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## **Population Census in Post-Independence India Lessons Learnt**

**I**NDIAN Census is the second largest census in the world, next only to that of China and the largest until 1981 when the last census of China was conducted. Census of India has been providing invaluable information about the population of India and its distribution and composition for the last one century. While the continuity has been maintained, subtle changes have been introduced in successive censuses. In the 50th year of independence, it is appropriate we review the changes and modifications in the population census of India pointing out the significance of census in political and socio-economic context of Independent India.

In the British India, the focus of the census was to know about the caste structure and the linguistic affinities of the population. Perhaps, the importance of the census data to the nation, particularly the data on language and religion was not lost upon the rulers. It may not be out of place to point out that the data on religious composition of the population published by the 1941 census was used to divide British India into India and Pakistan. Perhaps no other census in the world has used its information so exhaustively for partition of its own country. In the Independent India, the focus shifted to economic activity of the population. In the British India, census was an administrative activity conducted without a legal backing. In the Independent India, the leaders realized the importance of the census data in political decision making, planning of developmental programmes and allocation of resources. They thought that it is important to bring about a legislation to conduct census in Independent India. One of the first acts of the new Government was to enact a permanent Census Act in 1948. The then Deputy Prime Minister and Home Minister of India Sardar Vallabhbhai Patel, in his opening address to the census conference clearly brought out the change in the scope of the first census of Free Republic of India. He observed: "The Constitution, for the first time, recognizes the important role of Census. It has been specifically provided that the data collected at successive censuses should form the basis for the delimitation of territorial

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constituencies. There is also another departure from past practice. Formerly there used to be elaborate caste tables which were required in India, partly to satisfy the theory that it was caste ridden country and partly, to meet the needs of administrative measures dependent of caste divisions. In the forthcoming census this will no longer be a prominent feature and we can devote our energies and attention to the collection and formulation of basic economic data relating to the means of livelihood of the people and other economic activities of the individual and the State."

As a result of the above observation of the Deputy Prime Minister, the question on castes was given up in the census. To fulfil the constitutional requirements, data was collected on 'special groups' on the basis of a list compiled through the efforts of the local Governments. A person was a member of a 'special group' if he was a member of any 'scheduled castes' or any 'scheduled tribe' or of any 'backward class' or if he was an 'Anglo Indian'.

### **Definition of Scheduled Caste, Scheduled Tribe and Backward Classes**

The 'scheduled castes' are the castes who were considered to be extremely backward, socially ostracised by the rest of the population for centuries and are to be brought back to the mainstream of society by 'affirmative' political and social action. Scheduled caste included the castes, races or tribes, or parts of or groups within, castes or tribes specified in the Constitution (Scheduled Caste) Order, 1950; and the Constitution (Scheduled Castes) (Part C States) Order 1951.

Scheduled tribes included the tribes or tribal communities or parts of or groups within tribes or tribal communities specified in the "Constitution (Scheduled Tribes) Order 1950" and the Constitution (Scheduled Tribes) (Part C States) Order 1951. Scheduled tribes belonged to all religions.

There was no authoritative specifications of 'Other Backward Classes'. The information was collected on the basis of the Provincial list of 'Other Backward Classes' or of 'Non-Backward Classes', supplied by the State Governments. As a result, the information obtained regarding the number of backward classes (other than the scheduled castes and scheduled tribes) was, in some cases directly obtained; and, in others, by elimination of other categories.'

The data on 'other backward classes' collected in 1951 Census were handed over to the Backward Classes Commission (Kaka Kalelkar Commission), but were not published. Two important requirements of the constitution were to be filled by the census. These were:

1. determining the number of seats to the Lok Sabha from each State; and
2. delimitation of electoral constituencies; and allocation of reserved constituencies for Scheduled Castes and Scheduled Tribes.

The 1951 Census, the first to be conducted in Independent India, was pioneer in many respects. The language data collected in the census was used by the State Reorganisation Commission for the reorganisation of States on linguistic basis. The census also heralded the use of sampling for processing large volume of data. The data on population, literates and illiterates, Scheduled Castes, Scheduled Tribes and worker composition were published village wise. Data on age and marital status were based on a 10 per cent sample of individual

slips. The individual slips had been introduced in the 1951 Census after a long gap. Before the census, it was decided that in order to cross-tabulate the census data, it will be essential either to mechanize the data or introduce individual slips and sort out the data manually. The latter alternative was chosen. Elaborate procedures were laid down for sorting the data manually. These procedures were continued in the next 3 censuses with minor modifications.

