NEW UPDATED COURSE 2020 LESSON 1 TO 48

BT406 Research Methodology & Skill Enhancement

MSC ZOOLOGY

MUHAMMAD IMRAN

Virtual University

MUHAMMAD IMRAN

1. Introduction to Research

Objectives of the Course

Students should be able to:

- Sharpen the analytical skills.
- Develop their understanding of the research concerns.
- Develop the ability to convert the research concerns into a research problem.
- Prepare a roadmap or blueprint of the research – using appropriate methodologies.

Conduct the research by following the complete research process.

Methodology

Grading

Textbook:

- Neuman, W. L. (2000).
  Social Research Methods: Qualitative and Quantitative Approaches. Boston: Allyen and Bacon.

Supplementary books:

- Zikmund, W. G. (2003). *Business Research Methods.* Mason, Ohio: South Western.
- Sekaran, U. (2004). *Research Methods for Business* New York: John Wiley & Sons.

What is research?

- Gathering information needed to answer a question, and thereby help in solving a problem.
- Systematic and organized effort to investigate.

What is the value of research?

Research offers the pleasure of solving a puzzle.

Generating Theories – Models

Identifying problems and solutions

Research helps to develop new methodologies

We are surrounded by social research

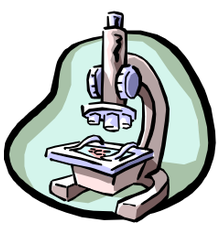
2. Scientific Methods of Research

RESEARCH METHODS SCIENTIFIC METHODS OF RESEARCH Every human knowledge is not science

Science is a method

A procedure to produce knowledge i.e. discovering uniformities/ principle" es, laws in this universe.

Process of "sensory experiences



- Observation
  - Repetition
  - Reobservation.
- By repeating the observation researchers want to be definite/positive.

This approach is called positivism

Results are organized, systematized, and made part of the body of knowledge.

Special Features of Scientific Method

1. Empirical

Observable phenomenon

2. Verifiable

- Use senses to confirm or refute the observation.
- "Sensory experiences"
- Intuitions and revelations are out.
- Replicability needed.

3. Cumulative

- Knowledge grows.
- Need not start from scratch.

4. Deterministic
   - Explains why things happen?
   - Parsimony

     Minimum No. of variables that explain variance.

5. Ethical and ideological neutrality

Value free.
Objectivity.
Is it possible?

6. Statistical generalization

7. Rationalism

Employ rigorous rules of logic.
Argumentation.

All features are interrelated.
Scientists not necessarily adhere to all these characteristics.
Two power bases of knowledge

Empiricism: Sensory experience
positivism.
Rationalism: Explanation for regularity. Consequential arguments. Logical.
Any body following the said procedure of research is doing scientific research.
Logical positivism i.e. theory + observation + statistics

3. Classification of Research

Four main dimensions:

1. Purpose of doing research.
2. Intended uses of research.
3. How it treats time → time dimension.
4. The research techniques used

Purpose of Research:

What the researcher trying to accomplish.

1. Exploratory/ Formulative
2. Descriptive
3. Explanatory
4. Studies can be multi-purpose

a. Exploratory Research:

- Initial research conducted to clarify and define the nature of the problem. Exploring a new topic.
- Specifically, there could be number of goals of exploratory research.

Goals of Exploratory Research:

- Become familiar with the topic. Develop well grounded picture of the situation.
- Develop tentative theories.
- Determine the feasibility of study.
- Formulate questions and refine issues for more systematic inquiry.

- Develop techniques and a sense of direction for future research

b. Descriptive Research:

- Research designed to describe characteristics of the phenomenon understudy.
- Helps in diagnostic analysis

Goals of Descriptive Research:

- Describe the situation/characteristics. Provide an accurate profile of a group.
- Give a verbal or numerical picture (%).
- Present basic background information.
- Create a set of categories or classify.
- Clarify sequence, set of stages.
- Focus on 'who', 'what', 'when', 'where' and 'how' but not on 'why'.

c. Explanatory Research:

- Also called as causal research i.e.
- 'Why'? Explanation.
- Identify cause and effect relationship among different factors.

Goals of Explanatory Research:

- Explain things not just reporting. Why?
- Which explanation is better.
- Determine the accuracy of theory.
- Advance knowledge about underlying process
- Build and elaborate a theory → complete.
- Extend a theory or principle into new areas.
- Provide evidence to support *or* refute an explanation or prediction.

2. Intended Uses of Research:

a. <u>Basic Research</u>

- Pure/ fundamental/ academic
- Developing/ refuting/ supporting theories.
- Expand knowledge.
- Explanatory research is the most common
- Applied can also contribute.

b. <u>Applied Research:</u>

- Solve specific problems → help practitioners. Market new product.
- Choose one policy over the other.
- For improving productivity → problem with machines, raw material, persons working.

Basic and Applied Research Comparison

Basic Research

- Intrinsically satisfying
- Freedom.

- High standards applied.
- Logic and rigorous research design
- Basic knowledge.
- Success→ results published, impact on other scientists.

Applied Research

- R → part of job
- Constrained to demands of sponsors
- R→ quick and dirty→ may not meet hi standards.
- Apply to areas of interest to sponsors.
- Practical payoffs.
- Success→ results are used by sponsors.

Types of applied research:

- Action Research: Those who are being studied participate in research process; research incorporates popular knowledge; focus on power with goal of empowerment increase awareness; tied to political actions.
- Impact Assessment: Estimate the likely consequences of planned change.
- Evaluation Research: Did the program work? Measures the effectiveness of program.

3. Time Dimensions of Research:

- *Cross-Sectional Research:* Observe at one point in time, Snapshot study.
- *Longitudinal Research:* Examine at more than one time. Can be →

- Time series study.
- Panel study.
- Cohort study – Category of people who share the same experience.

4. Research Techniques Used:

Quantitative:

- Experiments
- Surveys
- Content Analysis
- Using Existing Statistics

Qualitative:

- Field Research
- Case Study
- Focus Group Discussion

4. Theory and Research

The purpose of science concerns:

- The expansion of knowledge;
- The discovery of truth; and
- To make prediction.

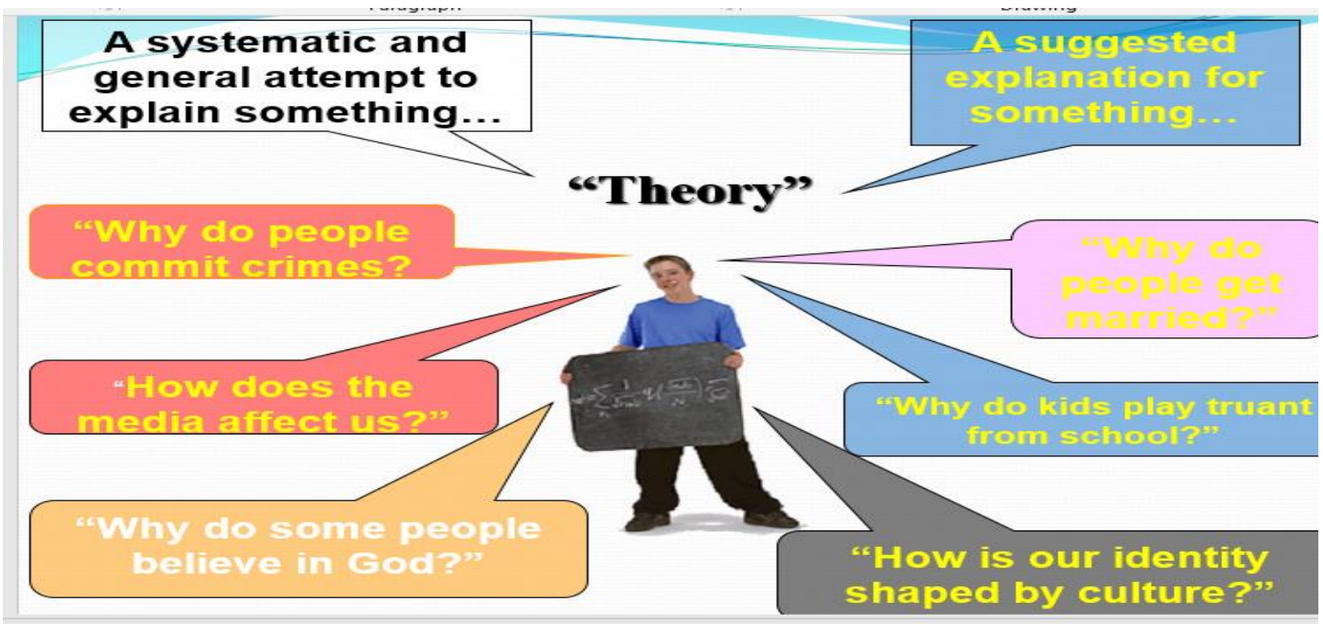
- Theory building is the means by which basic researchers hope to achieve this purpose.

A scientist poses questions like:

- What produces inflation?
- Does student teacher interaction influence students' performance?

Looking for:

- Explanation
- Prediction
- Understanding the process to reach prediction
- These are the purposes of theory.



Theory

- A coherent set of general propositions used as principles of explanation of the apparent relationships of certain observed phenomena.
- Key element in this definition is *proposition.*

Proposition

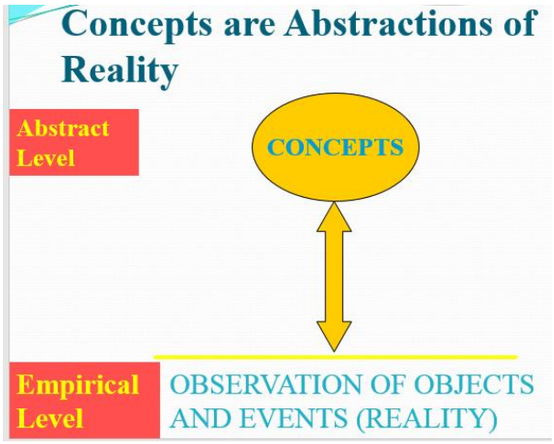
- A statement concerned with the logical relationships among concepts.
- Logic (argument) abstracted from observed reality.
- Theory is the highest level of abstraction.
- Theory is a network of propositions.

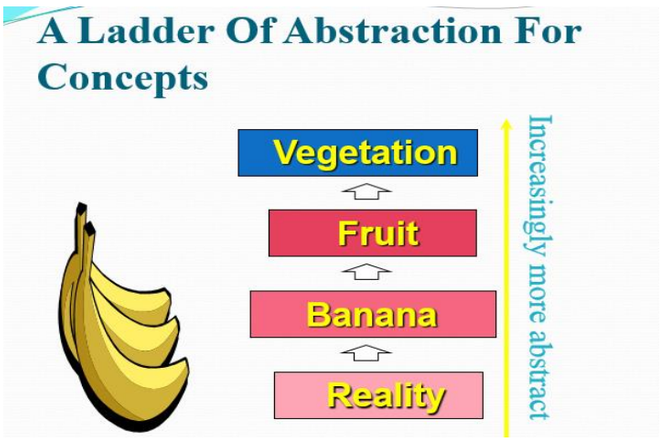
Concept

- A generalized idea about a class of objects, attributes, occurrences, or processes that has been given a name
- Building blocks of theory that abstract reality.
- Examples:

"leadership," "productivity," "morale,"

"motivation," "inflation," "happiness," "banana"





Theory and Research

- Research produces facts.
- Are facts and theories different?
- Soft mental images vs. empirical world of hard, settled, and observable things.
- Theory and fact (research) contribute to each other.

Role of Theory

- *Theory as orientation.* Framework. Phenomenon may be studied in different ways. Narrows the range of facts to be studied. Study of football.
- *Theory as conceptualization and classification. Provides concepts.*
- *Theory in summarizing role.* Empirical generalizations.
- *Theory predicts facts.* Extrapolation.
- *Theory points gaps in knowledge.*

Role of Facts

- *Facts initiate theory.*
- *Facts lead to the rejection and reformulation of theory. Alteration and expansion.*
- *Facts clarify theory.* New facts redefine theory. Provide further clarification.

Theory and Research: The Dynamic Duo

- Theory and research are interrelated. The dichotomy is artificial.
- Researchers weave together knowledge from different studies into more abstract theory.

5. Concepts.

Concept:

- Things we observe → Observable realities → physical or abstract
- For purposes of identification of a reality we try to give a name to it.
- By using name we communicate with others. Part of language

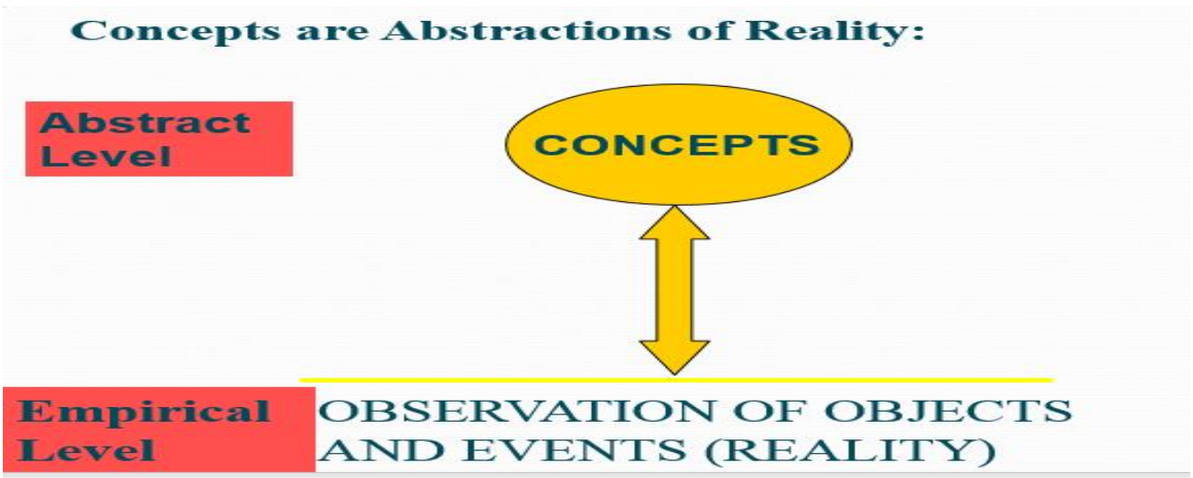
- Names are constructs.
- These constructs are concepts.

Concepts are Mental Images of Reality:

- Concept is an idea expressed as symbol or in words.
- Words are also symbols.
- Agreement to represent ideas by sounds or written words.
- Concepts can be symbols.

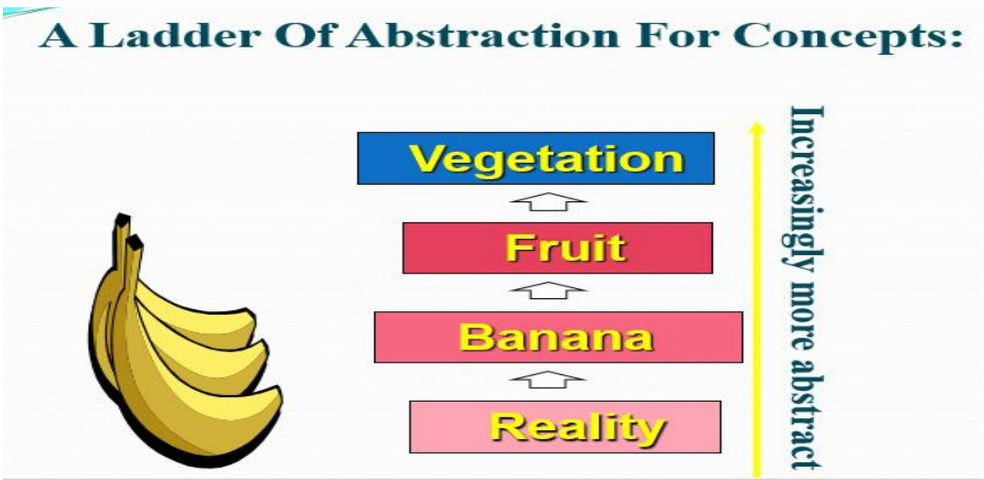
An Abstraction of Reality:

- Table, leadership, productivity, morale are all labels given to some phenomenon (reality).
- Concepts stand for phenomenon not the phenomenon itself.
- It may be called an abstraction of empirical reality.



Degree of Abstraction:

- Moving up the ladder of abstraction, the basic concept becomes more abstract, wider in scope, and less measurable.



Sources of Concepts:

- We create concepts from personal experience. Mass, speed, family.
- We borrow from other disciplines.
- We develop a specialized jargon or terminology for a particular subject.

Importance to Research:

- Concepts are basic to all thought and communication.
- Special problems grow out of the need for concept precision and inventiveness.
- We use concepts in hypothesis formulation.

Definitions:

- Confusions about the meanings of concepts can destroy the value of a study.
- Definitions are one way to reduce this danger.
- Two types of definitions:
  - Dictionary (theoretical) definition
  - Operational definition.

Dictionary Definition:

- Also called as Conceptual/Theoretical/Nominal
- Concept is defined with a synonym. Use other constructs to explain a construct.
- How to define a "customer," "client," "a satisfied worker"?

Operational Definition:

- *Working definition* stated in terms of specific testing or measurement criteria.
- Concrete indicators that can be observed/measured. Specify empirical indicators.

We use both the definitions in research:

Observational phenomenon → Construct → Conceptual def. → operational definition → data

6. Variables and Types of Variables.

Variable

- A central idea in research.
- Variable is a concept that varies.
- Anything (concept/term) that can take on differing or varying values. 2+ values. Could be numerical.
- Variation can be in quantity, intensity, amount, or type.
- Examples: Production units, Absenteeism, Gender, Religion, Motivation, Grade, Age.

Types of Variable

Continuous and Discontinuous Variable

- Can the values be divided into fractions?
- Discontinuous → Discrete categories. Categorical. Classificatory.

