Critical Assessment of India's Demographic Data

The most valuable accidents of any human being are birth, marriage, and death. These are known as vital events and its records are crucial, in the beginning, the records were primarily for the protection of individual rights, especially those rights relating to the distribution of property. But now a day's these records are not only useful for the person itself but also the government for the proper planning and program prospective.

In India, recording of vital vents were started prior to the first census. Indian census is going on decadal basis. The one type of data cannot be fulfil the all the requirements of the government policy and program. In the same way it is difficult to collect the demographic data without any error. There are two types of errors, first is coverage error (the failure to enumerate all the members of the relevant population) and second is content error (fail to collect true information as poor age reporting).

The present paper focuses to critically assess the quality as well as the limitations of different sources of India's demographic data.

The term "Demography" is the statistical and mathematical study of the **size, composition, and spatial distribution of human population, and of changes** over time in these aspects through the operation of five processes **of fertility, mortality, marriage, migration and social mobility**. Although it maintains a continuous descriptive and comparative analysis of trends in each of these processes, and in their net results, its long run goal is to develop a body of theory to explain the event that it charts and compares (**Donald Bogue -1968)**. Demography involves a systematic study of human population and its different aspects like: Population Level, Population Distribution, Population Structure and Characteristics, Population Growth and its components, fertility, mortality and migration, Time trends in all of the above & Determinants and Consequences of all of the above.

In India, during the regime of Emperor Ashoka (270 B.C.-230 B.C.), population data collection were often undertaken. In the third century B.C., the *Arthashastra* of Kautilya prescribed the collection of population statistics as a measure of State policy for the purpose of taxation. In the sixteenth century, during the rule of Akbar some population data were collected. But now the demographic data are required for planning, programme implementation, monitoring and evaluation as well as for the research in various fields. Usually the demographic data are drawn from various sources such as national censuses, civil registration system as well as the sample surveys.

Census

Modern Definition of a Census: "*A census of population is the total process of collecting, compiling, evaluating, analysing and publishing demographic, economic and social data pertaining, at a specific time, to all persons in a country or in a well-delimited part of a country.*"[1] In other words, the enumeration of the entire population of a country or a region at a particular time is known as census.

History of Census-Taking in India: The first attempt to obtain the size of population in India by actually counting heads was made during 1867-1872. This count was neither synchronous, nor did it cover the hole country. It was, as the noted demographer Kingsley Davis observed, just "an auspicious beginning" of census taking in India. The next census, which was synchronous, covered a wide area and was more modern in nature, was under taken in 1881. Since then on decadal basis, a new census has been taken in India. The recent 2001 census represents the fourteenth census of India, in this continuous serious.

How a National Census is taken: Census taking is a very complex and extensive task and is, therefore, usually conducted by governments. In many countries, provision for census taking is made by law. While such a law makes the co-operation of each citizen mandatory, it also ensure that confidential nature of census information provided by individuals shall be preserved.

In India, Census taking has been the responsibility of the Government from the very beginning. Even today, population census is a Union subject, with the Ministry of Home Affairs in charge. A senior officer of the Indian Administrative Service, with experience in the conduct of census operations, is generally appointed as Census Commissioner. There are thousands of enumerators, with a hierarchy of officers at various levels in between. For each State and Union Territory, an officer, designated as the Director of Census Operations, is appointed. Taking into consideration the magnitude of the task, the entire administrative machinery of the State and local self-government is placed at the disposal of the Director of Census Operations. In rural areas, primary school teachers, village "patvaris" and other staff in local offices are generally appointed as census enumerators. The enumerator is the basic and the most important link in census operations. He has to visit every household within the area assigned to him and collected the required information.

According to the Indian census Act of 1948, the Central Government is empowered to notify and conduct a census in the whole country or any part of it. It authorises census enumerators to ask the prescribed census question and legally compel all persons to answer these questions truthfully. The Act also guarantees that the information collected at any census from individuals shall be kept confidential, shall be used only for statistical purposes and shall not be used as evidence even in court of law.[2]

Quality of Census Data

On all India basis, one question – ***"Any child born alive during last one year"*** was canvassed to ***currently married women*** in 1971 census for the first time. The data on fertility from 1971 single question was not satisfactory and it has not been used to estimate fertility level. In view of this, two additional questions have been canvassed since 1981. Following questions are regularly canvassed:

- Any child born alive during last one year (to currently married women only)
- Total number of children ever born alive
- Number of children born alive are still surviving at the time of enumeration

Last two questions are asked to ***ever-married women*** and in combination they are used to estimate mortality indicators. First question provides base for calculating all the fertility indicators.

