OVERVIEW OF RESEARCH METHODS II

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This session will present an overview of several non-experimental research designs/methods including observational, survey, correlational, cross-sectional design, longitudinal design, etc. It will also provide an evaluation (merits and weaknesses) of each design.
At the end of this session, you will be able to:

- Draw at least one commonality and difference between the observational and the experimental research method,
- Explain what the survey method is
- List and explain the other research methods covered in the section
- Draw some differences between and among the methods
- Mention and discuss the merits and demerits of each of the methods discussed
- Determine when to use each or a combination of the methods


The session notes titled “overview of research methods II”
Non Experimental Methods

1. Observational Studies

- It is a field research and involves a close surveillance of a phenomenon of interest.
- There are two kinds:
  i. Naturalistic observation
  ii. Participant observation
Naturalistic observation

- Occurs in the natural setting of behaviour being studied.
- Involves observing and recording the behaviour of people (or animals) in their natural environment.
- Those under study often are not aware they are being studied (unobtrusiveness).
Naturalistic Observation

- Aims to *unobtrusively* observe behaviour in the natural setting.
- Observing in the natural setting enables one to minimize or eliminate the problem of artificial behaviour in response to being studied (i.e., reactivity effects).
II. Participants observation

- The researcher actively takes part in the behaviour of interest and record the relevant information.

- In participant observation, researcher becomes both an active member (participant) and at the same time a researcher.

- One variation of being a participant observer is undercover agent.
Naturalistic Observation

• Advantages
  – Observe the natural phenomena (not artificial)

• Disadvantages
  – Observer bias
  – Reactivity in subjects
  – Ethics
2. Survey Research Method

- Christenson (1994) defined survey as a method of collecting standardized information by interviewing a representative sample of a given population.

- Survey is applicable to a wide range of issues and may take the form of questionnaire administration, interviews or a combination of the two.
Survey Research

- Collecting standardized information from people using an interview or self-report format.
- Typically we survey attitude, knowledge or opinions.
- To standardized the information one uses a questionnaire with set questions.
- Ideally the questionnaire has been validated.
- Representativeness of the sample is very important.
The survey process

- The target *population*: a known and a well defined group from which a *sample* could be drawn.

- The data collection is done using questionnaires in most cases.
Survey Methods

• Interviews

  – **Advantage** - Comprehensive, ensure participant understands the question, minimizes missing data, enables clarification of unclear responses

  – **Disadvantage** – expensive, people more likely to refuse participation, can be risky for interviewer, interviewer may bias the responses.
Types of Survey Methods

• Group survey
  – Less Expensive and not time-consuming

• Telephone interviews
  – Need to use random-digit dialing to reach both listed and unlisted numbers.

• Mail
  – Return rate is usually low (20-30%).
Types of Questions

- **Open-ended**
  - E.g., Can you tell me about your typical experience with dating?

- **Close-ended**
  - E.g., How do you typically meet someone to date?
    - Introduced by someone
    - Social event
    - In university class or place of work
    - At a bar
    - Through sports or other athletic events
Survey Questionnaires

- Questionnaires must be valid and reliable
- Questionnaires may be designed for a specific topic or an existing or a standardised one can be used.
- Questionnaires may be open ended or closed ended
3. CASE STUDIES

• In depth description and analysis of a single individual, group, or institution.

• It is used to investigate rare occurrences and can provide compelling portraits of individuals

• Case studies can help us understand the particular situation in detail.

• The results of a single case study, no matter how dramatic, cannot be generalized to all people.

• Does not involve systematic observation
Correlational studies

• Seeks to find out the degree of relationship or association between two or more variables or events.
• Observing and measuring two variables and then determining the degree of relationship that exists between them.
• The degree of relationship between any two variables is determined by correlation coefficient ($r$).
Correlation coefficient (r)

• It ranges from -1 (negative one) through 0 (zero) to +1 (positive one).

• Thus r could be

a) Positive (two variables move in the same direction e.g. studying vrs academic performance)

b) Negative (two variables may move in different direction. E.g. depression vrs happiness)

c) Non existing (no relation between variables e.g. shoe size vrs intelligence.)
Exercise

- Find the type of correlation between these;
- Stress and health
- Promotion and job satisfaction
- Beauty and attraction
- Alcohol and memory
- Motivation and achievement
- Church going and crime
- Language ability and musical ability
- Noise and attention
- Stigma and self esteem etc.....
Ex post Facto Study

- Ex-post-facto means after the fact or event.
- Because phenomenon of interest has already occurred, investigator may not be able to subject them to direct manipulation.
- Focuses on what has happened, what led to it, the effects or impacts and the lessons for the future.
- E.g. a study on domestic violence on aggressive behaviour
Ex Post Facto Study

• Variable of interest is not subject to direct manipulation but must be chosen after the fact.

• E.g., Define two groups of people according to a certain characteristic (e.g., history of trauma) and measure how they respond in terms of anxiety to a certain stimulus (e.g., watching violent film).

• Limitation – self-selection bias, cohort effects may explain the effect.
Purpose of Ex Post Facto Study

• Attempts to determine cause for
  – Existing conditions
  – Preexisting differences in groups
• Alleged cause and effect have already occurred
• Orientations
  – **Retrospective** (basic): starts with an effect and seeks possible causes
  – **Prospective** (variation): starts with a cause and investigates its effects on some variable
Causal-comparative (ex post facto) Research

• The independent variable (IV) is not manipulated; it has already occurred
• Independent variables sometimes called “attribute variables”
• Less costly and time-consuming to conduct
• Establishing cause-effect relationships is more difficult than in experiments
Procedures in causal-comparative research

- Identify an existing condition or event (e.g., *differences in socialization among 1st grade students*)
- Look “backwards” to see what may have caused this difference/condition to occur (i.e., *some attended preschool, some did not*)
- Rule out other causal factors
Sometimes confused with correlational research:

- Both lack manipulation of variables
- Both require caution in interpreting results
- Both can support subsequent experimental research
Causal comparative vs. correlational research

• Causal comparative
  – Attempts to identify cause-effect relationships
  – At least one independent variable
  – Two or more groups
  – Involves a comparison

• Correlational
  – No attempt to understand cause and effect
  – Two or more variables
  – Only one group
Sometimes confused with experimental research:

- Both try to establish cause-effect relationships
- Both can test hypotheses concerning the relationship between an independent (X) and a dependent variable (Y)
- Both involve group comparisons
Comparison to experiments

• Causal comparative
  – Individuals already in groups before study begins
  – Independent variable has already occurred
  – Independent variable is not manipulated
    • Cannot be
    • Should not be
    • Could be, but is not

• Experiment
  – Individuals randomly assigned to groups (e.g., treatment or control)
  – Independent variable manipulated by the researcher
Examples of non-manipulated independent variables

- Age
- Sex
- Ethnicity
- “Learning style”
- Socioeconomic status (SES)
- Parent educational level
- Family environment
- Type of school attended
Design of causal-comparative research

- Select 2 groups that differ on some IV
  - One group possesses a characteristic that the other does not
  - Each group possesses the characteristic, but in differing amounts
- Randomly sample Ss from each group
- Collect info on Ss to determine equality of the groups
- Compare groups on the DV
Difficulty in interpreting findings

• Establishing cause and effect requires caution!

• Alternative explanations:
  – Different causal variable
  – Order of causation
    • Reverse causality
    • Order of occurrence