Dependent and Independent Variable

- DV → Outcome variable → effect variable (Y). Variation in Y is influenced by some other factor (s)
- IV → (X) that influences the Y.
- The variance in Y is accounted for by X.

Explaining X and Y variables

X variable	Y variable
• Presumed cause • Stimulus • Predicted from • Antecedent • Manipulated • Predictor	• Presumed effect • Response • Predicted to • Consequence • Measured outcome • Criterion

Moderating Variable

- A variable that moderates the strength of X – Y relationship.
- Strong relationship between the library facility (X) and performance of students (Y). Depends on the "interest and inclination" of students (MV). Modifies the original relationship.
- Relationship is contingent on another variable.

Intervening Variable

- Surfaces between the time X starts influencing the Y. Time factor. In fact is a function of X.
- IV → IVV → DV. IVV may be DV for IV in the first place, then it is IV for DV.
- Marital status → social integration → Suicide.
- 4-day workweek (IV) will lead to higher productivity (DV) by increasing job satisfaction (IVV).

Extraneous Variables

- Infinite number of EV exist that may effect XY relationship. Confounding factors.
- To be identified by the researcher.

Whether a variable is X or Y or moderating or intervening is determined by the researcher.

Relationship of Variables

- Relationship among variables. Logical.
- A statement concerned with the theoretical relationship among variables is a proposition.
- If the relationship refers to an observable reality, then the proposition may be testable → call it a hypothesis.

7. Hypothesis Testing and Characteristics.

Background:

- Once variables identified
- Establish the relationship through logical reasoning. Proposition.
- Proposition is a statement about variables judged to be true.

Definition:

- Hypothesis is a testable counterpart of proposition i.e. If variables refer to empirical reality then it could be testable. Therefore,
- Hypothesis is a testable proposition.

Example –1:

- Officers in my organization have higher than average *level of commitment.*
- How many variables in this hypothesis?
- Can we test this hypothesis?

Example-2:

- *Level of job commitment* of the Officers is associated with their *level of efficiency.*

Example –3:

- *Level of job commitment* of the Officers is positively associated with their *level of efficiency.*

Example–4:

- The higher the *level of job commitment* of Officers the lower their *level of absenteeism.*

Types of Hypothesis

i. Descriptive Hypothesis:

Also called uni-variate hypothesis: Proposition that typically states the existence, size, form, or distribution of some variable. e.g. Majority of the students registered in RM class are highly motivated.

ii. Relational Hypothesis:

- Statement describing the relationship between two or more variables.
- Relationship can be non-directional or directional.

a. Non-directional Relationship:

- The nature of relationship is not specified in Non-directional relationship.
- Job satisfaction and motivation are related.

b. Directional Relationship:

- Hypotheses are both relational and directional.
- Direction of relationship specified. Use of words like positive, negative, more than, less than etc.
- Hypotheses can be co-relational or causal.

c. Co-relational Hypothesis:

- Variables occur in some specified manner without implying that one causes the other. e.g. *Level of job commitment* of Officers is positively associated with their *level of efficiency*. Direction is Not causal.

d. Explanatory Hypothesis;

- Also called causal hypothesis.
- X and Y specified.
- X causes change in Y. e.g.
- High motivation causes high efficiency.

Different ways to state hypothesis:

- Hi motivation causes hi efficiency.
- Hi motivation leads to hi efficiency.
- Hi motivation and hi efficiency are +ly related
- Hi motivation influences hi efficiency.
- Hi motivation is associated with hi efficiency.
- Hi motivation produces hi efficiency.
- Hi motivation results in hi efficiency.
- If hi motivation then hi efficiency.
- Higher the motivation, higher the efficiency

iii. Null Hypothesis:

- No relationship between the variables
- The relationship between the variables is “zero”
- Null hypothesis is denoted as H0
- H0 = No relationship between X and Y /
- H0 = X and Y are independent of each other.

- H0 is non directional.

Use of Null Hypothesis:

- Used for testing the research hypothesis
- Researchers give more importance to negative evidence. No relationship rather than a relationship i.e. Null hypothesis.
- Reject H0 and accept alternative.

iv. Alternative Hypothesis:

- It is alternative to H0.
- There is a perfect relationship between X and Y i.e. H1

v. Research Hypothesis:

- This is the hypothesis formulated by the researcher.
- Tells not only the relationship but also the nature of relationship between X and Y.

The Role of Hypothesis:

- It guides the direction of study
- It identifies facts that are relevant and those that are not.
- It suggests which form of research design is likely to be the most appropriate.
- It provides framework for organizing the conclusions of findings the conclusions of findings.

The Characteristics of a Testable Hypothesis:

- Hypothesis must be conceptually clear.
- Hypothesis should have empirical referents.
- Hypothesis must be specific.
- Hypothesis should be related to available techniques of research.
- Hypothesis should be related to a body of theory

8. Review of Literature

Assumption

Assumption is that:

- Knowledge accumulates.
- We learn from and build on what others have done.

In review

- Researchers read other people's research.
- They learn, compare, replicate, or critically appreciate the work by others.

Goals of Review of Literature

1. To demonstrate a familiarity with a body of knowledge and establish credibility.
   - Tells the reader that the researcher knows the research in an area and knows the major issues. i.e.
   - Demonstrates the researcher's professional competence, ability, and background.
2. To know the path of prior research and how the current research project is linked to it
   - Review outlines the direction, ability, and background of research on a question and shows the development of knowledge.
   - Places the research project in context → makes a connection to a body of knowledge.

3. To integrate and summarize what is known in area

- Tells where prior studies agree, disagree, where questions remain unanswered.
- No reinvention of the wheel. No wastage of effort.
- Indicates direction for future research

4. To learn from others and stimulate new ideas

- Researcher benefits from others efforts.
- Ready made techniques. Also difficulties, blind alleys. Replications to overcome previous limitations.

5. Identification of variables

- None of the important variable relevant to the study project is left out.

6. Help in developing theoretical framework

- Ready made theoretical models for research may be available.
- Previous studies provide evidence for developing theoretical argumentation for positing the relationship among variables.

7. Problem statement can be made with precision

- Review provides clarity of thought about the issue under study.

Types of Reviews

- Reviews vary in scope and depth.
- Each may have different goals
- Six types of reviews

1. Self study reviews

- Increase the readers confidence
- Demonstrates researchers familiarity with an idea.
- Not only others have credibility of the researcher but also the researcher develops self-confidence.

2. Context reviews

- Place a specific project in the big picture
- Focusing on a specific issue →providing background
- Linking the project with specific body of knowledge and advancing further.

3. Historical reviews

- Trace the development of an issue over time.
- How a particular issue or theory has evolved.

4. Theoretical reviews

- Compare how different theories address an issue.
- Evaluate different theories for the soundness of their assumptions, logical consistency, and scope of explanation.
- Researcher may integrate two theories – form a hybrid

5. Integrative reviews

- Summarizes what is known at a point in time.
- Pulls together disparate research reports.

6. Methodological reviews

- Point out how methodology varies by study.
- Researcher evaluates the methodological strengths of past studies.
- Conflicting results may be the out come of different research designs

Where to find research literature

- Computer: on line systems.
- Scholarly journals.
- Books – containing reports of original research, or collection of research articles. READERS or Book of Readings.
- Dissertations.
- Government documents.
- Policy reports and presented papers.
- Bibliographic indexes.

Referencing of electronic sources:

- Ahmad, B. (2006). *Technology and immediacy of information.* [on line] Available http://www.bnet.act.com

9. Conducting a Systematic Literature Review.

Define and refine a topic:

- Have a good idea of your topic of interest
- Some clear research question to guide pursuit of relevant material.
- "Crime" is too broad. Narrow it to: "type of crime" or "economic inequality and crime"
- Review may help refocusing.

Design a search:

- Set parameters of your search.
- Type of review; how extensive.
- How to record the bibliographic citations.
- Begin a file folder or computer file.

Locate Research Reports:

- Articles in scholarly journals.
- Locating the relevant articles is difficult.
- Many academic field have "abstracts" or "indexes" for scholarly literature.
- Look in reference section of library
- Also available on computer.

Computerized literature search:

- Researchers organize computerized researches by author, by article title, by subject, or by keyword.
- *Keyword* important term for topic that is likely to be found in the title.
- Use 6-8 keywords in most computer based searches and use several synonyms

Other material:

- Scholarly books: have to use catalog
- Dissertations: A publication called *Dissertation Abstract International.*
- Government Documents: Section in library.
- Policy reports and presented papers. Difficult to locate. May be part of some bibliographies of published studies, or abstracts, or indexes.

What to record:

- Write down all details of the reference (full name of the authors, titles, journal name, year, volume, issue, pages)
- Same about books and other publications.
- Follow some standard format Like APA/ASA style.
- Referencing electronic source: Ahmad, B. (2006). *Technology and immediacy of information.* [on line] Available http://www.bnet.act.com

Write the review:

- Read critically. Skepticism is the norm of science. Don't accept simply because it is published. Evaluate.
- See whether introduction and the title fit with the rest of the article.
- Methods and results sections are the most critical.

How review will look like?

- Listing series of reports with a summary of each is not a review.
- It reads a set of notes strung together.
- Organize common findings or arguments together.
- Address the most important ideas first, to logically link findings, and to note discrepancies.

Plagiarism:

- In publications, presentations, writings the researchers explicitly identify, credit, and reference the author when they take data or material verbatim from another person's written work, whether it is published, unpublished, or electronically available.
- Do not present others' work as your own. Even the ideas have to be acknowledged.

Ethical Issues in Research:

- Management listening to Union members' conversation in cafeteria through hidden devices. Is there a moral question involved?
- A researcher discards damaging information about an organization. Is this proper?
- These questions are philosophical questions.

Ethical Issues:

- Philosophical questions (No agreement)
- Societal norms determine what is right and what is wrong.
- Codes of behavior determine what ought to be done.

Ethical behavior pervades each step of the research process – data collection, data analysis, reporting, and dissemination of information

Rights of the respondents:

- The right to be informed (informed consent: the expressed or implied acknowledgment waiving an individual's right to privacy when he/she agrees to participate in study)
- The obligation to be truthful

- Privacy
- Deception

Obligations of the Researcher:

- The purpose of research is research. Do not misrepresent.
- Objectivity – also no misrepresentation of research findings
- Protecting the right to confidentiality of the subject and clients.

10.Theoretical Framework.

Theoretical framework

- Theorizing the relationships among several factors relevant to the study.
- Can be called a conceptual model.

Conceptual Model

- Researcher elaborates the relationship among the variables.
- Explains the logic underlying these relationships.
- Describes the nature and direction of the relationships

Theoretical foundation

- Build up the theory
- Deduce hypothesis
- Test the theory or part thereof.

Provides the roadmap

- To the formulation of appropriate research question.
- To the formulation of research hypothesis.
- To the advancement of knowledge by testing theory.

Six basic components of Theoretical Framework

1. Make an inventory of variables
   - Identify the variables relevant to the study.
   - Search the literature, talk with informants, and observe
2. Specify the direction of relationship
   - Theorize the direction of relationship among the variable → negative or positive
3. Logic for the proposed relationship
   - Theorize the logical relationship between different variables.
   - Argument could be built up on the basis of previous studies, observations, inferences.
4. Make an inventory of propositions
   - Stipulation of logical relationship between two variables ends up in a proposition.
   - Number of interrelationships resulting in a number of propositions.
   - Each proposition supported by rigorous logic.
   - Take stock of the propositions.

5.Arrange propositions sequentially

- Interlink the propositions and arrange them sequentially.

- Axiomatic derivation.
- This will be theoretical framework

6. Present schematic diagram

- Helps in understanding the theorized relationships among the variables.

Example → Research Question

- Why middle class families become small in size?
- Let us follow the guideline for theoretical framework.

1. Inventory of relevant variables

- Education level of the couples, age at marriage, working women, rationalism, exposure to mass media of communication, accessibility to health services, use of family planning practices, parental aspirations about the education of their children, shift to nuclear families, mobility orientation, etc.

2. Specify the direction of relationship

- If you just make statements by using variables, it can indicate the direction of relationship. Look:
- Higher the education higher the age at marriage. Higher the education of women greater the chances of their being career oriented. Higher the education more the rationalism.
- Higher the education more the exposure to mass media of communication. Higher the education more the accessibility to health services. Higher the education more the exposure to mass media of communication. Higher the education more the accessibility to health services. Higher the education greater the use of family planning practices. Higher the education of parent higher their aspiration about the education of their children

3. Explanation for the proposed relationship

Higher the education higher the age at marriage: *Argumentation:* For getting high levels of education the youth spend about 16 years of their life in educational institutions.

Usually complete their schooling at age 22 years. Spend about 2-3 years for establishing themselves in their careers. During the whole of this period marriage is deferred. So with hi education the age at marriage goes up.

Compare

- By the time highly educated youth decide to marry they are 25yrs.
- Compare marriage at age 25 yrs. with marriage at age 16 yrs.
- With this higher age at marriage there is a reduction in reproductive period of women.
- Many of these women may be career women. Should they spend time to raise the children or to pursue the career. Rational decisions about the use of contraceptives. Family limitation is the option.

4. Inventory of propositions

The relationships specified under item 2 can be examples of propositions. Formulate additional propositions by using other combinations of variables.

5. Arrange propositions sequentially

- Higher the education, more the rationalism. Higher the rationalism, more the investment in career achievement. Greater the investment in career achievement, higher the age at marriage. Higher the age at marriage, shorter the reproductive period.
- Shorter the reproductive period, smaller the size of family.
- Use of contraceptive may be an intervening variable

6. Schematic diagram

11. Problem Definition & Research Proposal.

First step in research process

- No formula for the selection of topic.
- Starts with a broad area of interest.
- Interest from a variety of sources:

❑ Personal experiences.

❑ Mass media.

❑ Developments in knowledge.

❑ Solving problems (Org., family).

❑ Hot issues of daily life.

Broad area of interest

- Family →Trends in Pakistani family
- Population →Aging population
- Labor Unions →Protecting the rights of members.
- Marketing →TV commercials

Narrowing the topic

- Try to get background information from different sources.

Examine the literature

- Published articles are excellent sources of ideas for research questions.
- Already specific and suggest research questions.

Focus on the following:

a. Explore unexpected findings discovered in previous research.

b. Follow future research suggestions.

c. Apply existing theory to new topic.

d. Challenge the previous findings.

e. Specify the intervening process

Talk over ideas with others

- Share ideas with knowledgeable people
- Seek out those who differ. Discuss possible research questions with them.

Apply to a specific context

- Focus onto a specific historical period.
- Narrow the topic to a specific society.
- Consider which subgroups are involved – expected differences

From research question to hypotheses

- Tentative answers to questions – identification of variable (Family, population, labor unions)
- Argumentation – propositions
- Testable propositions – hypotheses
- Interrelationship of propositions – framework

Problem Definition

- From broad to specific concern
- Present problem statement in clear and precise manner.
- Problem could be an existing business problem identified by the manager
- Scope for future improvement
- Areas needing conceptual clarity
- Curiosity of the researcher

Sponsored Researches

- Symptoms of issues identified – tip of the iceberg – underlying factors to be identified.
- Management dilemmas to be translated into research questions
- Terms of reference
- Some steps may not get emphasis.
- Management's research decisions based on the urgency of the study, time available, existing information, and cost-benefit equation.

Research Proposal

- Document that presents a plan for a project to reviewers for evaluation.
- Can be a supervised project or a project proposed to funding agency.
- Convince the reviewers about the capability of the researcher.
- For funded projects the researchers need to show the track record of past success.

Research proposal sections

- Introduction (background, objectives, significance)
- Research design (data collection technique, population, sample, tools, fieldwork, data processing and analysis)
- Report writing
- Time schedule
- Research Team
- Budget

12.The Research Process

Research Process

- Usually treated as sequentially defined steps. Nevertheless:
- Completion of each step before going to next is not required.
- Idea of sequence is useful for developing a research project.
- Variation in the number of steps

1. Broad Problem Area

- General area of study (Organization).
- Specific issues that need to be focused in the broad area.
- Problem currently existing in an organization (sexual harassment).
- Areas that a manager believes to be improved (policy improvement).

- Conceptual issue (harassment).
- Research questions to be answered empirically.

2. Preliminary Data Collection

- Part of exploratory research
- Search for published data and studies.
- Seek out informants
- Focus group discussions

3. Problem Definition

- Translate the broad issue into a research question.
- Management dilemma into management question – symptoms of the problem. Productivity decline. Demand for daycare facilities

4. Theoretical Framework

- Consultation – identification of variables, make logical relationships, delineation of framework.
- Components of theoretical framework already discussed.

5. Generation of Hypotheses

Derive the hypotheses from the theoretical framework.

6. Research Design

- Master plan for collecting and analyzing the data.
- Specify the sources of information and the techniques to be used in the study.
- Broadly 6 methods – surveys, experiments, observations, communication analysis, case study, focus group discussions. Secondary data analysis.

Determine the method to be used

Objectives of the research, data sources, urgency of the decision, cost of obtaining the data will determine the method.

Surveys

- The most common method of generating primary data.
- Sample of people using questionnaire.
- Questionnaire an essential tool.
- Contact the respondents in person, by telephone, by mail, on the internet.
- Each of these techniques has advantages and disadvantages.
- Choose the most appropriate one.

Experiments

- Establish cause and effect relationship.
- Manipulating X affects on Y.
- Productivity affected by rewards.
- Controlled conditions – isolate causal factors – control external factors.
- Lab experiments and field experiments.

Observation techniques

Non participant and participant.

Communication analysis

- Analyzing the content of text.
- Content refers to words, meanings, pictures, symbols, ideas, themes, messages.
- Text is anything written, visual, or spoken
- Books, newspapers, advertisements, speeches, official documents, photographs, films, articles of clothing, works of art.

