WEEK 3: CONCEPTUALIZING QUANT COMM RESEARCH

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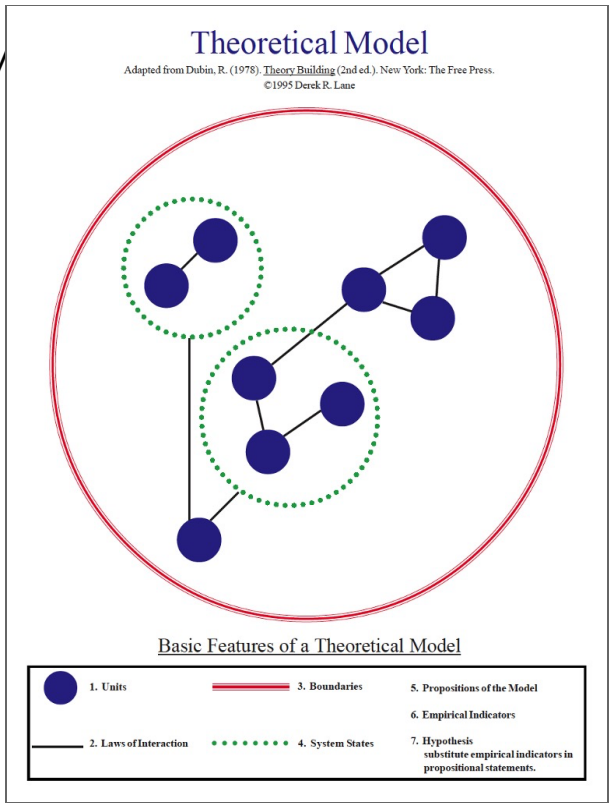
OVERVIEW

- BRIEF review
- Planning a Quant Research Project
- Key Terms!
- Using Stats in Quant Research
- Discussion: Different Perspectives
- Workshop: Setting up your research infrastructure
  - Getting situated with R
  - Understanding your research progression
  - Keeping track of your progress!

OLD CONTENT: REV



THEORY

“A theory is a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among the variables, with the purpose of explaining and (or) predicting the phenomena.” (Kerlinger, 1986)
“A theory is a way of making sense of a disturbing situation.” (Kaplan, 1964)

THEORY

Dubin (1978)

RESEARCH METHODS

"The strategies and tools used to collect evidence necessary for building or testing explanations (theories) about that which is being studied."
Research: "Disciplined method of gaining new information, building knowledge, or answering questions; also called disciplined inquiry; implies a *systematic* investigation with underlying guidelines regardless of the particular research paradigm."
4 Broad Categories:

- Experiments
- Surveys
- Textual Analysis
- Naturalistic Inquiry

TEXTUAL ANALYSIS

- Purpose is to describe and interpret the characteristics of a recorded or visual message.
- Focus is on content, structure, and functions of messages contained in texts.

NATURALISTIC INQUIRY

- Purpose is to study people in the situations where they usually interact, behaving as they customarily do when engaged in everyday activity.
- Focus is on how people behave when they are absorbed in *genuine life experiences*.

TYPES OF RESEARCH

What is the purpose of experimental research? What is its central characteristic?

- Purpose is to discover *causal* relationships between variables.
- *Control* is a central characteristic.

What is the purpose of survey research?

- Purpose is to discover how large groups of people think and act.
- Describes the characteristics of the respondents and the populations they were chosen to represent.

What five conditions must be met to trust generalizations made on the basis of quantitative survey methods?

To make trusthworhty generalizations from surveys...

- Samples must be **representative**
- Response rates must be **sufficient**
- Questions must be **unbiased**
- Data collections procedures must be **uniform**
- Coding and analysis must be **accurate**

The general framework for quantitative research includes 3 main approaches:

- Experimental
- Nonexperimental
- Descriptive

NONEXPERIMENTAL

The *comparative approach* also makes a comparison of a few groups on the dependent variables. However, the groups are based on an attribute independent variable, such as gender.
The *associational approach*, sometimes called correlational, has two or more usually continuous variables for the same group of participants, which are related or associated.