There are several limitations of the census data. They suffer mainly from two types of error coverage and content error. Differential coverage of the population by age and sex is also very often present and its effect cannot always be separated from those of age misstatement. It is experienced that the Indian censuses suffer from gross age misreporting. Looking at the single year age distributions, strong preference for ages ending in digit 0 and 5 has been found. For measurement of errors in age data, Whipple's index of concentration and Myer's blended sum may be used. The Whipple's index computed from them falls usually in the neighborhood of 300 and the Myer's index is typically around 50 and these indicate a rough quality of data. Although grouping of ages in quinquennial interval reduces considerably the errors from digital preference, its effects can still be seen at higher intervals in the form of concentration of persons in intervals that include an age ending in zero (Bhat 1995). Although some specific questions on fertility and mortality have been asked on a sample basis for certain states in every census since 1911, analysis of the data is hindered by poor quality, incomplete national coverage and irregular tabular

categories (Bhat et. al 1984). Another source of error in reported age distributions is age misreporting. Since age is not an important concept for most Indians, the recorded age distributions from Indian censuses suffer from considerable distortions. The ignorance of one's own true age results in a tendency to guess an age that ends in a common or desirable digit (Bhat el. al 1984). In estimating the trends and levels of fertility and mortality from census data under enumeration is a serious problem. There is no direct question on deaths in Indian census. It may also be added that fertility and mortality estimates which are derived from children ever born-children surviving (CEB-CS) data does not give the current mortality and fertility scenario but gives the scenario prior to the census. Census data are available every ten year. So, it is unable to give the demographic estimates for the period between two censuses or period after the census.

Civil Registration System in India

Civil registration in India started with a view to introduce sanitary reforms by the Sanitary Commissioner of the Govt. of India for control of pestilence and disease right in 1869. In the beginning, more emphasis was laid on the registration of deaths and registration of births was given secondary importance. The Bengal Births and Deaths Registration Act of 1873 is the first legislative measure on the topic.

Bhore committee constituted in 1943 recommended several steps to improve the collection of vital statistics in India. On recommendations of the Bhore Committee the office of Registrar General of India was created in 1951 and vital statistics was transferred to this office from the Director of Health Services in 1960. On the recommendations of various committees and deliberations, the Registration of Births and Deaths Act 1964, was enacted to co-ordinate civil registration throughout the country.

System of data collection in CRS

CRS gives data not only at the national level but also at the district and sub-divisional levels which are the basic units for the planning and implementation of health and family welfare services as well as several developmental programmes. At the local level, births and deaths are recorded by the Registrar or Sub-Registrar of specific area and the basic information is given to him by appointed informants (village level health workers/ICDS workers etc). In case of household events, head of the household is responsible for reporting the event where as the Medical officer in-charge collects information on events taking place in hospitals, nursing homes, maternity homes etc. This information are compiled and provided in a standard format such as Form 2 for live births, Form 3 for stillbirths and Form 4 for deaths. This information is reported to the district Registrar or Addl. District Registrar who is the Medical Health Officer. In case of Municipalities (urban wards) with a population of 30,000 and more, every Registrar is expected to send monthly statement to the Chief Registrar. The Chief Registrar of states sends the following information to the Registrar General of India:

- Monthly report, which include total number of registration units from where information has been received, number of births, deaths and infant deaths by districts and place of residence i.e. rural-urban.

- Annual returns in the form of statistical tables which are standard for all states.

A minimum tabulation plan has been recommended for all the states and they are expected to bring-out annual reports. On the basis of the annual vital statistics provided from the Chief Registrar, the Registrar General of India publishes a comprehensive annual report entitled *"Vital Statistics of India"*.

