Parameter Vs Statistics

#DataStatsInsights

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A-Definition

Parameters

In statistics, PARAMETER is a numerical value that describes a characteristic of a population.

It is a fixed value that is usually unknown and needs to be estimated from a sample.

Parameters are used to make inferences about the population as a whole.

Statistics

On the other hand, STATISTICS are numerical values that describe a characteristic of a sample.

They are calculated from the sample data and are used to estimate population parameters.

Statistics can vary from sample to sample and are used to make inferences about the population based on the characteristics of the sample.

B. Calculation

A Parameter is calculated using the entire population data set, whereas a Statistic is calculated using a sample from the population.

EXAMPLE:

If you want to know the average height of all adult males in a country, you would need to measure the height of every adult male in the country to get the population parameter.

However, it is not feasible to measure every single adult male, so a sample of adult males would be selected and their heights measured to obtain a statistic that is an estimate of the population parameter.

C. Purpose

The purpose of a Parameter is to describe a characteristic of a population,

whereas the purpose of a Statistic is to estimate a population parameter from a sample.

D. Variability

The value of a Parameter is fixed for a given population,

whereas the value of a Statistic can vary from sample to sample.

E. Notation

Parameters are typically represented using Greek letters (e.g., μ for population mean)

Statistics are typically represented using Latin letters (e.g., $\bar{x}$ for sample mean).

F. Importance

Both parameters and statistics are important in statistics.

Parameters are important because they provide a complete description of a population,

while statistics are important because they allow us to make inferences about a population based on a sample.

Thank You...

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