



# THIRUTHANGAL NADAR COLLEGE

(Belongs to the Chennaivazh Thiruthangal Hindu Nadar Uravinmurai Dharma Fund)

Selavayal, Chennai-51.

A Self-Financing Co-educational College of Arts & Science

Affiliated to the University of Madras

Accredited with 'B' Grade by NAAC

An ISO 9001: 2015 Certified Institution

**NAME OF THE DEPARTMENT** : Social Work

**SUBJECT** : Social Work Research & statistics

**TOPIC** : Diagrammatic Representation of data

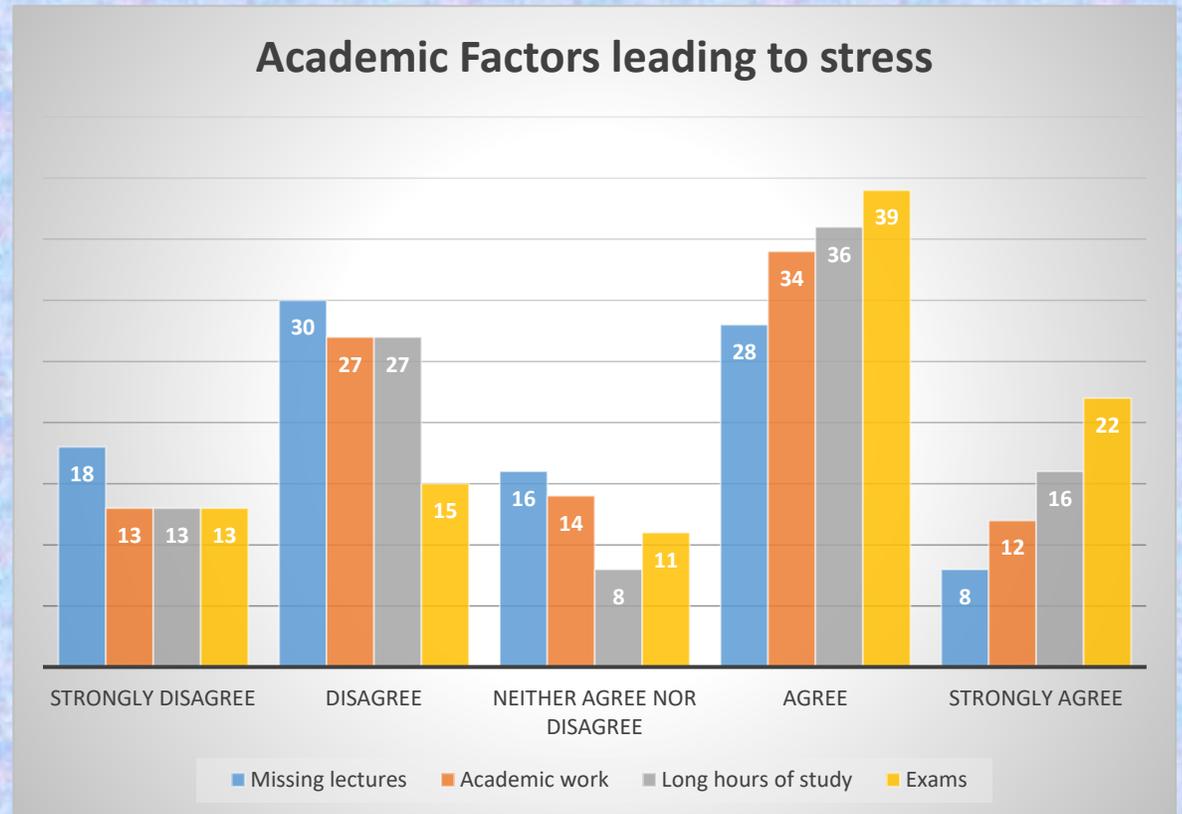
**STAFF NAME** : A Arockia Joice

# DIAGRAMMATIC PRESENTATION OF DATA

❑ Diagrammatic presentation is a technique of presenting numeric data through Pictograms, Cartograms, Bar Diagrams & Pie Diagrams etc.

