Using Qualitative & Quantitative Research Methods to Answer your Research Questions

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Outline

- Background
- Integration of qualitative and quantitative methods
- Using qualitative methods to design a research study
Background

- Quantitative Methods
- Qualitative Methods

*What do you think of when you see these terms?*

*How do they compare?*
Background

Quantitative
- Deductive

Qualitative
- Inductive
Background

**Quantitative**

- **Deductive**
  1. Focus on testing existing theory

**Qualitative**

- **Inductive**
  1. Focus on generating new theory

Excerpted from: http://deborahgabriel.com/2013/03/17/inductive-and-deductive-approaches-to-research/
## Background

### Quantitative

- **Deductive**
  1. Focus on testing existing theory
  2. Usually begins with hypotheses

### Qualitative

- **Inductive**
  1. Focus on generating new theory
  2. Used to form hypotheses

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Quantitative

- Deductive
  1. Focus on testing existing theory
  2. Usually begins with hypotheses
  3. Focus on causality

Qualitative

- Inductive
  1. Focus on generating new theory
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  3. Focus on new phenomena or examining previously researched phenomena from a new perspective

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# Background

## Quantitative

- **Deductive**
  1. Focus on testing existing theory
  2. Usually begins with hypotheses
  3. Focus on causality
  4. This method uses deduction to test hypotheses & theories

## Qualitative

- **Inductive**
  1. Focus on generating new theory
  2. Used to form hypotheses
  3. Focus on new phenomena or examining previously researched phenomena from a new perspective
  4. This method is used to make broad generalizations from specific observations

Excerpted from: http://deborahgabriel.com/2013/03/17/inductive-and-deductive-approaches-to-research/
Background

**Quantitative**
- Deductive
- Measurement tends to be **objective**
  - numerical information derived from statistical interpretations of data that can be mathematically manipulated and understood

**Qualitative**
- Inductive
- Measurement tends to be **subjective**
  - data derived mainly through sensory observations and overall impressions of a particular phenomena

Adapted from: *Qualitative Research & Evaluation Methods* by Michael Quinn Patton
Background

**Quantitative**
- **Deductive**
- **Objective measurement**
- **Reliable** (technology = instrument)
  - numerical information collected via high tech machines or numerical analysis of self-report surveys with scaled answers that are mathematically manipulated and understood

**Qualitative**
- **Inductive**
- **Subjective measurement**
- **Valid** (self = instrument)
  - requires researchers to serve as one of the measuring instruments; his/her perspective will be informed by individual perceptions, norms, and personal meaning attributed to observed events

Adapted from: Qualitative Research & Evaluation Methods by Michael Quinn Patton
Background

Quantitative

- Deductive
- Objective measurement
- Reliable
- Generalizable
  - Outsider’s perspective
  - Population-oriented

Qualitative

- Inductive
- Subjective measurement
- Valid
- Not generalizable
  - Insider’s perspective
  - Case-oriented

Adapted from: Qualitative Research & Evaluation Methods by Michael Quinn Patton
Qualitative and quantitative approaches appear to be very different...

...but are they?
Qualitative data can be coded and reported quantitatively (but be careful!)
Avoid over counting

• **NO:** 3 women said this...6 women said that...10 women said something else.

• **YES:** Most women said...
  - Use tables to display data and define what “most” means

Avoid misleading counting

• Avoid use of % to describe small samples
  - Can be highly misleading with small samples
  - May be required by some journals

• *Rule of thumb:* If total sample <25 cases, give actual numbers
Quantitative data are based on quality judgments.
Quantitative data are based on quality judgments.

- Numbers can’t fully be interpreted without understanding underlying assumptions.

- Example:
  - Patient flow in the orthopedic unit is 38% slower than other units in the hospital.
Integration of Quantitative and Qualitative

Model 1
Qualitative methods used to help develop quantitative measures and instruments.
Integration of Quantitative and Qualitative

Model 1

Qualitative methods used to help develop quantitative measures and instruments.

Example

*Qualitative: FGs with patients, staff, and physicians at a community health center (CHC) identifies recurring barriers to diabetes self-management.

Quantitative: FG data used to design a survey of CHC patients and health care providers to identify and prioritize most common barriers; collect clinical data (HgA1C, etc.)

Integration of Quantitative and Qualitative

**Model 2**

Qualitative methods used to help explain quantitative findings.

Integration of Quantitative and Qualitative

Model 2

Qualitative methods used to help explain quantitative findings.

