

UNIT IV: Sampling and Data Collection

SWK 3300
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Concepts relevant to selecting participants:

- Population
- Parameter
- Sample
- Sampling Frame
- Element

The ultimate purpose of sampling is to select a set of elements to accurately portray the population. Random selection allows equal opportunity for an element to be chosen for the sample.

There are two main methods of sampling:
probability
non-probability

Probability sampling

each element has a known chance of being selected for the sample (can estimate degree of sample error)

There are four main types of probability sampling techniques

- Simple random sampling
- Systematic Random sampling
- Stratified random sampling
- Cluster sampling

Non-probability sampling (also called purposive)

elements are not randomly selected for the sample (can not claim to be representative with sample)

There are many types of non-probability sampling techniques
(see text for all)

- Availability sampling
- Quota sampling
- Snowball sampling
- Key informants

What influences the sample size needed for a study?

- type of research
- diversity of population
- desired confidence level

Why is neutrality an issue in data collection?

data collection method could potentially influence the participants responses

Use of interviews as a data collection technique:

- unstructured
- semi-structured
- structured

If possible, interviews should be conducted face-to-face, why?

- Advantages
- Disadvantages

Other types of interviews

- Telephone (+/-)
- Computer assisted (+/-)

Use of questionnaires as a data collection technique:

- Mailed +/-
- Face-to-face +/-
- Group +/-

Issues to consider when constructing a questionnaire (or interview guide)?

- develop a purpose statement
- ensure accessibility for target population
- ensure instrument is culturally sensitive
- use an instrument with proven reliability
- avoid biased language and terms
- avoid negative phrasing

- being with an interesting (relevant) item
- provide an obvious way to respond
- use statements and questions
- avoid double-barreled questions
- use short questions
- do not use leading questions
- avoid sensitive questions
- know your population

Be sure to consult table 9.1
(page 172 in text)

Use of observation(s) as a data collection technique:

- Unstructured
- Structured
- Participant observation
- Non-participant observation

Use of logs and journals as a data collection technique:

- structured
- unstructured

used to: identify data, track progress, identify barriers, identify successes, detail responses, and experiences

Systematic Reviews

organized, comprehensive and transparent studies

Meta Analysis

statistical methods for combining quantitative results from multiple studies

Content Analysis

discovering patterns and meanings and creating quantitative data

Use of secondary data:

data or resources already in existence
(may have issues with neutrality)

Use of scales as a data collection technique:

- often used with observations and interviews
- usefulness of a composite score
- may not be ideal for expanding knowledge in an area, but can be really useful in well researched areas due to extensive testing

Likert Scale

set of response categories that proceed in order from one extreme to the opposite extreme (strongly agree to strongly disagree)

Thurstone Scale

constructed using equally distant intervals
items on the scale are often weighted

Bogardus Social Distance Scale

measures degree to which people are willing to interact with others who are different from them

Semantic Differential Scale

word association and strength of response
opposites (good/evil, interesting/boring)

Guttman Scale

organized from easy to hard questions
“How likely would you be to....”

Goal Attainment Scaling

- used to measure success of an intervention
- range of 5 levels of goal attainment
- -2 to +2

When more than one form of data collection is used in a study it is referred to as “triangulation.” Triangulation is especially common in validating data from qualitative research techniques.

Reliability is:

the extent to which a measure reveals actual differences in what is being measured (precision) rather than differences in the measuring instrument itself

“When assessing the reliability of an instrument, you need to determine whether there is evidence of certain sources of error.” (text p.185-186)

- Unclear definitions
- Use of retrospective information
- Variations in collection conditions
- Structure of instrument

Reliability is determined by obtaining two or more measurements and assessing how closely the measurements agree.

Methods used to establish the reliability of an instrument

- Test-retest (stability)
- Alternate form
- Split-half
- Representative
- Observer reliability (inter-rater)

Validity is:

the extent to which you are measuring what you think you are measuring

Types of validity in a measurement instrument (each is tested differently)

- Face validity
- Criterion validity
- Content validity
- Construct validity

* In measurement, reliability **CAN** exist without validity. (You can consistently measure the wrong thing)....

Validity **CAN NOT** occur without reliability. (You will not be accurate in your measurements if you are not consistent)

Sources of measurement error include:

- Random error
- Systematic error
- demographic variables
- response set errors (two types)

Response set errors due to personal styles of respondents:

- Social desirability
- Acquiescence
- Deviation

Response set errors due to reactions of observers:

- Contrast error
- Halo effect
- Error of leniency
- Error of severity
- Error of central tendency

“You need to be thinking about how the data will be organized as early in the research process as possible. This is especially important when you use a questionnaire to collect data, because the way questions are structured can influence the way data can ultimately be organized.” (text p. 202)

Organizing quantitative data:

data in raw form
level of measurement used determines type
of analysis possible

Coding the data:

- convert responses to numerical codes
- assign variable names
- develop code book (exhaustive and exclusive)
- use a software package (if possible) to do analysis for you

The coding procedures for quantitative research studies are often developed before any data collection takes place. Once coding has taken place the next step in quantitative research is to do a statistical analysis (Unit V).

Organizing qualitative data:

- take detailed notes
- organize notes
- code and file notes
- look for missing data
- use others to verify codes and categories

Filing and coding:

cross-referencing notes and codes
keep track of new insights and questions

Use of others to verify the codes and categories

- watch for bias
- confirm decisions
- check reliability
- ethical considerations
- account for diversity