

## Analysis and Interpretation of Tabulated Results and Graphical Representation (Indian Experience)

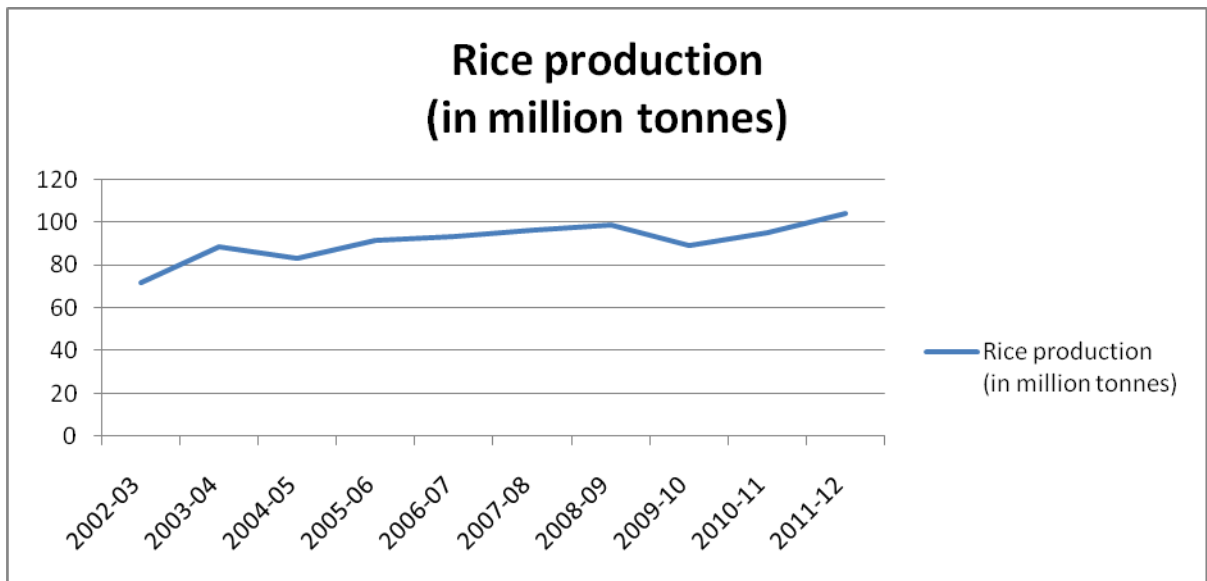
In NSSO, after the unit level data is disseminated and tables are generated, the next step is writing different reports as interpretation of the data findings. Initial reports of different rounds in NSSO are brought out by SDRD. Based on that report and also the unit level data, different researchers, academic and even non-academic people do their own analysis and interpretation. So many policy decisions in the government are also taken on the basis of the results and reports of those surveys.

Generally, report writing and graphical representation are based on the type of the findings that are being portrayed. Graphical representation of the findings always facilitates the users to understand the results better. For example, growth rate calculation is a very important tool to assess the correctness and viability of the current results. In the NSSO, similar surveys are conducted time and again to calculate the growth of related parameters, which, in turn determine the progress of our economy or social status. If we want to analyze the growth in rice production in India over the years the procedure may be as follows:

Table 1: Table of rice production in India over the years:

| <b>Year</b> | <b>Rice production<br/>(in million tonnes)</b> | <b>% growth</b> |
|-------------|--|-----------------|
| 2002-03     | 71.82  | -23.06          |
| 2003-04     | 88.53  | 23.27           |
| 2004-05     | 83.13  | -6.1            |
| 2005-06     | 91.79  | 10.42           |
| 2006-07     | 93.35  | 1.7             |
| 2007-08     | 96.69  | 3.58            |
| 2008-09     | 99.18  | 2.58            |
| 2009-10     | 89.09  | -10.17          |
| 2010-11     | 95.32  | 6.99            |
| 2011-12     | 104.32   | 9.44            |

The above table may be represented graphically in a line diagram as below where the line indicates the trend of Rice production (in million tonnes) in India over the years.



From the graph the following conclusions may be drawn:

- i) In the years 2004-05 and 2009-10 rice production declined from the previous year.
- ii) Positive growth in production is maximum in the year 2003-04 (the slope of line in the graph is steepest in the region 2002-03 to 2003-04)
- iii) Negative growth in production is maximum in the year 2009-10 (the negative slope is maximum in the region 2008-09 to 2009-10)

The reason of positive and negative growth and extent of growth may be attributed to so many factors like rainfall, irrigation etc. Others factors may also be explored by economists and statisticians from the facts and figures. Policy decision regarding rice output may be conceived on the basis of the situation pictured in the data.