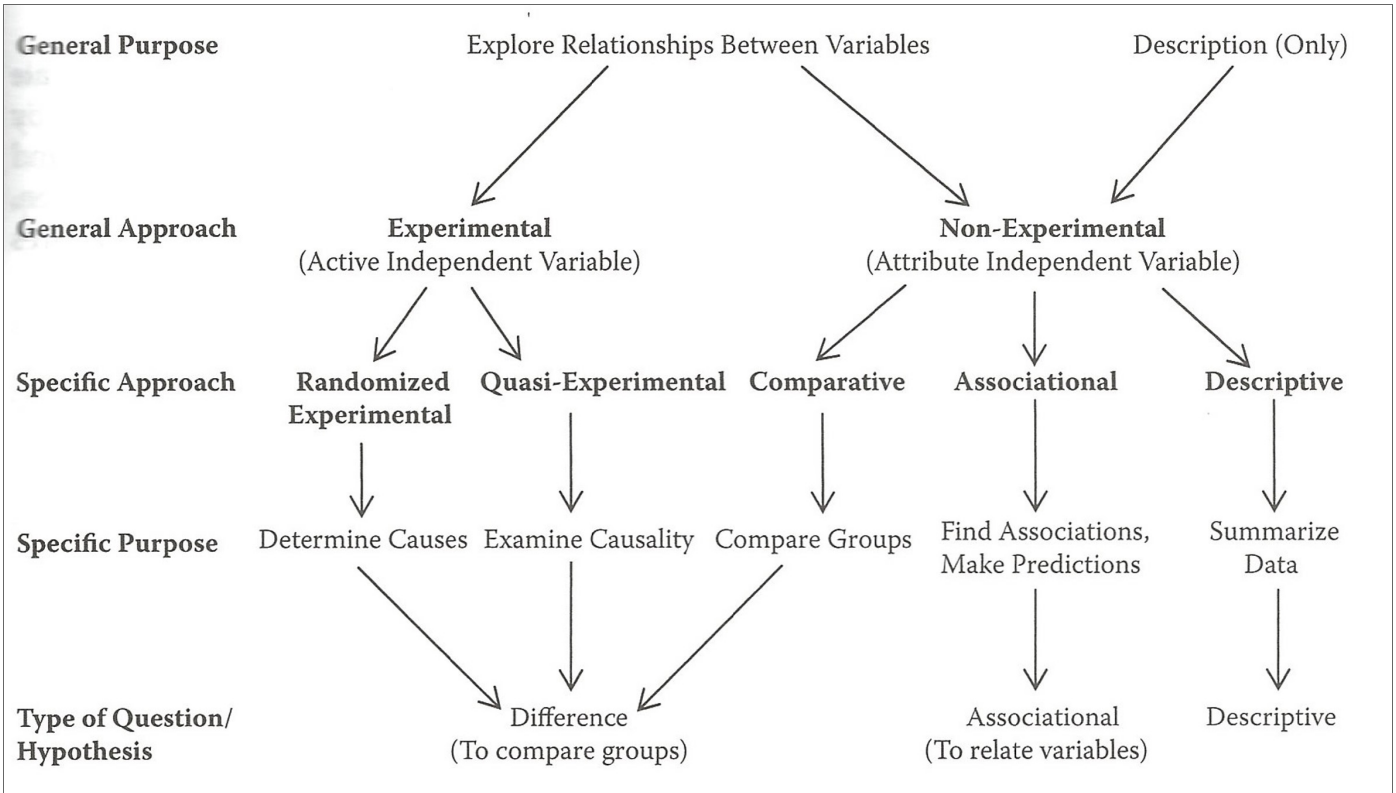


FIGURE 1.1
Schematic diagram of how the general type of research question corresponds to the purpose and approach of the study.

How is the post-positivist different from the constructivist communication researcher?

In the postpositivist/quantitative framework, a specific plan is developed prior to the s
In the constructivist/ qualitative approach, less structure is placed on the use of specif
Derived from our metatheoretical assumptions:

- Epistemology
  - One truth < - > Multiple truths
- Ontology
  - Reactors < - > Humans as actors
- Axiology
  - Value neutral < - > Value laden

What is the BRIDGE between theory and research?
"The **research hypothesis** is the **bridge** between **theory** and **research**."

- Metatheory drives Theory
- Theory drives RQs and Hs
- RQs and Hs drive Method(s)
- Method(s) drive Results
- Results drive Discussion

What is the PURPOSE of Quantitative Research?
Quantitative research:

- Is *systematic*. It is intentional, replicable, and valid.
- Observes, explains, and predicts
- Tests theories that describe human behavior
- Answers questions of **group differences** or **variable relationships**

What are the three primary principles outlined in the Belmont Report?

