Statistics in Real Life

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What is Statistics?

- “The word ‘statistics’ and ‘statistical’ are derived from the Latin word status, means political state

- “ It is a mathematical science pertaining to the collection, analysis, interpretation or explanation, and presentation of data. Also with prediction and forecasting based on data.

What is Statistics?

- Statistics form a key basis tool in business and manufacturing as well. It is used to understand measurement systems variability, control processes for summarizing data, and to make data-driven decisions.

- Some fields of inquiry use applied statistics so extensively that they have specialized terminology. Ex- engineering statistics, social statistics, statistics in sports, etc…

Statistics in daily life

Today, statistics is widely employed in government, business, and natural and social sciences. Today, statistical methods are applied in all fields that involve decision making, for making accurate inferences from a collated body of data and for making decisions in the face of uncertainty based on statistical methodology.

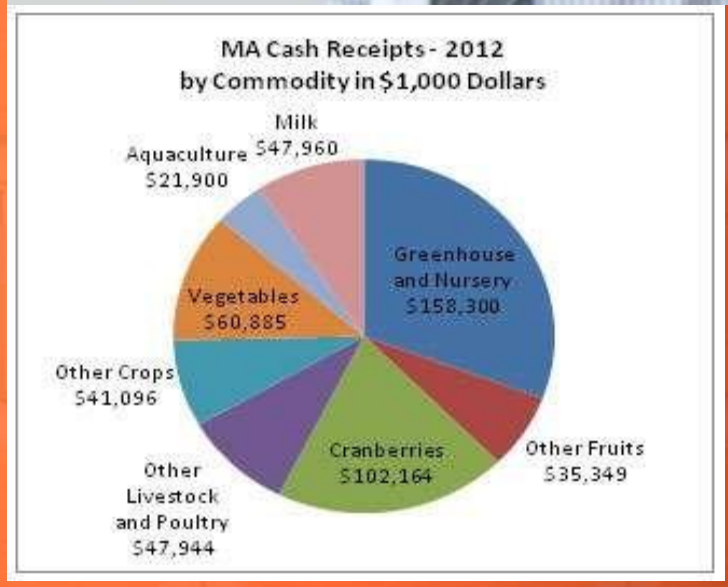
Statistics in daily life

The use of modern computers has expedited large-scale statistical computations, and has also made possible new methods that are impractical to perform manually. Statistics continues to be an area of active research, for example on the problem of how to analyze big data

Statistics in daily life

- **INDUSTRIES AND BUSINESS**
  - Report of early sales & comparison others.

  It shows where the factory or its sales lack and where they are good .

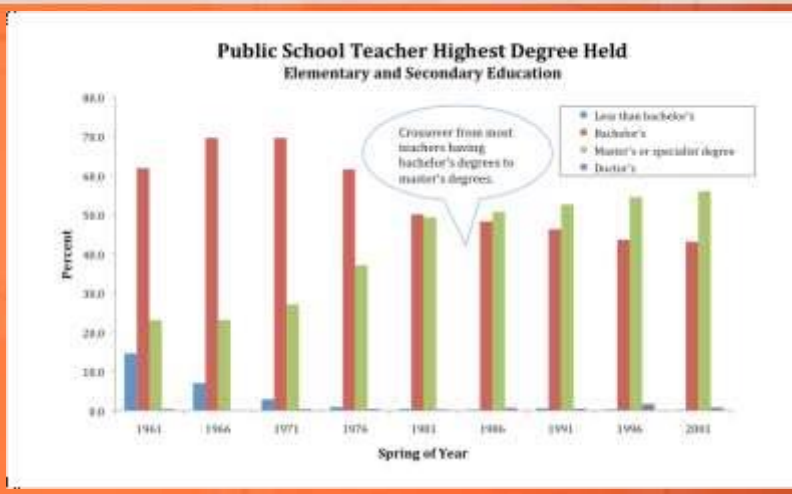


- **AGRICULTURE**
  - What amount of crops are grown this year in comparison to previous year or in comparison to required amount of crop for the country Quality and size of grains grown due to use of different fertilizer.

Statistics in daily life

- **EDUCATION**

Money spend on girls education
in comparison to boys education?
Increase in no. of girl students who
seated in who Seated for different exams?



- **ECOLOGICAL STUDIES**

Comparison of increasing impact of
pollution on global warming?
Increasing effect of nuclear reactors
on environment?

