Qualitative & Quantitative Research Methods

Tiffany Tsang, PhD
Senior Educational Analyst

Benjamin Logan, PhD
Senior Educational Analyst
Setting the stage…

- Discussion rather than lecture
- Zoom etiquette for a productive and engaging session
- Objectives of session
  1. Provide an overview
  2. Provide additional resources
  3. Provide opportunity to share experiences and ask questions
Roadmap

• Qualitative Research
  • What & Why
  • QRM Methods
  • QRM Software Options

• Quantitative Research
  • Purpose
  • How to Choose a Statistical Test
  • Statistical Software Options
What is qualitative research (QRM)?

- Is a form of inquiry that is more exploratory rather than hypothesis driven
  - Grounded Theory = research Q → data → theory

- Involves in-depth analysis of participants’ experiences
  
  “Development of concepts which help us to understand social phenomena in natural (rather than experimental) settings, giving due emphasis to the meanings, experiences, and views of the participants” (Pope & Mays, 1995)
Why use qualitative research methods?

“Not everything that can be counted counts, and not everything that counts can be counted.”

– Einstein

- Exploring topics that cannot be quantified
  - Why patients and healthcare providers behave in certain ways
  - Patients’ and providers’ perceptions, feelings, and experiences

- Example
  - The ‘lived experience’ of palliative care patients in one acute hospital setting – a qualitative study
Most Common Qualitative Research Methods

**Interviews**
- Most common
- 1-on-1
- Structured to semi-structured
- Recording & transcribing
- Most in-depth

**Focus Groups**
- 1-2 facilitators
- ~5-12 participants
- Structured to semi-structured
- Recording & transcribing
- When group meaning-making is important
Qualitative Data Analysis

Raw Data -> Analysis -> Interpretation -> Application

Currently we are facing challenges. For example, health facility in-charge don’t take charge in validating and reviewing the FP data, Medical Records Officers are left with the responsibility. Not all FP data is submitted to the district, some data disappears at the source. There is also a problem with data received from outreaches, it is not disaggregated by age only summaries are documented. The Emergency Contraceptive Pill is missing in the HMIS. Another challenge is that NMS only supplies the injectables, therefore, facilities that are not supported by partners their data is on one FP method (Injectables). There is also a challenge of inadequate skills for Medical records in FP indicators, but also, the district lacks revised FP data capture tools.
What coding software to use?

Choosing Qualitative Analysis Software
## What coding software to use? (cont.)

<table>
<thead>
<tr>
<th>Software</th>
<th>Student Cost</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS Word</td>
<td>$0</td>
<td>Easy learning curve</td>
<td>No bells and whistles</td>
</tr>
<tr>
<td>Dedoose</td>
<td>$120 (1 year)</td>
<td>Cloud-based; intuitive</td>
<td>Need internet connection; smaller community of users</td>
</tr>
<tr>
<td>Nvivo</td>
<td>$85 (1 year)</td>
<td>Advanced features</td>
<td>Difficult for group work; not intuitive</td>
</tr>
<tr>
<td>Atlas.ti</td>
<td>$99 (2 years)</td>
<td>Advanced features; lite mobile app versions</td>
<td>Original files are not stored within program</td>
</tr>
<tr>
<td>MAXQDA</td>
<td>$95 (2 years)</td>
<td>Advanced features; good for teams</td>
<td>Not intuitive</td>
</tr>
</tbody>
</table>
Additional Resources

• UCLA Labor Center
  https://www.labor.ucla.edu/what-we-do/research-tools/qualitative-research/

• UCLA Graduate Writing Center (GWC)
  https://gwc.gsrc.ucla.edu/resources/qualitativeresearch

• YouTube, Google (of course! :P)
Purpose of Quantitative Research

• Test hypotheses and make predictions using measured amounts
• Uses experiments or quasi-experiments
• Objective* and generalizable
How to Choose a Statistical Test

• Data available to you
• Type of dependent variable (DV)
• Type of independent variable (IV)
  • Number of IVs
• Meets assumptions of the statistical test
  • E.g., normal distribution
CHOOSING THE CORRECT STATISTICAL TEST IN SAS, STATA, SPSS AND R

The following table shows general guidelines for choosing a statistical analysis. We emphasize that these are general guidelines and should not be construed as hard and fast rules. Usually your data could be analyzed in multiple ways, each of which could yield legitimate answers. The table below covers a number of common analyses and helps you choose among them based on the number of dependent variables (sometimes referred to as outcome variables), the nature of your independent variables (sometimes referred to as predictors). You also want to consider the nature of your dependent variable, namely whether it is an interval variable, ordinal or categorical variable, and whether it is normally distributed (see What is the difference between categorical, ordinal and numerical variables? for more information on this). The table then shows one or more statistical tests commonly used given these types of variables (but not necessarily the only type of test that could be used) and links showing how to do such tests using SAS, Stata and SPSS.

<table>
<thead>
<tr>
<th>Number of Dependent</th>
<th>Nature of Independent Variables</th>
<th>Nature of Dependent</th>
<th>Test(s)</th>
<th>How to SAS</th>
<th>How to Stata</th>
<th>How to SPSS</th>
<th>How to R</th>
</tr>
</thead>
</table>

[Links to how to perform tests in SAS, Stata, SPSS, and R]
## What Statistical Software to Use?

<table>
<thead>
<tr>
<th>Software</th>
<th>12 Month Student Cost</th>
<th>Syntax</th>
<th>Point and Click</th>
</tr>
</thead>
<tbody>
<tr>
<td>R (along with R Studio)</td>
<td>$0</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Python (along with Spyder or Jupyter Notebooks)</td>
<td>$0</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Excel</td>
<td>$0*</td>
<td>Yes</td>
<td>Yes (but clunky)</td>
</tr>
<tr>
<td>SPSS</td>
<td>$45</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SAS</td>
<td>$99</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Stata</td>
<td>$179-$275</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Where to Learn Statistical Software

• IDRE Zoom Trainings (Free)
  • Introduction to SPSS on 10/26/2020 from 1:00-4:00 PM
  • Introduction to R on 11/02/2020 from 1:00-4:00 PM
  • Introduction to Stata on 11/09/2020 from 1:00-4:00

• DataCamp (Free/Fee)

• Laerd Statistics (Fee)

• Stack Exchange/YouTube/Google (Free)
Statistics Consulting

• IDRE via Zoom (free)
  • https://stats.idre.ucla.edu/ucla/policies/
• UCLA CTSI (free)
  • https://ctsi.ucla.edu/researcher-resources/pages/biostats
• UCLA Department of Statistics Consulting (fee)
  • http://scc.stat.ucla.edu/
Discussion Questions/Topics

1) What types of research projects have you been involved with or are interested in pursuing?
2) What have been some of the challenges/benefits of using a particular method?
3) What advice would you give to a student embarking on a research project?
4) Mixed methods