Welcome to

The Session Will Begin Shortly

START

Statistics in R with Tidyverse

Session 6: Multiple Linear Regression Analysis (Part 2)

instats

Regression Model Without Interaction Effects

- Explanatory variables affect the response independently
- Same slope for all levels of categorical variables
- Intercepts vary by group
- Additive effects of explanatory variables
- Sometimes easier to interpret

Multiple Regression with Two Numerical Regressors

- Models the relationship between one response and two numerical predictors
- Creates a regression plane instead of a line
- Each predictor has a partial slope
    - Slopes represent the effect of each predictor holding the other constant
- Joint influence of both predictors on the response
    - Can reveal complex relationships through the regression plane

Fitted Values

- Predicted values from the regression model
- Visualization
    - Overlaying fitted values on scatter plots
    - Residual plots to assess model fit
- Interpretation
    - How close the fitted values are to actual values
    - Assessing overfitting and underfitting

Partial Slopes

- Definition
    - Coefficients of independent variables in regression
- Interpretation
    - Effect of one predictor while holding others constant
- Calculation
    - Estimated from the regression model

Demo & Exercises

Q & A

STOP