
Tree People and Survey Research: Get it Right and Get it Published

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Overview

- Social research methods - qualitative or quantitative?
- Survey design basics
 - Construct formulation
 - Instrument construction & testing
 - Sampling
 - Analysis
- Shortcuts to avoid
- Must-have references

Social Research Methods

- Qualitative:
 - Focus groups
 - Case studies
- Quantitative:
 - Content/records analysis
 - Observations
 - **Surveys / interviews**

Qualitative Research

Focus Groups

- Similar to an interview, but employs multiple respondents together in space & time
 - Small groups 8-12 people
 - Facilitator guides discussion with set of prepared questions or topics
 - Typically used for marketing or exploring new ideas
- Example: US Census Bureau used focus groups to explore ways to improve census questionnaires for Census 2000.

Case Studies

- Case studies involve in-depth, longitudinal examination of a single instance or event: a *case*
 - Can lead to generating and testing new hypotheses
 - Often used for exploratory, explanatory and descriptive purposes
 - May not yield generalizable results
 - Employs information-oriented or deliberate sampling (as opposed to random sampling)
 - Useful because of its completeness of observation, reconstruction, and analysis.

Qualitative: The Good & the Bad

- Quantitative analysis not necessary
- Can be very expensive \$\$ & time
- Is not generalize-able to broader population unless replicated
- Yields very rich detail

Quantitative Research



Content / Record Analysis

- Review of written documents or other communication using a framework or checklist
 - Accident records from hospitals
 - Tree City USA applications
 - Yellow page / newspaper advertisements
 - Television / radio broadcasts
- Advantage: well kept records can provide rich data
- Disadvantage: details may be lost

Direct Observation

- Direct observation of research subjects
 - Work-site safety practices of tree care workers
 - Teacher-student interactions
- Employs guidelines or checklist
- Advantages
 - High level of detail
 - High validity
- Disadvantage
 - Presence of observer can affect behavior of subject
 - Time consuming / \$\$
 - High potential for observer bias

Surveys & Interviews

- Survey research encompasses measurement procedures that involve asking questions of respondents
 - Simple feedback form
 - Mailed or e-mailed questionnaire
 - In-depth interview
- Unlike a census, information collected from a sample of the target population

Survey Design Basics

- Construct formulation
- Instrument development & testing
- Sampling
- Analysis

Construct formulation (what are you measuring?)

- Construct – that idea or “thing” you want to measure
 - Safety among arborists
 - Adherence to Tree City USA requirements
 - Understanding of smart growth principles
 - Awareness of ecological benefits of trees
- Use multiple items to measure each construct
- Have some theoretical basis for examining construct and making comparisons

Instrument development & testing

(it is your ruler, make sure it works)

- Know your target respondents (literacy?)
- Questions should be written so they are:
 - clear
 - easy-to-understand
 - on-topic
- Order questions logically
- Make page layout easy to follow
- Include clear directions
- Make every question one that every respondent should answer
- **Use as many “readers” as you can**

Instrument development & testing

- Use pre-test to:
 - Check question clarity and meaning
 - Test and tweak coding and data entry scheme
 - Test and tweak your analysis plan
 - Trouble shoot other potential problems
- Pre-test methods include:
 - Interviewer or respondent debriefings
 - Split-sample tests
 - Analysis of item non-response rates & response distributions

Questionnaires & Interviews: The Survey Instrument

- Instrument quality of utmost importance – it is your “ruler” for measurement
- Multiple items per construct
- A good survey instrument will produce results that are:
 - Valid – generalizable to a broader population
 - Reliable – it will measure you construct and measure it consistently across respondents & time

Sampling

- What population do you want to describe? (theoretical population)
- What population can you gain access to? (study population)
- How can you get access to them? (sampling frame)
- Who is in your study? (sample)

Sampling: Probability / Random

- Types:
 - Simple random
 - Stratified random
 - Systemic random
 - Clustered (area)
 - Multi-stage (combination of above)
- Advantage: can generalize to larger population

Sampling: Non-probability

- Accidental, haphazard or convenience (clinical trials, man on the street)
- Purposive (marketing research on Caucasian women 30-40 years old)
- Disadvantage: cannot generalize to broader population

Sampling frame examples

- Mail survey – all addresses in a zip code
- Telephone survey – all students in directory
- Personal interviews – all customers of a retailer
- E-mail – all users of a certain provider

Analysis

- Keep it as simple as possible
 - Descriptive
 - T-Test between groups
 - Multiple comparison among 3+ groups
 - Always generate dummy data or use data from pilot to test analysis plan!

Shortcuts to Avoid

- Not pretesting field procedures – pretesting is the *only* way to make sure the instrument is good and your method is correct
- Not sufficiently following up on non-respondents – a low response rate can ruin an otherwise good survey
- Sloppy fieldwork and inadequate quality controls – cross check interviewers, questionnaires, find mistakes before it's too late

Must-Have References

- Qualitative:

- Marshall and Rossman, *Designing Qualitative Research*, 3rd Ed. London: Sage Publications, 1999.
- Robert K. Yin. *Case Study Research. Design and Methods*, 3rd Edition. Applied social research method series Volume 5. Sage Publications. California, 2002.

Must-Have References

- Quantitative:

- Dillman, Don. 2000. *Mail and Internet Surveys*, 2nd Ed. John Wiley & Sons.
- <http://www.whatisasurvey.info/>
- Bond, T. and C. Fox. 2007. *Applying the Rasch Model: Fundamental Measurements in the Human Sciences*, 2nd Ed. University of Toledo.

And to get it published...

- Conduct survey correctly
- Employ appropriate analysis
- Make it clear in methods section that you are familiar with approved methods and that you employed them correctly
- Cite the source(s) of your methods

Questions?