Analysis of 5 tables from the Census of India 2011

The Census is conducted with an attempt to systematically record and analyze information related to the population. The Census of India is conducted every 10 years. The 2011 census was India's 15th recorded census. It was conducted in two phases, namely house listing (1st April 2010) and population enumeration (9th- 28th February 2011). Following are the five selected tables for a brief analysis:

Table 1: A-1 NUMBER OF VILLAGES, TOWNS, HOUSEHOLDS, POPULATION AND AREA

Concept of Data: The major data attributes are:

1. **State Code/District Code/Sub District Code:** Assigns a code to each state/district/sub-district of India. (E.g.: 01 to Jammu and Kashmir, 02 to Himachal Pradesh and so on)
2. **India/State/ UT/District/ Sub-district:** Categorizes place as a country (India) or state, district or sub-district.
3. **Name:** Classifies the name of each state/district or subdistrict.
4. **Number of Villages:** This column shows the number of villages in each state/district or subdistrict that are:
    i. **Inhabited:** Villages with residents living in it.
    ii. **Uninhabited:** Villages with no residents in it.
5. **Number of towns:** Enlists the number of towns- where population exceeds 5000, at least 75% of main male working population is employed outside the agricultural sector and has a minimum population density of 400 persons per km.
6. **Number of households:** Enlists the number of households in a particular place. A household consists of all people who occupy a housing unit.
7. **Population:** Provides the data for number of people in a certain area. It is further divided into male and female population respectively.
8. **Area (in km):** Shows the total area of a particular state/district or subdistrict.
9. **Population per square kilometer:** Provides data of number of people in each square kilometer. This is known as the population density of each area. The population density of India as per 2011 census is 382 persons per sq. km.

Level of Data Used: The table has used data at the country level, state level, district level and sub-district level.

Problem with Data: Some of the data points have been missing. For example, data for sub district urban Nohra, Nankhari, etc. have been missing. This can lead to an underapproximation of attributes.

Rates that can be calculated: The rates that can be calculated from this table are:

i. **Sex ratio:** It calculates the number of women per 1000 males in an area. Sex ratio in India was 940 females per 1000 male. It provides an indication of both the relative survival of females and males and the future breeding potential of a population. Also, subsequently urban sex ratio and rural sex ratio can be calculated from this data. Finally, sex ratio of each particular state/district or subdistrict can be calculated.

ii. **Percentage of people living in rural and urban areas:** This can be calculated as:

$$\%\ of\ Rural(Urban)\ Population = \frac{Total\ Number\ of\ people\ in\ rural(urban)\ areas}{Total\ number\ of\ people\ in\ India} * 100$$

The percentage of India's rural population (2011) is 68.85%.

iii. **Population Density:** It calculates the number of people in each square kilometer area. It allows for broad comparison of settlement intensity across geographic areas. India's population density in 2011 was 382 persons per sq. km.

Table 2: C-13 SINGLE YEAR AGE RETURNS BY RESIDENCE AND SEX

Concept of Data: The major data attributes are:

1. **State Code/District Code/Sub District Code:** Assigns a code to each state/district/sub-district of India. (E.g.: 01 to Jammu and Kashmir, 02 to Himachal Pradesh and so on).
2. **Area Name:** Classifies the name of country (India) or each state.
3. **Age:** Classifies age category of the population (1 year, 2years, … ,100+years)
4. **Total:** Provides data for the number of persons with respect to each age. It is further subdivided into males and females.
5. **Rural:** Provides data for the total number of people in rural areas with respect to each age. It is further subdivided into males and females.
6. **Urban:** Provides data for the total number of people in urban areas with respect to each age. It is further subdivided into males and females.

Level of Data Used: The table has used data at the country level and state level.

Problem with Data: Each row with the title *"Age not mentioned"* contains information on people who have not revealed their age. This accounts for underestimation of different age groups.

Rates that can be calculated: The rates that can be calculated from this table are:

i. **Proportion of Each Age Group to Total Population:** It can be calculated by the following formula: $\frac{\textbf{Population in the respective age group}}{\textbf{Total Population}} * \mathbf{100}$

The age dependency ratio can be calculated from this data.

- **Youth Dependency Ratio**: The population ages 0-15 is divided by the population ages 16-64.

$$\frac{\textbf{Population aged } \mathbf{0-15} \textbf{ years}}{\textbf{Population aged } \mathbf{16-64} \textbf{ years}} * \mathbf{100}$$

- **Elderly dependency ratio**: Population aged 65-plus divided by the population aged 16-64.

$$\frac{\textbf{Population aged } \mathbf{65} \textbf{ years and above}}{\textbf{Population aged } \mathbf{16-64} \textbf{ years}} * \mathbf{100}$$

- **Total dependency ratio**: Sum of the youth and old-age ratios.

$$\frac{(\textbf{Population aged } \mathbf{0-15} \textbf{ years}) + (\textbf{Population aged } \mathbf{65} \textbf{ years and above})}{\textbf{Population aged } \mathbf{16-64} \textbf{ years}} * \mathbf{100}$$

ii. **Sex ratio:** It calculates the number of women per 100 males in an area. Sex ratio in India was 940 females per 1000 male. It provides an indication of both the relative survival of females and males and the future breeding potential of a population. Also, subsequently urban sex ratio and rural sex ratio can be calculated from this data. Finally, sex ratio of each particular state/district or subdistrict can be calculated.

