76	10.15	13.13	11.50
Bihar	22.76	32.79	27.01	9.11	11.51	10.21	21.19	20.02	24.96
Gujarat	2.92	8.49	5.29	1.73	1.60	1.68	2.51	6.04	4.03
Haryana	-	1.34	0.59	0.87	6.59	3.39	0.26	2.91	1.42
Karnataka	11.41	25.33	19.42	6.05	7.18	6.57	9.54	20.78	15.62
Kerala	-	-	-	-	-	-	-	-	-
Madhya Pradesh	21.42	40.38	29.02	6.00	10.35	8.09	18.8	33.77	25.03
Maharashtra	5.59	10.69	8.07	0.69	0.68	0.69	3.79	7.50	5.52
Orissa	11.94	26.53	18.93	5.09	6.04	5.58	10.87	22.9	16.71
Punjab	-	10.36	4.51	1.05	5.17	2.61	0.4	8.67	3.83
Rajasthan	23.02	42.67	30.98	2.02	9.54	5.51	18.98	34.96	25.65
Tamil Nadu	4.05	7.71	5.97	0.37	1.19	0.76	2.93	5.95	4.47
West Bengal	24.54	26.71	25.52	2.77	4.98	3.78	19.59	21.69	20.54
Delhi	-	-	-	7.64	3.77	6.05	6.39	3.45	5.25

Source: Computed from data collected in NCAER Survey, 1994.

Table 4.9 : Annual Drop Out Ratio of Children Aged 6-14 Years, 1992-93

(Per Cent)

State	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Andhra Pradesh	8.94	10.73	9.70	4.74	6.39	5.47	7.18	8.83	7.89
Assam	11.51	14.87	13.06	6.06	—	4.01	10.81	13.66	12.09
Bihar	9.79	9.40	9.64	5.85	7.22	6.47	9.27	9.04	9.18
Gujarat	3.23	11.31	6.65	2.75	2.44	2.61	3.06	7.97	5.16
Haryana	4.39	3.40	3.96	2.52	4.78	3.48	3.84	3.79	3.82
Karnataka	18.48	6.75	12.23	2.51	6.98	4.55	12.70	6.82	9.71
Kerala	1.09	—	0.64	4.50	1.49	3.03	1.93	0.45	1.29
Madhya Pradesh	3.73	17.45	8.35	3.72	4.29	3.99	3.73	13.53	7.33
Maharashtra	7.13	8.77	7.90	1.26	4.20	2.53	4.90	7.21	5.96
Orissa	8.38	8.78	8.56	0.41	3.78	2.15	7.06	7.70	7.35
Punjab	7.99	3.26	6.06	8.75	18.84	12.47	8.28	8.54	8.38
Rajasthan	5.55	11.02	7.39	0.76	3.40	1.93	4.43	8.55	5.94
Tamil Nadu	6.15	7.91	7.05	6.83	5.00	5.96	6.36	7.08	6.73
West Bengal	11.58	26.40	18.16	2.56	3.00	2.76	9.09	19.84	13.88
Delhi	1.30	0.00	0.78	0.79	3.24	1.81	0.83	2.90	1.67

Source: Computed from data collected in NCAER Survey, 1994.

Table 4.10 : Private Expenditure in Elementary Education, 1992-93

(Rs. Per Year Per Student)

State	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Andhra Pradesh	400	348	378	760	776	767	554	537	547
Assam	591	583	587	1251	1276	1260	680	647	665
Bihar	249	240	246	565	528	548	292	288	290
Gujarat	346	336	342	637	588	615	452	437	446
Haryana	914	652	801	1260	1149	1214	1018	797	924
Karnataka	403	480	448	650	566	613	505	505	505
Kerala	686	847	754	820	832	826	718	842	773
Madhya Pradesh	283	275	281	627	602	615	351	382	362
Maharashtra	324	335	329	558	531	546	415	405	411
Orissa	319	295	309	431	403	417	338	319	330
Punjab	694	500	612	847	702	796	751	562	676
Rajasthan	382	325	364	626	620	623	441	425	435
Tamil Nadu	342	355	349	622	716	668	429	460	445
West Bengal	515	486	504	1071	1025	1051	680	668	675
Delhi	609	813	660	986	1236	1089	921	1198	1029

Source: Computed from data collected in NCAER Survey, 1994.

Table 4.11 : Student-Teacher Ratio (STR) in States and Union Territories

State/Union Territory	STR in 1981-82		Per cent of		STR in 1991-92	
	Primary Schools	Upper Primary Schools	Primary Schools with no Black Board	Per Cent Literate in 1991 (Persons)	Primary Schools	Upper Primary Schools
INDIA	39	34	38.50	52.21 [†]	45	43
<i>States</i>						
Andhra Pradesh	51	39	45.92	44.09 (26)	53 (3)	50
Arunachal Pradesh	30	21	36.93	41.59 (28)	30 (22)	23
Assam	36	24	47.42	52.89 (22)	39 (13)	31
Bihar	41	35	61.80	38.48 (31)	52 (4)	413
Goa	29	29	30.76	75.51 (5)	21 (29)	19
Gujarat	41	39	24.05	61.29 (14)	44 (8)	42
Haryana	42	36	29.79	55.85 (21)	44 (9)	42
Himachal Pradesh	37	16	28.31	63.86 (11)	33 (18)	23
Jammu & Kashmir	27	21	29.06	-	26 (24)	24
Karnataka	45	44	42.21	56.04 (20)	41 (10)	58
Kerala	33	33	3.45	89.81 (1)	32 (19)	31
Madhya Pradesh	37	27	41.30	44.20 (25)	45 (7)	33
Maharashtra	40	37	20.62	64.87 (10)	37 (14)	40
Manipur	17	16	33.02	59.89 (16)	18 (31)	11
Meghalaya	30	17	38.79	49.10 (23)	36 (16)	19
Mizoram	30	15	3.59	82.27 (2)	30 (21)	12
Nagaland	21	15	1.65	61.65 (13)	19 (30)	21
Orissa	35	26	43.96	49.09 (24)	36 (15)	32
Punjab	39	16	28.77	58.51 (17)	40 (11)	24
Rajasthan	42	28	35.71	38.55 (30)	46 (6)	34
Sikkim	20	19	4.40	56.94 (19)	14 (32)	15
Tamil Nadu	40	38	15.75	62.66 (12)	47 (5)	47
Tripura	42	29	45.87	60.44 (15)	23 (27)	25
Uttar Pradesh	39	26	47.29	41.60 (27)	58 (1)	39
West Bengal **	38	29	33.01	57.70 (18)	55 (2)	42
<i>Union Territories</i>						
Andaman & Nicobar	19	19	18.92	73.02 (8)	21 (28)	21
Chandigarh	9	30	2.90	77.81 (4)	24 (26)	21
Dadra & Nagar Haveli	45	34	31.14	40.71 (29)	40 (12)	30
Daman & Diu	*	*	7.73	71.20 (9)	35 (17)	63
Delhi	36	24	2.83	75.29 (6)	31 (20)	20
Lakshadweep	31	27	0.00	81.78 (3)	26 (25)	25
Pondicherry	30	34	7.90	74.74 (7)	27 (23)	28

* Included in Goa.

** Figures relate to 1991-92.

[†] Excluding Jammu and Kashmir.

Note: Figures in parentheses are ranks.

Sources: (1) *Education in India*, Vol.1, 1981-82, Ministry of Human Resource Development, Dept. of Education, New Delhi.

(2) *Selected Educational Statistics*, 1992-93, Ministry of Human Resource Development, Dept. of Education, New Delhi, 1993.