- Respect for persons
- Beneficence
- Justice

What are 1-2 ethical issues related to conducting a study?

- Sample Selection
- Cooperating Agencies
- Response Rate
- Dropouts

What are 1-2 ethical issues related to quantitative methods?

- Deception
- Debriefing
- Experimental Research
- Nonexperimental and Qualitative Research
- Selection or Development of Instruments
- Procedures for Data Collection
- Confidentiality

What are 1-2 ethical issues related to data collection?

- Integrity of the Data
- Data Fabrication
- Data Falsification
- Conflict of Interest (COI)
- Conflict of Commitment
- Security of Data
- Authorship

GML CHAPTER 2

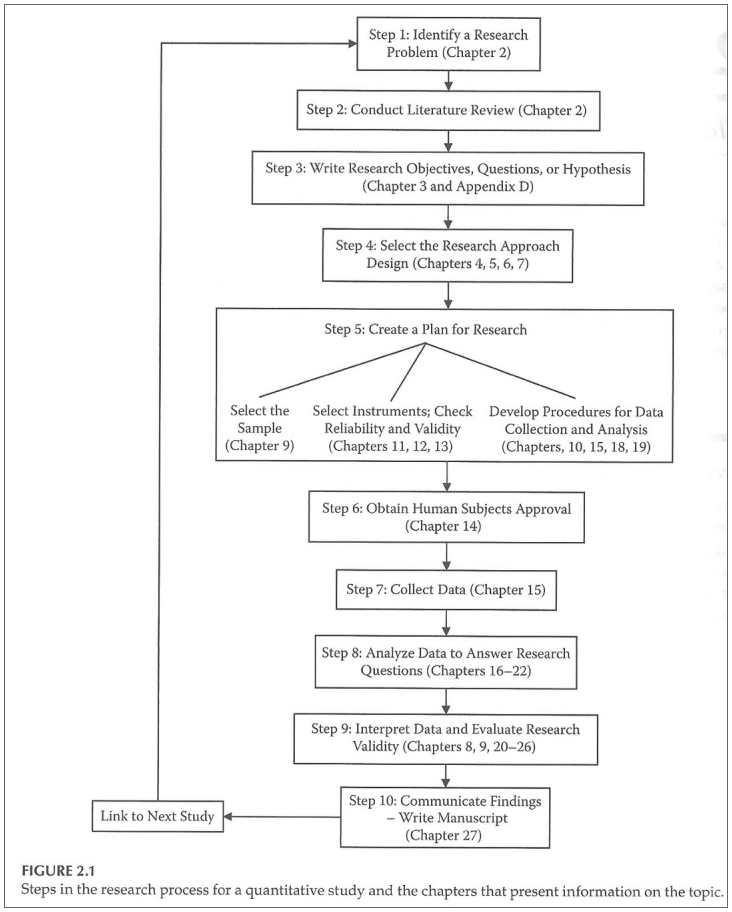
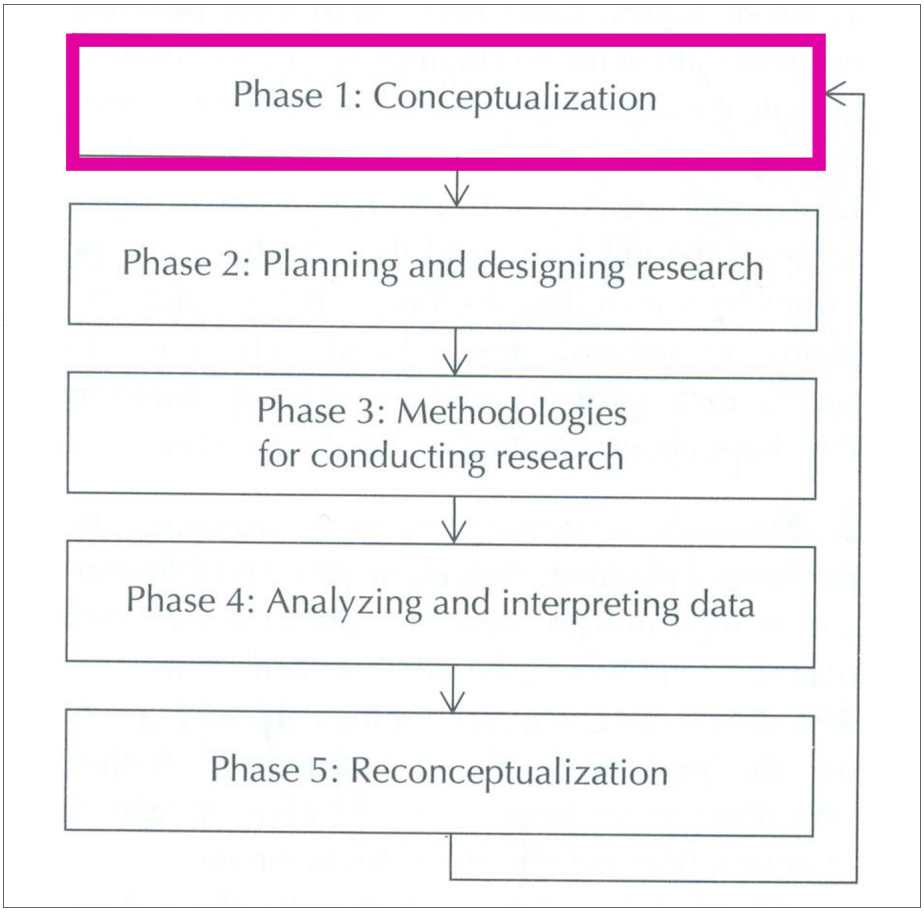
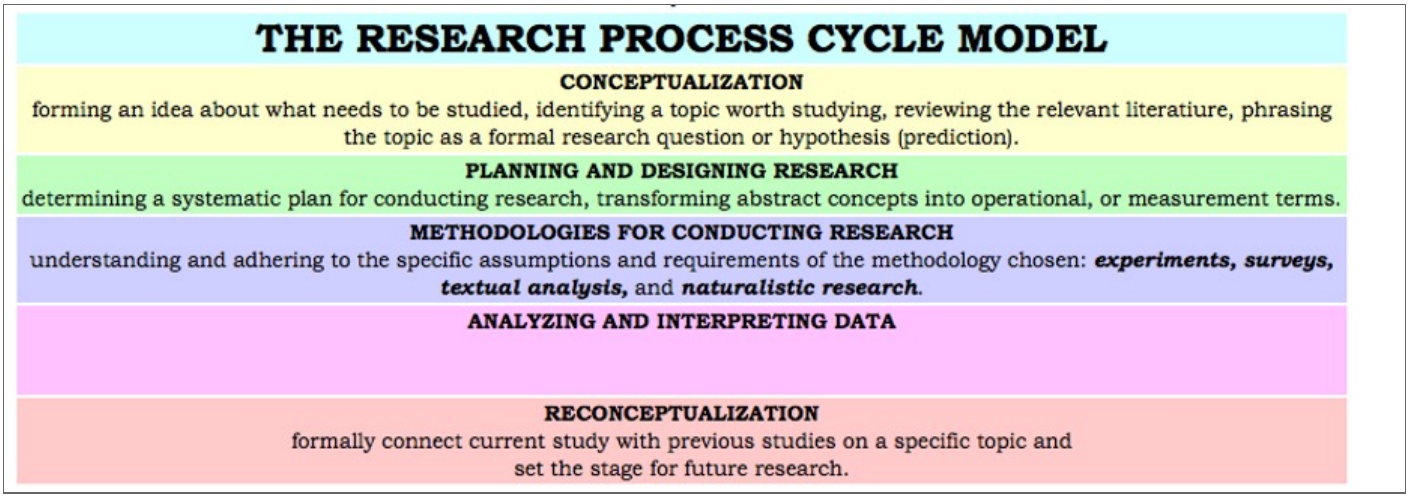


FIGURE 2.1
Steps in the research process for a quantitative study and the chapters that present information on the topic.


Phase 1: Conceptualization
Phase 2: Planning and designing research
Phase 3: Methodologies for conducting research
Phase 4: Analyzing and interpreting data
Phase 5: Reconceptualization


THE RESEARCH PROCESS CYCLE MODEL
CONCEPTUALIZATION
forming an idea about what needs to be studied, identifying a topic worth studying, reviewing the relevant literatiure, phrasing the topic as a formal research question or hypothesis (prediction).
PLANNING AND DESIGNING RESEARCH
determining a systematic plan for conducting research, transforming abstract concepts into operational, or measurement terms.
METHODOLOGIES FOR CONDUCTING RESEARCH
understanding and adhering to the specific assumptions and requirements of the methodology chosen: experiments, surveys, textual analysis, and naturalistic research.
ANALYZING AND INTERPRETING DATA
RECONCEPTUALIZATION
formally connect current study with previous studies on a specific topic and set the stage for future research.