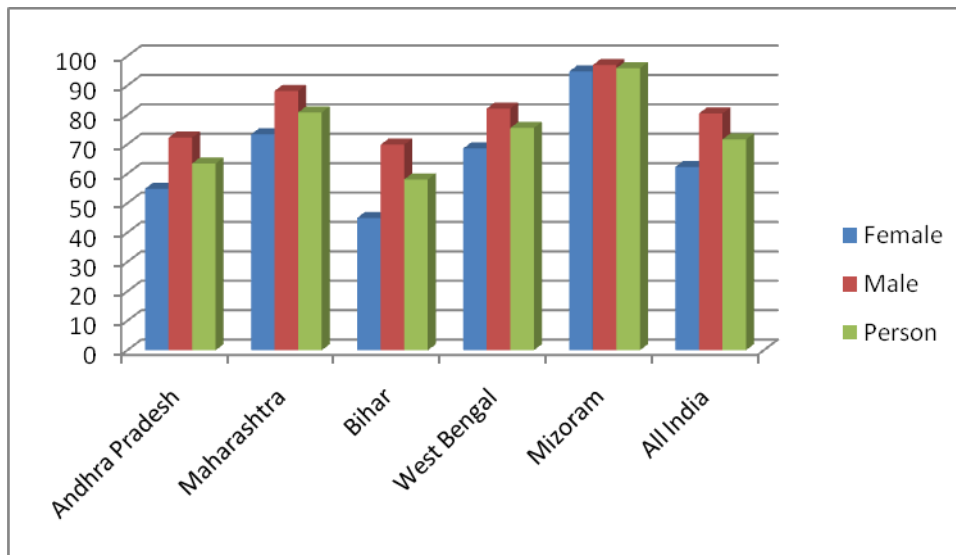
Now, let us go for another example. Let us now examine and analyze the ‘Literacy rates (%) in some selected states vis-à-vis All India by sex’. The table is like this

Table 2: Literacy rates (%) for age 7 years and above in some selected states and All India by sex:

| State            | Female      | Male        | Person      |
|------------------|-------------|-------------|-------------|
| Andhra Pradesh   | 54.9        | 72.3        | 63.5        |
| Maharashtra      | 73.4        | 88.2        | 80.9        |
| Bihar            | 45.0        | 69.9        | 58.1        |
| West Bengal      | 68.6        | 82.2        | 75.6        |
| Mizoram          | 94.8        | 97.0        | 95.9        |
| <b>All India</b> | <b>62.3</b> | <b>80.5</b> | <b>71.7</b> |

Data source : Draft NSSO Report No. 532

Table 2 may be represented graphically by a 3D bar diagram:



The following conclusions may be drawn from the above table:

- i) Of the 5 states, Mizoram and Bihar have the highest and lowest literacy rate respectively.
- ii) Female literacy rate is pretty low in Bihar and Andhra Pradesh.
- iii) Difference in Female and Male Literacy rate is highest in Bihar.

So many others conclusions may also be drawn from the graph and the table. Reason behind slow rate may be sorted out and corrective measures may be adopted.

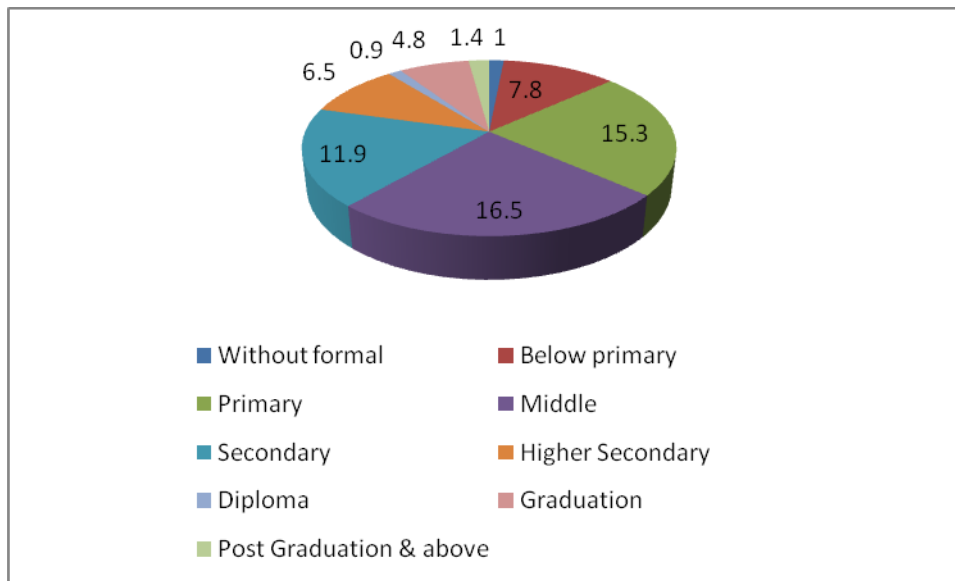
The third example is on the distribution of the entire adult (age 15 & above) population in India by completed level of education.

Table 3: Percentage distribution of the entire adult (age 15 & above) population in India by completed level of education.

| Level of education      | %age |
|-------------------------|------|
| Without formal          | 1    |
| Below primary           | 7.8  |
| Primary                 | 15.3 |
| Middle                  | 16.5 |
| Secondary               | 11.9 |
| Higher Secondary        | 6.5  |
| Diploma                 | 0.9  |
| Graduation              | 4.8  |
| Post Graduation & above | 1.4  |

Data source : Draft NSSO Report No. 532

Since the levels in the parameter 'Level of Education' are mutually disjoint as well as exhaustive, the table may be better visualized at a glance by this pie-diagram:



It is visible in the above chart that values have also been given with the graphical representation. Data levels or values can be shown in any kind of graph. From the above diagram the followings may be observed:

- i) Percentage is highest in 'Middle' level of education
- ii) The same is lowest in 'Diploma'.
- iii) Percentage of progressively increasing from 'Below primary' to "middle' and then there is a large to larger drop in 'Secondary' and 'Higher secondary'.
- iv) Percentage of persons attaining 'Post graduate degree and above' is low.

Tabular and graphical representation of data has ever been instrumental for through understanding of data which, in turn, exposes the right situation prevalent in the country. Apart from graphs and charts there are so many other statistical tools for data analysis such as working out 'Mean', 'Variance', 'Covariance', 'Correlation coefficient' etc from the data. These are also used for study and research to extract further facts and intricacies in the data.