

Introduction

Age is usually defined in demographic literature as the number of completed years, which have elapsed since the birth of the individual. In other words, the census data on age should usually refer to ages of individuals at their last birthday. It is well known that the sex-age structure represents one of the most fundamental characteristics of population composition recorded in censuses. The sex-age structure is governed by the degree of variations of the immediate preceding and long events that occurred in the society. It therefore factors the components of population change, namely- fertility, mortality and migration. Although, sex-age structure is a direct reflection of levels and trends of these three factors during the previous decades, but it is more often the level of the fertility, which is the basic factor in determining the age structure of a population over a long period in a closed population. Age structure is a crucial component in demographic analysis as it provides a quick and ready tool for mapping the broad contours of demographic history of a population. Similarly, the future demographic events are influenced to a large extent by the present sex-age structure, other things being constant.

Age data is important in the sense that most of the socio-demographic analysis is performed according to age and sex variables. Mortality rates fluctuate over a wide range at different ages. The child bearing is associated with only a limited part of the life span of women as is the event of marriage. The usefulness of age data is more visible, when it is cross classified with other demographic and socio-economic characteristics such as marital status, literacy, educational attainment, economic activity etc. While studying population statistics, it becomes evident that many of the above referred associated characteristics are unevenly distributed by age. Most of these characteristics are sufficiently significant only when they are observed according to sex and age and that is why the age data becomes an excellent instrument of separating and identifying the groups of people to be studied.

Apart from purely demographic concerns, the data on sex-age structure are widely required for a variety of administrative, scientific, technical and commercial purposes. It is of prime importance for formulating programmes to raise the standard of living. The dependency ratio, which is the ratio of economically active to economically inactive persons in a population, is dependent on the age composition. Many types of schemes, particularly, planning of community institutions and services for the children, adolescents, youth and the elderly, require data on age composition. Age is an important variable in measuring mean age at marriage, potential school population, the potential voting population, potential manpower etc. Projections of the number of

households and population, school enrolment, labour force, requirement of school teachers, health services, food and housing, problems of economic dependency etc. are some of the key areas in which the sex-age data are of prime importance. Several manufacturing and commercial ventures on consumer goods, leisure and entertainment industry, medical and health sector have immense utility of the age data for targeting their products and services. Hence it is important to know the efforts made in censuses and surveys to collect the information on age.

An Overview of the tabulation and presentation of age data in Indian Censuses

Although, a question on age has been regularly canvassed in successive censuses since 1872, the presentation and tabulation of the same was done on a countrywide scale basis 1951 to meet certain requirements of the First Five Year Plan (1951-56). Till 1951, the presentation and tabulation of age data was done mainly to meet the demands of the actuary for the construction of the life tables. In 1951 Census, age data by single year of age for every district, leading to a similar set of figures for the states, zones and the country on a ten percent sample basis was tabulated. In 1961, there was a further change and tables showing population by single year of age by sex, were prepared for the entire population separately for rural and urban areas on a hundred percent basis at the state level. In 1971, census single year age returns were tabulated at the state level on the basis of a sample of individual slips (10 percent in rural and 20 percent in urban areas). Five-year age groups were also presented at the district level as an appendix of the single year age returns. In 1981, however, separate single year and quinquennial age-group wise tables at the state level and the state/district levels respectively, based on 20 percent sample of enumeration blocks, were presented. In 1991, tabulation of age was done on the basis of 10 percent sample of Individual Slips at the state and district levels.

In 2001 Census, the age data based on single year and quinquennial age groups by sex and place of residence are tabulated on 100 percent basis at the state and district levels (for quinquennial age groups only), for all regions of the country. However, the single year age-sex composition of population will be presented as a separate report later. The quinquennial age-sex composition at the city level is being made available in electronic format. In an identical way, the age-sex composition for the scheduled castes and the scheduled tribes, separately, at the national and state levels, is also presented in this publication. District level age-sex composition for these two categories of individuals is being made available in the electronic format separately.