Table 3: C-6 EVER MARRIED AND CURRENTLY MARRIED POPULATION BY AGE AT MARRIAGE, DURATION OF MARRIAGE AND EDUCATIONAL LEVEL

Concept of Data: The major data attributes are:

1. **State Code/District Code/Sub District Code:** Assigns a code to each state/district/sub-district of India. (E.g.: 01 to Jammu and Kashmir, 02 to Himachal Pradesh and so on).
2. **Area Name:** Classifies the name of country (India) or each state.

3. **Education Level:** Segregates education level into illiterate, literate, primary, middle, secondary, graduate and above.
4. **Age at Marriage:** Specifies the age at which persons have been married.
5. **Number of Married Persons:** Provides data for the number of persons with married status. It is further subdivided into males and females.
6. **Duration of marriage of currently married persons:** Provides data on the present tenure (2011) of marriage. It is subdivided into different tenures, viz., 0-4, 5-9,10-19, …, 40 and above.

Level of Data Used: The table has used data at the country level and state level.

Problem with Data: Each row with the title *"Age not mentioned"* contains information on people who have not revealed their age. This accounts for underestimation of different age groups.

Rates that can be calculated: The rates that can be calculated from this table are:

i. **Ratio of unmarried men to unmarried women aged 15 and over:** It summarizes the potential numbers of men and women available for marriage. This measure indicates how many widowed, divorced, and never married men live in an area per 100 women of the same age range and marital status. A ratio of 100 means the numbers of unmarried men and women are equal.

ii. **Population Distribution by Marital Status:** It is the percentage distribution of the population in a given age group by the different marital status categories. The number of persons in a particular marital status category and age group is divided by the total number of persons in that age group at the same point in time. The result is expressed in percentage terms. The sum of the percentages in all marital status categories is equal to 100 per cent.

Table 4: A - 2 DECADAL VARIATION IN POPULATION SINCE 1901

Concept of Data: The major data attributes are:

1. **State Code/District Code/Sub District Code:** Assigns a code to each state/district/sub-district of India. (E.g.: 01 to Jammu and Kashmir, 02 to Himachal Pradesh and so on).
2. **India/State/Union Territory:** Classifies the name of country (India) or each state.
3. **Census Year:** Denotes each census year starting from 1901 to 2011.
4. **Persons:** Enlists the total number of persons in each census year across India and in each state.
5. **Males:** Enlists the total number of males in each census year across India and in each state.
6. **Females:** Enlists the total number of females in each census year across India and in each state.
7. **Variation since the preceding census:** Calculates the change in population from the previous census year.

Level of Data Used: The table has used data at the country level and state level.

Problem with Data: Some of the data has not been provided, for example, data for Arunachal Pradesh from 1901-1951. The 1981 Census could not be held owing to disturbed conditions prevailing in Assam. Hence the population figures for 1981 of Assam have been worked out by 'Interpolation'. The distribution of population of Puducherry by sex for 1901 (246,354), 1931 (258,628) and 1941 (285,011) is not available.

Rates that can be calculated: The rates that can be calculated from this table are:

i. **Decadal variation:** It is the difference of the population of the present census year and population in the past census year.

$$\textbf{\textit{Population in current census year} - \textit{Population in the past census year}}$$

This helps us to understand by how much population has increased over a decade. It also helps to understand the average population growth in a year.

ii. **Percentage decadal variation:** It is the percentage of population growth over a decade.

$$\frac{\textbf{\textit{Population in current census year} - \textit{Population in the past census year}}}{\textbf{\textit{Population in past census year}}} * \mathbf{100}$$

iii. **Sex ratio:** It calculates the number of women per 100 males in an area. Sex ratio in India was 940 females per 1000 male. It provides an indication of both the relative survival of females and males and the future breeding potential of a population.

Table 5: C -1 POPULATION BY RELIGIOUS COMMUNITY – 2011

Concept of Data: The major data attributes are:

1. **State Code/District Code/Tehsil Code/ Town Code:** Assigns a code to each state/district/tehsil/town of India. (E.g.: 01 to Jammu and Kashmir, 02 to Himachal Pradesh and so on).
2. **India/State/Union Territory:** Classifies the name of country (India) or each state.
3. **Total:** Enlists the total number of persons in each census year across India and in each state. It is divided into males and females.
4. **Religious communities:** It is divided into different religious communities viz., Hindu, Muslim, Christian, Sikh, Buddhist, Jain, Other religions and persuasions and 'Religion not stated'.

Level of Data Used: The table has used data at the country level and state level.

Problem with Data: No problem noted as such.

Rate that can be calculated: The following percentage can be calculated from the table

i. **Percentage of each religion:** This can be calculated as a percentage of the total number of people in each religion to the total population.

$$\frac{\textbf{\textit{Population of a particular religion}}(\textbf{Hindu}, \textbf{Muslim}, \textbf{Christian}, \textbf{etc})}{\textbf{\textit{Total Population}}} * \mathbf{100}$$

This can be subsequently done for each state. Also, we can find the subcategories like percentage of muslim women, percentage of Christian male and so on.

These data are very important to understand the percentage of each religion and several inter related socio-economic aspects.