Managing and initial analysis of structured and semi-structured interview data

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From your research matrix, you should already have an idea of how your data relates to your research questions.

<table>
<thead>
<tr>
<th>Questions: How can hybrid governance VSPPs as relates to national energy security?</th>
<th>Data needed</th>
<th>Interviewee/ origin of the source</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the incentives of each actor in economic, social and environmental aspects?</td>
<td>-Interests and incentives of each actor&lt;br&gt;-Internal process of decision-making to arrive at a leadership or an agreement to negotiate with the partners.&lt;br&gt;-Environmental motivations that drive policymakers&lt;br&gt;-The ability to access funding&lt;br&gt;-Norms of management&lt;br&gt;-The role of the community in participating in the organization</td>
<td>-The organization’s stakeholder (representative from each partnership)</td>
<td>-In-depth interview&lt;br&gt;-Secondary data review&lt;br&gt;-Non-participatory observation</td>
</tr>
</tbody>
</table>
Most of you are using **mixed methods** approaches:

- Qualitative to define questions and initial understanding;
- Quantitative to measure prevalence, and test positive and negative relationships
- Qualitative to explore the (contextual) reasons for (social) relationships

<table>
<thead>
<tr>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbers</td>
<td>Words</td>
</tr>
<tr>
<td>Point of view of researcher</td>
<td>Points of view of participants</td>
</tr>
<tr>
<td>Researcher distant</td>
<td>Researcher close</td>
</tr>
<tr>
<td>Theory testing</td>
<td>Theory emergent</td>
</tr>
<tr>
<td>Static</td>
<td>Process</td>
</tr>
<tr>
<td>Structured</td>
<td>Unstructured</td>
</tr>
<tr>
<td>Generalization</td>
<td>Contextual understanding</td>
</tr>
<tr>
<td>Hard, reliable data</td>
<td>Rich, deep data</td>
</tr>
<tr>
<td>Macro</td>
<td>Micro</td>
</tr>
<tr>
<td>Behaviour</td>
<td>Meaning</td>
</tr>
<tr>
<td>Artificial settings</td>
<td>Natural settings</td>
</tr>
</tbody>
</table>
Semi-structured interviews contain both quantitative and qualitative data

Analysis of quantitative (numerical) data:
• organize and manipulate data using statistical techniques; develop charts and graphs to present condensed information.
• quantitative information is relatively easy to condense

Analysis of qualitative data:
• qualitative data can seem “unstructured” and hard to manage.
• look for patterns, themes (“coding” your data)
• organize, compile data – charts, tables, matrixes
• consider your data in relation to concepts

Leehey, 2014
Quantitative Data: Data entry

- Enter your data into a statistical analysis program such as SPSS or Excel to manage and analyze it
  - All respondents should have an individual code
  - Clean your data (check numbers accurately entered; check translation/ no typos; check accurately coded; no typos etc…)
  - Consider **grouping continuous quantitative** data into discrete categories
  - Consider **coding qualitative responses** to enable descriptive quantitative data analysis
Quantitative Data and Descriptive Statistics

• Descriptive statistics:
  • The **number of times** something happened (e.g. goals scored; migrated to work in a foreign country…)
  • The **percentage** or **ratio** of an event or phenomena (e.g. the percentage of/ ratio of boys and girls who go to secondary school)
  • **Mean** (and standard deviation), and **median**
Quantitative Data and Descriptive Statistics

- Frequency distribution shown in a table or bar chart
  - percentage of people in different income levels
  - percentage of people in different age ranges
  - percentage of people in different ranges of standardized test scores

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 35</td>
<td>9%</td>
</tr>
<tr>
<td>36-45</td>
<td>21</td>
</tr>
<tr>
<td>46-55</td>
<td>45</td>
</tr>
<tr>
<td>56-65</td>
<td>19</td>
</tr>
<tr>
<td>66+</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 1. Frequency distribution table.

http://www.socialresearchmethods.net/kb/statdesc.php
Quantitative Statistics to explore relationships

- Bi-variate statistics: identify the relationship between two variables
  - For example, linear regression analysis
  - $R^2$ provides a measure of goodness-of-fit of linear regression

- Note, just because there’s a relationship, *doesn’t mean there’s a causality* – *these need to be explored through open questions and indepth interviews*

- Multi-variate statistics: For example, multiple regression analysis

http://www.mu-sigma.com/analytics/thought_leadership/cafe-cerebral-linear-regression.html
Analysis: Qualitative data analysis

• Look at open-ended questions:
  – Identify interesting quotes and information that might help explain relationships
  – Q1: How do you think fish catch changed over the past five years?
    • Significantly increase
    • Increase a little
    • Stayed the same
    • Decrease a little
    • Significantly decrease
  – Q2: Why?
    • People come and take fish illegally
    • People in this village are using new fishing gears that catch more fish
    • Illegal fishers
    • Illegal fishing gears are being used
    • More people fish nowadays catching too many fish
Analysis: Qualitative Data – Content Analysis

- Select an open-ended questionnaire question (e.g. Why do you think fisheries have declined?)
- Define categories and code your answers (e.g. over fishing; illegal fishing; climate change…)
- Calculate frequency of answers for each category
- Put data in a table or figure
- Summarize and interpret
  - What’s interesting/ what does it mean in the context of your hypothesis?
  - Identify outliers

Schmidt, 2005
Data verification – Building an analysis from your data

• Supporting Evidence
• Source verification
• Triangulation
• Logical coherence
• Expert assessment
Transcribe and code open questions (depending on the length of responses)

QDA4 Miner Lite is an easy to learn, easy to use software for quickly coding your interviews... and it’s free.

- There are also proprietary programs, such as Nvivo.
Making sense of your findings:

DEDUCTIVE thinking ("top-down"): from abstract generalizations to specifics
  • Reading academic sources and learning the theories and concepts that other scholars use to talk about... "poverty" "development" (etc.)

INDUCTIVE thinking ("bottom-up"): from specifics to abstractions
  • Using details of your data – and the language and concepts of your informants – to generate new concepts. (also called "grounded theory")

Leehey, 2014