Case study

- In-depth analysis of a unit.
- Clinical analysis in retrospect.
- Multiple sources of information – history, consulting written records.

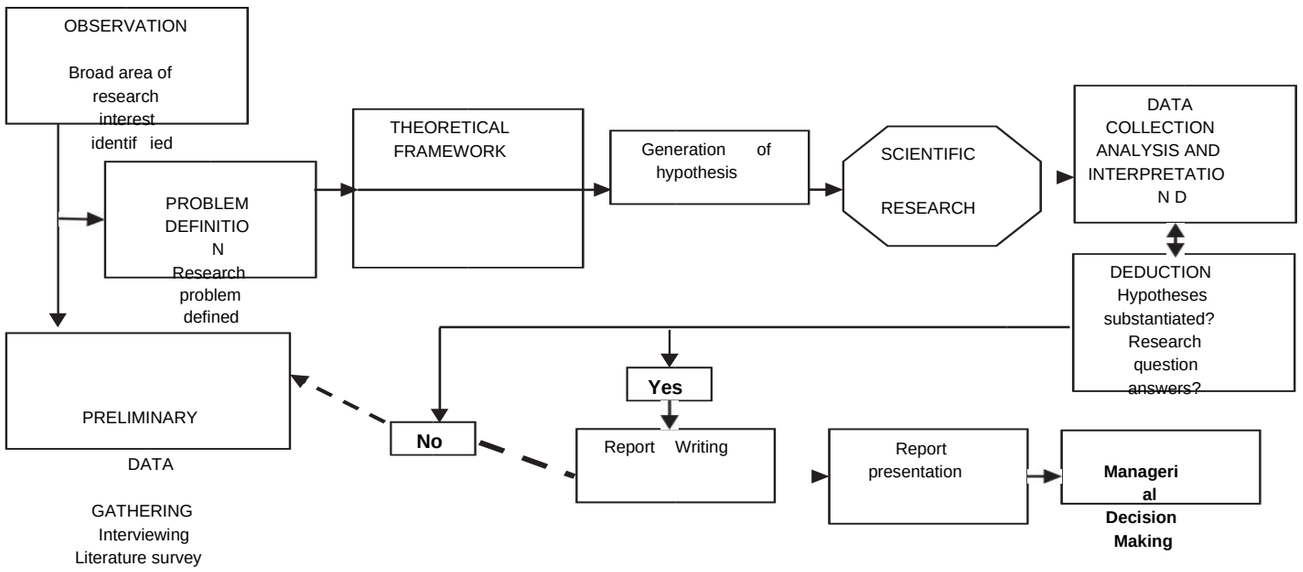
Focus group discussions

- Discussion of an issue by 6-12 persons assisted by a moderator.
- Useful in exploratory research. Supplements the quantitative information.

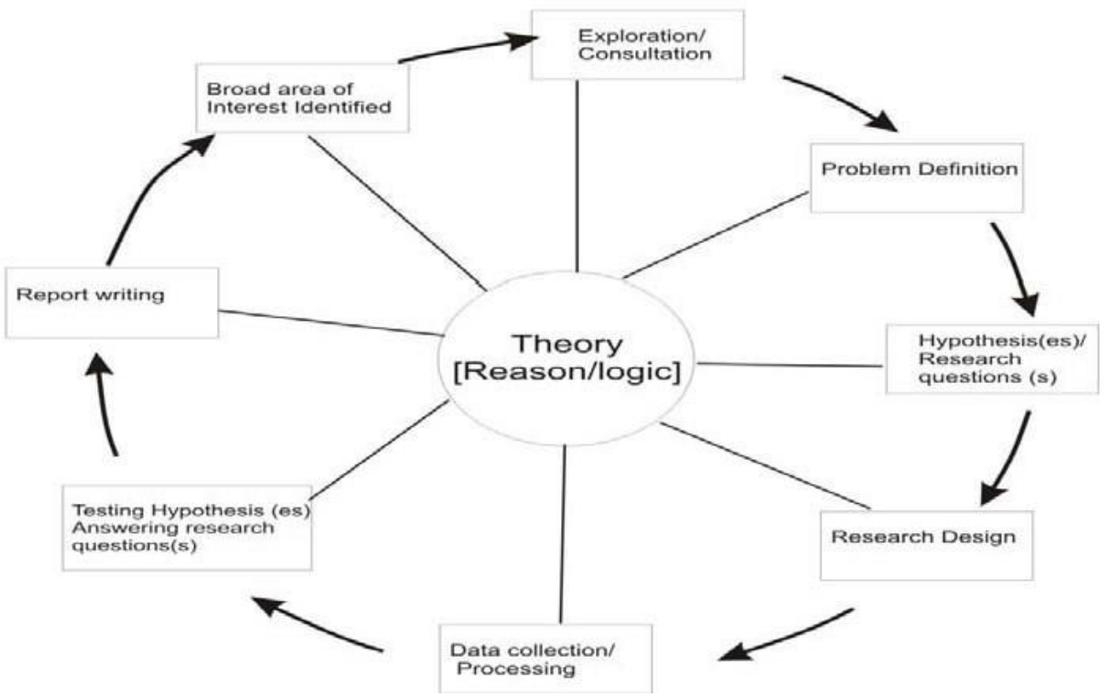
No one method is best

- Researchers evaluate and select the most appropriate method.

7. Data collection, data processing and analysis
    - Integral part of research design.
    - Variety of ways. Field and lab.
    - Interviews, questionnaires, observation.
    - Data processing – editing, coding, computer entries, tabulation.
8. Testing the Hypotheses
    - Interpretation of data.
    - Testing the hypotheses.
    - Finding solutions to problems of organization or society.
    - Making recommendations
9. Report Writing
    - Communicating the research findings.
    - Report is technical. Managers are selective readers. Interested only in recommendations.
    - Historical document.
    - Academic purpose – dissertations. Specific format. Writing of research papers



STEPS IN SOCIOLOGICAL INVESTIGATION



13.Ethical Issues in Research.

Codes of ethic applicable at each stage of the research.

Goal

- To ensure that no one is harmed or suffers adverse consequences from research activities.

Unethical activities	Ethical Issues
• Violating nondisclosure agreements. • Breaking respondent confidentiality. • Misrepresenting results. • Deceiving people. • Invoicing irregularities. • Avoiding legal liability.	• Remain to be issues. • Local norms suggest what ought to be done under the given circumstances. • Codes of ethics developed to guide researchers and sponsors. • Review Boards and peer groups help sorting out ethical dilemmas.

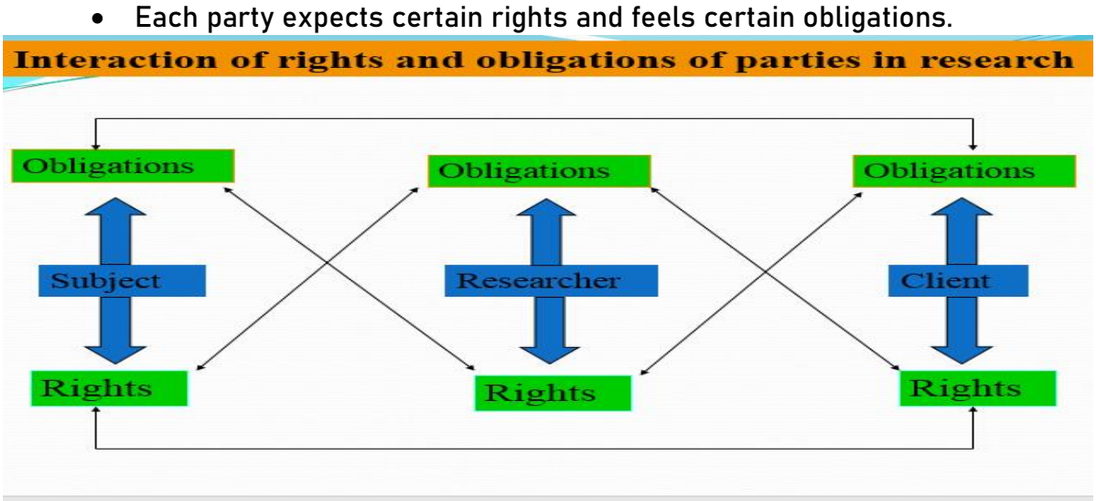
Anticipate ethical dilemmas

- Adjust the design, procedures, and protocols accordingly.
- Research ethics require personal integrity of the researcher, the project manager, and research sponsor.

Parties in Research

Mostly three parties:

- The researcher
- The sponsoring client (user)
- The respondent (subject)
- Interaction requires ethical questions.
- Each party expects certain rights and feels certain obligations.



Ethical Treatment of Participants

Rights of the participants

- No physical harm, discomfort, pain, embarrassment, or loss of privacy.

Follow three guidelines:

1. Explain study benefits.

2. Explain respondent rights and protections.

3. Obtain informed consent.

Benefits

- Discuss the study's benefits.
- Can be part of establishing rapport.
- Further inducements to participate. Should not be used as coercive measure.
- Note that sometime actual purpose is concealed jut to avoid the bias. This deception.

14. Ethical Issues in Research (continued).

Deception

- Truth is fully compromised. Debatable
- Two reasons for deception:

(1) To prevent biasing.

(2) To protect the confidentiality of the third party.

- The cost and benefits of deception to be balanced. More benefits – scientific, educational, or applied value.

- Respondents must have given informed consent.

Informed consent

- Disclosing fully the procedures of the study prior to requesting to proceed with the study.
- Exceptions for children. Parents to sign.
- How about non-literates? Oral consent.
- Types of limits about confidentiality, or of any harm to be explained.
- In case of intentional deception, debriefing is necessary

Debriefing

- After data collection.
- Explanation of any deception.
- Description of the hypothesis, goal or purpose of the study.
- Post study sharing of the results.
- Post study follow-up medical or psychological attention.
- A goodwill gesture. (experiments)

Right to Privacy

- Help retain the validity of research
- Protect the respondents through confidentiality of the survey answers.
- One has the right to refuse to be interviewed, or to refuse to answer any question in interview.
- One can withdraw from the experiment

Several ways to protect the confidentiality

- Obtaining signed nondisclosure documents.
- Restricting access to respondent's identification
- Revealing respondent information only with written consent.
- Restricting access to data instruments where the respondent is identified.
- Nondisclosure of data subsets.

The obligation

Once agreeing to participate, the subject should provide truthful answers. Honest cooperation is the main obligation.

Ethics and the Sponsor

Confidentiality of Sponsor

Several types of confidentiality:

- Sponsor nondisclosure (due to sensitive nature of the research. No influence of the sponsor)
- Purpose nondisclosure (new idea to be hidden from competitors).
- Findings nondisclosure (findings may not go to any interested parties)

Right to quality research

It includes:

- Providing research design appropriate for the research question.
- Maximizing the sponsor's value for the resources expended.
- Providing data handling and reporting techniques appropriate for data collected.

Sponsor's Ethics

- Unethical demands.
- Violating respondent confidentiality.
- Changing data or creating false data to meet the desired objective.
- Changing data presentation or interpretation.
- Interpreting data from a biased perspective.
- Omitting sections of data analysis and conclusions.
- Making recommendations beyond the scope of data collected.

Researchers and Team Members Ethics

Safety

- Project design should ensure that safety of all interviewers, surveyors, experimenters, or observers is protected
- Ensure researcher's right to safety.

Ethical Behavior of Assistants

- Ethical compliance by Assistants.
- Carry out the sampling plan, interview or observe respondents without bias, accurately record data.

Protection of Anonymity

- Protect the confidentiality of the sponsor's information and anonymity of the respondents.
- Sign a confidentiality and nondisclosure statement.

Professional Standards

- Many Corporations, Professional Associations, and Universities have code of ethics.
- The code of ethics to be enforced.
- Professional standards of ethics to be observed.

15.Measurement of Concepts

Concept

- A generalized idea about a class of objects, attributes, occurrences, or processes
- A sign, symbol, letter, word, name, number that stand for observable reality
- A construct that stands for phenomenon but not the phenomenon itself
- For purposes of research the phenomenon is measured

Measurement

- Measurement is a daily routine : casual measurement or by using a standard.
- Established yardstick verifies the height, weight, or another feature of a physical object.
- Also measure the qualities of objects → attitude, perception, motivation.
- In research, measurement is rigorous.

In dictionary sense, measurement is

- To measure is to discover the extent, dimensions, quantity, or capacity of something, especially by comparison with a standard.

In research

- Measurement is a process of ascertaining the extent or quantity of the concept, idea, or construct
- Follow some measurement procedure. Come up with empirical data that represent the concept.
- Use some existing yardstick, standard or develop your own.

What is measured?

- Variable → can be objects or properties.
- Objects include things.
- Properties are characteristics of objects.
- Person's properties: physical, psychological, social.
- Researchers to measure through indicators.
- Easier to measure visible properties than invisible. Invisible creates measurement issues.

Example

- Studying people attending an auto show of year's new models.
- Just male to female ratio of attendees.
- Record F for female and M for male. Or use some other symbol like 0 and 1 and decide which number stands for which group
- Researchers might also want to measure the desirability of the styling of new Espace van.
- They interview a sample of visitors and get their opinions.
- Assign numbers to their responses, with a different mapping rule like:
- What is your opinion of the styling of the Espace van? Opinion rating scale.
- V. desirable 5__4__3__2__1 V. undesirable
- This is a form of measurement.

Measurement issues

- Easier to measure physiological phenomena – height, weight.
- Difficult to measure subjective attributes – feelings, attitudes, ideology, deviance, perceptions.
- Devise techniques to measure the "invisible" – Teacher morale.
- Empirical reality → create instrument for its measurement.

Measurement in quantitative research

- Designing precise ways to measure variables is vital step at the planning stage.
- Develop techniques that can produce quantitative data. Move from abstract ideas to produce precise numerical information.
- Contemplate and reflect on concepts prior to the gathering of data. Qualitative researchers mostly do it during data collection.

Quantitative measurement

- Consists of assigning numbers to empirical events in compliance with set rules. Hence measurement is a three part process:

a. Selecting empirical reality – concept

b. Developing a set of mapping rules: a scheme for assigning number or symbols to represent aspects of the event being measured.

c. Applying the mapping rules to each observation of that event – data collection

Parts of Measurement Processes

Researcher takes the concept, idea, or construct and develops a measure.

Use two processes:

a. Conceptualization

b. Operationalization

a. Conceptualization

Taking the construct and refining it by giving it a conceptual or theoretical definition. Definition in abstract terms.

Single concept – could be many definitions; depending upon the theoretical frameworks used. *Social class*

A good definition has one clear, explicit, and specific definition. *Morale*

Prior to measurement we need a concept. Should know what you are looking for.

Example; Teacher morale.

- What is morale? Is it a variable?
- Develop a conceptual definition.
- Look at everyday understanding of morale. How people feel about things?
- Look in the dictionary: confidence, spirit, zeal, mental

condition toward something.

- Look into review of literature

Teacher morale

- Morale involves a feeling toward something else; a person has morale with regard to something. "somethings"
- 'Some things' toward which teachers have feelings → Some things could be:

❑ Students, parents, pay, the school administration, other teachers, the profession of teaching.

Dimensions of construct

- Are there several kinds of teacher morale or are all these 'somethings' different aspects of one construct (morale)?
- A single general feeling with different parts – call them as dimensions.
- Unit of analysis will determine – construct will apply to individual or group.
- Also who is a teacher?

b. Operationalization

- Linking conceptual definition to a specific set of measurement procedures.
- Specifies what the researcher must do to measure the concept under investigation.
- What specific activities to be undertaken for measuring the concept?
- Look at the behavioral dimensions, translate into observable elements, ask questions, and develop index of measurement. Example.

16. Measurement of Concepts (continued)

Operational Definition: Dimensions and Elements

- Let us operationalize *Job Satisfaction*

- First define it conceptually. Like:
  - Employees' feelings toward their job.
  - Degree of satisfaction that individuals obtain from various roles they play in an organization.
  - A pleasurable or positive emotional feeling resulting from the appraisal of one's job or job experience.
  - Employee's perception of how well the job provides those things ('some things) that are important. These things are the dimensions of job satisfaction.

Dimensions of job satisfaction

- Workers looking for many "things." A 'thing' may be taken as a dimension.
- Things that are important for employees: (Give rationale for each)
  - The work itself.
  - Pay/fringe benefits.
  - Promotion opportunities.
  - Supervision.
  - Coworkers.
  - Working conditions.

Elements of dimensions

- Breaking each dimension further into actual patterns of behavior that would be exhibited
- Work itself: *Elements* → opportunities for advancement, sense of accomplishment, challenging work/routine work.
- Pay/fringe benefits: *Elements* → Pay according to qualifications, comparison with other organizations, increments, availability of bonuses, old age benefits, insurance benefits, other allowances.
- Promotion opportunities: *Elements* → Mobility policy, equitability, dead end job.
- Supervision: *Elements* → Employee centered, employee participation in decision making.
- Coworkers: *Elements* → Primary group relations, supportive attitude, cohesiveness
- Working conditions: *Elements* → Lighting, temperature, cleanliness, building security, hygienic conditions, utilities.

From elements to questions/statements

- On each element ask question (s), make statements.
- Look into the scalability of questions. Five point scale (Likert scale).