Shortcomings of CRS

The vital events of births and deaths are grossly under registered in many underdeveloped and developing countries. Because information given by the CRS is incomplete, we have to adjust the data by some indirect techniques for estimating correct level of fertility and mortality. It may be mentioned here that neither of these can help in providing the accurate information about the vital events at the district or lower level of administration.

In spite of the fact that India has a century old tradition of registration of the vital event, the data from CRS have been far from being satisfactory. It seems that after an enactment of the Registration of Births and Deaths Act in 1969, the quality of data has rather deteriorated. "The system of registration (of births and deaths) further deteriorated particularly since sixties. The main reason for this is the disappearance of Chowkidari system and its substitution by Panchayati Raj". The coverage under registration system was never complete and there is no uniformity in its coverage and quality even today.

Despite various steps to improve civil registration system there is virtually no change in its quality. Survey of under registration conducted in 1966 by the office of the Registrar General, India indicated 58.5 percent completeness of births in the rural areas, which was quite high. It is stated in the same report completeness was in the vicinity of 50 percent for the whole country (RGI, 1966), which means survey results for rural area were not acceptable.

Pathak and Ram (1987) estimated the completeness of death registration in India and some selected states during 1961-81. It is seen that the completeness of death registration in India during 1961-70 and 1971-80 has not improved. The completeness of registration of deaths at adult ages say after age 5 years comes out to be in the neighbourhood of 50 percent. The completeness is slightly higher for males as compared to females. In another paper Pathak and Ram (1994) have found that about 50 percent deaths were registered in India in the year 1971. It decreased from 50 percent to 46.5 percent in 1975 and again increased to 53 percent.

Analysis by states shows that the civil registration system is at its lowest possible standard in Uttar Pradesh and comparatively better in Maharashtra, Gujarat and Tamil Nadu. During 1970's, system has shown an improvement in Kerala and Madhya Pradesh. Due to inherent tabulation problems, vital rates for urban areas came out to be abnormally high as event mostly takes place in urban areas and tabulation is done using place of occurrence instead of place of usual residence.

Sample Registration System (SRS)

The Sample Registration System (SRS) is a large-scale demographic survey for providing reliable annual estimates of birth rate, death rate and other fertility & mortality indicators at the national and sub-national levels. Initiated on a pilot basis by the OFFICE OF THE REGISTRAR GENERAL, INDIA in a few selected states in 1964-65, it became fully operational during 1969-70 with about 3700 sample units.

System of data collection in SRS

At the national level, the Vital Statistics Division of the Office of the Registrar General, India coordinates the implementation work, formulates and prescribes necessary standards. It provides necessary instructions and guidance, undertakes tabulation and analysis of data and their dissemination. The access of data/reports is limited to district level officers. The sample unit in rural areas is a village or a segment of it, if the village population is 2000 or more. In urban areas, the sampling unit is a census enumeration block with population ranging from 750 to 1000.

The field investigation under SRS consists of continuous enumeration of births and deaths in sampled villages/urban blocks by a resident or a part-time enumerator who usually is a local resident (for

example, primary school teacher, post-master, mid-wife, social or health worker). An independent retrospective survey is carried out by supervisors appointed by the state headquarters. The data obtained from these two sources are matched and the unmatched or partially matched events are re-verified in the field to get an unduplicated count of correct events. This eliminates the error of duplication and leads to quantitative assessment of sources of distortion in the two sets of records making it a self evaluating technique. Supervision of fieldwork is an important component of SRS to maintain the quality of data. Officers of Vital Statistics Division in the headquarters also undertake surprise check and visits SRS units for control of quality of work.

The SRS sample is replaced every ten years based on the latest census frame. It had been a practice to stagger the replacement process over 2-3 years. However, the latest replacement has been carried out in one go. Effective from January 2004, this sample is based on the 2001 Census frame. At present, SRS is operational in 7,597 sample units (4,433 rural and 3,164 urban) spread across all States and Union territories and covers about 1.5 million households and 7.10 million population. (SRS Bulletin October 2009, Vol. 44, No 1).