Table 4.12 : National Talent Search Scholarship Participation and Achievement, 1993

State/	Candidates Recom- mended	Candidates Appeared at National Level	Selected for Interview			Selected for Award		
			General	SC/ST	Total	General	SC/ST	Total
INDIA	3214	3214	1374	146	1520	680	70	750
<i>States</i>								
Andhra Pradesh	195	191	53	9	62	20	3	23
Arunachal Pradesh	25	22	-	3	3	-	1	1
Assam	85	80	22	5	27	7	3	10
Bihar	175	166	74	12	86	37	2	39
Goa	25	25	7	1	8	1	1	2
Gujarat	170	141	14	2	16	6	-	6
Haryana	65	65	35	3	38	12	2	14
Himachal Pradesh	45	43	9	3	11	3	1	4
Jammu & Kashmir	25	18	-	-	-	-	-	-
Karnataka	170	170	116	17	133	66	10	76
Kerala	195	190	99	4	103	36	1	37
Madhya Pradesh	155	147	71	7	78	34	1	35
Maharashtra	375	372	272	26	298	153	17	170
Manipur	25	24	3	1	4	1	1	2
Meghalaya	25	21	-	2	2	-	1	1
Mizoram	13	8	-	1	1	-	-	-
Nagaland	25	23	-	3	3	-	1	1
Orissa	120	114	55	4	59	21	2	23
Punjab	85	83	47	3	50	29	2	31
Rajasthan	130	127	90	2	92	56	1	57
Sikkim	25	23	-	-	-	-	-	-
Tamil Nadu	245	240	112	11	123	56	7	63
Tripura	25	25	5	3	8	1	2	3
Uttar Pradesh	435	424	168	7	175	65	3	68
West Bengal	255	235	64	13	77	30	5	35
<i>Union Territories</i>								
Andaman & Nicobar	10	9	3	-	3	1	-	1
Chandigarh	10	8	7	-	7	5	-	5
Dadra & Nagar Haveli	10	9	-	-	-	-	-	-
Daman & Diu	-	-	-	-	-	-	-	-
Delhi	55	55	48	4	52	40	2	42
Lakshadweep	6	5	-	-	-	-	-	-
Pondicherry	10	10	-	1	1	-	1	1

Source: National Talent Search Scholarship Section, NCERT, New Delhi.

Chapter 5

Longevity and Health Status

HEALTH status is another valid indicator of human development. Health, in itself, is a source of enjoyment. Health is also a basic necessity to make one able to participate in various social activities and share achievements. Individual health status has multiple dimensions and so does the aggregate for society. Thus, the health profile of any population would include a number of indicators.

Health status of any population is reflected in indicators like

- Crude Birth Rate (CBR), defined as the number of births per thousand population,
- Crude Death Rate (CDR), measured as the number of deaths per thousand population,
- Infant Mortality Rate (IMR), indicating the number of deaths before age one, out of one thousand live births, and
- Expectation of life at birth.

States and Union Territories have been ranked according to these indicators in Table 5.1. Death rate is found to be low in Chandigarh (4.0), Lakshadweep (4.7), Manipur (5.5), Andaman & Nicobar Islands (5.7), followed by Kerala and Delhi (6.0 each). High death rates are observed in Madhya Pradesh (13.8), Arunachal Pradesh (13.5), Orissa (12.7), Assam (11.5) and Dadra & Nagar Haveli (11.4).

Infant mortality rate (IMR) is highest in Meghalaya (126), followed by Madhya Pradesh (122), Uttar Pradesh (93), Assam (81) and Rajasthan (77). The indicator is low in Kerala (17), Punjab (53) and Tamil Nadu (57).

Expectation of life at birth is longest again in Kerala (72.2), followed by Punjab (64.7), Himachal Pradesh (62.9) and Maharashtra (62.8). Low expectation of life is observed in Uttar Pradesh (49.6), Madhya Pradesh (51.8), Bihar (52.3) and Assam (52.5).

Death rates and birth rates are indicative of general mortality and fertility conditions. However, child mortality accounts for a substantial proportion of deaths in India and many of the developing countries. Mortality conditions of children is often taken as a barometer for health status of any society. Child mortality at various

ages, therefore, needs special scrutiny while assessing health status of any society. Four standard estimates of child mortality based on 1981 census data have been used here. These are $q(1)$, $q(2)$, $q(3)$ and $q(5)$ representing expected number of deaths before age 1, age 2, age 3 and age 5 out of one thousand children. Infant mortality rates estimated from SRS data are available for national and state level. Small sample size does not permit estimation for subgroups smaller than the states. Child mortality estimates are available for smaller population subgroups such as, by religion and level of education of mother. Child mortality estimates are believed to be more reliable.

Child mortality estimates for states and union territories are shown in Tables 5.2, 5.3 and 5.4 separately for males and females and also for rural and urban areas. States and union territories have also been ranked according to these indicators in these tables.

States with high mortality include

Madhya Pradesh, Uttar Pradesh, Arunachal Pradesh, Lakshadweep, Andhra Pradesh, Bihar, Haryana, Himachal Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim, Tripura, West Bengal, Dadra & Nagar Haveli.

Mortality is low in

Kerala, Manipur, Nagaland, Chandigarh, Delhi, Goa, Daman & Diu, Gujarat, Karnataka, Meghalaya, Punjab, Tamil Nadu.

It may be of some interest to look into the mortality conditions of children among some population subgroups. Since the indicator $q(2)$ is considered to be more reliable to reflect an overall picture we have presented estimates of $q(2)$ for population subgroups belonging to different religious communities in Table 5.5.

For the country as a whole, child mortality is highest among Buddhists (140), followed by Hindus (126), Muslims (105) and Sikhs (92). Christians (83) and Jains (66) has much lower child mortality. Hindus in Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh, Muslims in Haryana, Meghalaya and Lakshadweep, Christians in Orissa and Arunachal Pradesh, Buddhists in Maharashtra and Arunachal Pradesh, Jains in Bihar and Rajasthan have relatively high child mortality.

The child is taken care of by the mother. General health and mortality condition of the child would, therefore, largely depend on the mother's capabilities and handicaps. Estimates of child mortality by level of education of mother are shown in Table 5.6 and those by occupation of mother are in Table 5.7.

As expected child mortality is seen to decrease as the level of education of mother rises in all the states and union territories.

Mortality is high among the children whose mothers are agricultural labourers (157) in rural areas, followed by manual workers (147), cultivators (136) and non-

manual workers (88). In the urban areas children of non-manual workers have lower mortality (55) than those of manual workers (128).

The working women in this country are by and large employed in unorganised sector and low paid as agricultural labourers in rural areas and as manual workers in urban areas. In the prevailing working conditions they are unable to take adequate care of their children. No wonder that the children of these mothers, deprived of adequate maternal care, are exposed to higher risk of mortality.

Health Care Facilities

Data for assessment of overall health care facilities are scanty. Some data on health facilities provided by public authorities are available. A large part of the health care facilities is supplied by private sector on which no agency seems to collect information.

In the period 1986-90, the Indian Market Research Bureau (IMRB) conducted different studies on rural illness care behaviour which brought forth one clear finding: in rural India, a bulk of illness care was being provided not by the government system, not by the PHC doctor or community health worker, but by the private practitioner. Situation in urban areas is believed to be not much different from this. Not much is known about this existing system of health care in the country either from secondary sources or any recent survey. A nationwide survey would be needed to collect such data before any meaningful assessment can be attempted.

Information on health care facilities provided by government and other public bodies collected by the collaborating scholars in various states are available in the Human Development Profiles of the respective states. These data do not reflect the real situation prevailing in rural and urban areas. Health care facilities provided by government and by private sector are more likely to be supplementary to each other – in the areas deficient in public health care system private practitioners thrive. It is difficult to make any realistic assessment of the available facilities in the absence of any information about the major part of the system. To quote scholars in the field:

“Since the statistics for non-government institutions and health posts are not available, it is, perhaps, difficult to make a proper assessment of health care facilities available in the state in general and districts in particular.” (NCAER, 1993a)

The profile presented here and the discussions indicate that human development manifested in aspects of education and health are not in exact conformity with the level of material well being in states and union territories. Analysis and understanding of the interrelationship among various indicators and other explanatory variables would be useful for formulation and implementation of policies aiming to achieve higher levels of human development. Analysis of data disaggregated at the level of districts within a state has been pursued in collaboration with scholars in research

organisations and university departments in respective states. The reports prepared by the collaborating scholars are available in separate volumes for each state. Important findings of these studies have already been discussed in appropriate context. Quality and reliability of data collected has been commented upon.

