TINGKAT PENGUKURAN

STATISTIK DESKRIPTIF

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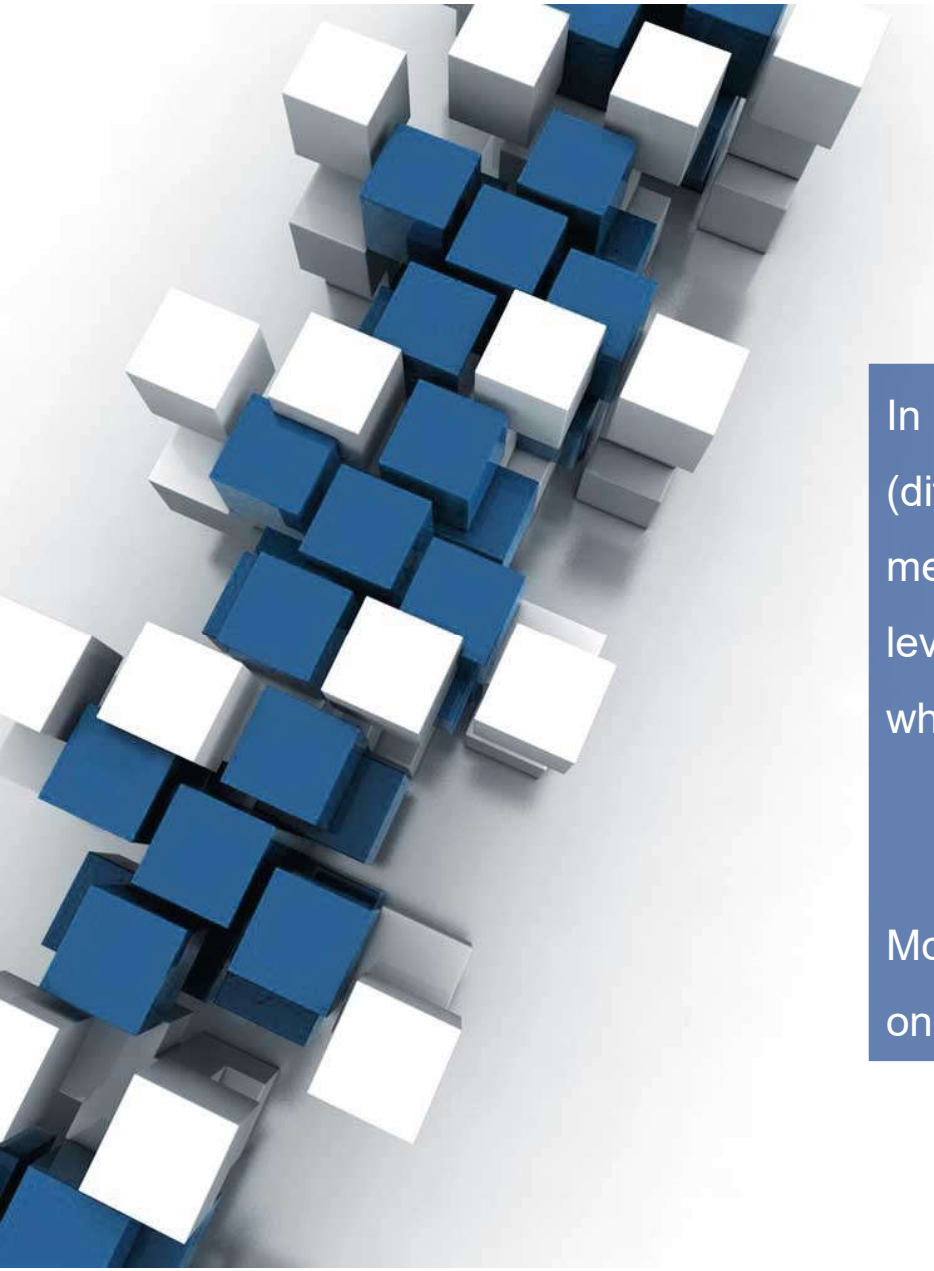
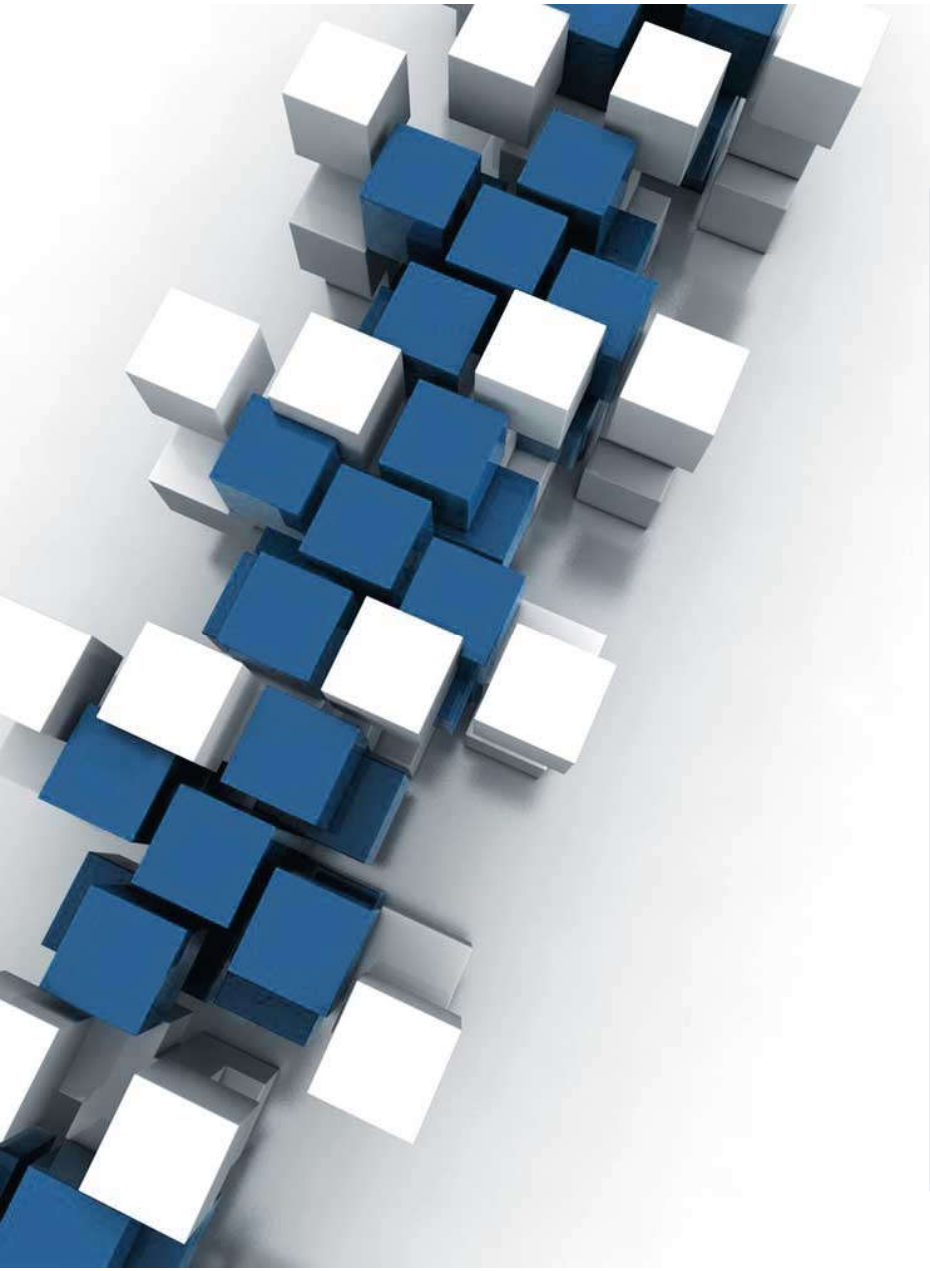
2021