Two other changes introduced in 1951 Census have continued till date. These are (i) the publication of district census handbook giving selected population data for each village and (ii) introduction of the post enumeration check to assess the extent of under enumeration in census.

The results of the 1951 Census brought out clearly the galloping growth of India's population. The then Census Commissioner, R A Gopaldaswami, drew the attention of the nation to the consequences of population growth and the need to check the population growth by adopting family planning methods. He coined the term '*improvident maternity*' to denote the pregnant women who had three living children and advocated that such maternity be controlled so that population of India stabilizes by 1968! This concern for rapid population growth found a reflection in the subsequent plan. The census can legitimately take pride that it was one of the pioneers in advocating family planning.

### **Standardization of Concepts and Procedures**

The 1951 Census attempted to follow a uniform definition of 'house' and 'household'. The 1961 Census attempted standardization of concepts of census such as usual resident, and definition of urban areas. It further introduced separate industrial and occupational classifications. The earlier censuses had adopted a combined industrial-cum-occupational categorization known as 'Census Economic Classification'. More important, a person was classified as worker or non-worker based on 'work', not on 'income'.

1961 Census also introduced data users conference in which wide consultations were made with data users in Government, such as Planning Commission, Central Statistical Organisation and outside the Government in universities and other academic institutions. Even though census conferences were held in earlier censuses, these were confined to Census officers. The practice of consulting data users on concepts, definition and questions to be included has now become a regular feature. In the data users conferences held in September and October 1958, draft questions, concepts, definitions and methodologies for 1961 Census programmes were discussed. These concepts and definitions were then field tested.

The data users conference were more to consult cross section of data users belonging to different disciplines. However to advise the census on all technical matters relating to conduct of census such as the concepts, formats, data processing and tabulation, a technical advisory committee was constituted prior to the 1981 census. The constitution of the technical advisory committee was a consequence of the recommendations of centre and state statisticians conference. This practice has continued in subsequent censuses.

Wide consultations on the tabulation programme of the census were started prior to 1971 census. A two day workshop on 14th and 15th March, 1969 held at New Delhi to

discuss the tentative tabulation plan was attended by the representatives of Central Statistical Organisation, Council of Scientific and Industrial Research, National Sample Survey, Planning Commission, National Council of Applied Economic Research, Institute of Applied Manpower Research and Directorate General of Employment & Training. A new concept of standard urban area was introduced. It has become a regular practice to discuss the detailed tabulation plan in such meetings called before census.

## **New Data Made Available through Censuses of Independent India**

### *Data on Housing and Establishments*

Keeping in view the demands of planning, the census started collecting data on a number of additional items. One important area was housing. 1961 Census collected data on material of the wall and material of the roof of the census house. Such a 'housing census' was carried out an year before the population census. This for the first time provided data on the housing conditions of the population. This census also collected data on the economic activities undertaken by the household. The data on housing was continued in all subsequent censuses. The data on the number of establishments, the type of activities carried out by these establishments, type of fuel/power used by these establishments and the number of persons employed by them were collected. This set of data on establishments was also collected in the 1971 Census. In the 1981 and 1991 censuses, an elaborate schedule termed as "economic census" schedule was canvassed by the census enumerators along with the house listing operation. These schedules were, however, processed by the Central Statistical Organisation.

### *Data on Skilled Personnel*

Along with the census operation, all the persons who were graduates were given a card to fill up. This provided data on the trained manpower availability and its utilization at a point of time. Till 1971, this was processed and published by census organisation itself. From 1981 onwards the data in modified form are being collected at the time of census but processed and published by Council of Scientific and Industrial Research.

### *Data on Migration*

While a question on place of birth was canvassed in 1951 and 1961 censuses. 1971 onwards census included a number of questions on migration. In 1971, a question on place of last residence was canvassed together with the questions on place of birth and duration of residence at the present place. In 1981, an additional question on reasons for migration was also canvassed. This was continued in 1991 also. These data proved to be of immense help to demographers and analysts who are studying migration streams.