Table 5.1 : Some Health Indicators in States and Union Territories, 1991

State/ Union Territory	Crude Birth Rate (Per '000 population)	Crude Death Rate (Per '000 population)	Infant Mortality Rate (Per '000 live births)	Life Expectancy at Birth (1981-88)	
				Male (Years)	Female (Years)
INDIA	29.3	9.8	80	55.9	55.9
<i>States</i>					
Andhra Pradesh	26.0 (10)	9.7 (21)	73 (9)	57.3 (10)	60.3 (7)
Arunachal Pradesh	30.9 (24)	13.5 (28)	—	—	—
Assam	30.9 (23)	11.5 (26)	81 (13)	52.4 (15)	52.5 (14)
Bihar	30.5 (22)	9.8 (23)	69 (7)	54.9 (12)	52.3 (15)
Goa	16.8 (2)	7.5 (8)	—	—	—
Gujarat	27.5 (16)	8.5 (14)	69 (6)	55.9 (11)	57.9 (11)
Haryana	33.1 (26)	8.2 (13)	68 (5)	61.5 (3)	59.5 (8)
Himachal Pradesh	28.4 (18)	8.9 (18)	75 (10)	58.5 (7)	62.9 (3)
Jammu & Kashmir	—	—	—	60.2 (4)	60.7 (6)
Karnataka	26.8 (14)	9.0 (20)	77 (12)	59.8 (6)	62.4 (5)
Kerala	18.1 (3)	6.0 (6)	17 (1)	65.9 (1)	72.2 (1)
Madhya Pradesh	35.8 (29)	13.8 (29)	122 (15)	50.6 (17)	51.8 (16)
Maharashtra	26.2 (11)	8.2 (12)	60 (4)	60.1 (5)	62.8 (4)
Manipur	19.6 (5)	5.5 (3)	—	—	—
Meghalaya	32.4 (25)	8.8 (17)	—	—	—
Mizoram	—	—	—	—	—
Nagaland	—	—	—	—	—
Orissa	28.8 (20)	12.7 (27)	126 (16)	53.6 (13)	53.1 (13)
Punjab	28.6 (19)	8.0 (10)	53 (2)	63.0 (2)	64.7 (2)
Rajasthan	34.3 (27)	9.8 (22)	77 (11)	53.5 (14)	54.3 (12)
Sikkim	26.5 (12)	8.8 (16)	—	—	—
Tamil Nadu	20.7 (7)	8.8 (15)	57 (3)	57.4 (9)	58.5 (10)
Tripura	24.4 (9)	7.6 (9)	—	—	—
Uttar Pradesh	35.1 (28)	11.1 (24)	93 (14)	52.3 (16)	49.6 (17)
West Bengal	26.7 (13)	8.1 (11)	70 (8)	57.9 (8)	59.1 (9)
<i>Union Territories</i>					
Andaman & Nicobar	19.9 (6)	5.7 (4)	—	—	—
Chandigarh	14.1 (1)	4.0 (1)	—	—	—
Dadra & Nagar Haveli	30.4 (21)	11.4 (25)	—	—	—
Daman & Diu	27.8 (17)	9.0 (19)	—	—	—
Delhi	24.1 (8)	6.0 (5)	—	—	—
Lakshadweep	27.1 (15)	4.7 (2)	—	—	—
Pondicherry	18.9 (4)	6.4 (7)	—	—	—

Note: Figures in parentheses are ranks.

Table 5.2 : Estimated Child Mortality in States and Union Territories
ALL AREAS

State/ Union Territory	Estimated Child Mortality											
	q(1)			q(2)			q(3)			q(5)		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
<i>States</i>												
Andhra Pradesh	91 (15)	100 (12)	82 (16)	105 (14)	113 (12)	97 (19)	118 (16)	123 (13)	113 (16)	139 (14)	143 (13)	135 (16)
Bihar	94 (11)	95 (14)	94 (8)	112 (13)	108 (15)	116 (10)	125 (10)	118 (16)	132 (8)	141 (13)	131 (16)	153 (7)
Gujarat	84 (17)	81 (18)	84 (14)	102 (18)	99 (19)	105 (13)	109 (19)	107 (19)	112 (17)	124 (19)	119 (19)	129 (18)
Haryana	94 (12)	87 (17)	119 (3)	124 (9)	107 (17)	127 (7)	125 (11)	118 (15)	133 (7)	138 (16)	125 (17)	153 (8)
Himachal Pradesh	92 (13)	101 (11)	89 (10)	123 (10)	133 (9)	113 (11)	124 (13)	138 (9)	119 (11)	139 (15)	142 (14)	136 (15)
Jammu & Kashmir	78 (20)	78 (21)	78 (18)	95 (20)	95 (20)	98 (17)	102 (21)	103 (20)	100 (21)	115 (21)	114 (22)	117 (21)
Karnataka	81 (18)	87 (16)	74 (20)	103 (15)	107 (16)	98 (18)	121 (15)	123 (14)	118 (14)	142 (11)	143 (12)	140 (12)
Kerala	52 (29)	55 (28)	48 (29)	55 (29)	59 (29)	50 (29)	63 (29)	67 (29)	59 (29)	80 (28)	85 (28)	76 (28)
Madhya Pradesh	150 (1)	158 (1)	140 (1)	162 (1)	165 (1)	159 (1)	171 (2)	170 (3)	173 (2)	197 (2)	193 (3)	201 (3)
Maharashtra	92 (14)	96 (13)	89 (11)	114 (12)	121 (11)	107 (12)	121 (14)	124 (12)	118 (13)	145 (10)	146 (11)	144 (10)
Manipur	32 (30)	31 (30)	33 (30)	40 (30)	41 (30)	39 (30)	44 (30)	45 (30)	43 (30)	51 (30)	51 (30)	50 (30)
Meghalaya	79 (19)	81 (19)	76 (19)	102 (17)	109 (14)	95 (21)	125 (12)	131 (11)	119 (12)	142 (12)	147 (10)	137 (14)
Nagaland	68 (25)	76 (23)	58 (25)	76 (26)	82 (25)	69 (26)	82 (26)	86 (26)	79 (26)	100 (25)	104 (24)	96 (26)
Orissa	115 (5)	119 (5)	111 (7)	148 (6)	151 (4)	144 (5)	165 (5)	170 (4)	160 (5)	179 (5)	181 (4)	176 (5)
Punjab	77 (21)	74 (24)	79 (17)	94 (21)	90 (23)	98 (15)	102 (20)	100 (22)	105 (20)	111 (23)	104 (25)	118 (20)

(Contd.)

Table 5.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Rajasthan	114 (6)	114 (6)	114 (5)	149 (5)	151 (3)	148 (4)	157 (6)	160 (5)	163 (4)	176 (6)	166 (7)	186 (4)
Sikkim	96 (9)	105 (8)	87 (13)	115 (11)	127 (10)	102 (14)	126 (9)	135 (10)	117 (15)	159 (7)	173 (6)	144 (11)
Tamil Nadu	86 (16)	89 (15)	82 (15)	103 (16)	110 (13)	96 (20)	114 (17)	116 (17)	111 (18)	132 (17)	134 (15)	131 (17)
Tripura	111 (7)	106 (7)	116 (4)	132 (7)	141 (7)	122 (8)	136 (7)	142 (7)	130 (9)	150 (8)	153 (9)	146 (9)
Uttar Pradesh	130 (2)	131 (3)	128 (2)	152 (2)	146 (6)	159 (2)	168 (3)	157 (6)	181 (1)	190 (3)	174 (5)	208 (2)
West Bengal	95 (10)	103 (9)	57 (26)	102 (19)	106 (18)	98 (16)	111 (18)	113 (18)	110 (19)	124 (18)	123 (18)	125 (19)
<i>Union Territories</i>												
Andaman & Nicobar	72 (23)	78 (20)	66 (23)	82 (22)	94 (21)	70 (25)	92 (23)	100 (21)	83 (24)	113 (22)	117 (21)	110 (23)
Assam	126 (3)	141 (2)	111 (6)	152 (3)	164 (2)	139 (6)	181 (1)	192 (1)	169 (3)	220 (1)	227 (1)	213 (1)
Chandigarh	53 (28)	53 (29)	53 (28)	63 (28)	63 (28)	63 (28)	67 (28)	68 (28)	66 (28)	73 (29)	72 (29)	74 (29)
Delhi	67 (26)	66 (26)	70 (21)	82 (24)	80 (26)	88 (22)	88 (22)	87 (25)	89 (23)	96 (26)	93 (26)	99 (24)
Dadra & Nagar Haveli	98 (8)	102 (10)	93 (9)	129 (8)	140 (8)	117 (9)	133 (8)	139 (8)	128 (10)	146 (9)	154 (8)	138 (13)
Daman & Diu	57 (27)	60 (27)	56 (27)	69 (27)	72 (27)	66 (27)	71 (27)	75 (27)	66 (27)	83 (27)	85 (27)	81 (27)
Lakshadweep	118 (4)	124 (4)	88 (12)	150 (4)	148 (5)	153 (3)	168 (4)	179 (2)	157 (6)	189 (4)	201 (2)	175 (6)
Mizoram	69 (24)	73 (25)	65 (24)	81 (25)	89 (24)	72 (23)	88 (24)	94 (24)	82 (25)	103 (24)	107 (23)	99 (25)
Pondicherry	73 (22)	77 (22)	68 (22)	82 (23)	92 (22)	72 (24)	94 (22)	97 (23)	91 (22)	115 (20)	117 (20)	113 (22)
INDIA	115	122	108	123	125	120	132	130	134	152	147	157

Note: Figures in parentheses are ranks.