Levels of Measurement

In addition to considering the nature of the hypothesis to be tested (difference or relationship), the researcher must also consider the measurements of the variables to be tested. This is because the levels at which the variables are measured determine(menentukan) which statistical test is used to analyze the data.

Most typically, variables in the behavioral sciences are measured on one of four scales: nominal, ordinal, interval, or ratio measurements.

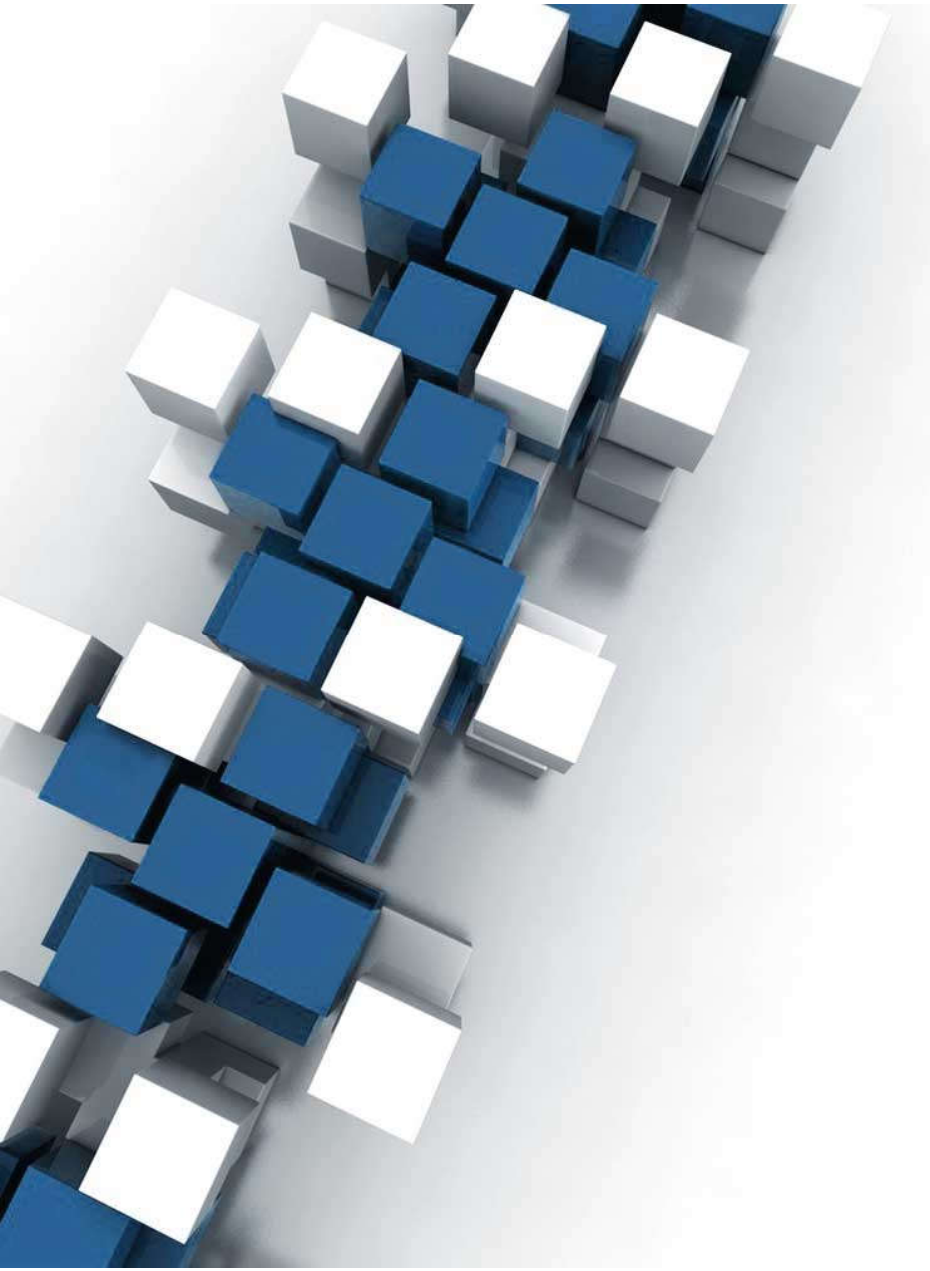


Nominal Scale

This is the lowest level of measurement and involves simply categorizing the variable to be measured into one of a number of discrete categories.

For instance, in measuring “ethnic origin,” people may be categorized as American, Chinese, Australian, African, or Indian.

