

**Statistics Assignment 1**

1. What exactly is the difference between descriptive and inferential statistics?

Answer:

i. Descriptive Statistics: -

- Descriptive Statistics consist of organizing and summarizing of data.

- It also contain Measure of Central Tendency i.e. Mean, Median and Mode.

- It also contain Measure of Dispersion i.e. Variance and Standard Deviation.

ii. Inferential Statistics: -

- Inferential Statistics allow us to find or assume height of 1000 student by using sample data.

- To perform above task we use different test such as z test, t test etc.

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1. I'm not sure what is the difference between a sample and a population?

Answer:

i. Population: -

- A population is the entire group that we want to draw conclusions about.

ii. Sample: -

- A sample is the specific group that we will collect data from.

- The size of the sample is always less than the total size of the population.

Population Data 100K

Sample Data 1K

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1. What distinguishes descriptive statistics from other types of statistics?

Answer:

Descriptive statistics allow us to describe a data set, while inferential statistics allow us to make inferences based on a data set.

Using Descriptive Statistics, we can report characteristics of our data:-

- The distribution concerns the frequency of each value.

- The central tendency concerns the averages of the values.

- The variability concerns how spread out the values are.

- In descriptive statistics, there is no uncertainty – the statistics precisely describe the data that we collected. If we collect data from an entire population, we can directly compare these descriptive statistics to those from other populations.

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1. What is the difference between quantitative and qualitative data?

Answer:

i. Quantitative Data: -

- Quantitative data is data that can be counted or measured in numerical values.

- It is further divided into two category:

a. Discrete Quantitative Data: -

- A Discrete Quantitative Data is the one that can only take specific numeric values and not the decimal value.

- Example: - Number of bank Account I have i.e. (1, 2, 3) etc. and Number of Book I have.

b. Continuous Quantitative Data: -

- A Continuous Quantitative Data is the one that take only decimal value.

- Example: - Height of student (180.12 cm) and Weight of Student (80.2 Kg).

ii. Qualitative Data: -

- Qualitative data is descriptive data that is not expressed numerically.

- Qualitative data also known as Categorical Data.

- Example: - Gender (Male/Female), Color (Red/Blue/Green).

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1. What is the definition of a percentile?

Answer:

- A Percentile is a value below which a certain percentage of observation lie.

- Formula: -

Percentile Rank of ‘X’ = Number of Value below ‘X’ \* 100

N

Example: -

Find Percentile Rank of ‘10’.

Dataset = { 2,2,3,4,5,5,5,6,7,8,8,8,8,8,9,9,10,11,11,12}

Percentile Rank of ‘10’ = Number of Value below ‘10’ \* 100

N

= (16/20) \*100

= 80 %

Percentile Rank for ‘10’ is equal to 80%.

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