Source: Census of India, 1981, Occasional Paper No. 5 of 1988, Child Mortality Estimates of India.

Table S.3 : Estimated Child Mortality in States and Union Territories
RURAL AREAS

State/ Union Territory	Estimated Child Mortality																			
	q(1)					q(2)					q(3)					q(5)				
	Persons	Males	Females	Persons	Females	Persons	Males	Females	Persons	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
States																				
Andhra Pradesh	95 (16)	105 (12)	86 (19)	116 (14)	125 (13)	107 (18)	131 (15)	136 (14)	125 (16)	153 (12)	156 (13)	148 (14)	140 (9)	149 (14)	138 (16)	161 (9)	145 (16)	134 (19)	135 (18)	167 (8)
Bihar	98 (14)	98 (15)	98 (10)	117 (13)	113 (18)	122 (10)	132 (14)	124 (18)	140 (9)	149 (14)	138 (16)	161 (9)	140 (9)	149 (14)	138 (16)	161 (9)	145 (16)	134 (19)	135 (18)	167 (8)
Gujarat	92 (18)	90 (19)	94 (12)	115 (16)	112 (19)	118 (12)	125 (18)	122 (19)	128 (15)	139 (19)	134 (19)	145 (16)	128 (15)	139 (19)	134 (19)	145 (16)	135 (18)	134 (19)	135 (18)	167 (8)
Haryana	101 (12)	97 (16)	126 (3)	133 (9)	130 (12)	137 (7)	138 (9)	130 (15)	147 (7)	150 (13)	135 (18)	167 (8)	147 (7)	150 (13)	135 (18)	167 (8)	145 (15)	142 (17)	145 (15)	135 (20)
Himachal Pradesh	96 (15)	103 (14)	91 (17)	125 (12)	136 (11)	115 (14)	128 (16)	141 (11)	122 (19)	142 (17)	145 (15)	135 (20)	141 (11)	122 (19)	142 (17)	145 (15)	135 (20)	128 (21)	126 (22)	129 (22)
Jammu & Kashmir	85 (20)	86 (20)	85 (20)	106 (21)	106 (21)	107 (21)	114 (22)	116 (20)	112 (22)	128 (21)	126 (22)	129 (22)	116 (20)	112 (22)	126 (22)	129 (22)	126 (22)	128 (21)	126 (22)	129 (22)
Karnataka	87 (19)	93 (18)	81 (21)	113 (17)	118 (15)	107 (17)	134 (12)	137 (13)	131 (11)	155 (10)	156 (12)	154 (10)	137 (13)	131 (11)	155 (10)	156 (12)	154 (10)	131 (11)	137 (13)	131 (11)
Kerala	53 (29)	57 (29)	50 (29)	56 (29)	62 (29)	50 (29)	66 (29)	69 (29)	62 (29)	83 (29)	88 (29)	78 (29)	66 (29)	69 (29)	83 (29)	88 (29)	78 (29)	62 (29)	69 (29)	66 (29)
Madhya Pradesh	158 (1)	168 (1)	147 (1)	176 (1)	179 (1)	173 (1)	188 (3)	187 (3)	189 (2)	213 (2)	209 (3)	217 (3)	188 (3)	187 (3)	213 (2)	209 (3)	217 (3)	189 (2)	187 (3)	189 (2)
Maharashtra	106 (8)	110 (8)	102 (8)	133 (8)	140 (9)	125 (9)	145 (7)	148 (7)	143 (8)	170 (7)	170 (8)	169 (7)	145 (7)	148 (7)	170 (7)	170 (8)	169 (7)	143 (8)	148 (7)	143 (8)
Manipur	32 (30)	34 (30)	30 (30)	42 (30)	42 (30)	42 (30)	47 (30)	48 (30)	46 (30)	55 (30)	56 (30)	54 (30)	48 (30)	48 (30)	55 (30)	56 (30)	54 (30)	46 (30)	48 (30)	46 (30)
Meghalaya	82 (22)	85 (23)	78 (22)	110 (19)	117 (17)	102 (22)	133 (13)	139 (12)	128 (13)	153 (11)	157 (10)	149 (13)	139 (12)	139 (12)	153 (11)	157 (10)	149 (13)	128 (13)	139 (12)	128 (13)
Nagaland	73 (26)	86 (22)	57 (28)	81 (27)	89 (26)	72 (27)	90 (27)	94 (27)	87 (27)	109 (27)	112 (26)	106 (27)	94 (27)	94 (27)	109 (27)	112 (26)	106 (27)	87 (27)	94 (27)	94 (27)
Orissa	120 (6)	124 (5)	114 (7)	154 (6)	158 (5)	148 (6)	173 (6)	178 (4)	163 (6)	186 (6)	188 (4)	183 (6)	173 (6)	178 (4)	186 (6)	188 (4)	183 (6)	163 (6)	178 (4)	178 (4)
Punjab	85 (21)	83 (25)	90 (18)	106 (22)	102 (25)	118 (13)	117 (21)	115 (21)	120 (21)	124 (24)	116 (25)	133 (21)	118 (13)	117 (21)	124 (24)	116 (25)	133 (21)	120 (21)	124 (24)	124 (24)

(Contd.)

Table 5.3 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Rajasthan	123 (5)	119 (6)	123 (4)	155 (5)	150 (6)	163 (4)	173 (5)	168 (6)	179 (4)	190 (5)	180 (7)	201 (4)
Sikkim	101 (11)	110 (9)	93 (13)	125 (11)	136 (10)	113 (15)	134 (11)	143 (9)	124 (17)	166 (8)	181 (6)	151 (12)
Tamil Nadu	94 (17)	97 (17)	91 (16)	116 (15)	123 (14)	108 (16)	127 (17)	129 (16)	124 (18)	146 (16)	147 (14)	145 (15)
Tripura	116 (7)	109 (10)	121 (5)	137 (7)	146 (7)	127 (8)	141 (8)	147 (8)	135 (10)	156 (9)	159 (9)	152 (11)
Uttar Pradesh	139 (2)	140 (4)	137 (2)	165 (3)	158 (4)	173 (2)	183 (4)	171 (5)	197 (1)	204 (4)	187 (5)	224 (1)
West Bengal	103 (10)	112 (7)	93 (15)	112 (18)	118 (16)	107 (19)	124 (19)	126 (17)	122 (20)	139 (18)	138 (17)	139 (19)
<i>Union Territories</i>												
Andaman & Nicobar	79 (24)	86 (21)	72 (25)	92 (24)	104 (23)	79 (25)	103 (24)	113 (23)	93 (26)	125 (23)	129 (21)	120 (25)
Arunachal Pradesh	131 (3)	146 (2)	115 (6)	162 (4)	174 (2)	149 (5)	189 (2)	199 (2)	177 (5)	228 (1)	234 (1)	221 (2)
Chandigarh	71 (27)	68 (27)	77 (23)	83 (26)	77 (27)	90 (23)	98 (26)	96 (26)	102 (24)	113 (26)	107 (27)	121 (24)
Dadra & Nagar Haveli	99 (13)	104 (13)	93 (14)	130 (10)	141 (8)	120 (11)	135 (10)	141 (10)	128 (14)	148 (15)	157 (11)	139 (18)
Delhi	106 (9)	109 (11)	102 (9)	109 (20)	111 (20)	107 (20)	121 (20)	113 (22)	130 (12)	131 (20)	121 (23)	143 (17)
Goa, Daman & Diu	61 (28)	64 (28)	59 (27)	73 (28)	76 (28)	70 (28)	76 (28)	80 (28)	72 (28)	88 (28)	91 (28)	86 (28)
Lakshadweep	131 (4)	140 (3)	96 (11)	169 (2)	171 (3)	166 (3)	194 (1)	207 (1)	180 (3)	210 (3)	228 (2)	189 (5)
Mizoram	77 (25)	83 (26)	72 (26)	95 (23)	105 (22)	84 (24)	100 (25)	106 (24)	95 (25)	116 (25)	120 (24)	112 (26)
Pondicherry	79 (23)	83 (24)	75 (24)	90 (25)	103 (24)	78 (26)	103 (23)	105 (25)	102 (23)	127 (22)	129 (20)	125 (23)
INDIA	123	130	116	135	138	133	147	145	149	167	161	173

Note: Figures in parentheses are ranks.
Source: Census of India, 1981, Occasional Paper No. 5 of 1988, Child Mortality Estimates of India.