17. Measurement of Concepts (continued).

Scales and Indexes)

STATEMENTS

No.	Statements	S. Agree	Agree	Undecided	Disagree	S. Disagree
1	I have a good opportunity for advancement in my job					
2	I feel very comfortable with my co-workers					
3	My pay is adequate to meet my necessary expenses					
4	My work gives me a sense of accomplishment					
5	My boss is impolite and cold					
6	My job is a dead-end job					
7	The company of my co-workers is boring					
8	Pay at my level is less as compared to other organizations					

No.	Statements	S. Agree	Agree	Undecided	Disagree	S. Disagree
9	Most of the time I am frustrated with my work					
10	My boss praises good work and is supportive					
11	There is a chance of frequent promotions in my job					
12	My co-workers are a source of inspiration for me					
13	I receive reasonable annual increments					
14	My work is very challenging to me					
15	My boss is adept in his work					
16	We have an unfair promotion policy in our organization					

No.	Statements	S. Agree	Agree	Undecided	Disagree	S .Disagree
17	Working style of my co-workers is different from mine					
18	The old-age benefits are quite adequate					
19	Most of the time I do routine work					
20	My boss does not delegate powers					
21	Opportunity for promotion is some-what limited here					
22	My co-workers try to take credit of my work					
23	My pay is commensurate with my qualification					

Scales and Indexes

- For most purposes, scales and indexes are used interchangeably.
- Social researchers do not use consistent nomenclature to distinguish between them.

Scale

- A scale is measure in which a researcher captures the intensity, direction, level, or potency of a variable construct.
- It arranges responses or observations on a continuum. It can use single indicator or multiple indicators
- Most are at the ordinal level of measurement

Index

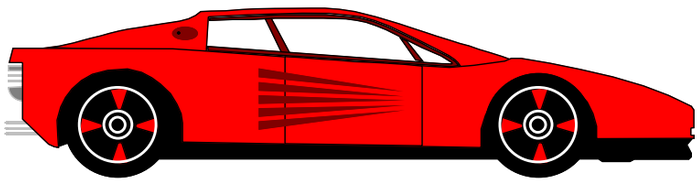
- A measure in which the researcher adds or combines several distinct indicators of a construct into a single score.
- This composite score is often a simple sum of the multiple indicators. Combination of items into a single numerical score. MCQ score.
- Indexes are often measured at the interval or ratio level.
- Researchers often combine the features of scales and indexes in a single measure.

Scale

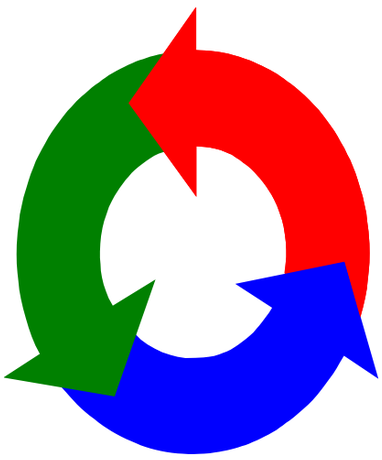
- Series of items arranged according to value for the purpose of quantification
- A continuous spectrum

Nominal Scale

Ordinal Scale



Interval Scale



Ratio Scale

Scale Properties

- Uniquely classifies
- Preserves order
- Equal intervals
- Natural zero

Nominal Scale Properties

- Uniquely classifies
    - Male, female
    - Muslims, non Muslims
    - Different nationalities

Mutually exclusive categories, though collectively exhaustive.

No overlapping. No gradation

Ordinal Scale Properties

- Uniquely classifies
- Preserves order

Interval Scale Properties

- Uniquely classifies
- Preserves order

- Equal intervals
    - Consumer Price Index (Base 100)
    - Fahrenheit temperature

Ratio Scale Properties

- Uniquely classifies
- Preserves order
- Equal intervals
    - Natural zero
    - Weight and distance

Index Measures

- ATTRIBUTES. A single characteristic or fundamental feature that pertains to an object, person, or issue
- COMPOSITE MEASURE. A composite measure of several attributes to measure a single concept; a multi-item instrument

18.Criteria for Good Measurement

Goodness of measurement

- Make sure the accuracy of the instrument. For that:
- Ensure not missing any dimension, element, and question. Nothing irrelevant.
- Assess the "goodness" of measuring instrument.
- Characteristics of a good measurement:

Validity, Reliability, and Sensitivity – accuracy of the measuring instrument.

The Goal of Measurement: Validity and Reliability

Validity

- The ability of an instrument to measure what is intended to be measured.
- Validity of the indicator → Is it a true measure? Are we tapping the concept?
- Abstract ideas (construct) but concrete observations. Degree of fit between a construct and its indicators.

Researchers ask questions:

- Do colleagues agree with my measurement?

- Does my measure correlate with others' measures of the same concept?
- Does it really measure what is expected to measure?
- The answers provide some evidence of the measure's validity.

Types of Validity

1. Content validity
2. Criterion-related validity
3. Construct validity

1. Content Validity:

- Do the measures include an adequate and representative set of items that tap the concept?
- How well the dimensions and elements of the concepts have been delineated?
- Let us take the example of measuring *feminism*

Example of Feminism:

- Implies a person's commitment to a set of beliefs creating full equality between men and women – in areas of:
- Arts, intellectual pursuits, family, work, politics, authority relation. Dimensions
- Is there adequate coverage of dimensions?
- Do we have questions on each dimension?
- Panel of judges may attest the content validity of an instrument.
- Each panelist assesses the test items

Face Validity

- Basic and minimum index of content validity
- Items that are supposed to measure a concept, do on the face look like they measure the concept. For example:
- Measure a college student's math ability → ask: 2+2=? Not a valid measure of college level math ability.
- Subjective agreement among professionals about the measuring content.

2. Criterion-Related Validity

- Uses some standard or criterion to indicate a construct accurately.
- Compare the measure with another accepted measure of the same construct.
- Does the measure differentiate individuals on the criterion it is expected to predict?
- Two subtypes (a) concurrent validity, (b) predictive validity

a. Concurrent Validity:

- An indicator must be associated with a pre-existing valid indicator. Example:
- Create a new intelligence test. Is it highly associated with the existing IQ test?
- Do those who score high in old test also score high in new test? If yes, then valid.
- When a scale differentiates individuals who are known to be different should score differently on the instrument.

b. Predictive Validity

- Indicates the ability of the measuring instrument to differentiate among individuals as to future criterion.

- Aptitude test at the time of selection. Those who score high at time one (T-1) should perform better in future (T-2) than those who scored low.

3. Construct Validity

- Used for measures with multiple indicators.
- Do various indicators operate in consistent manner?
- How well the results obtained from the use of the measure fit the theories around which the test is designed? This is assessed through (a) *convergent* and (b) *discriminant* validity.

a. Convergent Validity

- Multiple indicators of a concept converge or are associated with one another.
- Multiple indicators hang together, or operate in similar ways. For example, we measure "education" as a construct.

Construct "education"

- Ask the level of education completed.
- Verify the certificates.
- Give a test measuring school level knowledge.
- If the measures do not converge i.e.
- People claiming college degree but not supported by college records, or those with college degree perform no better than high school drop-out on the test.
- The outcome of each does not converge. Weak convergent validity. Do not combine the three indicators into one measure.

b. Discriminant Validity

- Divergent validity.
- Indicators of one concept hang together or converge, but also diverge or are negatively associated with opposing constructs.
- If two constructs A and B are very different then measures of A and B should not be associated.
- Example of *political conservatism.*

Measuring Political Conservatism

- We have 10 questions to measure P C.
- People answer all 10 in similar ways.
- We put 5 additional questions that measure liberalism.
- Two scores are theoretically predicted to be different and are empirically found to be so.
- If the 10 conservatism items hang together and are negatively associated with 5 liberalism ones.
- It has discriminant validity.

RELIABILITY

- The degree to which measures are free from random error and therefore yield consistent results.
- Stability and consistency with which the instrument measures the concept and helps to assess the goodness of a measure.
- Maintains stability over time in the measurement of a concept.
- Two important dimensions of reliability: (a) stability and (b) consistency.

a. Stability of Measures

- Ability of the measure to remain the same over time.
- It attests to the "goodness" of measure because the measure of the concept is stable, no matter when it is applied.
- Two tests of stability: (1) test-retest reliability, and (2) parallel-form reliability

1. Test-Retest Reliability:

- Administering the same test to the same respondents at two separate times
- Use instrument for measuring job satisfaction at T-1. Satisfied 64%. Repeat after 4 weeks. Same results. Hi stability.
- Reliability coefficient obtained with repetition of the same measure on second occasion. Correlation between two scores.

Two problems with test-retest

- It is a longitudinal approach.

So:

1. It may sensitize the respondents.

2. Time may help change the attitude. Also maturation of the subjects.

- Hence the results may not show high correlation.
- Due time factor rather than the lack of reliability.

2. Parallel-Form Reliability

- Also called equivalent-form reliability.
- When responses on two comparable sets of measures tapping the same construct are highly correlated.
- Both forms/sets have similar items, same response format. Change the wording/ordering.
- Minimum error variance caused by wording, ordering, or other factors
- Split-half reliability → correlation between two halves of an instrument.

b. Internal Consistency of Measures

- Indicative of the homogeneity of the items in the measure.
- Items should 'hang together as a set,'
- Each item be capable of independently measuring the same concept.
- Examine if the items and subsets of items in the instrument are highly correlated.
- Two ways to do it.

1. Inter-item Consistency Reliability

- Test of consistency of respondents' answers to all items in a measure.
- To the degree that items are independent measures of the same concept, they will be correlated.

2. Split-Half Reliability

- Reflects the correlation between two halves of an instrument.
- One half could be of even numbered items and other half of odd numbered items.
- High correlation tells us about similarity among items

Note

- Reliability is necessary but not sufficient condition of to test of goodness of a measure.

- A measure could be highly stable and consistent, but may not be valid.
- Validity ensures the ability of the instrument to measure the intended concept.

Sensitivity

- Instrument's ability to accurately measure variability in responses.
- A dichotomous response category, such as "agree or disagree" does not allow the recording of subtle attitude changes.
- A sensitive measure, with numerous items on the scale, may be needed. For example:
- Increase items. Increase response categories. (Strongly agree, agree, neutral, disagree, strongly disagree). It will increases a scale's sensitivity

Practicality

- Validity, reliability, and sensitivity are the scientific requirements of a project.
- Operational requirements call for it to be practical in terms of *economy, convenience*, and *interpretability.*

19.Research Design.

Research Design

- A master plan specifying the methods and procedures for collecting and analyzing the data.
- A strategy or blueprint that plans the action for carrying through the research data.

Elements

- Series of components of research design

1. Purpose of the Study

- Study can be exploratory, descriptive, and explanatory.
- Present study can't be exploratory. We have already covered long distance.
- Can be either descriptive or explanatory.
- Who, what, where, when, or how much?
- Why? Explains the relationship.

Purpose determines how rigorous the study will be

- Decide about the purpose.
- Within explanatory →

- ❑ Correlational: identification of factors associated with the problem.
- ❑ Causal: establish definite cause-and-effect relationship.

- Help in deciding the mode of observation.

2. Unit of Analysis

- Refers to the level of aggregation of the data during data analysis stage.
- Is it at the individual, or at group, or at organization level.
- Raise the motivation level of employees. Collect data from individual employees. Aggregate analysis of information collected from individuals. Unit of analysis is *individual.*
- Study two person interaction – then several two person groups will become the unit of analysis (husband-wife, supervisor-subordinate, teacher-student – dyads)
- Group effectiveness – unit of analysis is group. Comparing different departments in the work organization.
- Research question determines the unit of analysis. Affects the data collection methods, sampling.
- Unit of *observation*. Information provider. Sometimes observe indirectly.

3. Time Dimension

- Make observation more than one time i.e. over a long period.

1. Cross-sectional studies.
2. Longitudinal studies. Repeated over an extended period. Employees behavior before and after top management change

- ❑ Panel studies
- ❑ Cohort studies

4. Researcher Control of Variables

- Researcher's ability to manipulate variables.
- Experimental design.

a. Non-contrived: natural environment. Field experiment. Correlational studies.

b. Contrived: artificial setting. Causal

- Ex-post-facto design. No control over the variables. Report only what has happened or what is happening. Survey research.

5. Mode of observation

- Depending upon the type of study (qualitative or quantitative, descriptive or causal, cross-sectional or longitudinal, contrived or non- contrived) researcher decides about the mode of observation.
- Survey, experiment, field observation, case study, focus group, communication analysis.

6. Sampling Design

- Selecting some of the elements in the population and draw conclusions about the total population.
- Population element is the subject on which measurement is being taken.
- Has its advantages and disadvantages.
- Selection of appropriate sampling design.

7. Observation Tools

- Questionnaire
- Interview schedule
- Interview guide

- Check list
- Researcher will specify the instrument along with justification of its appropriateness.

8. Field Data Collection

- Depending on the mode of observation, the researcher will outline the procedure.
- Field team selection, training, supervision.

9. Data Processing and Data Analysis

- Manual vs. mechanical data processing.
- Quantification of data. Data reduction (score index), tabulation.
- Data analysis plan: use of statistics, interpretations

Survey Research: An Overview

- Method of gathering primary data based on communication with a representative sample of individuals.
- Survey requires asking people (respondents) for information, using either verbal or written questions.
- Collect data on telephone, face-to-face, or other communication media.

Steps in Conducting Surveys

- Researcher follows a deductive approach.
- Begins with theoretical or applied research problem and ends with empirical measurement and data analysis.
- It has six broad steps.

Decide on the Type of Survey

- Type of survey → Mail, interview, telephone, computer assisted.
- Develop the instrument: questionnaire or interview schedule. Both are list of questions.
- Questionnaire: respondents read the questions themselves and mark answers on the questionnaire.
- Interview schedule: questions read to the respondent by an interviewer, who also records the answers.

Plan How to Record Data

- Researcher thinks ahead how the data shall be recorded and organized for analysis.
- Pilot test survey instrument on similar population.

Decide on Target Population

- Get sampling frame
- Decide on sample size
- Select the sample

4. Do the Field Work

- Locate sampled respondents in person, telephone, or by mail.
- Conduct interviews or administer questionnaires
- Carefully record the data.

5. Data Processing

- Enter data into computers
- Data cleaning

- Tabulation
- Perform statistical analysis on data.

6. Research Report

- Describe methods and findings in research report
- Present findings to others for critique and evaluation

20. Survey Research.

Two approaches to collect primary data

1. Observe → conditions, behavior, events, people, or processes
2. Communicate with people.
   - Selected approach determines the research design to be followed.

Communication Approach

- Involves surveying people and recording their responses for analysis.
- Versatile approach: variety of communication media can be used.
- Traditional communication media – Human interactive media.
- Modern communication – use of digital technology – Electronic interactive media.
- Non-interactive media.

Human Interactive Media

- Personal forms of communication. Face to face interaction of individuals and or groups.
- Can also be conversation on telephone

Electronic Interactive Media

- Use of digital technology to reach people.
- Respondents are actively involved. Internet – new electronic interactive media

Non-Interactive Media

- Traditional questionnaire received by mail
- Self administered questionnaires
- Questionnaires delivered through other means – Fax machine, uploading on internet, printing in the newspaper.

Choosing a Communication Media

Once decided about doing survey then collect data by using different media:

- Personal interviewing
- Telephone interviewing
- Mail questionnaire
- Self-administered questionnaire
- Computer assisted medium
- Mixed media

Personal Interviewing

- Face to face interaction between strangers
- Respondent provides information with little hope to receive any immediate or direct benefits.

- Personal interview can take place anywhere.

Advantages of
Personal Interviewing

1. The opportunity for feedback

- Clarify respondent's apprehensions. Assurance for confidentiality.
- Clarify questions asked. Clarify instructions given for responses.
- Debriefing

2. Probing Complex Questions

Probing implies the verbal prompts made by the interviewer when:

- Response is not clear.
- Enlargement of the response is needed.
- More needed in open ended questions.

3. Length of Interview

Compared with other interviews personal interviews can be lengthy, if needed.

4. High Completion Rate

- Interviewer to make sure that all applicable questions have been answered.
- In telephone, the respondent may just hang up in the middle.
- Personally administered questionnaire have high incompletion rate. Respondents don't want to write long answer for open ended questions.
- Item non-response: failure to provide an answer to a question. Low in personal interviewing

5. Props and Visual Aids

Can see the new product sample, taste a product and give his/her evaluation. It is not possible for telephone interview or a mail survey.

6. High Participation Rate

- The presence of the interviewer increases the % of people to participate.
- No reading, no writing – only talking. Share their feelings with friendly and sympathetic interviewers.

7. Observing the Non- Verbal Behavior

Interviewer can catch the body language, facial expressions. Observe the environment as well.

8. Non-Literates can Participate

Illiterate or functionally illiterate person can take part in the study.

9. Interviewer can Prescreen Respondent

- Respondent to fit the sampling criteria.
- Interviewer has some control over the environment.
- No control in mail survey, telephone interview, or internet interview

10. Computer Assisted Personal Interviewing

- Computer Assisted Personal Interviewing (CAPI) – Use of modern technology
- Microcomputers can be used for direct entry of responses. Reduces error and cost

Disadvantages of Personal Interviewing

1. High Cost

- Geographical proximity, length of questionnaire, No. of recalls – influence cost
- Training, supervision, logistical arrangements add to the cost.
- Estimates show 15 times higher than mail survey.

Scarcity of Highly Trained Interviewers

For quality study we need quality interviewers

3. Callbacks –A Labor Intensive Work

- Callbacks are attempts to re-contact the missing sample cases.
- Labor intensive work – increases cost.

4. Interviewer Influence

Demographic characteristics of the interviewer can influence the respondent's responses.

5. Interviewer Bias

Biases in understanding, recording, and interpreting the responses

6. No Opportunity to Consult

Interview may take place anywhere – the respondent unable to consult any record or person in case he has to.

7. Less Standardized Wording

- Interviewers may make alterations in wording, and sequencing of questions.
- Bias the data

8. Limitations of respondents' availability and accessibility

Some executive officers and VIPs are never available or not willing to talk to researchers.

9. Some neighborhoods difficult to visit

- Security reasons
- Some neighborhoods may not allow outsiders. Some others may be scary for the interviewers.