Shortcomings in SRS

Though it is believed that Sample Registration System of India provides reliable estimates of birth rate and death rate at the state and national level, it also suffers from incompleteness in birth and death registration. Some of the possible deficiencies are outlined here:

- The main deficiency is its failure to record all vital events as they occur. For example, it is well known that birth may go unregistered for several years. Only when the child in ready to join the public education system or some other type of organization for which a birth certificate is required, the birth is reported. The same may be true of the births of children who die very young; in such cases the parents may consider the registration of either the birth or death unnecessary.

- Adult deaths are likely either to be reported near the time of their occurrence or not at all. It is not surprising to find that in spite of the legal necessity of registering deaths, many of them are never recorded. The vital registration system may also be deficient in recording characteristics of events, such as age at death, age of the mother at birth, or mother's parity after a birth.

- Children who show signs of life after birth but die within few seconds/minutes or afterwards are possibly reported as still births. SRS can suffer from this bias which results in an under-estimation of mortality.

- Bhat (2002) has estimated the completeness of death reporting and omission of births in SRS. The estimates reveal that death reporting was particularly deficient in Karnataka, Rajasthan and Jammu & Kashmir during the 1970's and the omission rates were higher than 10 percent. However in Haryana and Punjab, death reporting is assessed to have been better during 1970s than in the 1980s. The estimates of crude birth rate derived on the assumption that deaths of adults and children were being missed to the same extent suggest that 10-17 percent of births were being missed by the SRS in Karnataka, Rajasthan, Jammu & Kashmir, Maharashtra and Orissa. At the national level there was an omission of 7.4 percent of births by the SRS.

- The Panel on India also estimated a similar level of under registration of births in the SRS during the decade of 1971-73 (7.8 percent).

- SRS is providing the estimates below state level: district level, as well as estimate of LEB is not available for smaller states.

Reproductive and Child Health Survey under DLHS-RCH

The Reproductive and Child Health (RCH) under District Level Household Survey (DLHS) is being implemented by the Government of India to provide quality services at the grass-root level and to estimate the utilization of these services by the community. In the survey a shift was made from the method-mix target based activities to the client centred, demand driven quality services. This approach was adopted in order to change the attitude of the service providers at the grass-root level and to increase the outreach services.

It took into consideration not only to generate district level data on utilization of services but also the people's perception about the quality of services. In view of the above RCH under took the Rapid Household Survey and the Facility Survey in all the districts of the country in two phases. Phase-I started in the year 1998-99 and Phase-II in 2002-04. IIPS was chosen as a Nodal Agency for collecting data and preparation of reports by the Ministry of Health and Family Welfare. In Phase-I approximately 50 percent of the districts from each state and union territory were covered and the remaining districts were taken-up in the second phase. The survey focuses on coverage of antenatal care, immunization services, extent of safe deliveries, contraceptive prevalence and unmet need for family planning, awareness about RTI/STI and HIV/AIDS and utilization of government health services. Apart from this, information on birth history from all ever-married women is also collected during the survey that can provide vital rates at the district level. Currently the third round of DLHS-RCH data collection is under progress in all the states of India.

National Family Health Survey

In India National Family Health Survey were held in 1992-93, 1998-99 and 2005-06. Data on several aspects had been collected. To estimate several demographic indicators the data on birth and death are important. In the following section the quality of data on births and deaths has been discussed.

Birth history data

- Information on birth history in the NFHS was collected from all ever-married women in the age interval 13-49 for the first NFHS and 15-49 for the second and third round of NFHS. Data were collected from usual residents as well as visitors who slept in the household in the night prior to the survey interview. Given the wide spread practice of young women to visit the natal home for delivery and early post natal care, inclusion of only usual residents present during the time of survey would have clearly resulted in a biased sample (Bhat, 1995).

- The All India report of the survey asserts that in the birth history data, information on month of birth was missing only in less than three percent of the cases and virtually for all the births, year of birth was recorded, (IIPS, 1995). Even in the case of deceased children, information on date of birth was available for 92 percent of the cases. But in how many of the cases the supplied information, especially on the month of birth, could be deemed as accurate is unknown (Bhat, 1995).

- A factor that may have had some bearing on the reports of the date of birth in the NFHS in the cut off period of 4 years or 5 years for births used for asking health questions on children. As this part of the questionnaire was quite lengthy, interviewers could have easily reduced their work load by 'aging' the children out of the eligible period. (Bhat, 1995)

- Age misreporting of date of birth or of age of the child and mother in the most common type of error.