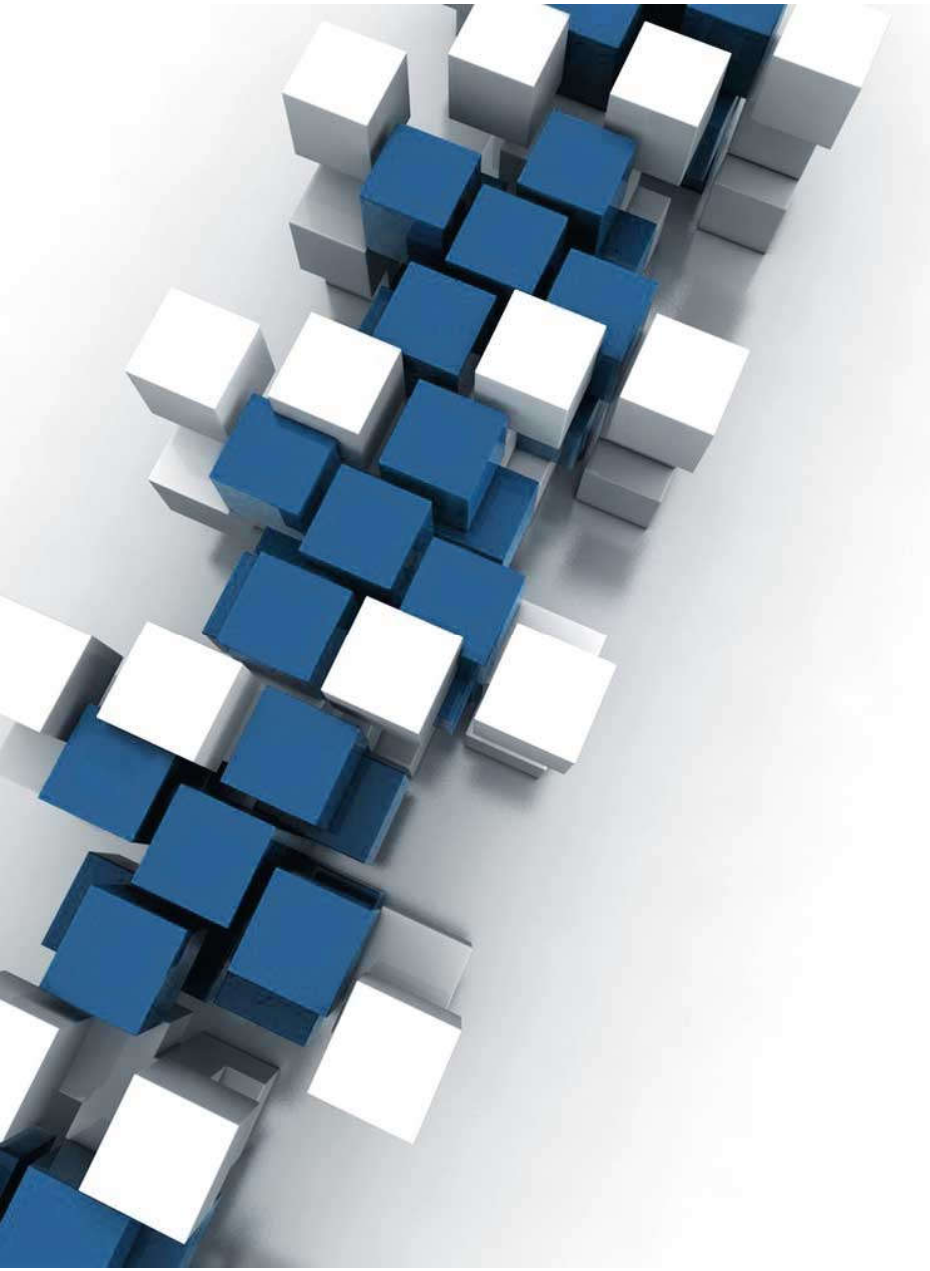
Once people have been categorized into these categories, all people in the same category (e.g., those categorized as Americans) Numbers can be assigned to describe the categories, but the numbers are only used to name/label the categories. They have no magnitude (besaran) in terms of quantitative value.



Ordinal Scale

This level of measurement involves ordering or ranking the variable to be measured.