Door to Door Interviews

- Personal interviews at respondent's home or place of work.
- More representative than others. We walk through. Can catch those without phones or having unlisted numbers.
- May exclude living in multiple dwellings, high rise buildings, executives.
- People who are at home are special type – moms, retired persons

Intercept interviews in shopping mall

- Shoppers are interviewed at a central point in the mall or at the entrance.
- Low cost.
- Incidence of refusal is high.
- May not be a representative sample of the population.
- Each mall will have its own characteristics.
- High traffic areas – some fast food center

21.Sample & Sampling Terminology.

Sample

- A subset, or some part, of a larger whole.
- Larger whole could be anything – bucket of water, a bag of sugar, a group of organizations, a group of students, a group of customers, a group of mid-level managers.

Why sample?

1. Saves cost, labor, and time
    - To go for sample study is pragmatic.
    - In case population is extremely small, then go for total study. Census another word – total enumeration.

2. Quality Management
    - Professional fieldworkers – a scarce commodity.
    - Instead of doing on large population with less qualified staff, do a sample study with quality fieldworkers.
    - Easier to manage small group – quality control. Training, supervision, record keeping.

3. Accurate and Reliable Results
    - Properly selected samples are accurate.
    - Homogeneous population – only a small sample needed. Likely to be representative. Blood samples.
    - Large population. More non-sampling errors – interviewer mistakes, tabulation errors. Low quality supervision.

4. No Alternative but Sampling
    - For quality control testing may require the destruction of the items being tested e. g. Firecrackers, testing the life a bulb, Testing missiles.
    - This is destructive testing.

5. Determine the Period of Study

Census study requires long time, may be a year. Seasonal variation. For example, Study of unemployment rate over a year. Results refer to which part of the year.

6. Determine the Confidence Level
    - Calculate the sampling error – help in determining the confidence level in the data.
    - Sampling type may facilitate the use of powerful statistical tests for analysis.

Sampling Terminology

Number of technical terms used that need explanation.

1. Element

- Unit about which information is collected and is the basis of analysis. Can be a person, a group, a family, an organization, a community.

2. Population

- Theoretically specified aggregation of study elements.
- Translating the abstract concept into workable concept. College students. Theoretical explanation.
- Pool of all available elements is population.

3. Target Population

- Out of conceptual variations, what exactly is the focus.

- Complete group of specific population elements relevant to project.
- Call it *Survey population* – aggregation of elements for selecting a sample. e.g. study of college students – college students from Govt. institutions, studying social sciences, aged 19 years, and with rural background

4. Sampling

- Process of using a small number of items. Estimate unknown characteristics of population.
- Process of selection – Depending upon the type of sample to be used.

5. Sampling Frame

- List of population elements. Listing of all college students meeting the criteria.
- Also called as *working population* – list that can be worked with operationally. Prepare the list of relevant college students.

6. Sampling Unit

- That element or set of elements considered for selection in some stage of sampling.
- Sampling can be single stage or multistage. Simple or complex.
- In single stage, sampling units are the same as elements.
- In multistage, different levels of sampling units may be employed. Sampling of Mohallahs, the of households, and then adults. Primary, secondary, final.

7. Observation Unit

- Unit of data collection from which information is collected.
- Unit of observation and unit of analysis can be same or different. [Interview head of household (UoO) and collect information about every member (UoA)]

8. Parameter

- Summary description of a given variable in population (Mean income of families in the city, mean age)
- Survey research involves the estimation of population parameters.

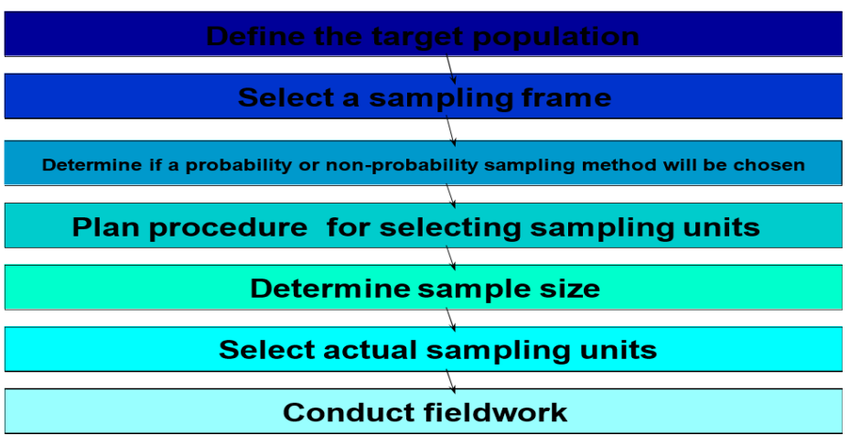
9. Statistic

- Summary description of a variable in survey sample. Mean income/age of the sample.
- Use it for estimation of population parameters

10. Sampling Error

- Probability samples seldom provide statistics exactly equal to parameters.
- Estimation of error to be expected for a given sample.

Stages in the Selection of a Sample



22. Probability & Non-Probability Sampling.

Major Alternatives to Sampling

- Probability
- Non-probability

Probability

- Every element in the population has a *known nonzero probability* of selection.
- Used when representativeness is crucial for wider gerenalizability.
- Can measure sampling error.

Non-Probability

- Probability of any element being chosen is unknown. Arbitrary – personal judgment.
- Time and other factors more crucial than generalizability.
- Cannot measure sampling error.
- Projecting data beyond sample is statistically inappropriate.

Types of Non-Probability Sampling

Convenience Sampling

- Also called *haphazard or accidental or grab sampling.*
- Obtaining units who are most conveniently available.
- Person-on-the street interviewed by TV people. Personal judgment.
- May not be representative. Least reliable.
- Used during exploratory phase

Purposive Sampling

- Researcher lays down the criteria for the subjects.
- Also called as *judgmental or expert opinion sample*. Selection depends upon the judgment of selector.

Quota Sampling

- Procedure that ensures certain characteristics of a population sample will be represented.
- Fix the quota. Use convenience sampling. Fieldworker bias in selection.
- Can be considered as proportionate stratified sampling – but on convenience basis.
- Speed of data collection, lower cost, and convenience.
- Ensures the inclusion of a subset when it is under-represented.

Snowball Sampling

- Also called: *network, chain referral, or reputational sampling.*
- Analogy of snowball.
- Begins with one/few, spreads out on the basis of links.
- Useful where respondents are difficult to identify.

Sequential Sampling

- Similar to purposive sampling.
- In purposive – get every possible case.
- In sequential – continuous evaluation of data. Stop when no new information is coming.

Theoretical Sampling

- Researcher selects cases based on his own insight.
- Used in observational studies

23. Types of Probability Sampling.

TYPES OF PROBABILITY SAMPLING

- Requires more work than non-random sampling.
- Researcher must identify sampling elements.
- Necessary to contact the sampled respondent. Call back several times.
- Likely to yield representative sample.
- Can determine the relationship between sample and population – Calculate the sampling error i.e. deviation between sample result and population parameter due to random process.

Simple Random Sample

- Assumption – homogeneous population.
- Develop an accurate sampling frame.
- Locate the exact element/s to be selected i.e. decide the sample size.
- Number all the elements in the sampling frame.
- Use the list/table of random numbers.

Table of Random Digits

37751	04998	66038	63480	98442	22245	83538	62351
50915	64152	82981	15796	27102	71635	34470	13608
99142	35021	01032	57907	80545	54112	15150	36856
70720	10033	25191	62358	03784	74377	88150	25567
18460	64947	32958	08752	96366	89092	23597	74308
65763	41133	60950	35372	06782	81451	78764	52645
83769	52570	60950	35372	06782	81451	84990	26400

- Take a random starting point.
- Characteristics of most random samples are close to the characteristics of population.
- Calculate the sampling error.

Systematic Random Sample

- Short cut for simple random sampling.

- Number each element in the sampling frame.
- Instead of using the table of random numbers, researcher develops a system for the selection of elements.
- Calculate the sampling interval. Basis of random selection.
- Sample size/Population size X 100 i.e. sample as % of population.
- Begin with a random start.
- Draw sample by choosing every Nth case.
- If elements are organized in some pattern in the sampling frame then problem. Possible periodicity in population.

Stratified Random Sampling

- In case population is heterogeneous, then stratify. Each stratum in itself becomes homogeneous.
- Researcher's decision about homogeneity of the population.
- Draw the sample from each stratum by using simple random sampling procedure.

Reasons for stratification

- To increase a sample's statistical efficiency. Each stratum gets represented. Reduces random sampling error. Makes the sample representative.
- Provides adequate data for analyzing the various subpopulations.
- Enables to use different research procedures in different strata.

Stratification Process

- Stratification based on the primary variable (Y). What characteristics of pop affect Y?
- Should increase homogeneity within stratum and heterogeneity between strata.
- Make sampling frame for each stratum.
- Serially number the elements.
- Use table of random numbers and select the sample from each stratum.

Proportionate vs. Disproportionate

- Proportionate: If the number of sampling units drawn from each stratum is in proportion to the relative population size of the stratum.
- Disproportionate: to ensure an adequate No. of sampling units in every stratum. Dictated by analytical considerations

Cluster Sampling

- Purpose: sample economically and retaining probability sampling.
- Heterogeneity within clusters but homogeneity between clusters.
- Random selection of clusters.
- Random selection of elements within the selected clusters.

Cluster sampling addresses two problems

- Researchers lack good sampling frame for dispersed population
- Reaching each sampled element is costly.

Multistage Sampling

- Researcher draws several samples in stages. For example:
- Cluster sampling is usually multistage →

stage1– random sampling of big clusters

stage 2– random sampling of small

clusters within the big ones

stage 3– random sampling of elements

within the selected small clusters

City blocks – households – individuals

Double Sampling

- When further information is needed from a subset of the group from which some information has already been collected for the same study.
- Want to examine the matter in more detail.
- Sub-sample of the primary sample

Appropriate Sample Design

Depends upon a number of criteria like:

1. Degree of accuracy.

2. Resources.

3. Advance knowledge of population.

4. National vs. local project. Geographic proximity of population.

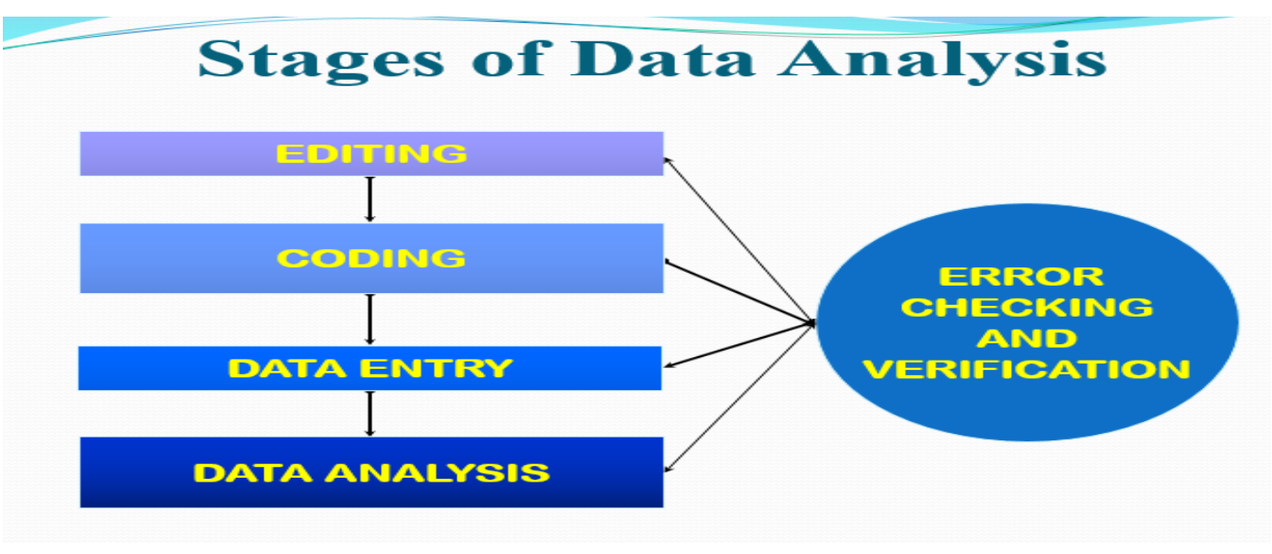
5. Need for statistical analysis. Projecting beyond the sample or the sample only.

24. Data Analysis.

Data Analysis

- Data processing and analysis is part of research design – decisions already made.
- During analysis several interrelated procedures are performed to summarize and rearrange data.
- Goal of most research is to provide information.
- Information: a body of facts that are in a format suitable for decision making.
- Data: simply recorded measures of certain phenomenon.

Stages of Data Analysis



Transformation of raw data into information

It is a lengthy process. Starts with:

- Editing, coding, and data storage.
- For storage and processing, many advantages to use computer.
- For computer storage follow the coding procedure.

Errors

Possibility of mistakes by fieldworkers e.g.

- Recording improbable answer
- Interviewing ineligible respondent
- Contradictory answers
- Editing should take care of such mistakes prior to coding

Editing

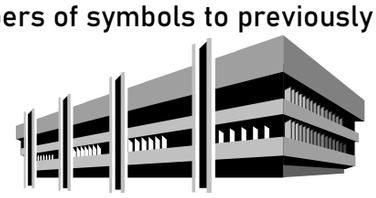
- Process of checking and adjusting the data for omissions, legibility, and consistency.
- Purpose is to ensure the completeness, consistency, and readability of data to be transferred storage.
- Editor may have to reconstruct some data (weekly income converted into monthly income)
- Bring to light the hidden values without bias.

Editing is not coding.

Coding is assignment of numbers of symbols to previously edited data.

Editing

IN-HOUSEEDITING



Field Editing

- Fieldworkers and then supervisors to do the field edits.
- Do the editing the same day.
- Catch technical omissions (blank page)
- Check legibility of hand writing.
- Clarify inconsistent responses.
- Supervisor can question thee interviewers.
- Callback if needed.
- Do the interviewers need additional training.

In-House Editing

- Rigorously investigates the results of data collection.
- For mailed questionnaire in-house editing is the only option.

Editing for consistency

- Adjust the inconsistent and contradictory responses (wrong person interviewed). Editor to make sure that the sampling unit is consistent with the objectives.
- Check for logical consistency of responses Answer to one question is consistent with answer to another related question.
- Are the questions applicable to respondent.
- Editor should adjust for consistency

Editing for completeness

- Respondent may have answered only the 2nd portion of the 2 part question e.g. Does your organization have more than one Internet Web site? Yes ___ No ___
- In the following question he answers 3 web sites.
- Editor to complete the missing answer.

Item non-response

- Non-response a technical term for an unanswered question on an otherwise complete questionnaire.

Specific decision rules:

- do nothing (missing value)
- If necessary → use plug value – *Plug in an average or neutral value. *Mean value of all who have answered that question. * Mean value of responses of this respondent. * Alternate the response categories (yes, no, yes, no)
- Decide whether or not the entire questionnaire is usable.

"I Don't Know"

- Legitimate don't know
- Reluctant don't know
- Confused don't know

Tabulation of "don't know"

- Make a decision about "don't know"
- Make a separate response category but eliminate the "don't know" answers from the percentage base.
- Can we distribute the "don't know" among other categories (proportionately). Not recommended.

Editing questions answered out of order

- Usually happens in interviewing
- An answer to an open ended question
- A respondent may have provided answer to a subsequent question in his answer to an earlier question.
- Interviewer may have avoided to asking the subsequent question. Skipped the question
- The editor may move the out-of-order answer to the section related to the skipped question.

Coding

- Coding involves assigning numbers or other symbols – responses can be grouped into classes or categories
- Helps in efficient analysis of data.
- Keep the data in raw form so far it is possible. Computer can help in grouping.
- Codes allow data processing in a computer.

Organize data into:

- A field: collection of characters (single No., letter, symbol) representing single type of data.
- A record: collection of related fields.
- A file: collection of related records.

Coding procedure

- It is a set of rules stating that certain numbers are assigned to a variable attributes e.g. code male as 1 and female as 2. Missing information also needs a code.
- Coding procedure should be recorded.

- A codebook is a document describing the coding procedure and the location of data for variables in a format that computers can use.

Pre-coding

- Researchers think of coding procedures before they collect data.
- Survey researcher pre-codes a questionnaire
- Pre-coding means placing the code for each of the categories on the questionnaire.
- Otherwise coding done after editing.
- Transfer the coded data into a format that computers can read.

Code Construction

- For closed ended questions, the number of categories requiring codes is determined during questionnaire design.
- Conventionally code 8 and 9 are given to "don't know" (DK) and "no answer" (NA)

Two basic rules for code construction

- Coding categories should be *exhaustive* i.e. coding category provided for every possible response.
- Coding categories should be *mutually exclusive* and *independent.*

Coding open-ended questions

- Pre-coding easier for closed-ended questions.
- Framework for classifying responses to open-ended question not possible before data collection.
- Give thought after editing.
- Reduce large number of responses to a few general categories of answers – assign numerical scores
- Depends upon the researcher's judgment.

Codebook

- A book identifying each variable in a study and its position in the data matrix. The book is used to identify a variable's description, code name, and field.

Q/V No.	Field/ col. No.	Code values
--	1-5	Study number
-	6	City
		1 = Lahore
		2 = Rawalpindi
		3 = Karachi
	7 -9	Interview No.
Sex	10	1 = Male
		2= Female
Age	11-12	Actual
Education	13	1 = Non literate 2 = Literate

Production Coding

- Transferring the data from the questionnaire after data collection.
- Depending upon the nature of data collection form, codes may be written directly on the instrument, or on a special coding sheet.

Data Entries

- The process of transforming data from the research project to computers.
- Optical scanning systems

- Marked-sensed questionnaires

Recoding

- Recoding is the process of using a computer to convert original codes used for raw data to codes that are more suitable for analysis.
- Var1 = 8 - Var1

Cleaning data

- Error checking and verification – make sure that all codes are legitimate.
- No errors in coding process, as well as entering data into a computer.