- ❖ As the data on birth histories were gathered only from women under age 50 at the time of survey, NFHS does not provide estimates for progressively more number of older age intervals as we go further back to the past (Bhat, 1995).

❖ Another error that typically plague the data on fertility in the omission of children, especially those not alive at the time of the survey.

Data on Death

- ❖ In NFHS the question is asked to the ever-married women in the age group 13-49 (NFHS-1) and 15-49 (NFHS-2 and NFHS-3). Women below age 13 and above age 49 were not questioned on their birth history. Mortality of children often varies with a 'U'-shape with the age of mother at birth (Rutstein 1984, Curtis 1995). Depending on the number of year before the survey estimates will be biased above, or below the true rates; for early years only young women are part of the sample for recent years relatively older women are present, and in between the relative share of women at ages showing lowest mortality dominate.

- ❖ Age heaping, the tendency to report age ending in certain preferred digits, can also severely bias the selection of eligible women.

- ❖ Omission of a child death occurs when the mother does not report a child who lived for only a short time after birth.

- ❖ Misdating errors occur when the respondent does not remember the date of birth or age at death of a child.

- ❖ Selection bias occurs when data from a group of people with district mortality levels are overlooked. For example, if the survey collects only data on children whose mothers are alive, the mortality rates could be biased as children whose mothers have died are likely to have higher mortality levels because of disease being transmitted from mother to child or because the child received inadequate care when the mother was sick or after she died.

- ❖ Children who showed signs by life after birth but died immediately or soon after sometime, are possibly reported as still births.

National Sample Survey

The National Sample Survey Organization (NSSO) was established in the year 1950 by the government of India to fill up the data gaps for socio-economic, health and morbidity data on a sample basis owing to the fact that, collecting information from each and every individual requires enormous resources. NSS are conducted in the form of various rounds having period from 6 months to one year for each round. It provides estimates of literacy, school enrolment, utilization of educational services, general morbidity, maternity and child care and utilization of medical services. It also conducts survey to estimate the total number of physically disabled persons in the country and utilization of the public distribution system. The main aim of the organization is to make use of data for policy making and plan formulation. It does not provide information on vital statistics.

Summary and Conclusions

The Indian census has been a goldmine for the population data including vital events where one can get the estimates even below district level. However, it has the limitation that the fertility rates are not reliably improved over time though the mortality rates estimated indirectly comes out reasonable good, at least for the larger state. Despite of tremendous efforts to improve the quality of data in different population census, it suffers from three major limitations hampering extensive use of census data in micro-level planning and programme implementation. In fact, the nature and pattern of coverage and contents errors and changing definitions of certain tangible indicators over different census restrict extensive use of these data in tracking the progress in millennium development goals set for India.

To avoid the limitation of larger interval between two censuses in getting information on vital statistics, CRS has been the most important source providing a constant data base even at lower administrative levels like cities/towns. But, even after a constant effort to strengthen the CRS it suffers heavily with the coverage errors. The severity of the problem can be understood with the fact that only over two-fifths of live births in India during 2001-2005 could be registered with civil societies. Further, the coverage of CRS in India depict profound variation across different states ranging from a minimum 6 percent in Bihar to the maximum of 95 percent in Goa followed by 89 percent in each of Kerala and Himachal Pradesh. There is no reason to expect a better coverage in death registration in the states where births registration are poor in spite of larger advocacy and better commitments from local governments by making birth registration mandatory for school enrolments. Another limitation of the CRS in India is lack of uniformity in publication. Therefore, it is essential to follow a standard format of registration of vital events and the publication of estimates by all the states so that it can be comparable across states and also over time.

In other way SRS is fulfilling the gap created by CRS and provides indicators like that CBR, CDR, ASDR, ASFR, TFR, GRR, TMFR, IMR, NNMR (Early & Late) Perinatal mortality, PNMR, Still Birth Rate, Child mortality rate, Percent distribution of live birth by birth order and Percent distribution of live birth by birth interval, but it has limitation that it is not able to provide below state level indicators. And also there is a scope of improvement in the case of coverage error where some of the live births resulting in to deaths within couples of minutes/ hours may be reported as still births and hence under estimate the mortality. Although SRS is dual record system but few vital events are missed out in registration. Due to this the estimates goes down and it creates in difficulty in program implementation i.e. child immunization etc.

