



STATISTIKA PENELITIAN

Teori Statistik

What does statistics mean to you?



The Random House College Dictionary defines statistics as “the science that deals with the collection, classification, analysis, and interpretation of information or data.”



Statistics is *the science of data. This involves collecting, classifying, summarizing, organizing, analyzing, presenting, and interpreting numerical information.*



Types of Statistical Applications

“Statistics” means “numerical descriptions” to most people.

***the applications of statistics can be divided into two broad areas:
descriptive statistics and inferential statistics.***



Descriptive statistics *utilizes numerical and graphical methods to look for patterns in a data set, to summarize the information revealed in a data set, and to present that information in a convenient form.*

Inferential statistics *utilizes sample data to make estimates, decisions, predictions, or other generalizations about a larger set of data.*

Contoh Statistik Deskriptif & Inferensial



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Fundamental Elements of Statistics

*Statistical methods are particularly useful for studying, analyzing, and learning about **populations of experimental** units.*

An experimental (or observational) unit is an object (e.g., person, thing, transaction, or event) about which we collect data

A population is a set of units (usually people, objects, transactions, or events) that we are interested in studying

POPULATION ???????





*In studying a population, we focus on one or more characteristics or properties of the units in the population. We call such characteristics **variables** . For example, we may be interested in the variables age, gender, and number of years of education of the people currently unemployed in the United States.*



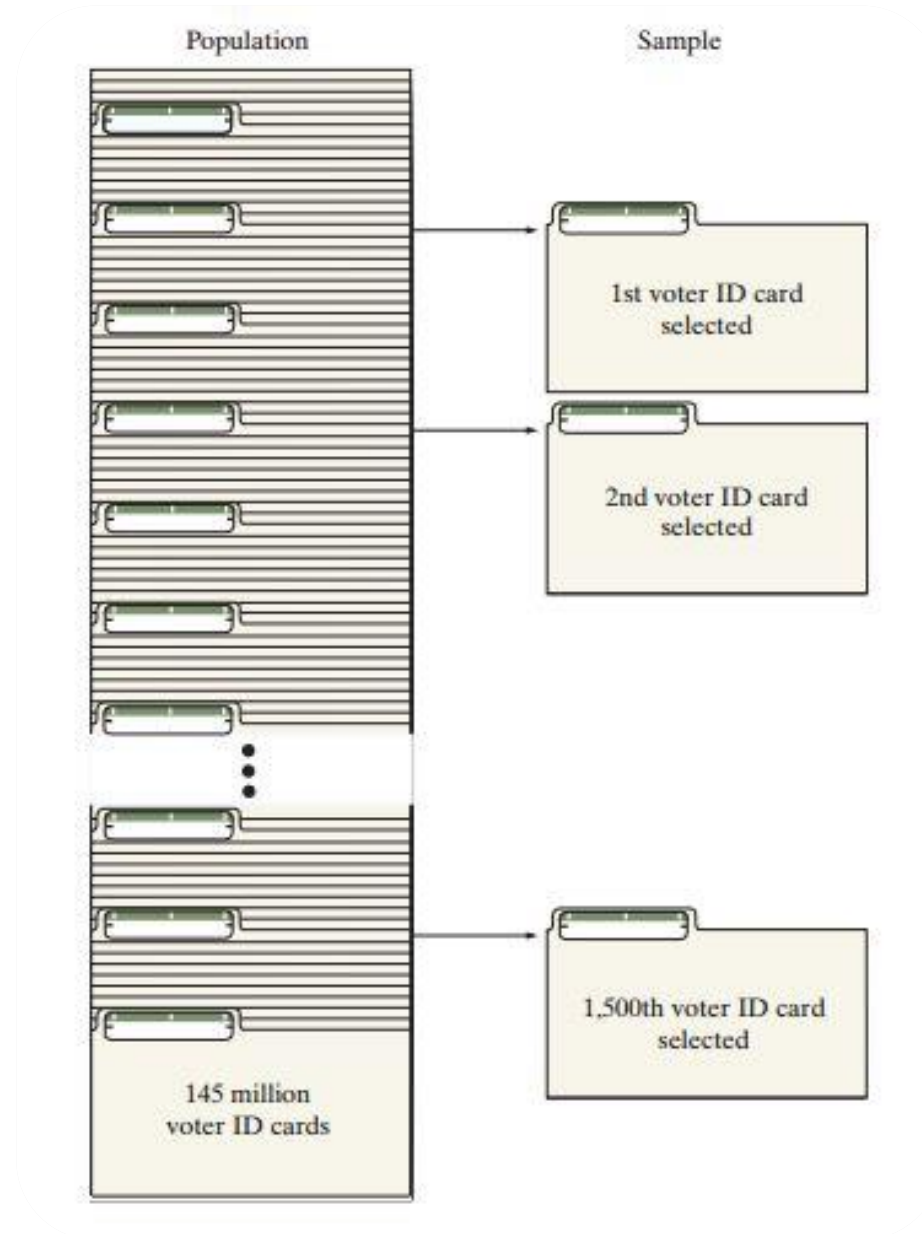
A variable is a characteristic or property of an individual experimental (or observational) unit in the population.

The name variable is derived from the fact that any particular characteristic may vary among the units in a population



Measurement is the process we use to assign numbers to variables of individual population units.

A sample is a subset of the units of a population





*A **statistical inference** is an estimate, prediction, or some other generalization about a population based on information contained in a samp*



That is, we use the information contained in the smaller sample to learn about the larger population.*

*Thus, from the sample of 1,500 voters, the pollster may estimate the percentage of all the voters who would vote for each presidential candidate if the election were held on the day the poll was conducted, or he might use the results **to predict** the outcome on election day*



*The preceding definitions and examples identify four of the five elements of an inferential statistical problem: **a population, one or more variables of interest, a sample, and an inference.***

*But making the inference is only part of the story; we also need to know its **reliability***



*The **measure of reliability** that accompanies an inference separates the science of statistics from the art of fortune-telling (PERAMALAN).*

*A **measure of reliability** is a statement (usually quantitative) about the degree of uncertainty (ketidakpastian) associated with a statistical inference.*

Four Elements of Descriptive Statistical Problems



- *The population or sample of interest (yang diminati)*
- *One or more variables (characteristics of the population or sample units) that are to be investigated*
- *Tables, graphs, or numerical summary tools*
- *Identification of patterns in the data*

Five Elements of Inferential Statistical Problems



- *The population of interest*
- *One or more variables (characteristics of the population units) that are to be investigated*
- *The sample of population units*
- *The inference about the population based on information contained in the sample*
- *A measure of the reliability of the inference*

TYPE of DATA , (Pertemuan berikutnya)



REFLEKSI



- 1. Informasi penting hari ini**
- 2. Manfaat penting dari informasi penting hari ini**
- 3. Tindak lanjut yang dapat saudara lakukan**



Thank you!
Any questions?