For example, people may be asked to rank-order four basketball teams according to their skills. Thus, a rank of 1 is assigned to the team that is the most skillful, a rank of 2 to the team that exhibits the next greatest amount of skill, and so forth (seterusnya). These numbers allow the researcher to quantify the magnitude (besaran) of the measured variable, by adding the arithmetic relationships “greater than” and “less than” to the measurement process.

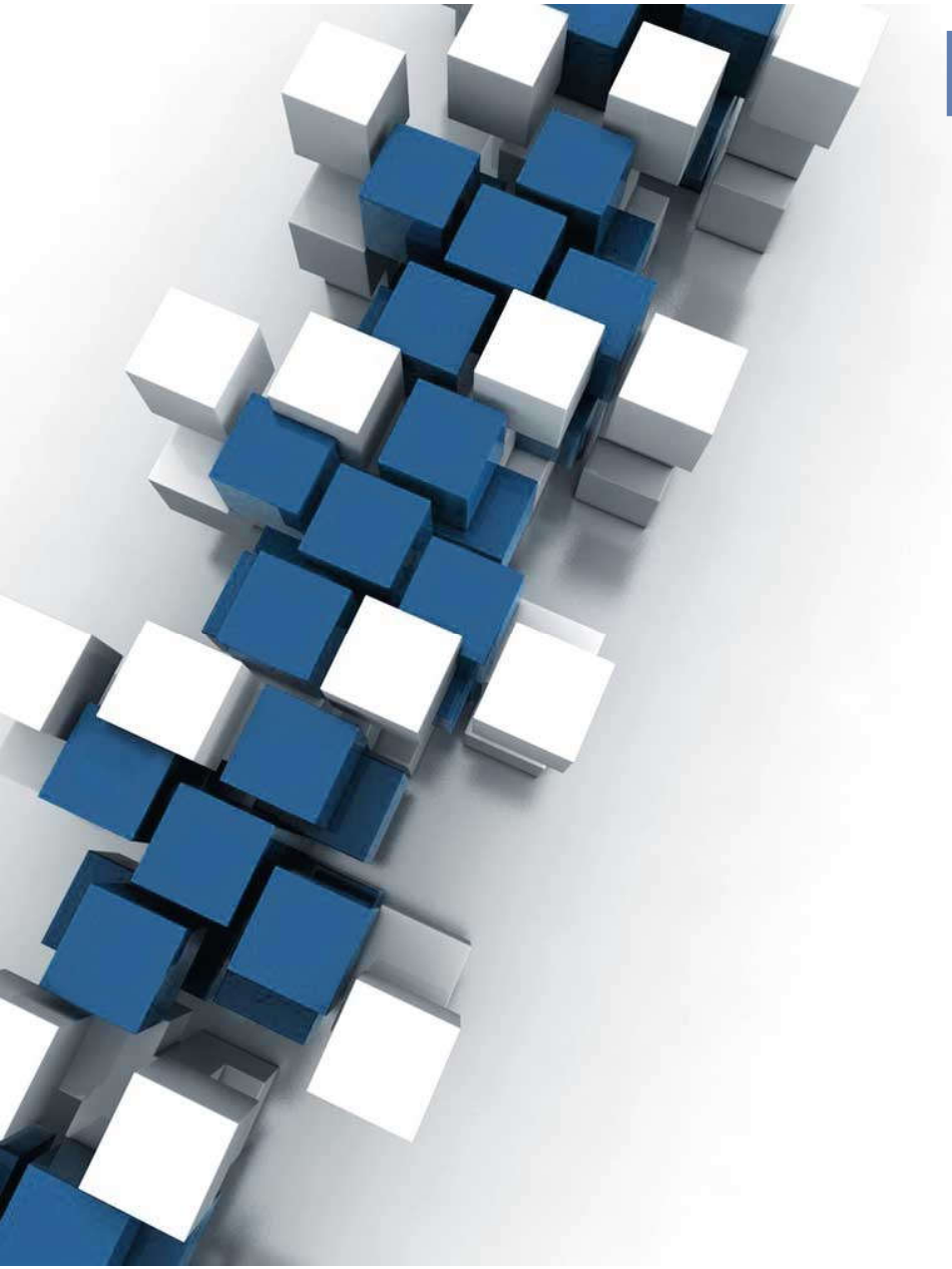


Interval Scale

This level of measurement involves being able to specify how far apart two stimuli are on a given dimension.