25. Data Transformation.

Data transformation

- The process of changing data from original form to a form that is more suitable to perform data analysis.
- Data conversion
- Changing the original form of the data to a new format
- More appropriate data analysis
- New variables

Data conversion

- The process of changing data from original form to a form that is more suitable to perform data analysis.
- Researchers modify the values. From date of birth calculate the age. Subtract the birth year from the current year. Call it data conversion

Reducing the categories

- Collapsing or combining categories of a variable.
- Strongly agree + Agree = 1
- Undecided = 2
- Disagree + Strongly= 3

  disagree
- Reducing from 5 categories to 3 categories

Creating New Variables

Creating new variable by re-specifying the data numeric or logical transformation e.g. Summative score = var1 + var2 + var3

Transformation

- Measurement of social phenomenon. Some can be measured directly (family income)
- Some others require the use of surrogates or proxies (job satisfaction).
- Also draw upon others' measures, already developed. Modify according to need.

Indexes and Scales

- Indexes and scales often used interchangeably.
- *Scale* is a measure to capture the intensity, direction, level, or potency of a variable. Arranges responses on a continuum. A scale can use single indicator or multiple indicators. Ordinal level.
- *Index* is a measure in which researcher adds or combines several distinct indicators of a construct into a single score. Composite score.

Scales and indexes combined

- Combine the features of scales and indexes in a single measure.
- Several indicators that are scales.
- Add these indicators to yield a single score.

Uni-dimensionality

- All items in a scale or index fit together i.e. measure a single construct.
- Combine several specific pieces of information into a single score or measure.
- All pieces measure the same construct (each sub-dimension is part of the construct's overall content)

Examples

- Feminist ideology: ideology about gender. It is an abstract and general construct.
- Includes specific beliefs and attitudes towards social, economic, political, family, sexual relations. All 5 areas are part of single general construct.
- Parts are dimensions. Parts mutually reinforcing and together form a system of beliefs about dignity, strengths and power of women.

Index Construction

- Index is combination of items into a single numerical score. Various components or subgroups of a construct are each measured, then combined into one measure.
- Example of consumer price index (CPI):
- CPI is created by totaling the cost of buying a list of goods and services (food, rent, utilities).
- Compare this cost with previous year. May indicate inflation.

Many types of indexes

- Exam with 25 MCQ. Total number of correct answers is a kind of index – a composite measure in which each question measures a small piece of knowledge.
- All questions scored correct or incorrect are totaled to produce a single measure.

Occupational rating index

Answer 'yes' or 'no' to the seven questions that follow on the characteristics of an occupation (truck driver, medical doctor, accountant, telephone operator). Score 1 for yes and 0 for no.

1. Does it pay good salary?
2. Is the job secure from layoffs or unemployment?
3. Is thee work interesting and challenging?
4. Are its working conditions (e.g. hours, safety, utilities) good?
5. Are there opportunities for career advancement and promotion?
6. Is it prestigious or looked up-to by others?
7. Does it permit self-direction and the freedom to make decisions?

The seven questions are our operational definition of the construct good occupation

Rating index

- Total the 7 answers for each of the four occupations.
- Which occupation had the highest and the lowest score?
- Measure the parts of a construct with multiple indicators.

Face Validity of items

- Every item in the index should have face validity.
- Each part of the construct should be measured with at least one indicator.
- Better to measure the parts of a construct with multiple indicators.

Example of college quality index

Dimension of quality college:

- Fewer students per faculty member,
- A highly educated faculty,
- More books in library,
- Fewer students dropping out of college,
- More students go to advanced degrees,
- Faculty members publish research papers.
- Score 100 college on each item, then ad the score for each to create an index score of college quality

Combine the score index for a dimension

- Add a sub-index on teaching quality. The index contain 8 elements:
- Average size of classes;
- Percentage of class time devoted to discussion
- Number of different classes a teacher teaches;
- Availability of faculty to students outside class;
- Currency amount of readings assigned;
- Degree to which the faculty get to know each student;
- Student ratings of instruction.

College quality index

- Similar sub-index measures can be created for other parts of college quality index.
- Combine all into a more global measure of college quality.
- Measures the definition of a construct “quality of college”

Weighting – important issue

- Whether or not to weight each item.
- Unless otherwise stated, assume that an index is un-weighted.
- Un-weighted index gives equal weight to each item.
- Add up the items without modification

Scoring

- Remember the measurement of job satisfaction. (dimensions and elements).
- Number of statements on each element.
- Likert scale (5) response categories: Strongly agree, agree, neutral, disagree, s. disagree.
- There are positive and negative statements.

- For positive statements, score S. agree = 5, agree = 4, neutral = 3, disagree = 2, s. disagree = 1.
- For negative statements reverse the scoring.

No.	Statements	S. Agree	Agree	Undecided	Disagree	S. Disagree
1	I have a good opportunity for advancement in my job	√				
2	I feel very comfortable with my co-workers	√				
3	My pay is adequate to meet my necessary expenses		√			
4	My work gives me a sense of accomplishment				√	
5	My boss is impolite and cold			√		
6	My job is a dead-end job					√
7	The company of my co-workers is boring					√
8	Pay at my level is less as compared to other organizations		√			

No.	Statements	S. Agree	Agree	Undecided	Disagree	S. Disagree
1	I have a good opportunity for advancement in my job	√ 5				
2	I feel very comfortable with my co-workers	√ 5				
3	My pay is adequate to meet my necessary expenses		√ 4			
4	My work gives me a sense of accomplishment				√ 2	
5	My boss is impolite and cold			√ 3		
6	My job is a dead-end job					√ 5
7	The company of my co-workers is boring					√ 5
8	Pay at my level is less as compared to other organizations		√ 2			

Score Index

- There were 23 statements for different elements.
- On each statement a person could get a score of 1 to 5.

- Total score for a person could range from a minimum of (23 X 1=) 23 to a maximum of (23 X 5 =) 115.
- Lower score indicating low job satisfaction and high score as high job satisfaction

Use of score index

- Different variables can have different score indexes.
- Use raw score indexes and apply appropriate statistics for testing the hypothesis.
- Can also divide score index into different categories like high job satisfaction and low job satisfaction.
- Cross-classify with some other variable, apply appropriate statistics and test the hypothesis.

26. Data Presentation.

Tables and Graphs

- Tabular and graphic presentation may take number of forms.
- Purpose is to facilitate the summarization and communication of the meaning.
- Bar charts, pie charts, curve diagrams, pictograms, and other forms can create strong visual impression.

Facilitation by Computer Technology

Commercial packages like:

- SAS, Statistical Package for the Social Sciences (SPSS), SYSTAT, Epi Info, MINITAB.
- User friendly packages are at the command of researcher.

Frequency Distribution

- Several useful techniques for displaying data.
- Easiest way to describe the numerical data is with a frequency distribution.
- Data of 400 students with different demographic characteristics.
- Let look at by gender.

Table 1: Frequency distribution of students by gender

Gender	Frequency	Percent
Male	300	75
Female	100	25
Total	400	100

Graphic Presentation

- Common types: histograms, bar charts, pie charts
- Graphic presentation lays emphasis on visual presentation over summary statistics.
- Summary statistics may obscure, conceal, or even misrepresent the underlying structure of data.

Interpretation

- Presented data have to be translated into some meaningful understanding.
- Explain the meaning for drawing inferences and conclusions.
- In order for interpretation, data have to be meaningfully analyzed.
- Statistics help for analysis.

Statistics

Different meanings:

- Set of collected numbers (No. of people living in a city)
- Branch of applied mathematics: used to manipulate and summarize the features of numbers.
- Use both. Descriptive statistics often used for univariate analysis.

Bivariate Tables

- Bivariate contingency table widely used.
- The table is based on cross tabulation.
- Cases are organized in the table on the basis of two variables at the same time.
- A contingency table is formed by cross-tabulating two variables.
- Contingent because the cases in each category of a variable get distributed into each category of second variable

Constructing bivariate and percentage table

Let us take two variables:

- Age of the respondents.
- Attitude toward women empowerment.
- Age of the respondents ranged from 25 to 70 years.
- The attitude index has three categories of 'highly favorable,' 'Medium favorable,' and 'low favorable'

First let us make two univariate tables

- The age variable has so many categories that making a bi-variate table with that much categories becomes unwieldy and meaningless.
- Regroup (recode) the age categories into three i.e. under 40, 40 – 60, 61+

Univariate table for age

Table 2: Age of the respondents.

Age (Yrs.)	Frequency	Percent
Under 40	1000	33.3
40 – 60	1000	33.3
61 +	1000	33.3
Total	3000	100

Univariate table for attitude

Table 3: Attitude towards women empowerment

Attitude	Frequency	Percent
Hi Favorable	1100	37
Med Favorable	1050	35
Lo Favorable	850	28
Total	3000	100

Bivariate table

Table 4: Age by attitude towards women empowerment .

Level of	Age (in years) under 40		40 –60		61 +		Total	
attitude	F.	%	F.	%	F	%	F	%
Hi Favorable	600	60	300	30	200	20	1100	37
Med. Favorable	300	30	500	50	250	25	1050	35
Lo Favorable	100	10	200	20	500	50	850	28
Total	1000	100	1000	100	1000	100	3000	100

27. The Parts of the Table.

The parts of the table

1. Give each table a number.

2. Give each table a title.

3. Label the row and column variables, and give name to each of the variable categories.

4. Include the totals of the columns and rows. These are called as marginals.

5. Each number or place that corresponds to the intersection of a category for each variable is cell of a table.

6. Missing information to be given under the table.

Percentaging

- Researchers convert raw count tables into percentages to see bivariate relationship.
- Three ways to percentage a bivariate table: by row, column, and for the total.
- Percentages by row and column are often used and show relationship

Right way to percentage

- Percentage by row or by column. Either could be appropriate.
- Decision based on researcher's hypothesis.
- Age affects attitude towards women empowerment.
- Look at the table, see where is the independent variable. See in which direction its values are being added up. Percentage in the same direction

Reading a table

- Once we know how table is made, reading it and figuring out what it says are much easier.
- Look at the title of table, the variable labels and background information.
- Look at the direction in which percentages have been computed – in rows or columns

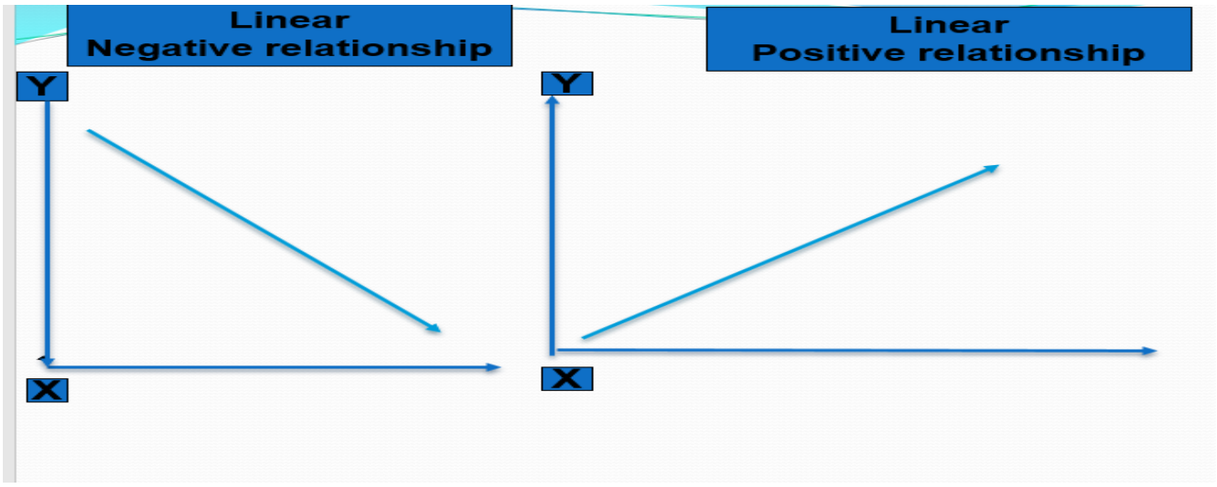
Read percentaged tables to make comparisons

- Comparison are made in the opposite direction from that in which percentages are computed.
- Compare across rows if the table is percentaged down the column.

How to figure out relationship?

If no relationship:

- Percentages look approximately equal across row or columns.
- A linear relationship looks like larger percentage in diagonal cells.



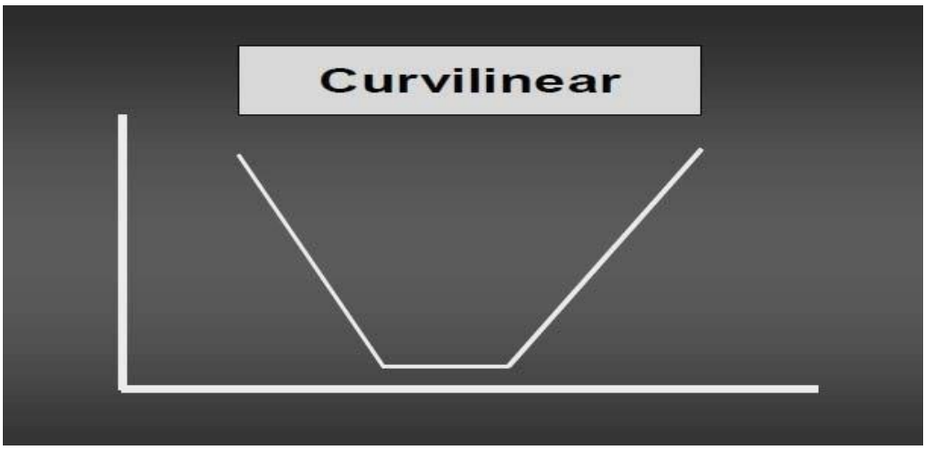
Linear relationship

Table 4: Age by attitude towards women empowerment

	Age (in years)							
Level of	under 40		40 –60		61 +		Total	
attitude	F.	%	F	%	F	%	F	%
Hi Favorable	600	60	300	30	200	20	1100	37
Med. Favorable	300	30	500	50	250	25	1050	28
Lo Favorable	100	10	200	20	500	50	850	28
Total	1000	100	1000	100	1000	100	3000	100

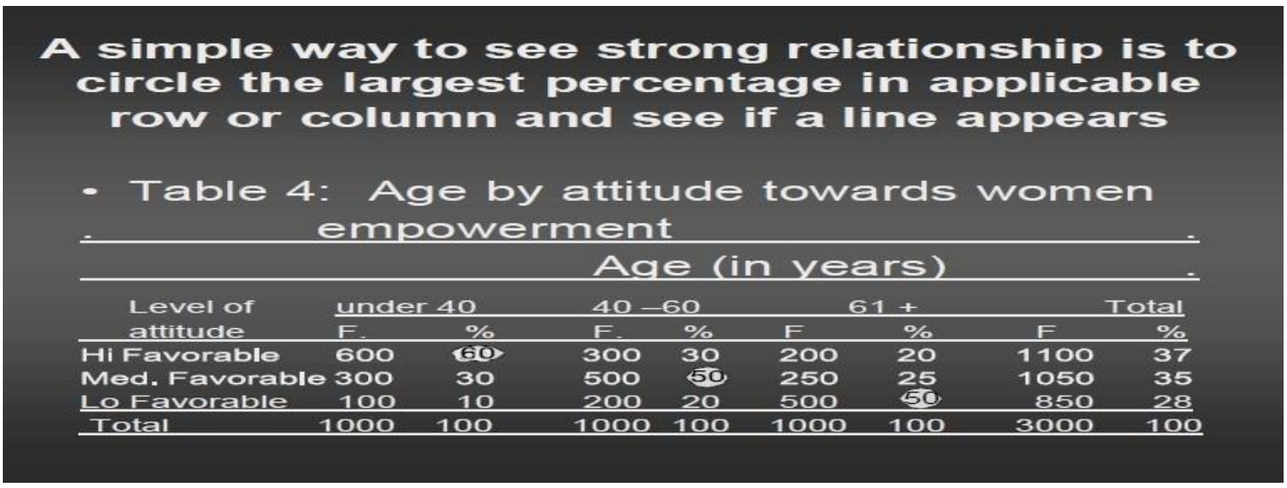
- Larger percentages in the diagonal cells

If there is curvilinear relationship, the largest percentages form a pattern across cells e.g. the largest cells might be the upper right, the bottom middle, and the upper left.



It is easier to see relationship in a moderate sized table (9 cells) where most cells have some cases (at least 5 cases)

A simple way to see strong relationship is to circle the largest percentage in applicable row or column and see if a line appears



Is the relationship genuine?

- Eliminate alternative explanations – explanations that can make the relationship *spurious.*
- Experimental researchers do this by choosing a research design that physically controls potential alternative explanations for results. Control prior to the start of experiment

In non-experimental research:

- A researcher controls for alternative explanations with statistics.
- Measures possible alternative explanations with *control variables*
- Examines the control variables with multivariate tables and statistics and decides whether a bivariate relationship is spurious.

Control for third factor

- Two variable table. Relationship between age of people and attitude towards women empowerment.
- To see the spuriousness of X and Y introduce third variable i.e. gender.
- Control the effect of gender i.e. the effect of gender is statistically removed.
- After control, does the bivariate relationship still persist?

Control for gender

- Under each category of male and female, negative relationship between age and attitude persists. Relationship is not spurious.
- If bivariate relationship weakens, or disappears, then age is not the factor affecting the attitude.
- Difference in attitude is due to gender.