Problems encountered in collection of age data during the Censuses

It is not understood by many that the question on determining age is extremely deceptive and not simple and state forward as it appears on first sight. Generally, two types of approaches are used to ascertain the age of the person, one is based on the question of 'age' and the other is through enquiring the 'date of birth'. The former appears to be very simple to collect but less accurate as

compared to the date of birth. Whereas, the response to question on date of birth though is more accurate, it is not easier to canvass this form of the question on age especially in illiterate populations. United Nations (Population Division) recommends asking the date of birth for children reported as '1 year of age' even if a direct question on age unconsciously is used for the remainder of the populations, to restrict the tendency to deviate and report '1 year of age' for children actually of '0 year of age'. Regarding the quality of reporting of age data, the report on 'Age Tables' based on 1961 Census states " Biases in census age returns are present even in the case of statistically advanced countries; but they are of a moderate degree and do not affect their usability so seriously, as they do in the case of countries like India. They are generally due to (i) ignorance of age, (ii) deliberate mis-statement, (iii) omission in enumeration, (iv) failure to reckon precise age due to misunderstanding of the question, and (v) the manner of obtaining information from the informant".

Though conceptually, collection of information on age seems to be a simple item but age returns in the censuses were found to be far from the true ages for a large part of the population. Apart from differential under-enumeration in various ages, the age data suffers from distortion owing to preferences for certain ages and digits due to social, cultural and legal habit and norms observed in a society. In country like India, the distortions are naturally greater because precise reporting or determination of age is not considered important in the everyday affairs and laxity is permitted on various grounds of discretion, expediency and convenience. Recording correct age of the population suffers from many typical inaccuracies such as frequent heaping of age ending at 0 and 5, preference for even numbers and certain ages such as 12 and 18. Frequently, the elderly population either does not know its age at all and reports ages in big age bands such as 50-60, 60-70, 70-80 etc. It is possible that often the enumerator is forced to estimate the age of a person based on physical appearance or hearsay in absence of any reliable documents or observance of socio-cultural norms which allow the individual or member of the household to know their ages precisely.

An analysis of the age data return in Indian Census indicates that not only there are certain typical shifts upwards and downwards in age reporting but also a tendency among elderly population to record their age a little higher than what possibly it is. Thus, in the past, certain persons returned their age much beyond 100 years. There are other two groups for whom recording of age is rather difficult, women being one of them. Although, frequently, women may be in a position to recall when they were married or a child was born to them, it is difficult for them to state their own date/year of birth unless they are literate. In addition, assessing age by the enumerator may also be difficult for young women, as in certain sections of this population, they may not be permitted to appear during the enquiry, unless the enumerator is a lady. The other group, which may suffer from these inaccuracies are infants and children particularly those not attending school.

Many reasons have been cited to explain why recording of age for the Indian population is difficult. There is no definite social, cultural or institutional mechanism, which would allow everyone to know their age every year as celebration of birthdays is not a common phenomenon or ritual observed in large

section of the population particularly for the rural population. There is no tendency to discourage even if age has been incorrectly stated, wherever required in the normal day to day life. Frequently the production of birth certificate, the only legally valid primary document of proof of age is by passed even in important administrative matters such as admission to school, in a criminal case or getting into an electoral roll when attaining age 18. Frequently, a question arises in criminal cases if person is adult or not and even in such matters instead of insisting only the birth certificates, other methods such as ossification test is resorted to estimate the age particularly for child offenders or women. Affidavits or a certificate from local elected representatives or village officials is often permitted as proof of age. Of late, many State Governments have introduced pensions for the elderly people and even here proof of age is based more often on an eye estimate by the Medical Officers or Civil Surgeons. In short, due to lack of conscious efforts on the part of the public and the administration, recording of age at census becomes particularly difficult. This is so because such searching enquiries are made only once in ten years while in day to day affairs of the society it is in exception rather the rule. However, it is felt that in the past few years, the situation throughout the country is changing for the better due to improvement in literacy and mobility of population which force people to carry some identity documents indicating their age also. With renewed efforts during training of census enumerators and publicity campaign for raising the awareness level and active participation of the people, it should be possible to make an effort for effecting substantive improvements in recording the age of the Indian population during Census of India 2011.

Special measures taken for improving collection of age data in 2001 Census

Based on the evaluation of age data of earlier censuses, it is a well established fact that the quality of such data has been far from satisfactory. It has been the experience during every Census that recording the correct age of the individuals has been extremely difficult in spite of special measures taken as a part of instruction manual for the enumerators. In view of this, more efforts were made in 2001 Census to collect accurate and good quality data as far as possible. Census enumerators and the respondents, being the key players in recording of responses to census questions, special focus and attention was laid on instructions and quality of training on one hand and raising public awareness on the other. In this regard, special guidelines were also issued by the Registrar General and Census Commissioner, India to all the Directors of Census Operations and from there the instructions reached the district administration and ultimately the enumerators and supervisors entrusted with the conducting of census.