Table S.4 : Estimated Child Mortality in States and Union Territories
URBAN AREAS

State/ Union Territory	Estimated Child Mortality																			
	q(1)					q(2)					q(3)					q(5)				
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		
States																				
Andhra Pradesh	62 (15)	65 (17)	59 (14)	71 (17)	78 (15)	65 (18)	78 (17)	82 (16)	74 (17)	92 (14)	95 (14)	89 (17)	92 (14)	82 (16)	74 (17)	92 (14)	95 (14)	89 (17)	89 (17)	
Bihar	62 (17)	67 (13)	58 (16)	71 (18)	70 (20)	72 (13)	77 (20)	75 (19)	79 (14)	88 (17)	84 (20)	93 (13)	88 (17)	75 (19)	79 (14)	88 (17)	84 (20)	93 (13)	93 (13)	
Gujarat	62 (18)	62 (18)	63 (10)	76 (12)	76 (16)	76 (10)	79 (15)	80 (18)	78 (15)	87 (18)	85 (18)	90 (16)	87 (18)	80 (18)	78 (15)	87 (18)	85 (18)	90 (16)	90 (16)	
Haryana	62 (16)	59 (20)	65 (9)	74 (15)	70 (19)	78 (8)	77 (19)	73 (20)	81 (10)	89 (16)	84 (19)	94 (12)	89 (16)	73 (20)	81 (10)	89 (16)	84 (19)	94 (12)	94 (12)	
Himachal Pradesh	63 (13)	66 (14)	60 (13)	75 (14)	79 (13)	71 (15)	79 (14)	84 (15)	74 (18)	90 (15)	93 (15)	87 (18)	90 (15)	84 (15)	74 (18)	90 (15)	93 (15)	87 (18)	87 (18)	
Jammu & Kashmir	47 (25)	46 (27)	48 (24)	55 (25)	53 (27)	56 (24)	56 (26)	55 (28)	57 (25)	65 (27)	64 (28)	67 (27)	65 (27)	56 (26)	57 (25)	65 (27)	64 (28)	67 (27)	67 (27)	
Karnataka	62 (14)	70 (9)	54 (19)	77 (10)	80 (11)	73 (12)	88 (7)	89 (11)	86 (7)	105 (8)	109 (7)	107 (7)	105 (8)	89 (11)	86 (7)	105 (8)	109 (7)	107 (7)	107 (7)	
Kerala	46 (26)	47 (26)	44 (26)	47 (28)	48 (28)	46 (27)	54 (27)	58 (27)	50 (27)	71 (24)	71 (23)	70 (23)	71 (24)	58 (27)	50 (27)	71 (24)	71 (23)	70 (23)	70 (23)	
Madhya Pradesh	83 (2)	86 (3)	81 (2)	104 (3)	108 (4)	100 (2)	107 (4)	116 (2)	106 (2)	125 (2)	124 (2)	126 (2)	125 (2)	116 (2)	106 (2)	125 (2)	124 (2)	126 (2)	126 (2)	
Maharashtra	63 (12)	65 (15)	60 (12)	77 (11)	79 (12)	71 (14)	78 (16)	81 (17)	74 (16)	93 (13)	95 (13)	90 (15)	93 (13)	81 (17)	74 (16)	93 (13)	95 (13)	90 (15)	90 (15)	
Manipur	31 (30)	24 (30)	40 (29)	34 (30)	39 (30)	29 (30)	36 (30)	38 (30)	35 (30)	40 (30)	40 (30)	39 (30)	40 (30)	38 (30)	35 (30)	40 (30)	40 (30)	39 (30)	39 (30)	
Meghalaya	57 (21)	55 (21)	53 (21)	66 (19)	71 (18)	61 (20)	78 (18)	87 (13)	69 (19)	83 (19)	92 (16)	73 (22)	83 (19)	87 (13)	69 (19)	83 (19)	92 (16)	73 (22)	73 (22)	
Nagaland	45 (27)	48 (25)	41 (28)	53 (26)	63 (23)	48 (26)	53 (28)	68 (21)	50 (28)	63 (28)	71 (24)	54 (29)	63 (28)	68 (21)	50 (28)	63 (28)	71 (24)	54 (29)	54 (29)	
Orissa	83 (3)	110 (1)	79 (4)	104 (4)	113 (3)	94 (4)	111 (3)	115 (3)	106 (3)	123 (3)	123 (3)	122 (5)	123 (3)	115 (3)	106 (3)	123 (3)	123 (3)	122 (5)	122 (5)	
Punjab	53 (22)	51 (24)	55 (18)	63 (21)	60 (26)	65 (19)	66 (21)	64 (25)	68 (20)	73 (22)	70 (26)	76 (20)	73 (22)	64 (25)	68 (20)	73 (22)	70 (26)	76 (20)	76 (20)	

(Contd.)

Table S.4 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Rajasthan	79 (6)	76 (6)	80 (3)	98 (5)	92 (5)	97 (3)	101 (5)	98 (6)	105 (5)	117 (4)	110 (6)	124 (4)
Sikkim	67 (9)	76 (7)	58 (15)	71 (16)	89 (7)	70 (16)	86 (10)	93 (8)	79 (13)	109 (7)	120 (4)	98 (10)
Tamil Nadu	68 (7)	71 (8)	66 (8)	78 (9)	83 (10)	74 (11)	88 (8)	92 (10)	84 (9)	104 (9)	106 (9)	102 (8)
Tripura	68 (8)	70 (11)	54 (20)	79 (7)	85 (8)	76 (9)	87 (9)	93 (9)	80 (12)	94 (11)	97 (12)	90 (14)
Uttar Pradesh	81 (5)	84 (4)	77 (5)	91 (6)	90 (6)	92 (5)	101 (6)	96 (7)	106 (4)	116 (5)	108 (8)	126 (3)
West Bengal	59 (20)	62 (19)	56 (17)	63 (22)	63 (21)	61 (21)	66 (22)	67 (22)	66 (21)	73 (21)	73 (21)	74 (21)
<i>Union Territories</i>												
Andaman & Nicobar	40 (28)	27 (29)	42 (27)	52 (27)	60 (25)	45 (28)	58 (25)	61 (26)	54 (26)	77 (20)	70 (25)	76 (19)
Arunachal Pradesh	61 (19)	70 (12)	50 (23)	66 (20)	74 (17)	57 (23)	85 (13)	99 (5)	63 (24)	67 (26)	105 (11)	69 (26)
Chandigarh	52 (23)	52 (23)	51 (22)	61 (23)	61 (24)	61 (22)	65 (23)	66 (24)	63 (23)	70 (25)	69 (27)	70 (25)
Dadra & Nagar Haveli	82 (4)	79 (5)	127 (1)	107 (2)	130 (1)	82 (6)	113 (2)	104 (4)	99 (6)	116 (6)	114 (5)	118 (6)
Delhi	66 (11)	65 (16)	67 (7)	79 (8)	78 (14)	81 (7)	85 (12)	84 (14)	86 (8)	93 (12)	90 (17)	95 (11)
Goa, Daman & Diu	51 (24)	53 (22)	46 (25)	60 (24)	63 (22)	53 (25)	62 (24)	67 (23)	66 (22)	71 (23)	72 (22)	70 (24)
Lakshadweep	99 (1)	99 (2)	67 (6)	125 (1)	114 (2)	136 (1)	143 (1)	140 (1)	146 (1)	157 (1)	160 (1)	153 (1)
Mizoram	40 (29)	43 (28)	37 (30)	42 (29)	45 (29)	39 (29)	48 (29)	55 (29)	40 (29)	58 (29)	61 (29)	55 (28)
Pondicherry	67 (10)	70 (10)	61 (11)	75 (13)	83 (9)	67 (17)	85 (11)	89 (12)	80 (11)	104 (10)	106 (10)	102 (9)
INDIA	67	68	66	80	83	77	84	85	84	98	97	99

Note: Figures in parentheses are ranks.