RESEARCH PROBLEMS

"It is usually a sentence or statement about the relationship between two or more variables" (GML, p. 23)

Research problems commonly come from:

- Existing literature
- Theory
- Personal experience
- Clinical observation

CHARACTERISTICS OF GOOD RESEARCH PROBLEMS

Good research problems are grounded in empirical and theoretical literature, stated clearly, testable, feasible, and of vital interest to *you*

Broad vs. Narrow **Widespread vs. Limited Interest**

Well-research vs. Unknown Territory

Is this so broad that it isn't feasible?
Is this so narrow that the impact will limited?
Can make it hard to find literature or establish the gap that you will fill.
Is there a reason the thing you are interested in is unexplored?
Quantitative researchers tend to place considerable emphasis on finding gaps in the literature so they tend to study relatively well-researched areas.

CHARACTERISTICS OF GOOD PROBLEM STATEMENTS

Reinard (1998) argues that good problem statements are NOT:

- Obvious yes or no answers
- Questions about applying a statistical tool
- Personal learning goals
- Things that have already been competently studied
- Questions that cannot be solved

CHARACTERISTICS OF GOOD PROBLEM STATEMENTS

Examples:

- What patterns of deceptive communication characterize close relationships?
- Do men and women report significantly different levels of satisfaction with conflict interaction?
- What is the relationship between the amount of television watched by adults and the level of anixety about personal safety?

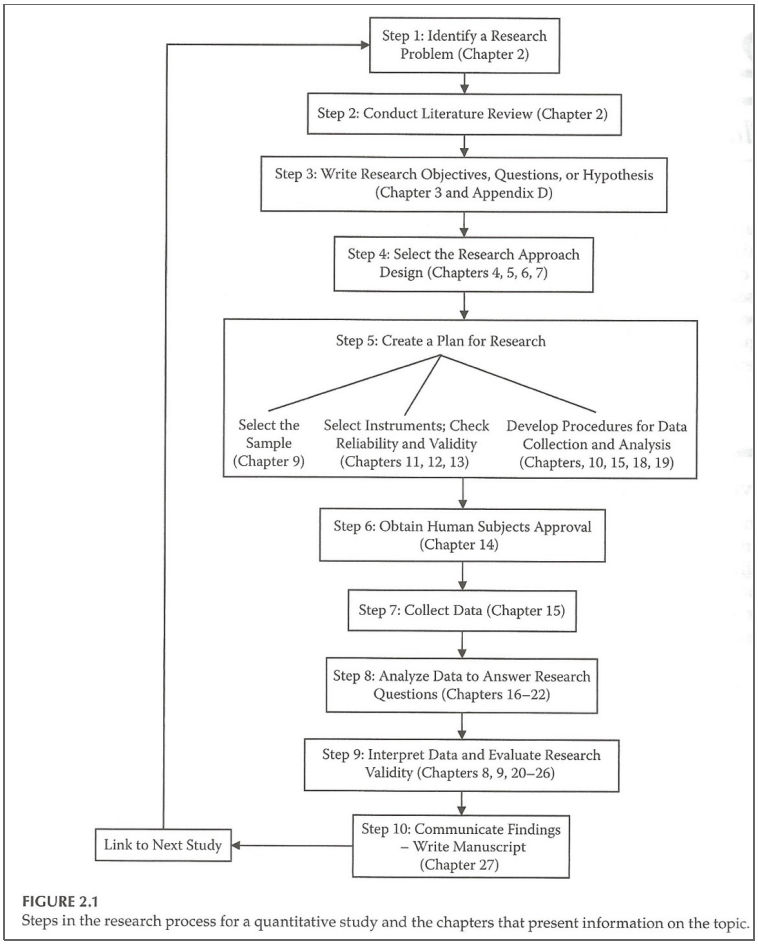
LITERATURE REVIEW

Of all the steps in the research process, reviewing the literature is one of the most imp

- Definition of the Literature Review
- Steps in the Literature Review Process
- Sources to Use in the Literature Review

Basically, be thorough with your literature review so that (1) you have identified gaps,