❑ It is the most attractive and appealing way to represent statistical data.

Academic Factors leading to stress					
Academic Factors	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Missing lectures	18	30	16	28	8
Academic work	13	27	14	34	12
Long hours of study	13	27	8	36	16
Exams	13	15	11	39	22



# **WHY DIAGRAMMATIC REPRESENTATION/IMPORTANCE**

## **1. Diagrams Are Attractive and Impressive**

- Data presented in the form of diagrams are able to attract the attention of even a common man.

## **2. Easy to Remember**

- Diagrams have a great memorising effect.
- The picture created in mind by diagrams last much longer than those created by figures presented through the tabular form.

## **3. Diagrams Save Time**

- It presents complex mass data in a simplified manner.
- Data presented in the form of diagrams can be understood by the user very quickly.

#### **4. Diagrams Simplify Data**

- Diagrams are used to represent a huge mass of complex data in a simplified and intelligible form, which is easy to understand.

#### **5. Diagrams Are Useful in Making Comparisons**

- It becomes easier to compare two sets of data visually by presenting them through diagrams.

#### **6. More Informative**

- Diagrams not only depict the characteristics of data but also bring out other hidden facts and relations which are not possible from the classified and tabulated data.

**DIFFERENT  
DIAGRAMATIC  
REPRESENTATION OF  
DATA**

One  
Dimensional  
Diagram

Two  
Dimensional  
Diagram

Pie Chart

Pictogram

Cartogram

Three  
Dimensional  
Diagram

One dimensional diagram is that diagram in which the only length of the diagram is considered. It can be drawn in the form of a line or in various types of bars.

Some of the Types of One-dimensional Diagram:

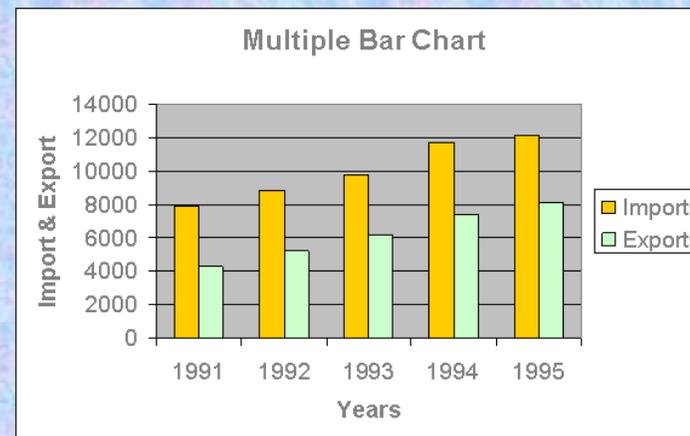
### (1) Simple Bar Diagram

Simple Bar diagram comprises of a group of rectangular bars of equal width for each class or category of data.



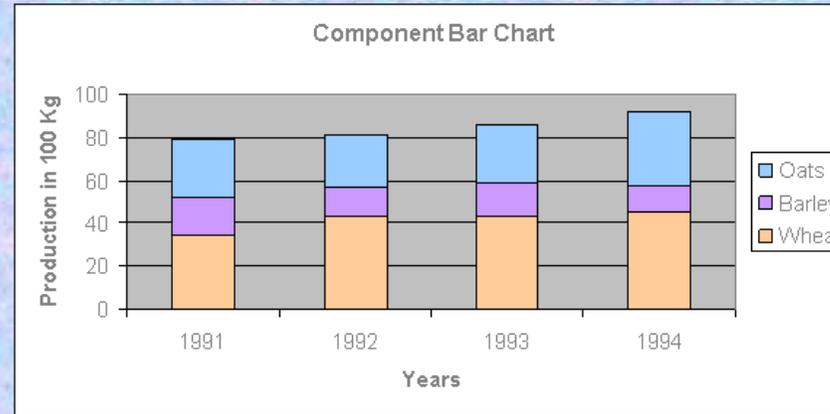
### (2) Multiple Bar Diagram

This diagram is used when we have to make a comparison between two or more variables like income and expenditure, import and export for different years, marks obtained in different subjects in different classes, etc.