Source: Census of India, 1981, Occasional Paper No. 5 of 1988, Child Mortality Estimates of India.

Table 5.5 : Estimates of Child Mortality, q(2), by Religion in States and Union Territories

State/ Union Territory	Child Mortality Among					
	Hindus	Muslims	Christians	Sikhs	Buddhists	Jains
<i>States</i>						
Andhra Pradesh	108	81	107	-	-	-
Bihar	112	110	106	48	-	88
Gujarat	104	90	82	-	-	57
Haryana	124	168	-	87	-	-
Himachal Pradesh	115	106	-	84	-	-
Jammu & Kashmir	84	104	-	57	121	-
Karnataka	106	82	74	-	-	76
Kerala	54	58	54	-	-	-
Madhya Pradesh	166	115	89	-	-	77
Maharashtra	117	85	54	-	142	57
Manipur	33	56	50	-	-	-
Meghalaya	86	144	94	-	-	-
Nagaland	71	84	73	-	-	-
Orissa	149	124	157	-	-	-
Punjab	88	96	108	98	-	-
Rajasthan	154	124	-	-	-	85
Sikkim	111	-	92	-	128	-
Tamil Nadu	105	83	93	-	-	-
Tripura	133	131	75	-	-	-
Uttar Pradesh	157	133	72	-	-	41
West Bengal	99	113	96	-	66	-
<i>Union Territories</i>						
Andaman & Nicobar	83	70	82	-	-	-
Arunachal Pradesh	90	-	149	-	150	-
Chandigarh	65	-	53	-	-	-
Dadra & Nagar Haveli	123	-	-	-	-	-
Delhi	84	87	-	59	-	-
Goa, Daman & Diu	75	65	44	-	-	-
Lakshadweep	-	153	-	-	-	-
Mizoram	91	-	65	-	-	-
Pondicherry	84	70	78	-	-	-
INDIA	126	105	83	92	140	66

Source: Census of India 1981, Occasional Paper No. 5 of 1988, Child Mortality Estimates of India.

Table 5.6 : Estimates of Child Mortality, q(2), by Education of Mother in States and Union Territories

State/ Union Territory	Child Mortality When Mother is				
	Illiterate	Literate but Below Middle	Middle but Below Matric	Matriculate but Below Graduate	Graduate and Above
<i>States</i>					
Andhra Pradesh	117	80	60	42	26
Bihar	120	82	63	44	14
Gujarat	123	86	61	49	31
Haryana	132	86	62	48	36
Himachal Pradesh	138	88	86	65	0
Jammu & Kashmir	108	92	58	45	19
Karnataka	115	84	66	38	17
Kerala	86	55	37	24	-
Madhya Pradesh	175	108	69	52	35
Maharashtra	136	104	66	39	28
Manipur	42	43	31	23	17
Meghalaya	116	91	65	35	-
Nagaland	93	68	39	49	-
Orissa	173	143	98	51	26
Punjab	106	97	75	54	29
Rajasthan	158	96	66	58	49
Sikkim	127	85	46	35	-
Tamil Nadu	124	88	63	47	19
Tripura	147	111	80	49	-
Uttar Pradesh	162	113	86	58	40
West Bengal	114	86	58	36	21
<i>Union Territories</i>					
Andaman & Nicobar	97	79	44	22	-
Arunachal Pradesh	175	77	45	24	17
Chandigarh	91	87	61	-	-
Dadra & Nagar Haveli	132	92	66	-	-
Delhi	110	76	56	45	25
Goa, Daman & Diu	93	53	42	35	-
Lakshadweep	177	150	87	78	-
Mizoram	133	76	35	41	-
Pondicherry	111	69	59	46	-
INDIA	138	99	63	43	28

Source: Census of India, 1981, Occasional Paper No. 5 of 1988, Child Mortality Estimates of India.

Table 5.7 : Estimates of Child Mortality, q(2), by Occupation of Mother

States	Child Mortality When the Mother is					
	Rural			Urban		
	Cultivators	Agricultural Labourers	Manual Workers	Non-manual Workers	Manual Workers*	Non-manual Workers
Andhra Pradesh	119	133	127	110	106	53
Bihar	123	161	146	89	123	46
Gujarat	102	149	140	90	109	58
Haryana	133	160	165	64	115	34
Karnataka	107	137	111	97	120	69
Kerala	74	88	84	42	78	33
Madhya Pradesh	165	208	211	137	151	119
Maharashtra	126	169	157	90	126	50
Orissa	163	179	328	133	155	97
Punjab	87	128	120	43	91	56
Rajasthan	162	298	183	101	130	67
Tamil Nadu	112	143	151	85	143	63
Uttar Pradesh	147	197	166	105	120	60
West Bengal	93	113	130	68	114	53
INDIA	136	157	157	88	128	55

* In urban areas, cultivators and agricultural labourers have been included under manual workers.

Note: Child mortality estimates by occupation are available only for the major states with population exceeding 10 millions.

Chapter 6

Inter-Relation Among Indicators and Policy Variables

INTER-RELATIONSHIPS among various indicators and policy variables have often been studied by computing correlation coefficients. A low value of correlation coefficient between two variables would normally indicate lack of mutual influence while a high value would suggest that changes in one of these is associated with change in the other. High correlation is, however, suggestive only and does not necessarily imply presence of any causal relation. Causal relations are to be looked for elsewhere and supported by other plausible evidence.

Tables 6.1 and 6.2 contain some indicators and policy variables pertaining to 15 major states and computed correlation coefficients between pairs of these variables. A look at these would reveal that:

- education as measured by percentage of literates has high correlation with Expectation of Life at Birth, Crude Birth and Death Rates and also Infant Mortality Rate. Plausible causal chains can be constructed among these variables which may make us believe that policies and programmes aiming to raise the level of education (specially of mothers) will have favourable impact on birth, death and infant mortality rates and thus create a condition where people will lead a healthy and longer life.
- percentage of SC and ST population in a state has positive correlation with birth, death and infant mortality rate. This may be due to higher incidence of these episodes among SC and ST population, suggesting this to be an area needing micro intervention.
- percentage of SC and ST bears a negative correlation with level of education indicating a lower level of achievements by them in the field of education. Policy implication of this would be to make special efforts to raise the level of education among SC, ST and such other backward communities with the expectation that this will have a favourable impact on birth, death and infant mortality rates which in turn will raise Expectation of Life at Birth for these communities.
- physical facilities for education such as, existence of primary school in the

village or primary school per lakh population seem to have no significant impact on educational attainment of the community. Quality of teaching as measured by student-teacher ratio (STR), in the absence of other suitable indicator, is correlated with literacy rate. STR has a mild correlation with enrolment ratio and a high correlation with drop out rate in primary schools. Improving the quality of teaching is expected to raise the level of attainment in education through increased enrolment and reduced drop outs.

Abbreviations Used in Tables 6.1 and 6.2

LE	:	Life expectancy at birth 1991-96
CBR	:	Crude birth rate 1991
CDR	:	Crude death rate 1991
IMR	:	Infant mortality rate 1991
PPBPL	:	Per cent of population below poverty line 1987-88
LRP	:	Effective literacy rate (Persons)
LRM	:	Effective literacy rate (Male)
LRF	:	Effective literacy rate (Female)
PER SC/ST	:	Per cent of SCs and STs 1991
EXP (HEALTH)	:	Per capita expenditure on health care, Pub. Ac. 1987-88
SCH HAB	:	Per cent of population with primary school within habitation
SCH DEN	:	Primary school per lakh population
PCY	:	Per capita income (1990-91)
ENR (B)	:	Primary school enrolment rate for boys
ENR (G)	:	Primary school enrolment rate for girls
ENR (T)	:	Primary school enrolment rate for boys and girls
DOR (B)	:	Primary school drop-out rate for boys
DOR (G)	:	Primary school drop-out rate for girls
DOR (T)	:	Primary school drop-out rate for boys and girls
STR	:	Students per teacher
EXP (EDUC)	:	Per capita expenditure on education, Pub. Ac.