National Family Health Surveys are providing reliable estimates at state level for the vital indicators like that ASFR, TFR, CEB, CS, IMR, CMR, Under 5 mortality, Neonatal and Post-Neonatal mortality. It provides the estimates at country as well as state level only. Age misreporting of date of birth or of age of the child and mother in the most common type of error. NFHS gathered birth histories data only from women under age 50 at the time of survey it does not provide estimates for progressively more number of older age intervals as we go further back to the past.

A district level household survey provides opportunity to get estimates of vital events as well as most of tangible programme indicators at district level, which are not only useful for the continuous monitoring of programmes but also for the sub area estimations- required for micro-level planning and programme implementation. As a result, the RCH programme in India has adopted multifaceted strategies in demographically diverse states in terms of implementing state and district specific programmes.

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2. Registrar-General and Census Commissioner, India, *Plans and Programmes of 1971 Census, p. 5*.

Table 1(A)

Myers' blended index of preferred and avoided terminal digits for people in major states of India, 2001

States	Terminal Digit										*Myers' Index*
	0	1	2	3	4	5	6	7	8	9	
India	12.4	-5.4	0.6	-3.8	-3.6	9.7	-2.2	-4.4	2.1	-5.4	*49.7*
Maharashtra	11.0	-4.4	0.6	-3.9	-3.4	9.7	-2.1	-3.6	0.5	-4.5	*43.7*
UP	14.9	-6.8	1.1	-4.1	-4.0	10.7	-2.7	-5.8	3.7	-6.9	*60.8*
Bihar	15.8	-6.2	0.8	-4.9	-4.4	12.5	-2.9	-6.3	2.5	-7.0	*63.4*
Rajasthan	11.4	-5.2	1.2	-3.3	-3.3	8.4	-1.7	-4.5	2.7	-5.7	*47.5*
Haryana	7.1	-3.7	1.8	-3.0	-2.1	5.7	-0.5	-3.4	2.2	-4.3	*33.7*
Punjab	11.7	-5.4	1.1	-3.3	-3.4	8.7	-2.1	-4.3	2.4	-5.4	*47.8*
HP	8.3	-4.1	0.9	-2.8	-2.3	6.3	-1.0	-3.0	1.8	-4.0	*34.5*
J&K	14.1	-6.3	-0.6	-4.0	-3.4	9.8	-1.8	-4.4	2.3	-5.7	*52.4*
Arunachal Pradesh	12.0	-5.3	-0.6	-4.1	-3.4	8.9	-1.6	-3.7	1.9	-4.0	*45.6*
Assam	13.3	-5.9	0.8	-4.6	-4.0	11.0	-2.1	-4.4	1.8	-5.9	*53.7*
WB	11.0	-5.5	1.6	-4.3	-3.3	9.4	-1.6	-3.9	2.0	-5.4	*48.0*
Orissa	13.1	-5.5	0.6	-4.0	-4.2	10.9	-2.7	-4.1	1.5	-5.7	*52.5*
MP	12.9	-6.0	1.1	-3.7	-3.4	9.3	-1.9	-5.1	2.9	-6.2	*52.3*
Gujarat	10.3	-4.7	1.6	-3.1	-3.3	7.8	-2.1	-3.9	2.5	-5.0	*44.2*
Karnataka	14.8	-5.7	-0.9	-4.4	-3.9	10.8	-2.3	-5.3	2.1	-5.4	*55.5*
Kerala	5.1	-3.3	0.2	-1.5	-1.5	4.2	-1.1	-1.6	1.6	-2.1	*22.3*
TN	11.3	-4.3	-0.9	-3.1	-4.1	9.8	-3.0	-2.2	0.1	-3.5	*42.3*
AP	15.0	-5.6	-0.8	-4.3	-4.3	10.9	-2.4	-5.0	1.6	-5.1	*55.0*