For example, on a standardized intelligence measure, a 10-point difference in IQ scores has the same meaning anywhere along the scale. Thus, the difference in IQ test scores between 80 and 90 is the same as the difference between 110 and 120.

However, it would not be correct to say that a person with an IQ score of 100 is twice as intelligent as a person with a score of 50. The reason for this is because intelligence test scales (and other similar interval scales) do not have a true zero that represents a complete absence (ketiadaan) of intelligence.

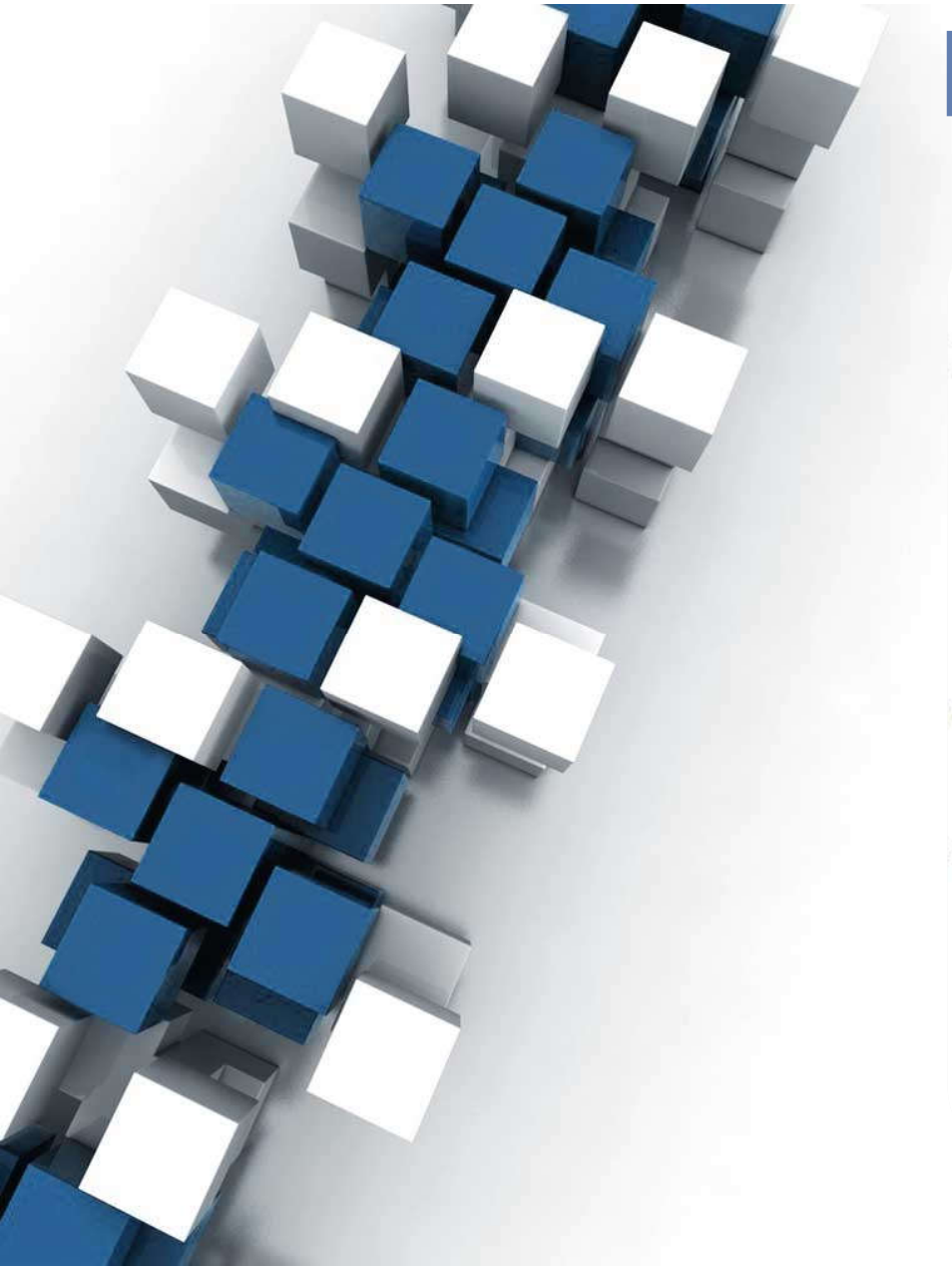