Table 6.1 : Some Social Indicators and Policy Variables for Major States

SET A

States	LE	CBR	CDR	IMR	PP BPL	LRP	LRM	LRF	PER SC:ST	EXP (HEALTH)
Andhra Pradesh	62.92	26.0	9.7	73	31.7	44.09	55.13	32.72	24.01	60.34
Assam	58.62	30.9	11.5	81	22.8	52.81	61.87	43.03	20.22	72.28
Bihar	60.47	30.5	9.8	69	40.8	38.48	52.49	22.89	22.21	33.25
Gujarat	61.81	27.5	8.5	69	18.4	61.29	73.13	48.64	22.33	79.35
Haryana	64.75	33.1	8.2	68	11.6	55.85	69.10	40.74	19.75	72.73
Karnataka	64.71	26.8	9.0	77	32.1	56.04	67.26	44.34	20.64	61.00
Kerala	71.86	18.1	6.0	17	17.0	89.79	93.62	86.13	11.02	70.47
Madhya Pradesh	58.62	35.8	13.8	122	36.7	44.20	58.42	28.85	37.82	63.66
Maharashtra	64.92	26.2	8.2	60	29.2	64.87	76.36	52.32	20.36	75.59
Orissa	59.28	28.8	12.7	126	44.7	49.09	63.09	34.68	38.41	51.96
Punjab	66.58	28.6	8.0	53	7.2	58.51	65.66	50.41	28.31	77.63
Rajasthan	60.90	34.3	9.8	77	24.4	38.55	54.99	20.44	29.73	95.89
Tamil Nadu	62.95	20.7	8.8	57	32.8	62.66	73.75	51.33	20.21	65.80
Uttar Pradesh	55.13	35.1	11.1	93	35.1	41.06	55.73	25.31	21.26	41.74
West Bengal	61.95	26.7	8.1	70	27.6	57.70	67.81	46.56	29.21	51.11

(Contd.)

Table 6.1 (Contd.)

Correlation Matrix

States	LE	CBR	CDR	IMR	PP BPL	LRP	LRM	LRF	PER SC/ST	EXP (HEALTH)
LE	1.000	-0.715	-0.820	-0.801	-0.580	0.804	0.770	0.809	-0.505	0.382
CBR	-0.715	1.000	0.656	0.680	0.134	-0.793	-0.757	-0.813	0.513	-0.050
CDR	-0.820	0.656	1.000	0.933	0.634	-0.699	-0.679	-0.692	0.699	-0.282
IMR	-0.801	0.680	0.933	1.000	0.622	-0.705	-0.657	-0.719	0.800	-0.289
PP BPL	-0.580	0.134	0.634	0.622	1.000	-0.489	-0.441	-0.497	0.393	-0.658
LRP	0.804	-0.793	-0.699	-0.705	-0.489	1.000	0.985	0.992	-0.566	0.296
LRM	0.770	-0.757	-0.679	-0.657	-0.441	0.985	1.000	0.956	-0.544	0.318
LRF	0.809	-0.813	-0.692	-0.719	-0.497	0.992	0.956	1.000	-0.568	0.268
PER SC/ST	-0.505	0.513	0.699	0.800	0.393	-0.566	-0.544	-0.568	1.000	-0.068
EXP (HEALTH)	0.382	-0.050	-0.282	-0.289	-0.658	0.296	0.318	0.268	-0.068	1.000

Table 6.2 : Some Social Indicators and Policy Variables for Major States

SET B

States	LRP	LRM	LRF	SCH HAB	SCH DEN	PCY	ENR (B)	ENR (G)	ENR (T)	DOR (B)	DOR (G)	DOR (T)	STR	PP BPL	EXP (EDUC)	PER SCST
Andhra Pradesh	44.09	55.13	32.72	93.29	73.44	4722	121.02	93.16	107.25	51.45	57.54	54.08	53	31.7	31.48	24.01
Assam	52.81	61.87	43.03	81.74	129.52	3427	116.00	107.27	111.75	52.20	59.64	55.42	40	22.8	30.15	20.22
Bihar	38.48	52.49	22.89	78.53	61.65	2539	107.55	55.05	81.70	64.39	70.26	66.34	50	40.8	21.02	22.21
Gujarat	61.29	73.13	48.64	97.83	31.89	6060	136.62	108.37	122.77	40.27	48.30	43.84	36	18.4	38.00	22.33
Haryana	55.85	69.10	40.74	96.68	29.90	6936	93.99	73.09	83.59	26.11	30.99	28.13	45	11.6	26.56	19.75
Himachal Pradesh	63.86	75.36	52.13	46.51	145.47	4813	125.67	108.69	117.21	26.38	27.99	27.12	41	9.2	46.56	29.56
Karnataka	56.04	67.26	44.34	92.50	52.34	4737	113.92	101.70	107.95	44.40	55.61	49.70	46	32.1	37.52	20.64
Kerala	89.79	93.62	86.13	87.67	23.27	3843	103.58	101.28	102.45	-3.00	-1.00	-2.00	32	17.0	48.84	11.02
Madhya Pradesh	44.20	58.42	28.85	81.51	101.10	3614	122.03	84.34	103.85	39.32	42.64	40.62	42	36.7	16.88	37.82
Maharashtra	64.87	76.56	52.32	92.42	49.56	7409	129.46	116.52	123.15	34.24	44.25	38.91	39	29.2	31.50	20.36
Orissa	49.09	63.09	34.68	77.08	126.45	3180	120.29	83.87	102.51	40.05	37.32	38.97	35	44.7	29.64	38.41
Punjab	58.51	65.66	50.41	96.80	61.28	8281	99.00	92.22	95.76	29.20	29.62	29.39	39	7.2	49.62	28.31
Rajasthan	38.55	54.99	20.44	86.84	68.70	3983	105.00	48.79	77.96	53.12	60.75	52.25	42	24.4	30.69	29.73
Tamil Nadu	62.66	73.75	51.33	83.92	53.67	4428	141.08	126.48	133.95	19.16	24.01	21.41	45	32.8	33.40	20.21
Uttar Pradesh	41.06	55.73	25.31	55.69	55.02	3553	98.59	62.27	81.39	50.30	48.96	49.89	51	35.1	14.68	21.26
West Bengal	57.70	67.81	46.56	79.71	74.76	4750	141.37	108.73	125.31	62.57	66.89	64.45	41	27.6	41.15	29.21

(Contd.)

Table 6.2 (Contd.)