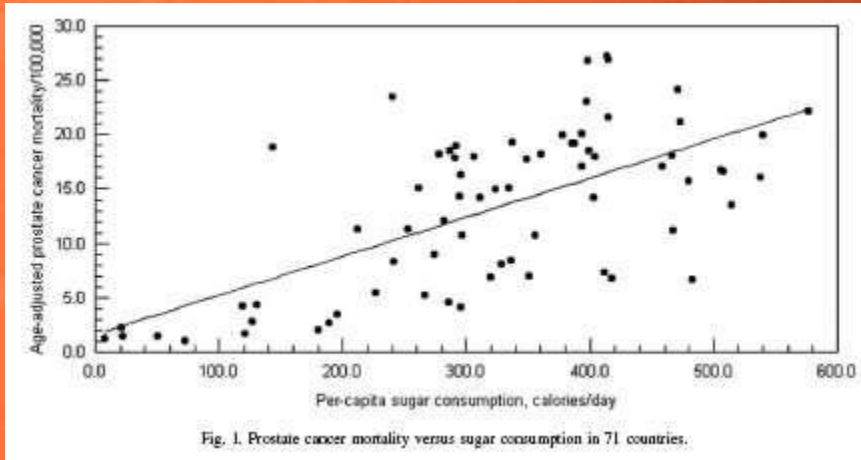
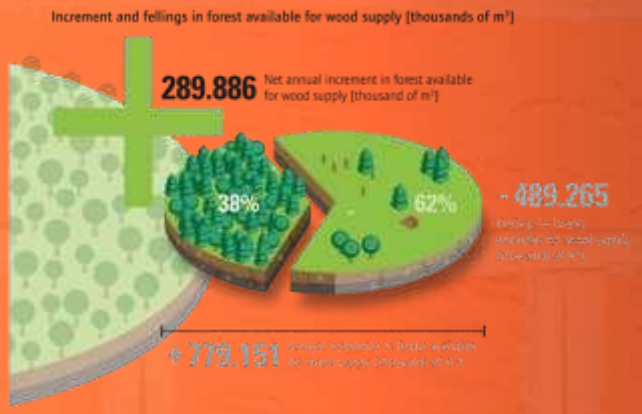


Fig. 1. Prostate cancer mortality versus sugar consumption in 71 countries.

Statistics in daily life

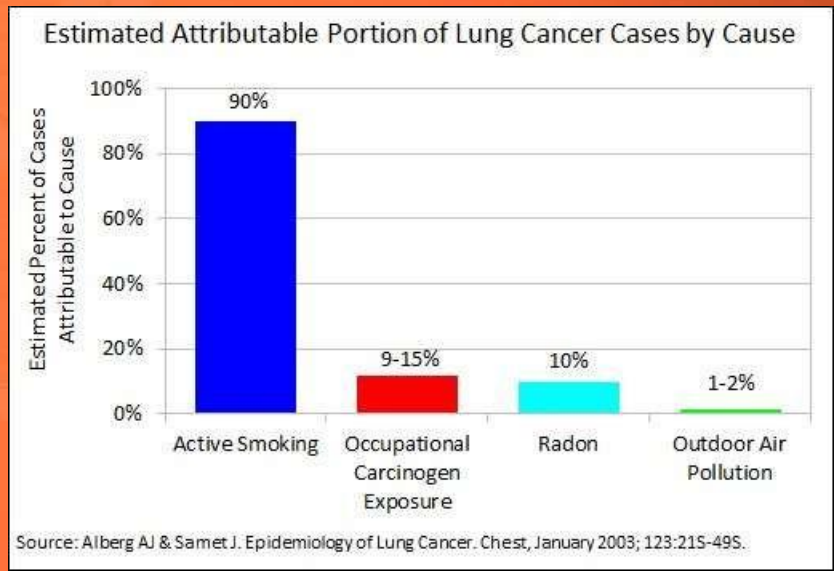
- **FORESTERY**

How much growth has been occurred in area under forest or how much forest has been depleted in last 5 years? How much different species of flora and fauna have increased or decreased in last 5 years?



- **MEDICAL STUDIES**

No. of new diseases grown in last 10 year. Increase in no. of patients for a particular disease. SPORTS Used to compare run rates of to different teams. Used to compare to different players.esult for last 10 years.



Statistics in daily life

- **Use of Graphs**

Nowadays graphs are used almost everywhere. In Stock Market, graphs are used to determine the profit margins of Stock. There is always a graph showing how prices have changed over time , unemployment figures , inflation , exchange rates , NASA space stories , global warming statistics , mortgage lending figures , house price comparisons , inflation , budget forecasts. taxation or pension forecasts, Food prices , and how they have changed over time etc.

Mean

- The mean is used as one of the properties of statistics. It is defined as the average of all the clarifications.

- The mean of a number of observations is the sum of the values of all the observations divided by the total number of observations. It is denoted by the symbol x , read as ‘x bar’.

Mean : 4, 0, 7, −1, 8, 11

$$\text{Mean} = \frac{\sum x_i}{n} = \frac{4+0+7+(-1)+8+11}{6} = \frac{29}{6}$$

$$= 29/6 .$$

Mode

- The mode is that value of the observation which occurs most frequently, i.e., an observation with the maximum frequency is called the mode.

- The no. of games succeeded by any team of players. The frequency of the need of infants. Used to find the number of the mode is also seen in calculation of the wages, in the patients going to the hospitals, the mode of travel etc.

Ex: 4, 0, 7, 2, 0, 5, 4, 8, 8, 3, 4

Mode = 4

Median

- The median is that value of the given number of observations, which divides it into exactly two parts.

- It is used to measure the distribution of the earnings Used to find the players height e.g. football players. To find the middle age from the class students. Also used to find the poverty line.

Ex: 0, 4, 8, 9, 11, −2, 5, 3, 8, 11

⇒ −2, 0, 3, 4, 5, 8, 9, 11, 11

median

Conclusion

- Statistics and probability are important for making decisions in life.
- Statistics is not mathematics. The methods sometimes uses mathematics, but the basic ideas do not require advanced math.
- We need to focus on concepts and importance of statistics.

Thank you