Involving the people towards improvement of age data

To involve directly or indirectly the people in reporting their age correctly, the following approach was conceptualized and implemented during the Census 2001. It is well known that literacy and thereby enrolment in schools has improved substantially in the last three decades. For persons born after 1975, it

is felt that the literacy rates would be very high, possibly upwards of 80 per cent in most parts of the country. This population, therefore, offered a ray of hope for improving the age statistics during Census 2001. Much of the urban adult population had also attended school in the past and with some focused sensitization, it should be possible to record the age of the urban population a little more precisely. Therefore, it was felt that the younger population attending school or college could be sensitized through the Education Department/School authorities and help the census enumerators for recording their correct ages. To implement this idea, possibilities were explored through the teachers to ensure that every child attending school knew his/her date (year) of birth. The teachers were expected to ask every child to write his/her date of birth (year) and calculate the current age. Such attempts have been made in other countries (for example, USA and Canada) for teaching arithmetic through census numbers. For example, if children have to be taught how to write one crore or hundred crores (ten million or a billion), this can easily be done by quoting the population of India or States. Such illustrative use of population numbers does create some awareness among the children about the size of the Indian population. It was thought fit that an active participation in such an important campaign involving the Director of Education and the Principal Census Officers, could be invoked by addressing to them through a letter from ORGI and ensuring that each school, government or private, embarks upon such a campaign, so that every child attending school during the educational year 2000-2001, knew his/her correct age. It was felt that the movement might be taken forward when the teacher would ask the children to recall the correct ages of other siblings and also those of the parents and grand-parents.

Keeping this in view, separate meetings were convened by the Directors of Census Operations with the state Nodal Officer in-charge of census matters or through the State level Co-ordination Committee on census and the Director, Primary Education in the States. Thereupon, instructions/circulars were issued to all schools both Government and non-Government of their states by the Census directorates and also the Director, Primary Education and the District Collectors. Specific requests were made by the tahsil officers and municipalities to the teachers/principals to make an effort to teach children, the calculation of proper age. It was felt that ultimately the teachers, who worked as Census enumerators, would be in a position to easily appreciate the necessity of launching such a movement and convert it into an effective public awareness campaign. In several districts across the country, this plan of action was actually implemented quite successfully and the credit must go to the people, teachers, the State officials and the Census directorates.

Instructions to enumerators

Keeping in view of the problems in eliciting the accurate age data from the respondents and the effort required to collect the same as accurately as possible, instructions were elaborately laid down and explained in the Instruction Manual for Census Enumerators covering as many situation as possible situation. Many persons, particularly, in rural areas often do not remember their ages correctly in terms of year and /or date and month. Keeping this in view, enumerators were instructed and trained to assist such people to arrive at the correct age by

stimulating the memory of those persons with reference to any relevant historical event of importance well known in the local area. In this connection, a list of important historical events relating to the state/union territory of work of the respective enumerators was compiled in advance, discussed and provided to each one of them. Sometimes, the age, if not known, can be ascertained with reasonable accuracy with reference to the age of another person of a known age, who may be living in the same household or in the neighbouring household or that of a well-known person of the village such as Headman of the village. The person then easily recalls, whether she/he was older or younger than such a person and approximately by how many years. The enumerators were advised that this may help them to record the age a little more precisely than the existing situations permitted. They were specifically instructed not to try to assess the age of a person by her/his physical appearance, particularly for the elderly, even though the person might ask him (enumerator) to do so.

In respect of infants, who might not have completed one year by the day of enumeration, the enumerators were instructed that age of those children in completed years must be shown as 'zero', as these children had not completed one year of age.

Enumerators were advised to give special emphasis for determination of actual age of women, since age of married women in particular, has a special bearing in demographic analysis. If a woman is not aware about her age and is also unable to report the year of her birth, the enumerators were advised to further probe to estimate her age. One way, provided to the enumerator for such estimation, was to ask her the age of her eldest living son or daughter and her own estimated age at the time, when she gave birth to this child. The sum of these two figures with minor adjustments would provide a fair estimate of her current age. Even if she is not able to tell her age at the time when the first child was born, the enumerators was advised to try to ascertain her (woman's) age at the time of marriage (or her age at the consummation of marriage) and the interval between her marriage and the birth of her eldest child. Adding these two figures with the age of her eldest child may help in determining her current age. In case, she does not know her age at marriage, then the enumerator was advised to find out her age in relation to the age of her husband, whose age might possibly be known a little more precisely.