Table 1(B)

Myers' blended index of preferred and avoided terminal digits for males in major states of India, 2001

States	Terminal Digit										*Myers' Index*
	0	1	2	3	4	5	6	7	8	9	
India	13.0	-5.2	0.8	-4.4	-3.8	10.2	-2.2	-4.4	1.3	-5.5	*50.8*
Maharashtra	10.3	-4.0	1.0	-3.8	-3.3	9.0	-2.0	-3.4	0.6	-4.4	*42.0*
UP	17.7	-6.8	0.8	-5.7	-4.8	13.3	-2.9	-6.0	1.4	-7.1	*66.5*
Bihar	18.0	-6.2	0.7	-6.2	-4.8	14.5	-3.1	-6.5	0.9	-7.3	*68.2*
Rajasthan	12.4	-5.0	1.5	-4.2	-3.7	9.5	-1.8	-4.5	1.6	-5.8	*49.9*
Haryana	7.5	-3.4	2.0	-3.5	-2.3	6.2	-0.4	-3.2	1.6	-4.3	*34.4*
Punjab	12.9	-5.3	1.0	-4.0	-3.8	9.9	-2.2	-4.1	1.1	-5.5	*49.7*
HP	7.7	-3.7	1.1	-2.7	-2.1	5.7	-1.0	-2.7	1.6	-3.9	*32.2*
J&K	15.7	-6.1	-0.6	-4.4	-3.6	10.0	-2.0	-4.4	1.1	-5.7	*53.6*
Arunachal Pradesh	12.0	-4.9	-0.4	-4.2	-3.6	9.0	-1.7	-3.5	1.4	-4.1	*44.9*
Assam	13.0	-5.8	1.0	-4.6	-4.0	10.8	-2.0	-4.3	1.9	-6.0	*53.3*
WB	10.4	-5.4	2.0	-4.3	-3.2	8.7	-1.4	-3.7	2.3	-5.4	*46.9*
Orissa	13.0	-5.3	1.0	-4.2	-4.1	10.7	-2.7	-4.2	1.5	-5.6	*52.2*
MP	14.0	-5.8	1.3	-4.7	-3.8	10.6	-1.9	-5.1	1.6	-6.2	*55.1*
Gujarat	10.8	-4.5	1.9	-3.9	-3.6	9.2	-2.2	-3.9	1.4	-5.2	*46.6*
Karnataka	14.3	-5.3	-0.5	-4.2	-3.7	10.0	-2.2	-5.1	2.0	-5.3	*52.5*
Kerala	5.1	-3.3	0.2	-1.5	-1.5	4.2	-1.1	-1.6	1.6	-2.1	*22.3*
TN	11.3	-4.3	-0.9	-3.1	-4.1	9.8	-3.0	-2.2	0.1	-3.5	*42.3*
AP	15.0	-5.6	-0.8	-4.3	-4.3	10.9	-2.4	-5.0	1.6	-5.1	*55.0*

Table 1(C)

Myers' blended index of preferred and avoided terminal digits for females in major states of India, 2001

