



A STUDY OF STATICS AND DESCRIPTIVE STATICS

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ABSTRACT

Statistics is the study of the collection, analysis, interpretation, presentation, and organization of data. In applying statistics to, e.g., a scientific, industrial, or social problem, it is conventional to begin with a statistical population or a statistical model process to be studied. Populations can be diverse topics such as "all people living in a country" or "every atom composing a crystal". Statistics deals with all aspects of data including the planning of data collection in terms of the design of surveys and experiments.



Descriptive statistics is the discipline of quantitatively describing the main features of a collection of information, or the quantitative description itself. Descriptive statistics are distinguished from inferential statistics (or inductive statistics), in that descriptive statistics aim to summarize a sample, rather than use the data to learn about the population that the sample of data is thought to represent. This generally means that descriptive statistics, unlike inferential statistics, are not developed on the basis of probability theory.

KEYWORDS :Statistics, collection, analysis, interpretation, Descriptive statistics, inferential statistics

INTRODUCTION

1. STATICS:

MEANING

"Measurements", that a word is frequently utilized, has been gotten from the Latin word "Status" that implies a gathering of numbers or figures; those speak to some data of our human interest. We discover measurements in ordinary life, for example, in books or other data papers or TV or daily papers. In spite of the fact that, first and foremost it was utilized by Kings just to collect data about states and other data which was required about their kin, their number, income of the state and

so on. This was known as the investigation of the state since it was utilized as it were by the Kings. So it got its improvement as "Lords" subject or 'Study of Kings' or we may call it as "Political Arithmetic's". It was surprisingly, maybe in Egypt to direct enumeration of populace in 3050 B.C. since the lord required cash to erect pyramids. In any case, in India, it is thought, that, it began going back to Chandra Gupta Maurya's kingdom under

DEFINITION

The term 'Statistics' has been defined in two senses, i.e. in Singular and in Plural sense. In plural sense, it implies a deliberate accumulation of numerical actualities also, in particular sense; it is the investigation of gathering, characterizing and utilizing measurements.

A. In the Plural Sense:

"Measurements are numerical articulations of certainties in any branch of enquiry put in connection to each other." — A.L. Bowley

"The ordered actualities regarding the state of the general population in a state — particularly those truths which can be expressed in numbers or in tables of numbers or in any plain or grouped course of action." — Webster

These definitions given above give a tight intending to the insights as they don't show its different viewpoints as are seen in its down to earth applications. From the this perspective the definition given by Prof. Horace Sacrist has all the earmarks of being the most exhaustive what's more, significant:

"By measurements we mean totals of truths influenced to a checked degree by assortment of causes, numerically communicated, counted then again evaluated by standard of exactness, gathered in a precise way for a foreordained reason, and put in connection to each other." — Horace Sacrist

B. In the Singular Sense:-

"Measurements alludes to the collection of procedure or strategy, which has been created for the gathering, presentation and investigation of quantitative information and for the utilization of such information in basic leadership." — Ncttor and Washerman.

"Insights may appropriately be known as the exploration of midpoints." — Bowleg.

"Insights might be characterized as the gathering, presentation, investigation, furthermore, elucidation of numerical information." — Croxton and Cowden.

STAGES OF INVESTIGATIONS:

1. Collection of Data:

It is the principal phase of examination and is with respect to gathering of information. It is resolved what strategies for accumulation is required in this issue and after that information are gathered.

2. Organization of Data:

It is second stage. The information are disentangled and made relative what's more, are ordered by and place.

3. Presentation of Data:

In this third stage, sorted out information are made straightforward and appealing. These are introduced as tables charts and diagrams.

4. Analysis of Data:

Forward phase of examination is investigation. To get right results, investigation is essential. It is frequently attempted utilizing Measures of focal inclinations, Measures of scattering, relationship, relapse what's more, introduction and so on.

5. Interpretation of Data:

In this last stage, conclusions are established. Utilization of correlations is made. On this premise, gauging is made.

FUNCTION SCOPE

Scope and importance of Statistics:

1. Insights and arranging: Statistics is irreplaceable into arranging in the present day age which is termed as "the period of arranging". All over the world the govt. are re-putting away to getting ready for financial improvement.

2. Insights and financial matters: Statistical information and systems of factual investigation need to be hugely valuable including prudent issue. For example, compensation, value, time arrangement examination, request investigation.

3. Measurements and business: Statistics is a flighty apparatus of generation control. Business officials are depending increasingly on measurable systems for concentrating on the much and yearning of the esteemed clients.

4. Measurements and industry: In industry insights is broadly utilized disparity control. Underway designing to see if the item is affirming to the particulars or not. Factual apparatuses, for example, assessment arrangement, control outline and so on.

5. Measurements and science: Statistics are personally related late progressions in factual system are the result of wide uses of arithmetic.

6. Measurements and cutting edge science: In restorative science the factual devices for gathering, presentation and investigation of watched truths identifying with causes and frequency of diseases and the aftereffect of use different medications and drug are of extraordinary significance.

7. Measurements, brain science and instruction: In training and physiology insights has discovered wide application, for example, deciding or to decide the unwavering quality and legitimacy to a test, element examination and so on.