On mis-reporting of age by individuals, the enumerators were asked to be cautious and they were specifically requested to keep in mind the following advice.

'Very often, there is a tendency on the part of individuals to return 'years running' rather than the 'years completed'. They were instructed to make sure that only the actual number of years completed was recorded as age. It has also been noticed that people usually tend to return their age with numeric figures ending in '0' and '5'. For example, if the age of the person is 43/46 years, she/he might return her/his age as 45 years or if the age of the person is 39/41 years, one might say, she/he was 40 years old. There is also a tendency among the elderly people to overstate their age. In all such case, careful probing as indicated above should be done in order to closely estimate their age.'

A statement showing the age as on 1st March, 2001 and the corresponding year of birth according to English and local calendar for the preceding 100 years was given separately to the enumerators with the intention that it would serve as ready reckoner to quickly and correctly arrive at the exact age, when the respondent was able to give him her/his date (year) of birth. In situations, where the respondent gives her/his age, the hundred year ready reckoner could be used to arrive at the year of birth. That would help the enumerator to confirm the correctness of the year of birth worked out by him (enumerator).

The assumption that the urban and the literate population are able to recall their age correctly is at time misplaced. Age heaping frequently results due to the habit of rounding numbers even by the educated population. For example, a person may continue to state his/her age as '35' for railway reservation purposes during ages '32-38' although each of these years his/her age is different. Since the railway authorities do not always insist on the correct age, therefore, it has become habitual for most to round off the age while purchasing tickets. So it was emphasized that when recording ages of the response answers ended with the digit either '0' or '5', additional probing be effected. During probing of ages ending 0 and 5, the enumerator was expected to show the calendar and enquire in the above referred case for example, as to which of the years between 1962 to 1968 he/she was born. The chances were that the precise year of birth might be recalled by the respondent with some effort. This guideline was demonstrated and practiced during the training classes of the enumerator and possibly had some positive effect on them. Efforts were also made as part of the publicity campaign to educate the public as to why recording of correct age was important for census.

Training

Training has always been recognized as one of the most vital inputs for smooth and successful conduct of the census. Nearly two million census enumerators were extensively trained to elicit information on various questions included in the Census Schedule. Special emphasis was laid by the Census Advisors specially appointed for gender training to enumerators on canvassing of the question on age as accurately as possible. Since there is a tendency to report the ages in numbers ending with '0' or '5', it was emphasized that in all such cases, a little more probing might be made to ascertain the correct age. Regarding reporting of age by local calendar, a confusion over the reporting of age in accordance with local calendar instead of English calendar exists not only in India but in many countries. In countries like China, Korea, Hong Kong and Singapore, age is reckoned in a still different way, where, at birth, an individual is assigned an age of 1 and he then becomes a year older on each Chinese New Year's day. In 1960 in the census of South Korea, for example, some respondents gave one type of age and the rest, the other type. Since local calendars have some influence in the minds of the people of this country, training was also imparted for consulting the local calendar such as Bengali year, Tamil year or *Vikram Samvat*, and arriving at the correct age by converting the date of birth reported by the above source into English calendar year. This was required, since sometimes date of births are known and reported by local calendars only.

The enumerators were sensitized about the quality of age data recorded and reported in earlier censuses by way of showing different indices used for evaluation of age data. They were also shown the single year age data of earlier censuses by way of graphs and tables to give them an idea of the nature of heaping at certain ages, especially, in the ages ending with digits '0' and '5' would result if they were not careful enough.

Publicity

Well organized publicity campaign is an important medium instrument to create and raise awareness among the people about any forthcoming event. Through a well conceptualized and neatly drawn publicity campaign, it is possible to enhance public awareness and make efforts for their active participation as stakeholders in a given activity. As a part of such publicity campaign for Census 2001, an all out effort was made to educate the public as to why recording of correct age is important for them as well as the country.

All these efforts supplemented by the increased literacy rates in the recent past along with public awareness, seem to have had some effect in improving the quality of age data as compared to the past censuses.