### *Data on Scheduled Castes and Scheduled Tribes*

As already pointed out, there was a constitutional requirement for data on population of Scheduled Castes and Scheduled Tribes for the purposes of electoral constituencies

delimitation. Apart from this, the census provided data at local area level on Scheduled Castes and Scheduled Tribes castewise and tribewise. In 1961, data on their literacy and educational level were tabulated. In 1981, data were also presented on their marital status and fertility. In case of Scheduled Tribes, data on bi-lingualism and mother-tongue were also presented in all the censuses after 1951. The data presented on Scheduled Tribes helped enormously in launching special tribal areas programmes in the 1970s.

### *Local Area Estimates*

The scope of tabulation increased tremendously in the post Independent India. The 1951 Census saw the introduction of district Census Handbooks. Some key statistics were published for each village. This practice has continued in all subsequent censuses. The 1961 Census expanded the scope of the villagewise data. Data on all the amenities available in each village and some particulars on the linkages to urban areas, facilities available in the villages, such as educational facilities, availability of electricity, transport and communication were collected along with census operation through administrative machinery. This has provided a comparable set of database for all the villages of India. It is unfortunate that the data for the 1961 and 1971 censuses are not available in computerized form. For 1981 and 1991 censuses, villagewise data are available on computer readable media. The 1991 Census has also provided a linkage to the 1981 Census data.

### **Data on Fertility and Mortality**

In view of the increasing population of India, attention of the planners has been focused on fertility. The Civil Registration System in India is almost non-functional. In 1951 Census, states were given an option to include one or 2 questions of their choice. Under this option, Kerala and Madhya Bharat had canvassed questions on fertility. Subsequently a number of sample surveys such as National Sample Surveys had conducted periodic surveys to estimate fertility and mortality levels. These however did not provide reliable estimates of vital rates particularly at local area level. To fill the gap, a set of fertility questions were introduced for the first time in the post Independent India in 1971 Census. Two questions, one on births during last one year and the other on age at marriage were canvassed for all currently married women. Here again the data collected on births during last year proved to be inadequate. The scope of the questions was expanded in 1981 and 1991 censuses. In the 1981 Census, questions on age at marriage, children ever born, children surviving, births during last one year, were canvassed. While the first three questions were canvassed for all ever married women, the last one was canvassed for all currently married women. These questions, particularly the last three enabled the census organisation to estimate fertility and child mortality at district level using indirect techniques. These were found useful in initiating special programmes for high fertility and high mortality districts.

### *Use of Sampling*

To cope up with increasing cross-tabulation requirements, the census started computerizing the information collected through individual slips. Since this involved coding of the

items uniformly all over India, it was decided to prepare the detailed tables on the basis of the sample. In the 1951 Census, data on age, sex and marital status were tabulated on 10 per cent sample basis. In the 1961 Census, though all tables based on individual slip were tabulated 100 per cent, the household economic schedule was tabulated on 20 per cent sample basis. The household economic tables of the 1961 Census were processed by means of mechanical tabulation equipments using punch cards, sorters and tabulators. In 1971, for the first time, computer was used to analyse the census data. An IBM 1401 with 16K memory was used to process the data. One per cent sample of individual slips was selected and tabulated to bring out few tables in advance. This was followed by tabulation of 20 per cent sample of individual slips in the urban areas. In the rural areas, 10 per cent sample of individual slips was selected and processed manually. The data on Scheduled Caste and Scheduled Tribe, religion and mother-tongue were however brought out by manual tabulation using 100 per cent of the slips. The 1981 Census attempted, for the first time in the history of Indian census, to adopt sampling at enumeration stage. The questions on migration and fertility were canvassed in a 20 per cent sample of enumeration block. For each individual, a common slip named universal individual slip was canvassed. For persons living in the 20 per cent of the enumeration blocks, a sample slip was also canvassed. The sample slip was printed at the back of the universal individual slip. Though only fertility and migration questions were canvassed on a sample basis, all the economic and social, cultural tables were also generated on the basis of the area sample in addition to fertility and migration tables. The tables for Scheduled Castes and Scheduled Tribes were processed on a 100 per cent basis.

In the 1991 Census, it was decided to canvass all the questions to all the individuals. However, the tabulation was done on the basis of a 10 per cent sample of individual slips selected with a fresh random number in each enumeration block. The data on the primary census abstract, religion and mother-tongue were compiled manually.