Example

Quantitative: National data reveals a trend of lower test scores on mandatory food safety certification exams among school food service managers.

Qualitative: In-depth interviews with a subgroup of school food service managers to determine reasons underlying declining scores.

Integration of Quantitative and Qualitative

Model 3

Quantitative methods used to embellish a primarily qualitative study.

Integration of Quantitative and Qualitative

Model 3
Quantitative methods used to embellish a primarily qualitative study.

Example
*Qualitative: Observations of school-aged children at community pools reveals lack of sunscreen use by parents/guardians.

Quantitative: Survey parents and guardians to identify knowledge and attitudes about sunscreen use.

Integration of Quantitative and Qualitative

Model 4

Qualitative and quantitative methods are used equally and in parallel.

Qualitative and quantitative methods are used equally and in parallel.

Example

**Qualitative:** Key informant interviews with community leaders to assess knowledge, awareness, and level of commitment to a community-wide public health promotion campaign.

**Quantitative:** Survey of community members to assess knowledge, awareness, and level of commitment to a community-wide public health promotion campaign.
Use of Qualitative Methods to Design Research

- Purpose
- Conceptual Context
- Research Questions
- Methods
- Validity
Why are you doing this study?

Purpose

Understanding ...
- Meaning
- Context
- Process/es

Identifying ...
- Unanticipated phenomenon and influences
- Causal explanations

What do you think is going on?

- Assumptions
- Expectations
- Beliefs
Literature Reviews

- Learn about the topic.
- Learn about the theoretical assumptions and methods that produce the results.
- Learn the tools for documenting, linking, sorting and storing information.
What do you want to understand?
Purpose

Conceptual Concept

Research Questions

Methods

What will you actually do?

- Where?
- When?
- Who?
- How?
- How much?
Fit Questions with Methods

Qualitative Methods

**Ethnography:**
Research methods that observe social systems, behaviors, cultures, social life (activities of daily living).
Fit Questions with Methods

Methods

Ethnography:
Research methods that observe social systems, behaviors, cultures, social life (activities of daily living).

Phenomenology:
Study of individuals’ emotions, attitudes, thoughts, meanings, perceptions and experiences during or after experiencing a phenomenon.
Phenomenology

The study of “phenomena”

• appearances of things,
• things as they appear in our experience,
• the ways we experience things (e.g. coping, anger management, etc.)

It refers to the meanings that things have in our lived experience.

Excerpted from: http://plato.stanford.edu/entries/phenomenology/
Fit Questions with Methods

Methods

Ethnography:
Research methods that observe social systems, behaviors, cultures, social life (activities of daily living).

Phenomenology:
Study of individuals’ emotions, attitudes, thoughts, meanings, perceptions and experiences during or after experiencing a phenomenon.

Grounded theory:
Systematic evaluation of qualitative data to generate theories.
Grounded Theory

- Requires extensive and repeated examination of data.
- Analyses and re-analyses of the data is required multiple times to identify emergent theory.
- Best suited to research studies where a phenomena has not previously been examined.
## Fit Questions with Methods

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<td>What is the <em>process</em> of ______?</td>
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# Fit Method, Data and Analytical Techniques

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<td>Primary data</td>
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<td>deep descriptions, rereading notes, case analysis, coding</td>
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<td>Secondary data</td>
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<td>documents, archival data</td>
<td>coding, recording notes, diagramming or modeling to show patterns and processes</td>
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What might you be doing wrong?
Threats to Validity

- **Theory**
  - Ignore alternative explanations of the phenomena you are studying.

- **Description**
  - Inaccuracy or incompleteness of the data.

- **Interpretation**
  - Imposing one’s own perspective or meaning rather than the experience of participants.
Contextual Factors Influencing a Research Design

- Purpose
- Conceptual Context
- Research Questions
- Methods
- Validity

Factors:
- Personal and Political Goals
- Participants Concerns
- Funding
- Ethical Standards
- Setting
- Personal Style
- Researchers Skills
- Research Paradigm
- Perceived Problems
- Personal Experience
- Existing Theory
- Prior and Pilot Research
- Data and Conclusions

Steps to Consider in the Design Process

- Step 1: Literature review
- Step 2: Methodological approach
- Step 3: Research setting
- Step 4: Sampling scheme, protocols and procedures
- Step 5: Field work
- Step 6: Management of data
- Step 7: Application of analytic techniques
References