Statistical control

- A measure of association tested for its genuineness by controlling third variable.
- Researchers are cautious in their interpretations.
- Look for net effect.
- Go for trivariate percentaged table or multiple regression

Trivariate Table

- Test the alternative explanation. 3rd factor.
- Control for third variable. Make a trivariate table.
- It has a bivariate table of XY for each category of control variable.
- The new tables may be called partials.
- No. of partial depends upon the No. of categories of control variable.

- Partial tables look like bivariate tables, but use subset of the cases. Break apart a bivariate table to form partials

Limitations

- Difficult to interpret if control variable has more than four categories.
- Total number of cases may be limiting factor because cases are divided into cells in partials. Thinning out of data. On average 5 cases per cell recommended.

Partial table for males

Level of	Age (in years)							
	Under 40		40—60		61+		Total	
Attitude	F	%	F	%	F.	%	F.	%.
High	300	60	200	33	30	6	530	33
Medium	140	28	270	45	120	24	530	33
Low	60	12	130	22	350	70	540	34
Total	500	100	600	100	500	100	1600	100

Partial table for females

Level of	Age (in years)							
	Under 40		40—60		61+		Total	
Attitude	F	%	F	%	F.	%	F.	%
High	350	70	200	50	20	4	570	41
Medium	150	30	150	38	220	44	520	37
Low	-	-	50	12	260	52	310	22
Total	500	100	400	100	500	100	1400	100

Replication pattern

- When the partials replicate or reproduce the same relationship that existed in bivariate table prior to control
- Control has no effect.

The specification pattern

- When on partial replicate the same relationship but others do not.
- The researcher can specify in which partial there is strong relationship and where it is not.

The suppressor variable pattern

- When the bivariate table suggests independence of X and Y but the relationship appears in one or more partials.
- The control variable is suppressor – the true relationship appears in partials.

Multiple regression analysis

28. Experimental Research.

Replication pattern

- When the partials replicate or reproduce the same relationship that existed in bivariate table prior to control
- Control has no effect.

The specification pattern

- When one partial replicate the same relationship but others do not.
- The researcher can specify in which partial there is strong relationship and where it is not.

The suppressor variable pattern

- When the bivariate table suggests independence of X and Y but the relationship appears in one or more partials.
- The control variable is suppressor – the true relationship appears in partials.

Multiple regression analysis

- Controls for many alternative explanations and variables simultaneously.
- Referred to course on statistics.
- Also there are a number of statistical tests that can be applied to test the hypothesis. Here again reference has to be made to course on statistics.

Logic of experiments in natural sciences

- Applied in experiments on human social behavior.
- Experiments are found in psychology, education, criminal justice, journalism, marketing, nursing, political science, social work, and sociology.
- Logic: *Control* the research situation, and evaluate the *causal* relationship among variables

In experiments

- The researcher manipulates a single variable and holds constant all others, extraneous variables.
- The way events are controlled in experiments is not possible in a survey.
- The researcher gains the confidence that his experimental treatment is the cause of the effect he measures.
- Theoretically there is high degree of control on the research situation.
- X is manipulated and its effect on Y is measured.
- The effect of all other variables is controlled.
- Researcher creates an artificial situation or deliberately manipulates a situation.

To establish causal relationship between X and Y

All three conditions to be met:

1. X and Y should co-vary.
2. X should precede Y.
3. No other factor should possibly cause change in Y.

By controlling all other factors that can affect Y allows the researcher to say that X and X alone causes Y. Not possible to control other factors in an organization where some events occur naturally.

Parts of experiments:

No fixed number. Usually seven parts:

1. Treatment or independent variable
2. Dependent variable.
3. Pretest
4. Posttest
5. Experimental group.
6. Control group.
7. Assignment of subjects

Treatment or independent variable

- The experiment has some degree of control over X. Values can be manipulated.
- Treatment is what researcher modifies.
- Term comes from medicine: a physician administers a treatment to patients.
- Physician intervenes in a physical or psychological condition to change it. Hence it is X variable or the combination of many Xs.

Experimenter creates a situation

- Degree of fear – levels are high-fear or low fear.
- The researcher puts the subjects into either high-fear or low-fear situation.

Dependent variable

- The criterion or standard by which results are judged.
- Assumption: changes in Y are a consequence of changes in the X.
- The outcome of experimental research are the physical conditions, social behaviors, attitudes, or beliefs of subjects that change, in response to treatment.
- Measure Y by observations, interviews, or physiological responses (e.g. heartbeat)

Pretests and Posttests

- Frequently a researcher measures the Y more than once during an experiment.
- *Pretest* is the measurement of Y prior to treatment.
- *Posttest* is the measurement of Y after the treatment introduced into the experimental situation.

Experimental and Control groups

- Divide subjects into 2 or more groups for purposes of comparison.
- A simple experiment has only 2 groups, only one of which receives the treatment.
- Experimental group is the one that receives the treatment or in which treatment is present.
- Group that does not receive the treatment is control group.
- When X has many different values, more than one experimental group is used.

In a simple experiment

- Only two values of the X are manipulated. E.g. Consider measuring the influence of a change in work situation, such as playing music during working hours, on employee productivity.
- In the experimental condition (the treatment administered to the experimental group), music is played during working hours.
- In control group (treatment not administered) no change in work situation.
- Productivity in the two groups is compared at the end to determine the effect of X.

Several treatment levels

- The music/productivity experiment with one experimental and on control group may not tell the researcher everything about the relationship
- For understanding the functional nature of relationship between music and productivity at several treatment levels, additional experimental groups with music played for 2 hrs, only for 4 hrs, and only for 6 hrs.
- Allows the experimenter to get a better idea about the impact of music on productivity.

Assignment of Subjects/Test Units

- Social researchers frequently want to compare.

- Compare cases that do not differ.

Requires:

- Groups should be similar in characteristics
- Change in Y is presumably the outcome of the manipulation of X variable, having no alternative explanations.

Random assignment

- Ramdomization is a method for assigning the cases (individuals, organizations) to groups for making comparisons.
- It is a way to divide or sort a collection of cases into 2 or more groups in order to increase one's confidence that the groups do not differ in a systematic way.
- In a mechanical method; the assignment is automatic, and the researcher cannot make assignments on the basis of personal preference or the features of specific cases.
- Random assignment is random in statistical/mathematical sense not in everyday sense.
- In every day speech, random means unplanned, haphazard, or accidental, but it has special meaning in mathematics.
- Random describes a process in which each case has a known chance of being selected.
- A random process is the one in which all cases have an exactly equal chance of ending up in one or the other group.
- It is unbiased.
- Makes the groups identical, except for treatment

Matching

- Matching the subjects on the basis of pertinent background information is another technique for controlling assignment errors.
- Matching presents a problem: What are the relevant characteristics to match on, and can one locate exact matches. Cases could differ in a number of ways.
- Randomization preferred. Takes care of contaminating factors.

Three types of controls

- Manipulation: control over stimulus/treatment.
- Holding conditions constant i.e. control over the environment (the confounding factors).
- Control over the composition of groups – balancing. Find out the way that individual differences do not confound the X variable under investigation. Randomization is the answer.

29. Experimental Research (cont.).

Steps in conducing an Experiment:

- Begin with an hypothesis.
- Decide on an Exp design to test H.
- Decide how to introduce X.
- Develop a measure of Y.
- Set up an experiment and do pilot testing.
- Locate appropriate subjects.
- Randomly assign subjects to groups and give instructions.
- Gather data for the pretest of Y.
- Introduce the X to experimental group only and monitor all groups.
- Gather data for posttest of Y.
- Debrief the subjects by informing them of the true purpose of experiment.

- Examine data, make comparisons between groups. Test Hypothesis.

Types of Designs

Quasi Experimental Designs:

- One-shot case study design. One group posttest only design.
- One group experiment→
- Pretest (O1) X Posttest (O2). No control group for comparison. [O2 - O1] = Effect
- Two groups experiment → posttest with experimental and control group →

Exp. Group X O1

Control Group - O2

[O1 – O2] = Treatment Effect.

True Experimental Designs:

- Includes experimental and control group. Pretest and posttest to both groups. X only in experimental group. (Ex-post facto experimental design.)
- Exp: Pretest (O1) X Posttest (O2)

Con: Pretest (O3) - Posttest (O4) Randomization for group set up.

- [(O2-O1) – (O4-O1)] = Treatment effect

Solomon 4 Group Design:

To gain more confidence, it is advisable to set up 2 exp groups and 2 cont groups. One exp and one control group be given both pretest and posttest. Other two are given posttest only.

Exp: Pretest (O1) X Posttest (O2)

Con: Pretest (O3) - Posttest (O4)

Exp: - X Posttest (O5)

Con: - - Posttest (O6)

(O2 – O1) = E (O2 – O4) = E

(O5 – O6) = E (O5 – O3) = E

[(O2 – O1) – (O4 – O3)] = E

If all Es are similar, the cause and effect relationship is highly valid.

Interaction Effect:

- Effect of 2 variables together is likely to be greater than the individual effect of each. For example:
- Population of smokers → 30% got lung cancer
- Population of nonsmokers but living in a smoggy climate → 10% got lung cancer.
- Pop of smokers + living in smoggy area → 45% got lung cancer instead of (30+10) 40%.
- Difference between 45-40= 5 is the interaction effect (smoking + smoggy climate)

In experiment

Interaction between treatment + sensitization due to the instrument.

Exp: Pretest (O1) X Posttest (O2)

Con: Pretest (O3) - Posttest (O4)

Why difference in O4 and O3? *Sensitization*.

Exp: - X Posttest (O5)

(O2 – O1) = D

(O4 – O3) = D/

(O5 – O3) = D//

D – [D/ + D//] = Interaction effect.

Further Experimental Designs:

- Randomized Block designs.
- Latin square Design.
- Natural Group Design.
- Factorial Design.

Validity in Experiments

- Validity refers to confidence in cause and effect relationship.
- Internal validity is high in Laboratory experiments.
- External validity (generalizability) is not sure.

Factors Affecting Internal Validity:

History Effect: Other historical events may affect the X – Y relationship. In addition to advertisement --- something else happens (Virus, some legitimacy)

Maturation Effect: With passage of time, biological and psychological maturity. Growing older, getting tired, feeling hungry

Testing Effect: Pretests. Sensitization.

Instrumentation Effect: Change in measuring instrument between pretest and posttest.

Selection Bias Effect: Improper or unmatched selection of subject for groups.

Statistical Regression: If extremes are taken then they tend to regress towards mean. Those who are at either end of the extreme would not truly reflect the cause and relationship.

Mortality: Attrition of subjects. Subject loss. Random groups do not remain comparable.

Mechanical Loss: Equipment failure

- Experimenter Expectancy: May indirectly communicate desired findings to subject.
- *The double blind experiment* is designed to control EE. Both the subjects and those in contact with them are blind to details of the experiment.

Ethical Issues in Lab Experiments:

- Putting pressure on subjects to participate.
- Asking demeaning question.
- Deceiving subjects by deliberately misleading them.
- Exposing participants to physical or mental stress.
- Not allowing subjects to withdraw.
- Using results to disadvantage the subjects
- Withholding benefits from control group.

30. Experimental Research (Continued).

Validity in Experiments

Validity refers to confidence in cause and effect relationship.

Internal validity is high in Laboratory experiments. Controlled environment.

External validity (generalizability) is not sure. Organizational or field setting. Several confounding variables. Field experiments have more external validity but less internal validity.

First have lab experiments then test in field setting.

Factors Affecting Internal Validity

- Even the best designed lab studies get influenced by some factors.
- Some confounding factors that can pose threat to internal validity. Sensitization.

1. History Effect

Other historical (unexpected) events may affect the X – Y relationship. In addition to advertisement --- something else happens (Virus, some legitimacy, some chemical like formalin used as preservative in packed milked) e.g. a bakery is studying the effects of adding nutrients to its bread on 14 yr old within 30 days. Health status (X) treatment on 20th day outbreak of flue affecting children in experiment. Unforeseen event of history.

2. Maturation Effect

- With passage of time, biological and psychological maturity; operating within the subject. Growing older, getting tired, feeling hungry, getting bored. Affect the Y
- Introduce technology and see its effect after 3 months. Is this technology effect or just the experience?

3. Testing Effect

- Pretests given to subjects (questionnaire).
- Exposure to pretest influences posttest.
- Pretest of Job satisfaction (Y before) Treatment (X) Posttest of job satisfaction. Role of sensitization.

4. Instrumentation Effect

- Change in measuring instrument between pretest and posttest.
- Performance measured by i). the units of output, 2). number of units rejected, and the amount of resources expended to produce the units.

5. Selection Bias Effect

- Improper and unmatched selection of subject for groups.

6. Statistical Regression

- If participants chosen for experimental group have extreme scores on the dependent variable to begin with then laws of probability say that those with very low scores on a variable have a greater probability to improve and scoring closer to mean on the posttest after treatment. This phenomenon of low scorers tending to score closer to the mean is known as “regressing toward the mean.”
- Likewise, those with high scores have a greater tendency to regress toward the mean – will score lower on the posttest than on pretest.
- The extremes will not ‘truly’ reflect the causal relationship. Threat to internal validity.

7. Mortality

- Attrition of subjects. Subject loss. Affects the group composition. Random groups don’t remain comparable.
- Reaction of those who had left and those who stayed could be different

8. Mechanical loss

- Equipment failure

9. Experimenter Expectancy

- Experimenter’s behavior may threaten causal logic.

- May indirectly communicate the desired findings to subjects. Just by explaining the hypothesis. Study the reactions of subjects to the disabled. Explaining the gender differences. Females expected to react differently (being more sensitive to disabled) try to react differently from males.
- *Double blind experiment*: to control experimenter expectancy. Both the subjects and experimenters are blind to details of experiment.
- *Placebo* – a false treatment that appears to be real

External Validity

- Even if the researcher eliminates all concerns for internal validity, external validity remains a potential problem.
- *External validity* is the ability to generalize experimental findings to real life situations.
- Without external validity, findings are of little use for both basic and applied research.
- Threats to external validity: Reactivity

Reactivity

- Subjects may react differently in an experiment than they would in real life; because they know they are in a study.
- The *Hawthorn effect*, a specific kind of reactivity.
- Researchers modified many aspects of working conditions and measured productivity. Productivity rose after each modification.
- Workers did not respond to treatment but to the additional attention they received (being in the experiment and being the focus of attention.
- Demand characteristics another type of reactivity. Change behavior as demanded.

Ethical Issues in Lab Experiments

- Subjects to be fully informed. Subjects' right. Deceiving subjects by deliberately misleading them – unethical. Demand characteristics can invalidate an experiment. Ethics of not providing complete information.
- Debriefing necessary. Providing subjects with all the pertinent facts about the nature and purpose of the experiment. Could relieve the stress. Provide educational experience

Ethical Issues [continued]

- Putting pressure on subjects to participate. Coercion or applying social pressure.
- Giving menial tasks and asking demeaning question. Diminish self respect.
- Exposing subjects to physical or mental stress.
- Not allowing subjects to withdraw.
- Using results to disadvantage the participants.
- Not explaining the procedures to be followed in the experiment.
- Not preserving the privacy and confidentiality of information given by subjects
- Withholding benefits from control groups (incentives – training – offered to experiment groups but not to control group). Debatable.

Human Subjects Committee

- To protect the rights of participating subjects.
- Ethics Committee on Research

31.Non-reactive Research.

Reactive Research

- People being studied are aware of that fact.
- Experiments and surveys are both reactive.

Non-reactive Research

- Those being studied are not aware that they are part of research project.
- Largely based on positivist principles. Quantitative.

The logic of Non-Reactive Research

- Uses measures that are not obtrusive or intrusive.
- People being studied are not aware of it but leave evidence of their behavior or actions "naturally."
- Researcher infers from evidence to behavior or attitudes without disrupting those being studied.
- Unnoticed observation is also a type of non-reactive measure.

Varieties of Non-Reactive Observations

- Researchers have been creative in inventing indirect ways to measure behavior. Examples:

Physical traces:

a. Erosion. Wear suggests greater use.

b. Accretion. Accumulation of physical evidence suggests behavior.

Beverage cans/bottles in garbage collection.

Archives: Running records. Marriage records.

Observations: External appearance. Counting behaviors. Time duration

Content Analysis

- A technique for gathering and analyzing the content of text.
- The *content* refers to words, meanings, pictures, symbols, ideas, themes, or any message that can be communicated.
- The *text* is anything written, visual, or spoken that serves as medium of communication.
- It is also called a study of communication.
- Who says what, to whom, why, how, and with what effect.

Possible artifacts for study:

Books, magazines, speeches, poems, newspapers, songs, paintings, letters, laws, constitutions, dramas, films, advertisements, billboards, musical lyrics, photographs, articles of clothing, or works of arts.

All these may be called as documents.

Documents can be:

Personal

Non-personal

Mass media.

The researcher uses objective and systematic counting and recording procedures to produce quantitative description of symbolic content in a text.

May also be called as "textual coding"

Content analysis is non-reactive

- Because the placing of words, messages, or symbols in a text to communicate to a reader occurs without the influence of researcher.
- No interaction between the researcher and the creator of text.
- The researcher reveals the content (messages, meanings, symbols) in a source of communication. May be something not clear to an ordinary reader/listener/viewer.

Measurement and Coding

Careful measurement is crucial.

Procedure to measure spelled out. e.g. Negative stereotypes about women (give list). Violence on TV.

Constructs are operationalized with a set of instructions or rules on how to systematically observe and record text. Leadership role. Written rules to classify people. Social class.

Observations can be structured:

Rule how to categorize and classify observations in terms of:

Frequency. Counting as how many.

Direction: noting the direction of messages along some continuum like: positive-negative. Favorable-unfavorable. Friendly –unfriendly.

Intensity: strength or power of message in a direction.

Space: size of the text message – amount of space. It could be counting of words, sentences, paragraphs. For video/audio – amount of time.

Unit of analysis:

Can be a word, a phrase, an article, a character

Coding:

Categories/classification and giving labels to each category.