8. Insights and war: In war the hypothesis of choice capacity can be an extraordinary help to the military and individual to arrange "most extreme decimation with least exertion."

2. DESCRIPTIVE STATISTICS

KNOWLEDGE OF CLASSIFICATION AND TABULATION

In any measurable examination, the accumulation of the numerical information is the first and the most essential matter to be gone to. Regularly a man examining, will need to gather the information from the real field of request. For this he may issue appropriate polls to get fundamental data or he may take real meetings; individual meetings are more compelling than surveys, which may not inspire a satisfactory reaction. Another technique for gathering information might be accessible in distributions of Government bodies or other open or private associations.

Tabulation

It is the procedure of buildup of the information for comfort, in measurable preparing, presentation and translation of the data.

A good table is one which has the following requirements:

1. It ought to show the information plainly, highlighting essential points of interest.
2. It ought to spare space however appealingly outlined.
3. The table number and title of the table ought to be given.+
4. Row and segment headings must clarify the figures in that.
5. Averages or rates ought to be near the information.
6. Units of the estimation ought to be unmistakably expressed along the titles or headings.
7. Abbreviations and images ought to be maintained a strategic distance from beyond what many would consider possible.
8. Sources of the information ought to be given at the base of the information.
9. In case inconsistencies creep in table or any component is not adequately clarified, references and commentaries must be given.
10. The adjusting of figures ought to be fair-minded.

Classification

"Characterized and organized realities talk about themselves, and described they are as dead as lamb" This quote is given by J.R. Hicks.

The procedure of partitioning the information into various gatherings (viz. classes) which are homogeneous inside yet heterogeneous between themselves, is known as a characterization. It helps in comprehension the notable elements of the information furthermore the examination with comparable information. For a last investigation it is the closest companion of an analyst.

Methods Of Classification

The data is classified in the following ways:

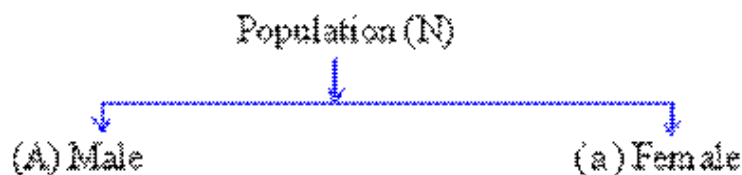
1. According to attributes or qualities this is divided into two parts:
(A) Simple classification
(B) Multiple classifications.
2. According to variable or quantity or classification according to class intervals. –

3. Qualitative Classification :

At the point when actualities are assembled by qualities (traits) like religion, education, business and so on., the order is called as subjective characterization.

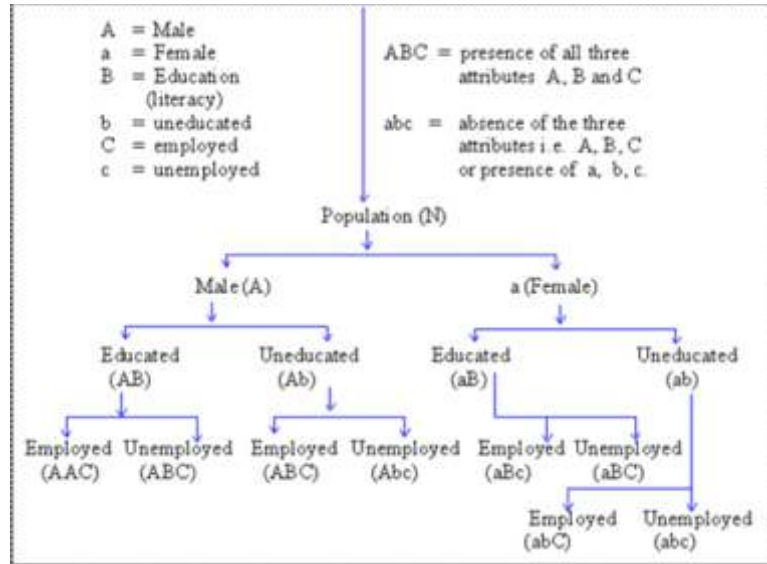
(A) Simple Classification :

It is otherwise called order as indicated by Dichotomy. Whenever information (realities) are partitioned into gatherings as indicated by their qualities, the arrangement is called as 'Basic Classification'. Qualities are indicated by capital letters (A, B, C, D) while the nonattendance of these qualities are signified by lower case letters (a, b, c, d, and so on.) For instance ,



B) Manifold or multiple classifications:

In this technique information is characterized utilizing one or more qualities. In the first place, the information is isolated into two gatherings (classes) utilizing one of the qualities. At that point utilizing the remaining qualities, the information is separated into various subgroups. For instance, the number of inhabitants in a nation is characterized utilizing three characteristics: sex, proficiency and business as,



2. PREPARATION OF UNIVARIATE AND BIVARIATE FREQUENCY TABLES – univariate and bivariate tables (tables)-

General Description

The fundamental utilization of TABLES is to acquire univariate or bivariate recurrence tables with discretionary line, section and corner rates and discretionary univariate and bivariate insights. Tables of mean estimations of a variable can likewise be acquired.

