

STATISTICS IN BOTANY

BY

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LECTURE CONDUCTED AT LECTURE THEATRE OF THE DEPARTMENT OF BOTANY OF PATNA SCIENCE COLLEGE PATNA UNIVERSITY UNDER THE STAR COLLEGE SCHEME OF DEPARTMENT OF BIOTECHNOLOGY, GOVERNMENT OF INDIA

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KEY POINTS OF THE LECTURE

POPULATION - GROUP OF OBJECTS / A SET OF OBJECTS.

POPULATION SIZE (A) - NO. OF OBJECTS IN A POPULATION SIZE.

* ALL THE OBJECTS HAVING SIMILARITY CONSTITUTE A POPULATION.

SAMPLE - SMALLER PART OF POPULATION.

- MUST BE ADEQUATE IN QUANTITY.

- MUST BE REPRESENTATIVE OF THE POPULATION FROM WHICH IT IS DRAWN.

SAMPLE SIZE (m) - IT IS A PART OF POPULATION CHOSEN FOR A SURVEY / EXPERIMENT.

PARAMETERS

* CONSTANT CALCULATED ON THE BASIS OF PARTICIPANT VALUE / POPULATION SIZE.

* A STATISTIC (SINGULAR) OR SAMPLE STATISTIC IS ANY QUANTITY COMPUTED ON THE BASIS OF SAMPLE SIZE.

* VARIOUS MEANINGS OF STATISTICS

(i) PLURAL OF STATISTIC.

(ii) NUMERICAL OR QUANTITATIVE INFORMATION ABOUT A CHARACTERISTIC.

EXAMPLES

(a) CRIME STATISTICS

(b) PRICE STATISTICS

(c) STUDENT STATISTICS

(d) ACCIDENT STATISTICS

(iii) SUBJECT

- STATISTICS IS A BRANCH OF SCIENCE THAT DEALS WITH COLLECTION, CLASSIFICATION, TABULATION, ANALYSIS OR INTERPRETATION OF A SET OF DATA RELATED TO AN INVESTIGATION OR ENQUIRY.

PROCESSES INVOLVED IN STATISTICS -

COLLECTION - THE DATA IS COLLECTED.

CLASSIFICATION - THE COLLECTED DATA IS FURTHER CLASSIFIED BECAUSE IT IS MUCH EASIER TO HANDLE SMALLER GROUPS.

TABULATION - THE DATA IS THEN TABULATED IN THE FORM OF TABLES.

DATA ANALYSIS AND INTERPRETATION - IT IS THE PROCESS OF ASSIGNING MEANING TO THE COLLECTED INFORMATION AND DETERMINING THE CONCLUSIONS, SIGNIFICANCE AND IMPLICATIONS OF THE FINDING.

LIMITATIONS OF STATISTICS -

(i) STATISTICAL METHODS REQUIRE NUMERICAL / QUANTITATIVE VALUE.

(ii) IT DEALS WITH A GROUP, NOT WITH AN INDIVIDUAL.

(iii) THE STATISTICAL INFERENCES ARE PROBABILISTIC IN NATURE.

(iv) ONLY EXPERTS OF STATISTICS SHOULD USE STATISTICAL METHODS.

STATISTICS IS TAUGHT THROUGH SOFTWARE AT ADVANCED LEVEL IN UNIVERSITIES.

NAME OF THE SOFTWARE : MINITAB

DEVELOPED AT : THE PENNSYLVANIA STATE UNIVERSITY

DEVELOPED BY : BARBARA F. RYAN, THOMAS A. RYAN, JR., AND BRIAN L. JOINER

DEVELOPED IN : 1972

PROCESSES INVOLVED IN USING THE SOFTWARE

(i) GIVING COMMAND.

(ii) GIVING DATA.

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