### **Ancillary Studies**

A number of ancillary studies were initiated after 1961 Census in collaboration with other departments. These include village surveys, crafts surveys, fairs and festivals studies, preparation of ethnographic notes and bringing out census monographs. Some of them such as village and town studies have continued till 1991. Another unique feature of the 1961 Census was census atlas project. A separate census atlas for each state and union territory of India was brought out. These have become regular features of all subsequent censuses. Another important activity of 1961 census was to bring out a 'Bibliography of Indian Census publications from 1860 to 1951' in collaboration with National Library. In all the subsequent censuses a list of publications was brought out.

### **Reasons of Delay in Release of Census Data**

In the 1981 and 1991 censuses, the number of tables presented has increased tremendously. Unfortunately, the time lag in releasing the data has increased to six to seven years. A few reasons may be attributed for this delay. In all the censuses, the Census organization was guided by experience of manual tabulation. Editing and coding procedures which were essential in computer processing were given secondary importance. Though

elaborate manuals were available for coding and editing, often codes were given by untrained persons who were recruited temporarily. This was compounded by the belief that the Primary Census Abstract which was prepared by a large number of fresh recruits in break neck speed is the most accurate document and other cross tabulated data prepared on computer after careful scrutiny and thorough editing should conform to the former. The matching of two records and reconciling the figures was often time consuming. If such procedures are not required at least 6 months to one year of time can be saved in release of data.

A second factor which added to the delay was the delay in printing, after the tables were available. This was partly due to the fact that the results were to be published bi-lingual. The 1991 Census, to a great extent, avoided this delay by making available data in floppies and also bringing publications in Hindi and English in separate volumes. But those who do not have computer facilities, still have no access to most of the cross-tabulated data even in 1998.

### **Dissemination of Census Data**

A list of tables brought out in different censuses is enclosed in Annexure. The list incorporates only tables for general population not the special tables for Scheduled Castes and Tribes. A policy decision was taken after 1981 Census to supply census data tapes to users on payment of copying charges. To respect the confidentiality clause of census, it was decided to mask the village and household identity while supplying data tape to users. One limitation of this was that data users who wanted to retabulate the data according to some other jurisdiction were unable to do it. For example, if one wanted to estimate fertility and child mortality estimates at community development block level, instead of districts, the relevant data were not made available. A similar policy of lending data tapes has also been continued for 1991 Census. It is for the data users to make use of this facility to obtain data tape and analyse the data. One suggestion to the Census Organisation would be to supply the data after inserting pseudo random numbers for villages or households, so that the user can tabulate data according to the jurisdiction he would like to have without violating confidentiality clause. Such a practice is prevalent in USA and other countries.

1991 Census was pioneer in supplying tabulated data in floppy disk. This helped to a large extent in making the data available to a number of users even though the number of beneficiaries were only a few.

Both in 1981 and 1991 censuses, Primary Census Abstract data were disseminated to government offices all over the country through National Information Centre network.

### **Suggestions for 2001 Census**

One of the drawbacks of the census is the lack of data on households. A number of characteristics such as literacy, employment, fertility show tremendous variation between households belonging to different socio-economic segments. Unfortunately census has not been able to throw light on these because of the adoption of "individual slip" as basic format for collecting data. Because of its compactness, individual slip has been found useful in the field. Further it was found efficient when data were sorted manually using 'pigeon holes' in 1951, 1961 and 1971 censuses. However, this was not found efficient for computer tabulation

particularly when sample of individual slips was selected as in 1991 census. Many of the questions canvassed in census such as religion, mother tongue can be canvassed for household as a whole, rather than for individuals without loss of significant information. Further household format enables many consistency checks between individual members residing in the household. It is hoped that in 2001 Census household format would be adopted.

One of the reasons for the delay in processing of census data is the need for coding the slips. One way out would be to adopt partial field coding in respect of items such as religion, mother tongue, district code and broad categories of work like cultivation, agricultural labour, household industry, other work, and non-work such as household duties, students, retired persons etc. For example in case of religion most of the persons report six major religions. The schedule itself can provide for these religions. In case a person reports some other religion, the religion reported by him may be recorded and coded later on at office. Similarly in case of mother tongue, provision may be made to record 2 or 3 mother tongues spoken by people residing in a state by suitable codes and to write down other mother tongues. Other mother tongues reported may be coded later on at office. In case of migration, if the person is enumerated at the place of birth, instead of writing 'PL', a code may be entered. For persons born within district of enumeration, or who last resided within district of enumeration, district code may be given by census enumerator. These would reduce coding time considerably by about a year. Unfortunately, Census Organisation is unwilling to make even these simple changes.