Both univariate/bivariate tables and bivariate insights can be yield to a record so that can be utilized with a report producing program, or can be contribution to GraphID or different bundles, for example, EXCEL for graphical showcase.

Univariate tables

Both univariate frequencies and total univariate frequencies might be produced for any number of information variables and may likewise be communicated as rates of the weighted or unweighted complete recurrence. What's more, the mean of a cell variable can be gotten.

Bivariate tables.

Any number of bivariate tables might be produced. Notwithstanding the weighted and/or unweighted frequencies, a table may contain frequencies communicated as rates in light of the line marginals, section marginals or table aggregate, and the mean of a cell variable. These different things might be set in a solitary table with a conceivable six things for every cell, or each might be acquired as an unmistakable table.

Univariate statistics

For univariate examinations, the accompanying measurements are accessible: mean, mode, middle, change (fair), standard deviation, coefficient of variety, skewness and kurtosis. A quantile alternative (NTILE) is likewise accessible. Division into as few as three sections or upwards of ten

sections might be asked.

Bivariate statistics

For bivariate analyses, the following statistics can be requested:

- t-tests of means (assumes independent populations) between pairs of rows,
- chi-square, contingency coefficient and Cramer's V,
- Kendall's Tau, Gamma, Lambdas,
- S (numerator of the tau statistics and of gamma), its standard and normal deviations, and its variance,
- Spearman rho,
- Evidence Based Medicine (EBM) statistics,
- non-parametric tests: Wilcoxon, Mann-Whitney and Fisher.

Matrices of statistics

Frameworks of any of the above bivariate insights aside from tests, EBM measurements or measurements of S can be printed or kept in touch with a record. Relating grids of weighted and/or unweighted n's can be created.

3- and 4-way tables

These can be developed by making utilization of the reiteration and subsetting highlights. The redundancy variable can be considered as a control or board variable. The subsetting highlight can be utilized to advance choose cases for a specific gathering of tables.

Tables of sums

Tables in which the cells contain the whole of a reliant variable can be created by indicating the needy variable as the weight. E.g. indicate WEIGHT=V208, where V208 speaks to a respondents salary, keeping in mind the end goal to get the aggregate wage of all respondents falling into a cell.

Standard IDAMS Features

Case and variable selection

The standard channel is accessible to choose a subset of cases from the info information. What's more, nearby channels and reiteration components (called subset details) might be utilized to choose a subset of cases for a specific table. For tables which are separately indicated, the variable(s) to be utilized for the table are chosen with the table determination parameters R and C. For sets of tables, variables are chosen with the table determination parameters ROWVARS and COLVARS.

Transforming data

Recode proclamations might be utilized. Note that for R-variables, the quantity of decimals to be held is specified by the NDEC parameter.

Weighting data

A weight variable may alternatively be indicated for every arrangement of tables. Both V- and R-variables with decimal spots are duplicated by a scale component keeping in mind the end goal to get number qualities. See "Information Dataset" area underneath. At the point when the estimation of the weight variable for a case is zero, negative, missing or non-numeric, then the case is constantly avoided; the quantity of cases so treated is printed.

Bivariate tables

Each bivariate table begins on another page; an expansive table may take more than one page. Tables are printed with up to 10 segments and up to 16 columns for every page contingent upon the quantity of things in every cell. Segments and columns are printed just for codes which really show up in the information. Line and segment sums, and total peripheral frequencies and rates if asked for, are printed around the edges of the table.

A huge table is imprinted in vertical strips. For instance, a table with 40 line codes and 40 section codes would ordinarily be imprinted on 12 pages as demonstrated in the accompanying graph, where the numbers in the cells demonstrate the request in which the pages are printed:

	1st	2nd	3rd	4th	
	10	<u>10</u>	<u>10</u>	<u>10</u>	codes
1st 16 codes	1	4	7	10	
2nd 16 codes	2	5	8	11	
<u>last 8 codes</u>	3	6	9	12	

Bivariate statistics. (Optional: see the table parameter STATS).

t-tests. (Discretionary: see the table parameter STATS).

On the off chance that t-tests were asked for, they and the methods and standard deviations of the section variable for every line are imprinted on a different page.

Matrices of bivariate statistics. (Discretionary: see the table parameter PRINT).

The lower-left corner of the network is printed. Eight segments and 25 lines are printed per page.

Matrix of N's. (Discretionary: see the table parameter PRINT).

This is imprinted in the same organization as the relating factual grid.

Univariate tables. (Discretionary: see the table parameter CELLS). Ordinarily each univariate table is printed starting on another page. Frequencies, percents and mean estimations of a variable, if asked for, for ten codes are printed over the page.

Univariate statistics. (Discretionary: see the table parameter USTATS).

Quantiles. (Discretionary: see the table parameter NTILE).

N-1 focuses are printed; e.g. on the off chance that quartiles are asked for, the parameter NTILE is set to 4 and 3 breakpoints will be printed.

Page numbers.

These are of the structure: ttt.rr.ppp where

- ttt = table number
- rr = repetition number (00 if no repetition used)
- ppp = page number within the table.

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