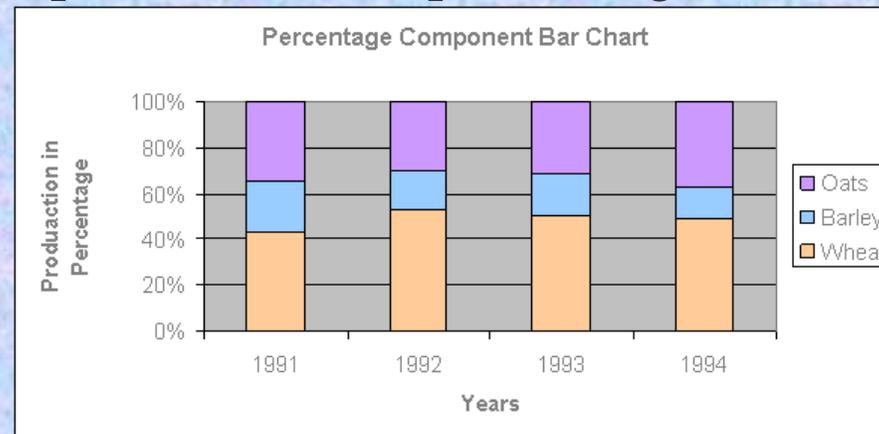
### (3) Sub-divided Bar Diagram

This diagram is constructed by sub-dividing the bars in the ratio of various components.



### (4) Percentage Bar Diagram

Sub-divided bar diagram presented on a percentage basis is known as Percentage Bar Diagram.



- TWO DIMENSIONAL DIAGRAM
- THREE DIMENSIONAL DIAGRAMS
  - PIE CHART
  - PICTOGRAM AND
  - CARTOGRAM

## **TWO DIMENSIONAL DIAGRAMS**

- ❑ In two dimensional diagrams both length and width of the bars are considered, i.e. in two dimensional diagrams given numerical figures are represented by areas of the bars.
- ❑ So, two dimensional diagrams are also known as “Area Diagrams.”
- ❑ The following are the types of two dimensional diagrams:
  - (i) Rectangles
  - (ii) Squares
  - (iii) Circles

