



Biostatistics 2: Descriptive statistics, Estimates and Probabilities

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Statistics

- Collection of data in the form of numbers and arranged in the form of diagrams and / or tables where the contents explain a particular problem.



Statistics Based on The Phase and Purpose

- **Descriptive statistics** , namely statistics relating to the collection of processing, analysis, and presentation of data without any general conclusions. Form statistics in general in tables, graphs, diagrams, mode, and others.
- **Inferential statistics** , i.e. statistics whose processes allow general conclusions to be drawn for the data processed.



Statistics Based on Data Population Distribution Assumptions

- **Parametric statistics** , i.e. statistics based on the normal distribution model.
- **Non-parametric** statistics, i.e. statistics performed by the free distribution method or not based on the normal distribution model.



Statistics Based on the Amount of Bound Variable

- **Univariate statistics** , i.e. statistics that only have one dependent variable.
- **Multivariate statistics** , i.e. statistics that have more than one dependent variable.



Descriptive Statistics

- **Presentation of data** without any general conclusions. Form statistics in general in tables, graphs, diagrams, mode, and others.
- Statistics used to generalize sample data to the population
- Identical univariate analysis



Presentation of data

- Table or diagram
- Chart type: Bar, Pie, Histogram → value, percentages
- Central Tendency: Mean, Median, Mode
- Dispersion: Std deviation, Range, Minimum-Maximum, S.E Mean
- Distribution: Skewness, Kurtosis



Exp. Table

Distribusi Usia Tenaga Medis Di FKTP Klinik Pratama dan FKTP Puskesmas Kota Malang Tahun 2018

Nilai	FKTP Klinik Pratama	FKTP Puskesmas	FKTP Gabungan
Rerata (<i>Mean</i>)	42,93	43,62	43,20
Standar Deviasi	9,28	6,80	8,41
Minimal	27,00	30,00	27,00
Maksimal	60,00	53,00	60,00



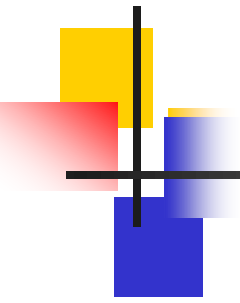
Estimation

- **Estimation** is a method by which we can estimate the value of a population by using the value of a sample.
- Not bias, consistent, efficient
- Mean & Std deviation



Probability

- **Probability** is a value that is used to measure the level of occurrence of a random event → experimentation, outcome and event
- The value of the probability ranges from 0 to 1 → as decimal numbers (such as 0.50, 0.20 or 0.89) or fractions like $5/100$, $20/100$, $75/100$.



Thank You