Qualitative Methods: Data Analysis and Validation

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Interactive Model of Research Design

- Goals
- Conceptual Framework
- Research Questions
- Methods
- Validity
Data Analysis

- What type of data are usually generated through qualitative methods?
- Should data analysis and data collection be treated as discrete activities?
  - Qualitative methods are inherently iterative. Immediately analyzing data allows for progressive focusing of subsequent interviews and observations.
  - Helps research to decide how to test emerging conclusions.
Components of Analysis

1. Data Reduction
2. Data Display
3. Verification/ Drawing Conclusions
Data Reduction

"Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written up field notes or transcriptions." (Miles and Huberman 1994)

How do we transform pages of textual data into something more manageable?
Data Reduction

- Coding
  - Goal of coding in qual methods is to “fracture” the data and rearrange it into categories to facilitate analysis
  - How do we develop our coding strategy?
    - Derived from existing theory (deductive categories)
    - Generated through research (inductive categories)
    - Drawn from categories used by subjects (emic categories)
Data Reduction

- Coding allows the researcher to:
  - Develop a general sense of what is going on
  - Generate themes and theoretical concepts
  - Organize and retrieve data

- However…
  - By fracturing text into categories you may neglect important contextual relationships among data
  - What are ways of managing this?
    - Connecting strategies (case studies, profiles.. Connecting statements to context)
1. Organizational codes/categories
   - Broad subjects or issues
   - Often established prior to data collection
   - They function primarily as “bins” for sorting data for further analysis— may serve as chapter or section headings, but won’t help you to make sense of what is going on
   - What are some examples of potential organizational categories for your research?
2. Substantive and theoretical categories

- Often sub-categories of organizational categories— but often not generated a priori
- They implicitly make a claim about the topic being studied
  - In other words, they could be wrong rather than just conceptual boxes for holding the data
  - What do I mean by this?
Data Reduction: Category Typology

- **Substantive Categories**
  - Emerge out of respondents’ concepts and beliefs (emic categories)
  - Inductively developed through “open coding” of data (Corbin and Strauss 2007)
  - Used to develop a theory of what is going on but don’t depend on existing theory
  - Contrast with theoretical categories
Data Reduction: Category Typology

- Theoretical Categories
  - Data coded according to more abstract or general framework
  - Often derived from prior theory
  - Usually represent the researchers’ concepts rather than the participants’
Data Reduction: Category Typology example

- Qualitative study of the effects of FRA on cotton production.

- What are some potential organizational categories?
  - Markets, prices, labor, profitability, farmer characteristics

- What could be some substantive categories under these?
  - Markets: beliefs about private vs. public market institutions; beliefs about food vs cash

- Theoretical categories?
  - Marketing cost; Maize vs cotton price expectations; risk management;
Data Display

- Second-level of qualitative data analysis
- Can be narrative or diagrammatic

Goal:
- Provide new ways of arranging and thinking about textually embedded data
- Extrapolate from the data enough to begin to discern systematic patterns and interrelationships
Data Display Strategies

- Display strategy depends on your questions and your preference. Common strategies include:
  - Flow charts: mapping out critical processes and decisions
  - Data matrix: Examining patterns and relationships
RQ: The effects of FRA on decision to participate in cotton production
Organizational Code: Price/payment system

<table>
<thead>
<tr>
<th>Respondent group</th>
<th>Variable/uncertain prices</th>
<th>Pan-territorial prices</th>
<th>Immediate versus delayed payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent cotton producers</td>
<td>Opportunity to earn large profits</td>
<td>Would help planning</td>
<td>Immediate payment at lower price better than delayed payment at higher price: need to be able to plan</td>
</tr>
<tr>
<td>Inconsistent cotton producers</td>
<td>High risk</td>
<td>Safer/less risky</td>
<td>Price offered in previous year determines whether or not to plant cotton. Timing of payment is not important</td>
</tr>
<tr>
<td>Non-cotton producer/never produced</td>
<td>High risk/unscrupulous</td>
<td>Duty of the government</td>
<td>Predictable price more important than timing</td>
</tr>
</tbody>
</table>
What conclusions can we begin to draw from the matrix?

- FRA activity unlikely to change consistent cotton producer behaviors: they value ability forecast prices, but reliable payment and potential to earn large profits is more important.

- Increased FRA activity likely to draw inconsistent cotton producers to maize production: risk adverse, inconsistent timing of payment not a worry.

- What sort of follow-up questions might you ask based on this?
  - What affects groups’ risk horizons?
  - How do the different groups vary in terms of what they plan for and why?
Validation

- Unlike quantitative research
  - Cannot use sampling or statistical manipulation to control for validity threats
  - Therefore, must try to rule out validity threats during research phase
    - Collect evidence to identify and rule out alternative hypotheses
Validation

- Two Broad Types of Validity Threats
  - Research Bias
  - Reactivity: The effect of the research on the research setting or respondent
Broad Threats

Research bias:

- Ways in which data collection and analysis are distorted by researchers’ theories, values, or preconceptions
- How might we cope with this? Should we attempt to standardize researchers’ subjectivity?
Broad Threats

- Reactivity
  - How has this manifested in your research?
  - How did you deal with it?
  - What are some effective strategies?
Validation Strategies

- Respondent validation:
  - Systematically soliciting feedback about your data and conclusion from study population.
    - Effective at ruling out possible misinterpretations of events and meaning
    - Helps to identify your own biases and misunderstandings

  - When might this be appropriate and when might it not? What are some challenges with this strategy?
Validation Strategies

- Searching for discrepant evidence and negative cases:
  - Identifying and analyzing cases that cannot be accounted for by a particular interpretation
  - Allows you to assess whether it is more plausible to retain or modify your conclusion
  - The exception that proves the rule?
Validation Strategies

- Triangulation
  - Collecting information from a diverse range of individuals/populations/setting, using a variety of methods
  - Minimize systematic bias arising from single method
  - Can triangulate using mixed methods or drawing from a range of qualitative methods
Validation Strategies

- Quasi Statistics:
  - Drawing simple quantitative data from qualitative methods (frequencies, variances)
  - Does not allow you to “test” claims, but enables you to assess the amount of evidence in your data supports a conclusion or is discrepant
Saturation

- The point signaling the end of data collection/analysis:
  - Diminishing returns to additional sampling
  - Collecting and coding new data do not yield new themes, but reaffirm existing codes and categories
  - In your analysis describe how and why you reached the point of saturation
Final Thoughts

- Drawing conclusions from qualitative research is inherently a subjective exercise. But that does not mean these methods are not rigorous.
  - Be explicit about your goals
  - Develop a conceptual framework that is both theoretically robust but flexible
  - Explicitly link your questions to your conceptual framework and your methods
    - Allow for iteration, explore alternatives
Final Thoughts

- Utilize multiple methods and sampling strategies
  - Analyze your data, identify gaps, and develop interpretations during data collection....then employ necessary methods and sampling strategies to test these

- Embrace discrepancies: How does the discrepant case support your conclusion? How might you modify or expand your conclusions?
Thank You

- Now it’s time to develop your own design