Ratio Scale

This level of measurement replaces the arbitrary zero point of the interval scale with a true zero starting point that corresponds to the absence of the variable being measured. Thus, with a ratio scale, it is possible to state (menyatakan) that a variable has, for example, twice, half, or three times as much of the variable measured than another. Take weight as an example.

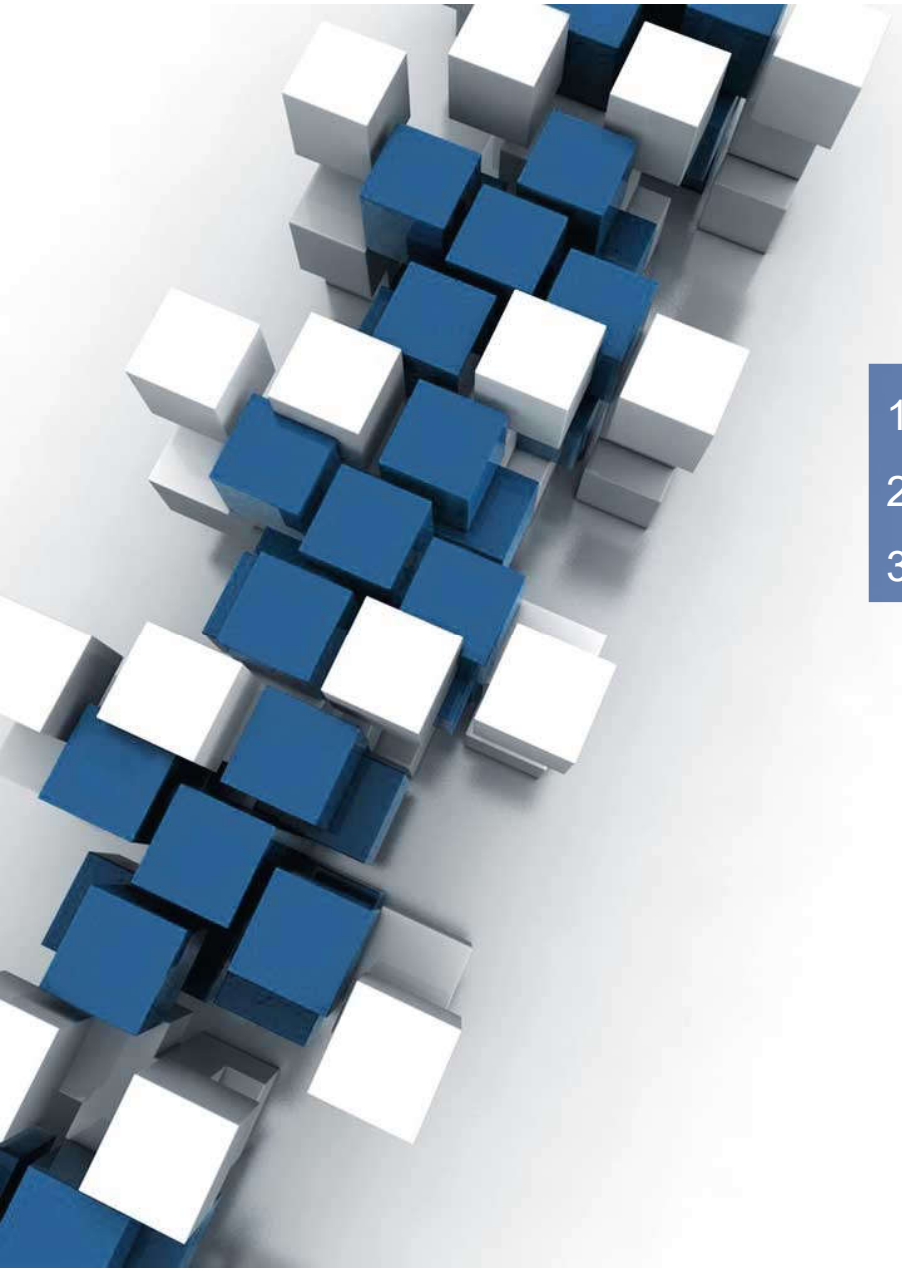
Weight has a true zero point (a weight of zero means that the object is weightless) and the intervals between the units of measurement are equal (sama).