SUMMARY



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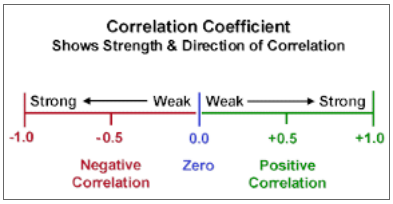
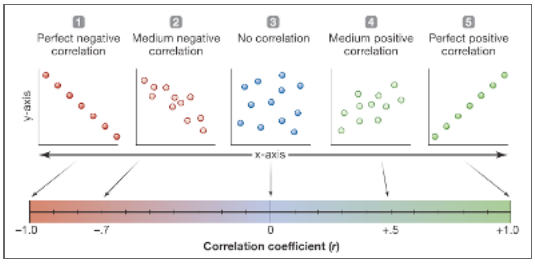
GML CHAPTER 3





CONCEPTS, CONSTRUCTS, VARIABLES

These are *not* interchangeable

- **Concept** (Theoretical concept) - a mental representation (more abstract than a construct)
- **Construct** - a set of operational measures that allow for the study of a theoretical concept (less abstract than a concept)
- **Variable** - any measurable construct that has at least two values (different types or amounts)

Isomorphism refers to how well your conceptual definition of a construct matches your operationalization.

INDEPENDENT VARIABLES

Remember: Variables are “any concept that has two or more values”

“variables thought to influence changes in another variable (the dependent variable).”

Known as the IV (sometimes called explanatory variable or PREDICTOR variable in non-experimental research)

When more than two independent variables are used in a “factorial design” the IVs are referred to as factors.

DEPENDENT VARIABLES

“variables are thought to be changed by another variable (the independent variable).”

Know as the DV (sometimes called outcome variable or CRITERION variable in non-experimental research)

IV VS DV

In non-experimental research, the IV can be measured as well.

MEASUREMENT THEORY (STEVENS, 1958)

4 levels of measurement used to describe the range and the relationship among the values a variable can take.

QUESTIONS VS. HYPOTHESES

RESEARCH QUESTION

"a formal question posed to guide research."
The explicit questions researchers ask about the variables that interest them.

RESEARCH HYPOTHESIS

When researchers feel confident enough to make a prediction, they advance a hypothesis, or
"a tentative statement about the relationship between independent and dependent variable(s)."

A good hypothesis has 3 characteristics:

- Simple - concerned with only one aspect at a time
- Observable - related to the theory and can actually be observed
- Testable - Possible to actually make the observations involved

The simplest way to phrase a hypothesis is to create a statement of simple relationships:
There *will be a direct* (or positive, negative, inverse, or curvilinear) *relationship between* (insert favorite first variable of interest) *and* (insert favorite second variable of interest).
OR
As (insert favorite first variable of interest) increases (or decreases, etc.) the (insert favorite second variable of interest) decreases (or increases, etc.)

Bostrom (1998):
“Hypotheses repsent a formal testing of a theory and a research question represent a more general exploration of phenomena…the choice of hypotheses as opposed to research questions is determined largely by the state of theory in the area, the statistical procedure used, and the preferences of the researchers.”

TYPES OF HYPOTHESES

TWO-TAILED

"(two-direction or non-directional hypothesis) predicts a relationship without specifying the nature of that relationship"

ONE-TAILED

"(directional hypothesis) predicts a relationship between independent and dependent variable(s) and specifies the nature of that relationship."

OTHER IMPORTANT TERMINOLOGY

POSITIVE RELATIONSHIPS

direct relationships

NEGATIVE RELATIONSHIPS

inverse relationships

CORRELATION COEFFICIENTS

MAIN EFFECTS

“Effects of each IV working alone .”

INTERACTION EFFECTS

“Due to the effects of multiple IVs working together.”

DESCRIPTIVES!

MEANS, VARIANCE, STANDARD DEVIATION, STANDARD SCORES

Keep track of the handout for now. We will get to these in Ch. 10 (Week 6)!

SUMMARY

- Review
- Steps in the Research Process
- Research Problems
- Key Terms

WHAT'S NEXT?

Planning and Designing Communication Research: Who Are You Studying?
At this point, you should have a basic understanding of what you want to study. The logical next step is to discuss how to select your sample and determine the number of people that you will need. Lecture topics also include tradeoffs across sampling approaches, internal and external validity, significance testing, and power.

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