TRINITY COLLEGE FOR WOMEN NAMAKKAL
Department of Mathematics

MATHEMATICAL STATISTICS
21USTA02 - ODD Semester
Topic: CORRELATION

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- INTRODUCTION

- TYPES OF CORRELATION

- METHOD OF STUDING CORRELATION

Introduction

Correlation refers to relation of two or more variables.

Example:

There exists relationship between price and demand, wages and price, yield and rainfall, height and weight and so on.

Meaning of correlation:

Correlation is a statistical tool which measures the degree of relationship between two variables. In other words, the correlation measure closeness of relationship between two variables.

TYPES OF CORRELATION:
   Correlation is described or classified in several different ways. Three of the most important are:

● **Positive and Negative correlation**
      When the values of two variables change in the   same direction, there is positive correlation between   the two variables.

 Example:
1.   Price and supply, 2. Yield and Fertiliser Applied.

When the values of two variables change in the opposite directions, there is positive correlation between the two variables.

Example:

1. Price and Demand, 2. Yield and Weed

● **Linear or Non-linear or No correlation:**

The ratio of change between two variables uniform then the correlation is said to be linear correlation.

If the ratio of change between two variable is not uniform then the correlation is said to be non-linear correlation.

   When the points are scattered neither around a line nor around a curve, there is no correlation between the two variables.

● **Simple, Partial and Multiple Correlation:**
     When only two variables are considered as under positive or negative correlation above , the correlation between them is called simple correlation.

When more than two variables are considered, the correlation between two of them when all other variables are held constant, i.e., when the linear effects of all other variables on them are removed, is called partial correlation.

When more than two variables are considered, the correlation between one of them and its estimate based on the group consisting of the other variables is called multiple correlation.

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THANK YOU

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