Thus, the difference between 10 and 15 g is equal to the difference between 45 and 50 g, and 80 g is twice as heavy as 40 g.



ıest Selection Grid

	Relationship	One Set of Scores	Related Two Sets	Independent Two Sets	More than Two Sets
Nominal	Point biserial (*rpb*) (true dichotomy)	Single variable chi-square (χ^2) test	McNemar significance of change χ^2	Chi-square test of association	Chi-square goodness of fit
	Biserial (*rb*) (artificial dichotomy)				
	Phi (rΦ) (true/true)				
	Tetrachoric (*rt*) (artificial dichotomy /artificial dichotomy)				
Ordinal	Spearman's rho	Kolmogorov-Smirnov test for ranked data	Wilcoxon matched-pairs signed-ranks test	Mann-Whitney *U* test	Kruskal-Wallis test
Interval/ Ratio	Pearson's product-moment correlation	One-sample *t*-test	Related samples *t*-test	Independent samples *t*-test	One-way ANOVA (independent)
	Linear regression				Factorial ANOVA (independent)
	Multiple regression				Multivariate ANOVA (related)



REFLEKSI

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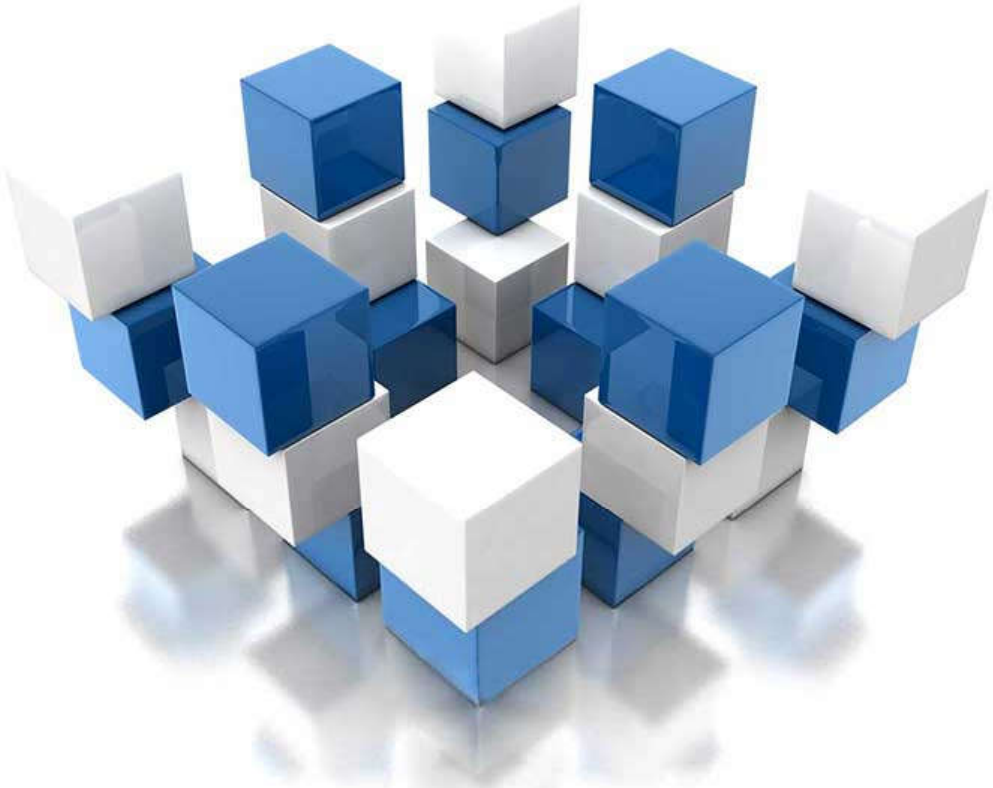

THANK YOU

Any question ?