States	Terminal Digit										*Myers' Index*
	0	1	2	3	4	5	6	7	8	9	
India	11.8	-5.6	0.4	-3.3	-3.4	9.1	-2.1	-4.5	2.9	-5.3	*48.5*
Maharashtra	11.7	-4.7	0.1	-4.0	-3.5	10.5	-2.2	-3.7	0.5	-4.7	*45.5*
UP	11.9	-6.9	1.4	-2.3	-3.2	7.7	-2.5	-5.6	6.3	-6.6	*54.4*
Bihar	13.4	-6.1	1.0	-3.6	-3.9	10.5	-2.7	-6.0	4.2	-6.8	*58.3*
Rajasthan	10.4	-5.4	0.9	-2.3	-3.0	7.2	-1.7	-4.5	3.9	-5.6	*45.0*
Haryana	6.8	-3.9	1.7	-2.3	-1.8	5.1	-0.5	-3.6	2.9	-4.4	*33.0*
Punjab	10.3	-5.6	1.1	-2.5	-2.9	7.4	-2.0	-4.5	3.9	-5.3	*45.6*
HP	9.0	-4.5	0.6	-2.8	-2.4	6.9	-1.1	-3.3	2.0	-4.2	*36.9*
J&K	12.3	-6.5	-0.7	-3.5	-3.2	9.6	-1.5	-4.3	3.6	-5.7	*51.0*
Arunachal Pradesh	12.0	-5.7	-0.8	-4.0	-3.3	8.8	-1.5	-4.0	2.5	-3.9	*46.5*
Assam	13.6	-6.0	0.5	-4.6	-4.0	11.3	-2.1	-4.6	1.7	-5.8	*54.2*
WB	11.6	-5.7	1.2	-4.4	-3.4	10.1	-1.7	-4.2	1.6	-5.3	*49.2*
Orissa	13.3	-5.7	0.3	-3.9	-4.3	11.2	-2.7	-4.0	1.6	-5.7	*52.8*
MP	11.7	-6.2	0.8	-2.5	-2.9	7.8	-1.9	-5.0	4.3	-6.1	*49.2*
Gujarat	9.6	-5.0	1.3	-2.3	-2.9	6.3	-2.0	-4.0	3.7	-4.8	*41.7*
Karnataka	15.4	-6.0	-1.3	-4.6	-4.1	11.7	-2.4	-5.5	2.2	-5.5	*58.6*
Kerala	5.6	-3.7	0.0	-1.6	-1.6	4.6	-1.1	-1.7	1.7	-2.2	*23.9*
TN	12.0	-4.8	-1.3	-3.3	-4.4	10.6	-3.0	-2.5	0.4	-3.7	*46.0*
AP	14.9	-6.0	-1.0	-4.3	-4.3	11.2	-2.3	-5.3	2.1	-5.2	*56.6*

Table 2

Birth Registration of Children under age five

Percentage of de jure children under age five years whose birth was registered with the civil authorities, according to back ground characteristics, India, 2005-2006, NFHS-3

Background characteristics	Percentage of Children whose birth was registered		
	Registered, has a birth certificate	Registered, does not have a birth certificate	Total registered
Age			
<2	25	15.5	40.5
2-4	28.1	13.5	41.5
Sex			
Male	27.1	13.9	41
Female	26.7	14.6	41.3
Residence			
Urban	46	13.3	59.3
Rural	20.2	14.6	34.8
Wealth Index			
Lowest	11.2	12.7	23.9
Second	17.3	13.8	31
Middle	25	14.4	39.4
Fourth	37.6	16.2	53.8
Highest	57.3	15.1	72.4
Total	26.9	14.3	41.1

Table 3

Birth Registration of Children under age five by state

Percentage of de jure children under age five years whose birth was registered with the civil authorities, according to residence and state, India, 2005-2006, NFHS-3

State	Urban	Rural	Total
India	59.3	34.8	41.1
North			
Delhi	61.9	67.6	62.4
Haryana	75.5	70.5	71.7
Himachal Pradesh	86.7	89.2	89.0
Jammu & Kashmir	56.1	30.6	35.8
Punjab	76.7	76.9	76.8
Rajasthan	38.3	10.8	16.4
Uttaranchal	56.1	32.4	38.4
Central			
Chhattisgarh	76.2	72.3	73.0
MP	37.3	27.5	29.7
UP	22.7	3.2	7.1
East			
Bihar	13.7	4.7	5.8
Jharkhand	21.8	6.0	9.1
Orissa	62.8	56.1	57.0
West Bengal	85.4	73.2	75.8
Northeast			
Arunachal Pradesh	49.4	26.8	32.4
Assam	67.4	40.0	43.0
Manipur	40.4	26.6	30.4
Meghalaya	66.0	38.8	43.3
Mizoram	94.6	92.1	93.3
Nagaland	43.8	35.0	36.9
Sikkim	93.3	84.2	85.7
Tripura	84.3	72.8	74.4
West			
Goa	95.3	93.9	94.7
Gujarat	88.4	84.0	85.6
Maharashtra	84.5	76.2	80.0
South			
Andhra Pradesh	49.4	35.6	40.3
Karnataka	72.3	49.8	58.3
Kerala	91.0	87.5	88.6
Tamil Nadu	90.3	81.9	85.8