Exploring and Using Qualitative Data
SAMPLE SLIDES

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Learning objectives

In this tutorial, we will cover:

- ❖ Characteristics of qualitative research that drive how we should handle the data
- ❖ Proactive strategies to make sure qualitative research is useful for guiding design
- ❖ How to maintain scientific rigor when working with qualitative data
- ❖ Ways to manage data collection to make data accessible and facilitate analysis
- ❖ Techniques and software tools for exploring data patterns
- ❖ Strategies for getting the results into design

Quantitative versus Qualitative

	Quantitative	Qualitative
Method, design	Predetermined	Ad hoc, opportunistic
Sampling	Large, representative, Random	Small, strategic
Data analysis	❖Standardized measures allow efficient data reduction ❖Facilitates combining and comparing across cases	❖Volume of raw data overwhelming, often of unclear pertinence ❖Data reduction not straight-forward ❖Data not standardized across cases
Evaluation of quality	Standards of quality exist, looks objective, degree of support for inferences open to scrutiny	Inferences can seem to come from "invisible" intuitions, hard to assess quality

On the other hand...

	Quantitative	Qualitative
Focus	❖Questions should be specified in advance based on theory ❖Must be narrowed, sometimes ridiculously, to isolate variables, or it takes "black box" approach	❖Open to possibility you don't know the right questions to ask in advance ❖Broad, holistic, explanatory, tries to grasp complex interactions of factors
Aimed at	❖Understanding "What?" ❖Numerical Abstractions ❖Characterizing the population	❖Understanding "How and why?" ❖Realistic representations ❖Characterizing the "Design Space"
Values	Statistical validity	Practical implications

Foundations of scientific rigor in using qualitative data: Overview

- ❖ Using multi-modal data collection
- ❖ Maintaining data integrity and relevance, while preserving richness
- ❖ Recognizing and compensating for common systematic biases
- ❖ Respecting the limitations of what inferences the method(s) can support

Scientific rigor in using qualitative data: Overview (2)

- ❖ Recognizing and restraining premature closure
- ❖ Systematic practices for refining, testing, confirming, and disconfirming hypotheses
- ❖ Multiple, contrasting methods for exploring and representing patterns in data
- ❖ Managing the distortions that can be introduced during dissemination of findings within the organization

Biases in judgmental heuristics

Interpretation of qualitative data is subject to systematic biases in judgmental heuristics (Kahneman and Tversky), such as:

❖ Anchoring: perceptual calibration based on first few instances
❖ Availability: greater weight given to easily retrievable (memorable) instances
❖ Confirmatory bias
❖ Over-weighting extreme and novel instances

More common biases in judgmental heuristics

❖ Under-weighting of base rate information
❖ Over-estimating representativeness of small samples
❖ Inability to weight data according its reliability
❖ Associativeness: Perceived correlation based on associative connection rather than actual co-variation

Hints for building a focus structure

❖ Structure should be explicit, thematic

❖ Data categories at the 'case' level are NOT the same as categories of 'cross-case patterns' and issues that will emerge. Data structure focuses on case level

❖ Categories should be 'topics,' not yes/no or quantitative questions

❖ Topical categories will overlap and cross (This is a strength!) Data categories should be heterogeneous in level of abstraction

❖ Include "Miscellaneous" categories at different levels of abstraction

❖ The initial set of data categories WILL evolve, so plan how to manage this process, e.g., keeping track of changing definitions!

More on building a structure

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What is the unit of textual data?

- ❖ Favor behavioral or observational data
- ❖ Do NOT over-focus on quotations
  - DO identify quotes to distinguish from other behaviors
  - Quotes tend to take on a 'life of their own'
  - Use coherent narrative 'snippets' that will make the relevance obvious later
- ❖ Segregate and identify interpretive statements
- ❖ The full meaning of the data element comes from the wording AND from other cues

Suggestions for structuring and using data capture forms

- ❖ Form can be used during data collection, or debrief
- ❖ Form structure should map onto focus structure
- ❖ If there is a logical flow of topics in the interaction, match it, but be prepared to jump around
- ❖ Structured data capture forms work best with fairly large 'baskets'.
- ❖ Subcategories can be listed in margin as cues for probing and for tagging notes within the section.

Suggestions for structuring and using data capture forms (2)

- ❖ Be cautious about using different structures for different methods
  - Do the methods really address a different subset of issues?
  - Is it really part of the same study?
  - Will you be able to integrate it into the same overall data structure?
- ❖ Be prepared to shift to sequential note-taking in the session if you have to
- ❖ Do not panic if a note could go more than one place – just handle that in the debriefing

Multi-method exploration of data patterns: Overview (1)

❖Finding and exploring the meaningful distinctions in the design space

- Affinity diagramming
- Clustering to capture natural groupings of persons or settings
- Extracting of dimensions, defining variables
- Matrices, tables, graphs

Multi-method exploration of data patterns: Overview (2)

❖ Modeling relationships, process, and flows
  - Fishbone diagrams
  - Recursive networks
  - Decision Trees

❖ Consolidated narratives:
  - Scenarios
  - Profiles
  - Personae
  - Visual stories

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Dimensions: How do we identify them?

❖ Potentially meaningful dimensions are implicit in the distinctions among the clusters.

❖ List all factors that differentiated any of the clusters, or that differentiated within clusters.

❖ Draw upon the entire clustering exercise, including clustering schemes that were discarded.

❖ Factors that only differentiated among a subset of clusters may still be useful. Are they inapplicable to the others, or simply neutral or non-differentiating for some groups?

❖ When there are too few cases to begin with clusters (e.g., you want to characterize the 3 different companies in your sample) treat each individual as a cluster and catalogue similarities and differences via 2-way comparisons.

Interpretive considerations: Cautions about quantitative inference

❖ Many pressures to "get quantitative," e.g., many questions from team may be in quantitative form: how often do people use this feature? How many people do this task this way.

❖ Many inferences can sound quantitative.

❖ Quantitative inferences tend to imply generalizability to a population, probably not supported by study design.

❖ Numbers take on a dangerous life of their own and persist in organizational memories.

❖ Iterative alternation of qualitative and quantitative studies makes more sense, but remember that quantitative studies are often biased by over-reliance on "self-report."