Correlation Matrix

States	LRP	LRM	LRF	SCH HAB	SCH DEN	PCY	ENR (B)	ENR (G)	ENR (T)	DOR (B)	DOR (G)	DOR (T)	STR	PP BPL	EXP (EDUC)	PER SC/ST
LRP	1.000	0.985	0.992	0.153	-0.290	0.336	0.175	0.671	0.501	-0.810	-0.753	-0.775	-0.654	-0.513	0.729	-0.514
LRM	0.985	1.000	0.956	0.116	-0.300	0.331	0.208	0.647	0.501	-0.824	-0.763	-0.791	-0.666	-0.483	0.672	-0.481
LRF	0.992	0.956	1.000	0.167	-0.266	0.322	0.159	0.684	0.503	-0.786	-0.734	-0.751	-0.631	-0.514	0.757	-0.522
SCH HAB	0.153	0.116	0.167	1.000	-0.584	0.484	-0.033	0.121	0.059	-0.103	0.013	-0.055	-0.167	-0.122	0.167	-0.244
SCH DEN	-0.290	-0.300	-0.266	-0.584	1.000	-0.378	0.216	0.067	0.139	0.263	0.181	0.230	-0.069	0.140	-0.052	0.643
PCY	0.336	0.331	0.322	0.484	-0.378	1.000	-0.021	0.327	0.196	-0.311	-0.249	-0.277	-0.192	-0.640	0.438	-0.135
ENR (B)	0.175	0.208	0.159	-0.033	0.216	-0.021	1.000	0.706	0.894	0.101	0.146	0.139	-0.172	0.224	0.173	0.203
ENR (G)	0.671	0.647	0.684	0.121	0.067	0.327	0.706	1.000	0.948	-0.405	-0.330	-0.342	-0.375	-0.223	0.547	-0.217
ENR (T)	0.501	0.501	0.503	0.059	0.139	0.196	0.894	0.948	1.000	-0.211	-0.144	-0.154	-0.315	-0.039	0.421	-0.045
DOR (B)	-0.810	-0.824	-0.786	-0.103	0.263	-0.311	0.101	-0.405	-0.211	1.000	0.979	0.994	0.513	0.473	-0.481	0.355
DOR (G)	-0.753	-0.763	-0.734	0.013	0.181	-0.249	0.146	-0.330	-0.144	0.979	1.000	0.991	0.509	0.436	-0.445	0.251
DOR (T)	-0.775	-0.791	-0.751	-0.055	0.230	-0.277	0.139	-0.342	-0.154	0.994	0.991	1.000	0.519	0.467	-0.467	0.301
STR	-0.654	-0.666	-0.631	-0.167	-0.069	-0.192	-0.172	-0.375	-0.315	0.513	0.509	0.519	1.000	0.343	-0.553	-0.075
PP BPL	-0.513	-0.483	-0.514	-0.122	0.140	-0.640	0.224	-0.223	-0.039	0.473	0.436	0.467	0.343	1.000	-0.663	0.278
EXP (EDUC)	0.729	0.672	0.757	0.167	-0.052	0.438	0.173	0.547	0.421	-0.481	-0.445	-0.467	-0.553	-0.663	1.000	-0.190
PER SC/ST	-0.514	-0.481	-0.522	-0.244	0.643	-0.135	0.203	-0.217	-0.045	0.355	0.251	0.301	-0.075	0.278	-0.190	1.000

Chapter 7

Quality and Reliability of Data Used

THE quality and reliability of data from secondary sources such as various censuses, sample surveys by NSS, NCAER and other organisations and individual scholars, records and registers of government departments, have been scrutinised by scholars in various academic gatherings and reported in journals. Various publications on this subject (Rao, 1972; Saluja, 1972; Dandekar and Venkataramaiah, 1975; Bose, 1982) discussed limitations and deficiencies of the data obtainable from these sources. The current studies have made use of data on Consumer Expenditure, Operational Land Holdings, Education and Health.

Consumer Expenditure

Data on consumer expenditure collected by NSS have been thoroughly scrutinised by competent scholars (Srinivasan and Bardhan, 1974; Mitra, 1983). Various checks and precautions adopted by NSS field staff are believed to ensure reliability of data despite possible memory lapse on the part of the respondent.

Land Holdings

The quinquennial census of agricultural land holdings is based on the returns submitted by the village assistants. Despite apprehensions regarding the information on tenancy etc. reported in various publications, data on number of holdings and operated area are believed to be relatively more reliable.

Education

The number of students furnished by population censuses and those obtained from department of education are often at variance. The former is based on information obtained from the households and the latter is a compilation from reports supplied by educational institutions. Expert opinion is that information supplied by institutions is more likely to be biased.

Deficiencies and discrepancies in the reported enrolment and drop out ratios have already been indicated. Moreover, enrolment figures reported by various directorates of education do not reflect actual attendance in school and effective use of existing facility. A widely shared view is that reported enrolments are over estimates while drop outs are under estimated making the mean years of schooling, estimated on the basis of these data, biased.

Data on literacy obtained from census are of reliable quality with tolerable error.

Health

Data on health facilities provided by government agencies are factual and by and large reliable. This, however, gives only a partial picture of the available health care facilities as already discussed. Death rates, birth rates and infant mortality rates obtained are believed to be of reliable quality.

The estimates of expectations of life depend, to a large extent, on the assumptions made in the model. Reliability will, thus, depend on the appropriateness of these assumptions.

References

1. Adelman, I. and Morris, C. T. : *Economic Growth and Social Equity in Developing Countries*, Stanford University Press, California, 1973.
2. Arndt, H. W. : *Economic Development : The History of An Idea*, University of Chicago Press, 1987.
3. Bose, Ashish (ed) : *Data Base of the Indian Economy, Vol IV, Social Statistics : Health and Education*, Statistical Publishing Society, Calcutta, 1982.
4. Chakrabarty, G. : *Measuring Social Welfare*, Unpublished, 1993 .
5. Chakravarty, S. R. : "An Axiomatisation of the Entropy Measure", *Sankhya*, B, 1982.
6. Dandekar, V. M. and Venkataramaiah, M. (ed) : *Data Base of the Indian Economy, Vol II*, Statistical Publishing Society, Calcutta and The Indian Econometric Society, Hyderabad, 1975.
7. Dasgupta, Partha and Weale, Martin : "On Measuring Quality of Life", *World Development*, January 1992.
8. Govt. of India : *Challenge of Education – A Policy Perspective*, August 1985.
9. ICSSR and CSO : *Social Information of India, Trends and Structures*, Hindusthan Publishing Corporation, Delhi, 1983.
10. Ingham, B. : "The Meaning of Development, Interaction Between 'new' and 'old' ideas", *World Development*, November 1993.
11. Iserman, P. : "Inter Country Comparisons of Real (PPP) Incomes: Revised Estimates and Unresolved Question", *World Development*, January 1980.
12. Kakwani, N. C. : "Concentration Curves and Their Applications to Optimal Negative Income Taxation", *Journal of Quantitative Economics*, 1985.
13. Kakwani, N. C. : *Income Inequality and Poverty : Methods of Estimation and Policy Applications*, Oxford University Press, 1980.
14. Kakwani, N. C. : "Welfare Measures : An International Comparison", *Journal of Development Economics*, 1981.
15. Kamat, A. R. : "Educational Statistics : Sources, Limitations and Improvements", *National Seminar on Social Statistics*, CSO, 1977.
16. Kelley, Allen C. : "The Human Development Index : Handle with Care", *Population and Development Review*, June 1991.
17. Kondor, Yaakov : "Value Judgments Implied by the Use of Various Measures of Income Inequality", *Review of Income and Wealth*, 1975.
18. Miles, I. : *Social Indicators for Human Development*, Pinter, London, 1985.
19. Mitra, G. K. : "A Note on Suitability of NSS Consumer Expenditure Survey Data for District Level Poverty Estimates", *Anvesak*, 1983.
20. Morris, M. D. : *Measuring the Conditions of World's Poor : The Physical Quality of Life Index*, Pergamon, Oxford, 1979.
21. NCAER : Human Development Profile of Tamil Nadu, 1994, Mimeo.
22. NCAER : Human Development Profile of Orissa, 1994a, Mimeo.
23. Pal, S. P. and Pant, D. K. : "An Alternative Human Development Index", *Margin*, Special Issue on Human Development, Vol. 25, No. 2, Part II, Jan-March, 1993.

24. Rao, C. R. (ed) : *Data Base of the Indian Economy, Vol. I*, The Indian Econometric Society, Hyderabad, 1972.
25. Saluja, M. R. (ed) : *Indian Official Statistical System*, Statistical Publishing Society, Calcutta, 1972.
26. Sen, Amartya : "Informational Bases of Alternative Welfare Approaches : Aggregation and Income Distribution", *Journal of Public Economics*, 1974.
27. Sen, Amartya : "On the Development of Basic Income Indicators to Supplement GNP Measures", *United Nations Economic Bulletin for Asia and Far East*, 1973.
28. Srinivasan, T. N. and Bardhan, P. K. (ed) : *Poverty and Income Distribution in India*, Statistical Publishing Society, Calcutta, 1974.
29. Subrahmanyam, S. and Rama Raju, V. : *Wastage in Primary Education*, Centre for Economic and Social Studies, Hyderabad, 1988.
30. Summers, R. and Heston, A. : "A New Set of International comparisons of real Product and Prices - Estimates for 130 Countries, 1950-1985", *Review of Income and Wealth*, 1988.
31. UNDP : *Human Development Reports, 1990, 1991, 1992 and 1993*.
32. UNRISD : *Contents and Measurement of Socio-economic Development*, Geneva, 1970.

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