Analisis Data: Measures of Association

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Sesi 10

Bedanya apa dgn test of significance?

- Hayo…?

Contoh

- Apakah ada hubungan antara jumlah budget untuk pemasaran dengan nilai penjualan?
- Apakah ada hubungan antara besar gaji setelah 5 tahun lulus, dengan IPK saat lulus?
- Apakah ada hubungan kebiasaan menggunakan sendal dengan jenis kelamin?
- Apakah ada hubungan antara uang saku bulanan mahasiswa dengan harga rata-rata makan siang mereka?

Commonly Used Measures of Association

- Interval & Ratio
- Ordinal
- Nominal

Nominal
Measures of Association

Coefficient	Comments and Uses
Phi	Chi-square 2x2 tables
Cramer's V	Chi-square based, adjusted when one table dimension > 2
Contigency coefficient C	Chi-square based
Lambda	PRE-based
Goodman & Kruskal's tau	PRE-based
Uncertainty coefficient	Useful for multidimensional tables
Kappa	Agreement measures

Ordinal
Measures of Association

Coefficient	Comments and Uses
Gamma	Based on concordant-discordant pairs: (P-Q); proportional reduction in error (PRE) interpretation
Kendall's tau b	P-Q based for tied rankds
Kendall's tau c	P-Q based, adjusted for table dimensions
Somer's d	P-Q based, asymetrical extensions of gamma
Spearman's rho	Product moment correlationfor ranked (ordinal) data

Interval & Ratio Measures of Association

Coefficient	Comments and Uses
Pearson (product moment) correlation coefficient	For continous linearly related variables
Correlational ratio (η / eta)	For non-linear data or relating a main effect to a continous dependent variable
Biserial	One continous and one dichotomous variable with an underlying nominal distribution
Partial correlation	Three variables, relating two with third effect taken out
Multiple correlation	Three variables, relating one variable with two others
Bivariate linear regression	Predicting one variable from another's scores

Agenda

- Bivariate Correlational Analysis
  - Pearson Product Moment Coefficient r
  - Common variance
  - Interpretation of correlations
- Simple Linear Regression
  - Basic model
  - Perbedaan regresi dan korelasi
  - Application
  - Goodness of fit
- Non-parametric
  - Chi-square based
  - Proportional Reduction in Error
- Measures of ordinal data
  - Concordant-discordant

Correlational vs Regression

- Sama:
  - Interval & rasio
  - Continous, linearly related
- Bedanya:
  - Symetric vs. asymetric (X independet, Y dependent)