

PSY 309 FINAL EXAM STUDY GUIDE

DESCRIPTIVE & CORRELATIONAL RESEARCH

Sampling Procedures:

- Random, Stratified, Cluster, Convenience, Quota

Basics of correlational designs

- Hypotheses
- Types of variables
- Positive vs. Negative correlations
- Advantages and Disadvantages

Basics of advanced correlational designs

- What “controlling for” a variable means
- Hypotheses
- Types of variables

RELIABILITY & CONSTRUCT VALIDITY

Conceptual vs. Operational definitions of variables

Definition of a construct

Reliability

Ways to measure it:

- Cronbach’s alpha
- Item-total correlations
- T1-T2 correlations
- Intraclass correlations

TYPES OF SCALES & SURVEY MEASURES

Categorical (aka. Discrete) vs. Continuous variables

Types of scales:

- Nominal
- Ordinal
- Interval
- Ratio

Self-report measures:

- Open vs. Closed-ended
- Problems with self-report measures

FREQUENCY DISTRIBUTIONS

Simple frequency distributions

Obtaining sample size (n) from a frequency distribution

Cumulative frequency (cf)

Proportions and percentages in frequency distributions

Real limits and frequency distributions

Frequency distribution graphs (histograms)

- Create given data or frequency table

Percentiles ($c\%$) and percentile ranks

- Definition
- Finding them in a frequency distribution
- Interpolation Formula

CENTRAL TENDENCY

Mode

- Definition & be able to report based on frequency

Median

- Definition & Be able to hand calculate

Mean

- Definition & Formula
- Be able to hand calculate

When to use which measure of central tendency

Central tendency and the shape of distributions

VARIABILITY

Range

- Definition, Formula, Be able to hand calculate

Sum of Squares

- Definition, Formulas, Be able to hand calculate

Population & Sample Variance

- Definition, Formulas, Be able to hand calculate

Population & Sample Standard deviation

- Definition, Formulas
- Be able to hand calculate given the variance

Z SCORES & AREA UNDER THE CURVE

Z score

- Definition
- How it’s used and interpreted
- Formula & Be able to hand calculate
- Location in a normal distribution

Percentages under the curve of a normal distribution

- Between +1 / -1 SD
- Between +2 / -2 SD
- Between +3 / -3 SD

Determine area using the Z table

- Determine Z score given a specific prop./%
- Determine prop./% given a Z score
- Finding prop./% between two Z scores

CORRELATIONAL ANALYSIS

Correlation coefficient (r)

- Range
- How to interpret positive vs. negative
- Be able to rank based on magnitude

Coefficient of determination (r^2)

- How to obtain it
- How to interpret

Correlation vs. Regression analysis

Predictor vs. Outcome variables

What “controlling for” a variable means

Multiple correlation coefficient (R)

- Definition
- How to interpret

R^2

- How to obtain it
- How to interpret

Standardized beta (β)

- How to interpret
- β vs. r

SIMPLE EXPERIMENTS

Independent random assignment

Independent variable (IV)

- Definition
- IV vs. Levels of the IV
- Conceptual vs. Operational definition of the IV
- Manipulated vs. Non-manipulated IVs
- Experimental vs. Control groups

Dependent variable (DV)

- Definition

Internal validity issues in experiments

- Confounds
- Solutions to confounds

External validity issues in experiments

Construct validity issues in experiments

- Manipulation checks

EXPERIMENTAL VALIDITY

Internal Validity

Threats to Internal Validity

- Selection
- Selection by maturation interaction
- Regression toward the mean
- Maturation
- Mortality
- History
- Testing
- Instrumentation

External validity

- Ways to obtain external validity
- Typical problems with external validity

Construct validity

- Definition of a construct
- Ways to obtain construct validity
- Typical problems with construct validity

QUASI-EXPERIMENTS AND SINGLE-N DESIGNS

Quasi-experimental vs. True experimental designs

Quasi-independent variable vs. Subject variable

Nonequivalent control group design

-Posttest only vs. Pretest-Posttest

Selection bias

Single case experiments

- ABA vs. ABC designs

Case studies

Graphic analysis