

Correlational Analysis

- ### Types of Analyses (review)
- _____
 - Only interested in variation in an outcome (dependent variable)
 - t-test, ANOVA
 - _____
 - Interested in the variation between two variables
 - _____
 - Interested in the variation among several variables

- ### Correlational Designs (review)
- Research that examines the relation among variables
 - Best used when:
 - you can't manipulate particular variables in the lab
 - you are interested in the unique relation between two variables
 - Often used with survey data

Examples of Correlational

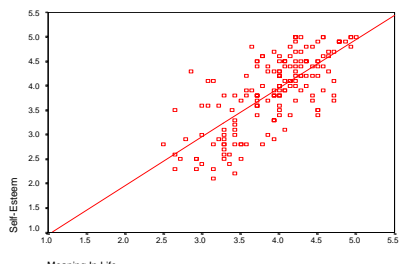
- Room temperature is positively associated with bringing to mind violent thoughts
- GPA is negatively associated with amount of drinking

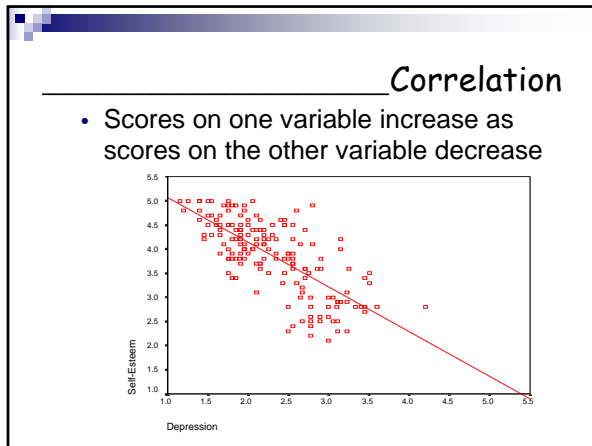
Determining Correlations

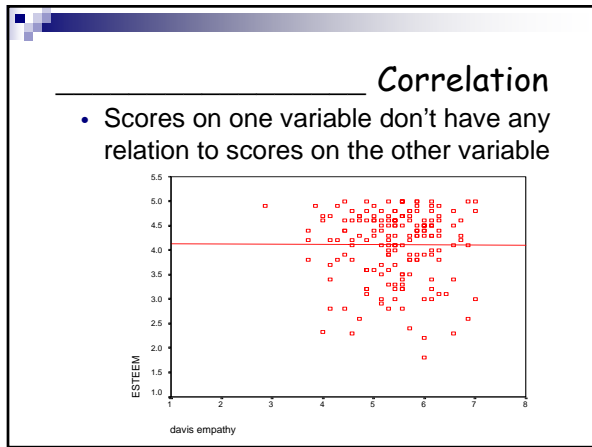
- Scatterplots
- Pearson's r
 - Range: +1 to -1
 - .10 is weak, .30 is moderate, .50 is strong
 - r^2 = coefficient of determination
 - Percent of variance shared between the two variables

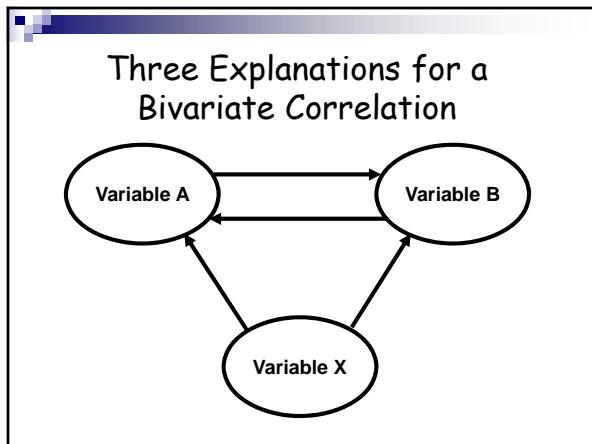
Correlation

- Scores on one variable increase as scores on the other variable increase









Adding

- Controlling for other variables
- Variance explained by a competing variable is held constant
- Ex. Job Satisfaction and Life Satisfaction
 - “Controlling for” neuroticism
 - Is job satisfaction related to life satisfaction when neuroticism is held constant?

- Examines the relationship between two variables with the effect of the third variables removed from both
- So, the following variance is “partialed out”
 - Variance shared between the third variable and the first variable only
 - Variance shared between the third variable and the second variable only
 - Variance shared among all three variables

- Examines the relationship between two variables with the effect of the third variables removed from ONLY ONE
- So, the following variance is “partialed out”
 - Variance shared between the third variable and the first variable only
 - Variance shared between the third variable and the chunk shared between the other two

When Do You Use Them?

- Use _____ when the third variable is a plausible explanation of the correlation between the first and second variables
- Use _____ when you want to show that the third variable explains incremental variance in the second variable above and beyond the first variable

Important Notes

- Semi-partial effects are also observed in multiple regression analyses (next lecture)
- The magnitude of the partial correlation will always be as big or bigger than the magnitude of the semi-partial correlation due to the remaining variance in the second variable (based on proportion of variance explained, not total amount)

Comparison