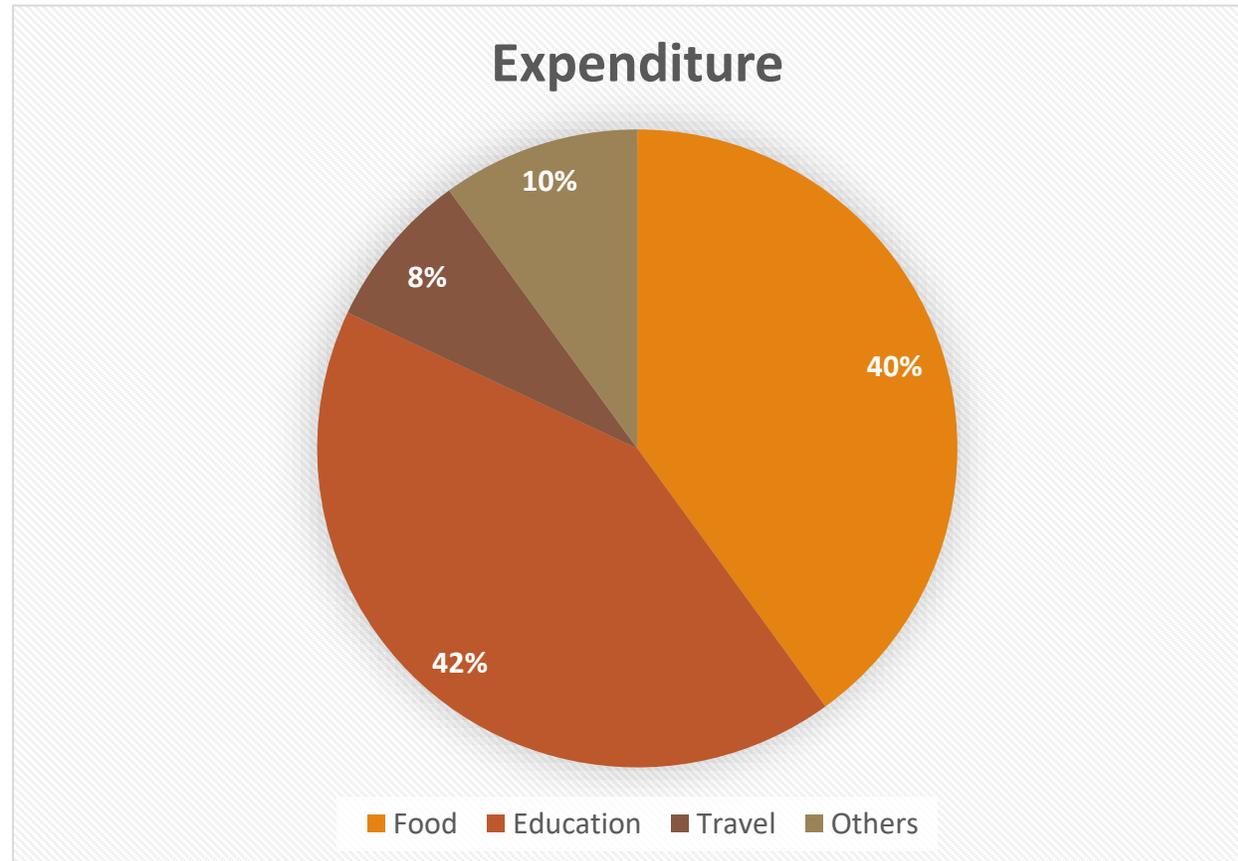
## THREE DIMENSIONAL DIAGRAM

- Three dimensional diagrams are those in which three dimension, length, width and height are taken into account.
- They are also known as Cubic Diagram.
- It may be drawn in the form of cylinders, blocks, spheres, etc.



## PIE DIAGRAM

Pie diagram/chart is used when the requirement of the situation is to know the relationship between whole of a thing and its parts, i.e. pie chart provides us the information that how the entire thing is divided up into different parts



## **Limitation of Pie Diagram**

- (i) For accurate reading and interpretation, particularly when data are divided into a large number of components or the difference among the values of components is very small, the pie diagram is less effective than the bar diagrams.
- (ii) Attractiveness of a pie chart suffers if the number of parts of the whole is more than 7 or 8. That is, pie chart should be avoided if number of parts of the whole is more than 7 or 8.
- (iv) Pie chart is used only when total of the parts make a meaningful whole.
- (v) Pie chart should not be used if observations of the different parts are not mutually exclusive.
- (vi) Pie chart should not be used if observations of the different parts are observed at different time.

# **PICTOGRAMS**

- ❖ Pictograms, also known as picture grams, are very frequently used in representing statistical data.
- ❖ Pictograms are drawn with the help of pictures.
- ❖ These diagrams indicate towards the nature of the represented facts.
- ❖ Pictograms are attractive and easy to comprehend and as such this method is particularly useful in presenting statistics to the layman.
- ❖ The picture which is used as symbols to represent the units or values of any variable or commodity selected carefully.
- ❖ The picture symbol must be self explanatory in nature.

Year	Number of cars	 = 1000 cars
2003		
2004		
2005		
2006		
2007		

The pictograms have the following merits:

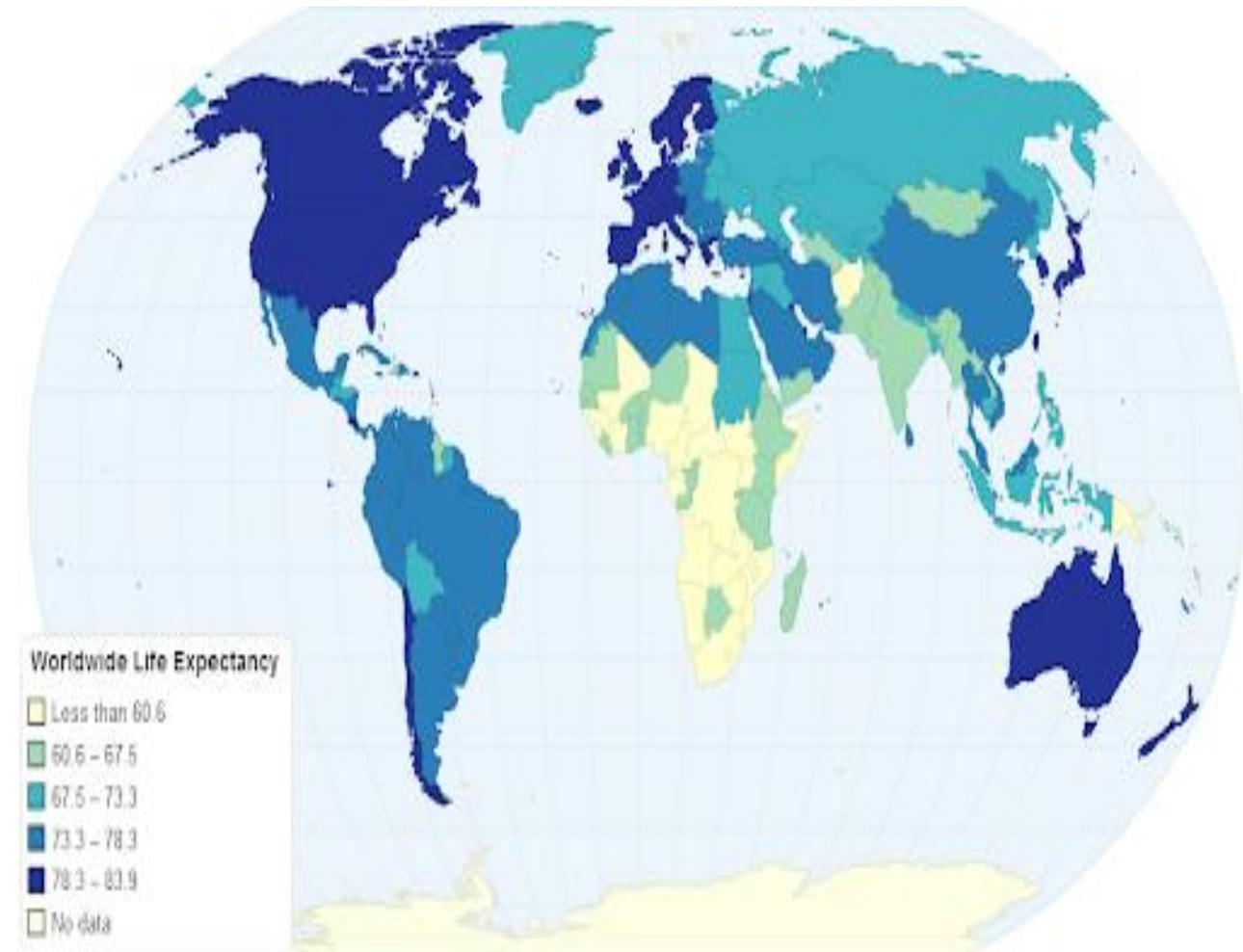
- (i) The magnitudes of the variables may be known by counting the pictures.
- (ii) An illiterate person can also get the information.
- (iii) The facts represented in a pictorial form can be remembered longer.

## **CARTOGRAM**

Representation of the numerical facts with the help of a map is known as cartogram.

By representing the facts by maps, the impact of the results on different geographical area may be shown and to be compared also.

Maps are helpful in comparative study of various districts of a state or different states of a country.



## **Which diagram can be used?**

The choice would primarily depend upon two factors, namely:

- (i) **The Nature of the Data:** The nature of data would depend whether to use one dimensional, two dimensional or three dimensional diagrams and if it is one dimensional, whether it is simple, sub-divided, multiple or some other type. A cubic diagram would be preferred to a bar if the magnitudes of the figures are very wide apart.
- (ii) **The Type of People for whom the Diagram is to be made:** For drawing attention of an undedicated mass pictogram or cartograms are more effective.