Duplication of records for manual tabulation and computer tabulation needs to be avoided. In such duplication, errors multiply. Even though a 100 per cent comparison of records has been provided for, often this is skipped or records are compared indifferently. As a result reconciliation of two sets of figures takes considerable time. Such duplication results in cost and time over runs. All data must be tabulated from a single record.

## References

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67 Annexure

LIST OF MAIN CENSUS TABULATIONS, 1951 - 1991

<i>Items</i>	<i>1951</i>	<i>1961</i>	<i>1971</i>	<i>1981</i>	<i>1991</i>
<i>Total Population</i>					
Population (total)	x	x	x	x	x
(1) Population by sex	x	x	x	x	x
<i>Age</i>					
(2) Population by age groups and sex	x	x	x	x	x
(3) Population by single year age and by sex	x	x	x	x	x
<i>Marital Status</i>					
(4) Population by marital status and by sex	x	x	x	x	x
(5) Population by marital status, age groups and sex	x	x	x	x	x
<i>Religion</i>					
(6) Population by religion and sex	x	x	x	x	x
(7) Population by religion, age groups and sex	-	-	-	-	-
<i>Literacy</i>					
(8) Population by literacy and sex	x	x	x	x	x
(9) Population by literacy, age groups and sex	x	x	x	x	x
<i>Education</i>					
(10) Population by educational level and by sex	x	x	x	x	x
(11) Population by educational level, age groups and sex	x	x	x	x	x
(12) Attending school/college by completed level of education age and sex	-	-	-	x	x
<i>Nationality</i>					
(13) Population by nationality	x	x	-	-	-
<i>Language</i>					
(14) Population by mother tongue and by sex	x	x	x	x	x
(15) Population by other language spoken		x	x	x	x
<i>Birth Place and Migration</i>					
(16) Population by birth place and sex	x	x	x	x	x
(17) Migrants by place of last residence in the place of enumeration	-	x	x	x	x

Annexure (contd. on p. 68)

Annexure (contd. from p. 57)

<i>Items</i>	<i>1951</i>	<i>1961</i>	<i>1971</i>	<i>1981</i>	<i>1991</i>
(18) Migrants by duration of residence, age-groups and educational level	-	x	x	x	x
(19) Migrants by industrial categories of workers and non-workers	-	x	x	-	x
(20) Migrant workers (other than C, AL) by occupational division	-	-	-	-	x
(21) Migrants to cities by reason for migration	-	-	-	-	x
(22) Migrants by place of last residence age groups, duration of residence and marital status	-	-	x	x	-
(23) Migrants by place of last residence, duration of residence and reasons for migration	-	-	-	x	x
<i>Occupation</i>					
(24) Workers by occupation	x	x	x	x	x
(25) Workers by occupation and sex	x	x	x	x	x
(26) Workers by occupation and age groups	-	x	x	x	x
(27) Workers by occupation, level of education	-	x	x	x	x
(28) Workers by occupation and industrial categories				x	x
(29) Workers by occupation (for SC and ST)	-	-	-	x	x
<i>Industry</i>					
(30) Workers by industrial categories and by sex	x	x	x	x	x
(31) Workers by industrial categories by age groups, sex	-	x	x	x	x
(32) Workers by industrial categories by sex and educational level	-	x	x	x	x
(33) Female workers by industrial categories and marital status				x	x
<i>Non-workers</i>					
(34) Non-workers by sex, age groups and type of activity	-	x	x	x	x
(35) Non-workers by sex and educational level	-	x	x	x	x
(36) Persons seeking/available for work by age/sex and educational level	-	x	x	x	x
<i>Housing and Establishment</i>					
(37) Census houses by type of wall and roof	-	x	x	-	x
(38) Households by type of wall and roof or floor of the census houses occupied	-	-	-	x	x

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(39) Census houses and the use to which they are put	--	x	x	x	x
(40) Households by number of members and number of rooms occupied	-	x	x	x	x
(41) Tenure status	-	x	x	x	x
(42) Households by availability of electricity, toilet facilities and source of drinking water	-	-	-	x	x
(43) Households by type of fuel used for cooking	-	-	-	-	x
(44) Establishment by broad types	-	x	x	-	-
(45) Establishments by size of employment	-	x	x	-	-
(46) Establishments by type of fuel used and size of employment	-	x	x	-	-

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