Manifest coding: coding the visible → just counting the number of times a word, sentence, character appears. It is highly reliable. Same word could have different meanings. Limits the validity.

Latent coding: (semantic analysis) Look for implicit meaning in the context of the text. Read the whole paragraph → romantic or vulgar. Censor Board decisions. It is less reliable. Check inter-coder reliability.

How to conduct content analysis?

1. Question Formulation

- Begin with a question. Should involve variables that are messages or symbols. How the women are portrayed in advertisements?

2. Unit of analysis

- Researcher decides on the unit of analysis. Each ad may be a unit of analysis.

3. Sampling

- Researchers often use random sampling in content analysis.
- Define the population and sampling elements. Population could be all the words, all sentences, all paragraphs in certain documents over a period of time. E.g. we want to know how women are portrayed in weekly news magazines? Unit of analysis is the article. Population – all articles published in magazines Define what is an article. Decide on the number of magazines, period, sample size. Sampling frame shall be all the articles published in the selected magazine in a specified period. Do random selection.

4. Variables and constructing code categories

- Women portrayal: leadership role. Make categories. Positive role. Inspiring role. Give written rules to classify role of women as portrayed in articles.
- Can have the coding sheets.

5. Inferences

- Content analysis describes what is in the text. It cannot reveal the intentions of those who created the text or the effects that messages in the text have on those who receive them.
- Describe the sex stereotypes in children's books. It influence on children's beliefs and behavior cannot be inferred.

32. Use of Secondary Data.

Advantages:

1. Access to inaccessible subjects.

2. Non-Reactivity → unobtrusive research. Observations are unnoticed. Indirect observations. One way mirror. Subjects are not living. Creator may be dead.

3. Can do longitudinal analysis. Trend. Study over time.

4. Use sampling. Use random sampling – population sample. How women are portrayed in weekly news magazines?

5. Can use large sample size. More trust in generalization.

6. Spontaneity. Spontaneous actions or feelings recorded when they occurred. Diary records. Letters. Speeches.

7. Confessions. Persons more likely to confess in documents which are read after the death than in questionnaires. Diaries.

8. Relatively low cost. Travel costs .

9. High quality. Many documents (newspaper columns) written by skilled social commentators compared to respondents to a questionnaires.

Disadvantages

1. Bias. Documents written for purposes other than research. Goals may bias the information presented. Money making. Present only positive/negatives.

2. Selective survival. Preservation selective.

3. Incompleteness. Letters/diaries include references only. Private background only known to the author.

4. Lack of availability of documents. Documents remain classified.

5. Sampling bias. Only well educated people will write. Views of poorly educated people are not there.

6. Limited to verbal behavior.

7. Lack of standardized format. Newspapers may have it, not for personal documents.

8. Coding difficulties. Difficult to quantify.

9. Data must be adjusted for comparability over time. Unit/value may change.

USE OF SECONDARY DATA: EXISTINGSTATISTICS/ DOCUMENTS

Secondary Data

- Variety of data collected by others and available to researchers for further analysis.
- Data available in the form of statistical documents (books, reports). Also computerized records.

- Data collected by large bureaucratic organizations. Data gathered for policy decisions or as a public service.
- Time bound collection of information (pop. Census) as well as over long periods (unemployment, crime rates)
- Comparisons over time, across the countries.

Selecting Topic for Secondary Analysis

- Formulate research question, reassemble the data in new ways to address the research question.
- Research question has to be in line with the available data. So first find what is available, then frame the question.
- Look into trends. Develop social indicators.
- Secondary analysis may not fit neatly into a deductive model of research design.

Locating Data

- Main sources are government or international agencies and private sources.
- Many existing documents are “free” and available at libraries. Laborious job.
- UN publications. UNESCO Statistical Yearbook. United Nations Statistical Yearbook, Demographic Yearbook, Labor force survey of Pakistan, Population Census Data.

Secondary Survey data

- Secondary analysis is a special case of existing statistics; it is reanalysis of previously collected data by others.
- Focus is on analyzing rather than on collecting data.
- Relatively inexpensive. Collecting such huge data by a single researcher may be prohibitive.
- Permits comparisons across groups, nations or time;
- Facilitates replication;
- Permits asking about issues not thought by original researchers.

Reliability and Validity

- Existing statistics and secondary data are not trouble free. Researchers must be concerned about validity and reliability .
- A common error is the fallacy of misplaced concreteness. Someone gives a false impression of accuracy by quoting statistics in greater detail than warranted by how the statistics were collected.

Validity problems

- Researcher’s theoretical definition may not match with government agency or organization that collected the data. *Unemployed.*
- Researcher lack control over how the data were collected. Data collection as part of job. No quality control – systematic errors. Typographical errors.

Reliability

- Stability reliability problems develop when official definition or method of collecting data changes over time.
- Definition of literacy changed many times. Definition of unemployment. Poverty.
- Equivalence reliability. Decimal system. Problems of comparability nationally and internationally.

Inferences from non-reactive data

- To infer causality and to test a theory on the basis of non-reactive data is limited.
- Cannot establish temporal order of variables. Cannot eliminate the interference of confounding factors.
- Not possible to generalize from content to its effects on those who read the text. Only logical correlation.

33. Qualitative Research: Observation Studies/Field Research

Qualitative and Quantitative Research

- Differ but complement each other.
- Qualitative research produces *soft data*: impressions, words, sentences, photos, symbols. Interpretative approach. Non-linear approach (spiral)
- Quantitative research produces *hard data*: numbers. Follow positivist approach. Speak the language of variables and hypotheses. Emphasis on precise measurement of variables and testing hypotheses. Look for causality. Linear approach (sequential steps)

Observation Studies

- Observation can be participant or non-participant.
- In participant observation the researcher directly observes and participates in small scale social settings in the present time.
- Also referred to as field research, ethnography, or anthropological study.
- Direct, face to face interaction with "real people" in a natural setting.
- A group who interact with each other on regular basis in a fixed setting: street corner, tea shop, a club, nomads, village.

Ethnography and Ethno-methodology

- Ethno means people distinct by their culture. Graphy refers to description. Understanding the culture of people.
- Methodology: how people create reality as well as its interpretation. Meanings attached to a reality.

Logic of field research

- Observation of events in natural settings.
- Researcher uses various set of methods. Highly flexible use of multiple methods.
- He/she gets involved but also detached as a researcher. People culture vs. research culture.
- Direct involvement in field may have an impact on the researcher.

A field researcher does the following:

1.Observes ordinary events and everyday activities as they happen in natural settings, in addition to unusual occurrences.

2. Becomes directly involved with people being studied and personally experiences the process of daily life in the field setting.

3. Acquires an insider's point of view while maintaining the analytic perspective or distance of an outsider.

4. Uses a variety of techniques and social skills in a flexible manner as the situation demands.

5. Produces data in the form of extensive, written notes, as well as diagrams, maps, pictures to provide very detailed descriptions.

6. Sees events holistically (as a whole unit) and individually in their social context.

7. Understands and develops empathy for members in a field setting, and does not just record 'cold' objective facts.

8. Notices both explicit (recognized, conscious, spoken) and tacit (less recognized, implicit, unspoken) aspects of culture.

9. Observes ongoing social processes without upsetting, or imposing an outside point of view.

10. Copes with high levels of personal stress, uncertainty, ethical dilemmas, and ambiguity.

Steps in Field research:

1. Prepare yourself, read the literature, and defocus. Empty your mind. No stereotypes

2. Select a field site and gain access. Look for gate keepers. Use access ladder.

3. Enter the field and establish social relations with members. Rapport

4. Adopt a social role, learn the ropes, and get along with members.

5. Watch, listen, and collect quality data.

6. Begin to analyze data, generate and evaluate working hypothesis.

7. Focus on specific aspects of the setting and use theoretical sampling. Take smaller, selective observations.

8. Conduct field interviews with member informants.

9. Disengage and physically leave the setting.

10. Complete the analysis and write the report.

34. Observational Studies (continued)

Steps in Field Research

Background

- Flexibility: naturalism and direct involvement demand researcher flexibility. Researcher himself/herself has to be flexible. No fixed steps to be followed.
- Good field researchers recognize and seize opportunities. Rapidly adjust.

1. Prepare yourself, read the literature, and defocus. Empty your mind. No stereotypes.

- Field project → some happening or personal interest. Generic topic (No hypothesis) Literature will help in learning concepts, methods, techniques for resolving conflicts.
- Not purely focusing on the role of researcher. Has to have experience.
- Know yourself. No preconceptions about self and others. Can you bear the strains.

2. Select a field site and gain access.

- Where to observe? Site: socially defined territory with shifting boundaries.
- Gain access. Look for gate keepers. Authority. May have to negotiate. Entry may be a process – use access ladder. Building trust helps in having access to observe sensitive events.

3. Enter the field and establish social relations with members.

- Develop rapport.
- Presentation of self. Acceptable to people.
- Researcher as measuring instrument. Has to be alert to happenings around. Maintain social relationships and personal feelings.

4. Relations in the field

- Adopt a social role, learn the ropes, and get along with members.

- Preexisting versus created roles. Limits to the roles chosen because of age, race, gender, attractiveness.
- Also the level of involvement. Complete observer, observer as participant, participant as observer, complete participant.

5. Observing and collecting data

- Watch, listen, and collect quality data.
- Field data are what the researcher experiences, remembers, and records in field notes.
- Maps and diagram. Machine recording

6. Begin to analyze data, generate and evaluate working hypothesis.

- Field research does not start with a hypothesis. Could be generated from the data.

7. Focus on specific aspects of the setting and use theoretical sampling.

- Researcher first gets general picture. Develops hypothesis. Then focuses on few specific problems.
- Take smaller, selective observations. Takes theoretical sampling. Guided by researcher's own theory. Sample times, situations, types of events, locations, types of people.

8. Conduct field interviews with member informants.

- Field researchers use unstructured, nondirective, in-depth interviews which differ from formal survey research interviews.

FR Interview vs. Survey Interview

Survey Interview	Field Interview
1. It has clear beginning and end.	1. The beginning and end are not clear. The interview can be picked up later.
2. The same standard questions are asked of all respondents in the same sequence.	2. The questions and the order in which they are asked are tailored to specific people and situations.
3. The interviewer appears neutral at all times.	3.The interviewer shows interest in responses, encourages elaboration.
4. The interviewer asks questions, and the respondent answers.	4. It is like a friendly conversational exchange but with more interviewer questions.
5. It is almost always with one respondent alone.	5. It can occur in group setting or with others in area, but varies.
6. It has a professional tone and businesslike focus, diversions are ignored.	6. It is interspersed with jokes, aside, stories, diversions, and anecdotes, which are recorded.
7. Closed-ended questions are common, with rare probes.	7. Open-ended questions are common, and probes are frequent.
8. The interviewer alone controls the pace and direction of interview.	8. The interviewer and member jointly control the pace and direction of the interview.
9. The social context in which the interview occurs is ignored and assumed to make little difference.	9. The social context of the interview is noted and seen as important for interpreting the meaning of responses.

10. The interviewer attempts to mold the communication pattern into a standard framework.	10. The interviewer adjusts to the member"s norms and language usages.

9. Disengage and physically leave the setting.

- At some point work in field ends.
- Can be an emotional ending depending upon the intensity of involvement. Can be disruptive and painful.
- Follow the local norms in the exit process.

10. Complete the analysis and write the report.

- Researcher may share the written report with the members observed to verify its accuracy and approve its portrayal in print.
- It may help in determining the validity of the study.
- (May not be possible with marginal groups like addicts, some deviant groups)

Ethical Dilemmas of Field Research

- Direct involvement of field researcher in the social lives of people raises many ethical dilemmas.

Let us look at these:

- Confidentiality
- Deception

Deception

- Research may be covert; or may assume a false role, name, or identity; or may mislead members in some way.
- Debatable. Cost benefit situation. Researcher the best judge.
- Covert research is never preferable and never easier than overt research.

Confidentiality

- Intimate knowledge of the people.
- Moral obligation to uphold the confidentiality of data. Also disguising the members' names in field notes and in report.

Involvement with deviants

- Research on deviants (illegal behavior)
- Guilty knowledge. Such knowledge is of interest to law enforcement agencies as well as to other deviants.
- Dilemma: building rapport with deviants, yet not so involved as to violate his/her basic personal moral standards. Some explicit arrangement with deviant members.

Publishing field reports

- Intimate knowledge that a researcher obtains and reports creates an ethical dilemma between the right of privacy and the right to know.
- Cannot publish that may offend or harm someone. Some things may remain hidden; the readers may not believe the report if critical details are omitted.

35. Historical Comparative Research

History

- Has several meanings.
- One meaning: the events of the past.
- *Historiography* is the method of doing historical research or of gathering and analyzing historical evidence.

Major questions:

- How did major societal change take place?
- What fundamental features are common to most societies?
- Why did current social arrangement take a certain form in some societies but not in others? Revolution in society and not in another. Feelings about the value of children. Changes.
- H-C research strengthens conceptualization and theory building.

Focus on:

- Tracing the development of social forms (patterns) overtime as well as its broad historical processes, and
- Comparing those social forms and its developmental processes across cultures.

Follows scientific approach

- Can be a survey of events in history – could be through the study of documents (using statistics, doing communication analysis), interviewing people who may recall historical events.
- Mostly a longitudinal analysis i.e. look into developmental processes.
- Make cross cultural comparisons of the social forms as well as the developmental processes.

Social forms

- Historical development of ideas about different forms of society.
- Progression of social forms from simple to the complex, from rural-agrarian to urban-industrial societies.
- Savagery to barbarism to civilization. Folk society to urban society. Division of labor as studied by Durkheim. Nomadic (*Al-badawi*) to sedentary (*Al-hadari*) by Ibn Khaldun

Forms of economic systems

- Studied by Marx. Progressing historically from primitive to feudal to capitalist forms.
- All history was a history of class struggles – "haves" struggling to maintain their advantages and the "have-nots" struggling for a better lot in life.
- End of this struggle is classless society.
- Economic determinism – economic factors determine all other aspects of society.

Economic forms and ideas

- *Protestant Ethic and the Spirit of Capitalism* by Weber.
- Predestination. God gave each person an earthly "calling" – an occupation. Success or failure indicating the will of God. Success as a means to salvation – work hard. Earn, save, and reinvest capital. Ultimate development of capitalism.
- Why capitalism did not develop in India, China? None of the religions supported the accumulation and reinvestment of capital.

Logic of Historical-Comparative Research

- Is there a distinct method and logic for this research? Or is it simply a research that examines life in the past or in several societies?

- Some researchers use positivist, quantitative approach to study historical or comparative issues.
- Others rely on qualitative approach.

Quantitative Approach

Use time series data to monitor changing conditions over time – population, crime rates, unemployment, infant mortality rates. Such data need comparability.

Historical development of Unionization and the frequency of strikes.

Qualitative Approach

Qualitative method. No easily listed steps.

Max Weber used the German term *verstehen* – "understanding."

Researcher must be able to take on, mentally, the circumstances, views, and feelings of those being studied to interpret their actions appropriately.

Must find patterns – Weber called them *ideal types*: conceptual models composed of the essential characteristics. Bureaucracy.

- Intensive examination of a limited number of cases. Elaborate historical process and concrete historical details. Evidence.
- Focuses on culture;
- Sees through the eyes of those being studied i.e. gets the "understanding;" and
- Reconstructs the lives of those being studied.
- Follows lot of anthropological approach.

A Distinct H-C Approach

- Avoid the excesses of quantitative and qualitative approaches.
- Combines sensitivity to specific historical or cultural contexts with theoretical generalization.
- H-C researchers may use quantitative data to supplement qualitative data and analysis.
- Logic and goals of H-C research are closer to field research than to those of traditional positivist approaches.

Similarities with Field Research

- Researcher's point of view is an unavoidable part of research. Both involve interpretation.
- Examine a great diversity of data. Empathic understanding of events and people. Capture subjective feelings and look for social meaning.
- Both often use *grounded theory*. Theory usually emerges during the process of data collection.
- Both involve a type of translation. Understand people's point of view and translate it for others.
- Both see social reality as something constructed by people through actions and over time.
- Generalizations and theory are limited. Replications limited.

Unique features of H-C Research

- Evidence is limited and indirect. H-C researcher reconstructs what occurred from evidence. Does not have absolute confidence. Evidence may not be sufficient.
- Personal interpretation of the evidence. People may derive different meanings. Researcher becomes immersed in and absorbs details about context.

- H-C researcher is usually more aware of events occurring prior to the time studied, events occurring in places other than the location studied, and events that occurred after the period studied. More coherent construction of past than while it was happening.
- H-C researcher does not use deterministic approach. Uses combinational explanations. All factors appeared together rather linearly. Look at the whole. Apparent and hidden meanings
- H-C researcher can shift between a specific context and a general comparison. Compare across cultural-geographic units. Develop trans-cultural concepts for comparative analysis.

36. Historical Comparative Research (continued)

Steps in a H-C Research Project

- Does not involve rigid set of steps.
- Does not use complex or specialized techniques.

Conceptualizing the Object of Inquiry

- Become familiar with the setting and conceptualize what is to be studied.
- Start with a loose model for study. Assumptions, concepts, interrelationship of concepts.
- Decide on the historical era or comparative settings (nations or units).
- List of questions relating to specific issue.

Locating Evidence

- Gather evidence through bibliographic work. Which libraries will have. Shall have to travel to those libraries.
- Researcher reads lots of literature. May have to learns foreign language (s).
- Creates his own bibliography with complete citations along with notes.
- Adjusts his initial model – concepts, questions, and even the direction.

Evaluating the Quality of Evidence

Researcher has two questions in mind:

1. How relevant is the evidence?

2. How accurate and strong is the evidence?

Question of relevance is difficult – with the shift in focus, the relevance of evidence may change.

Accuracy is looked for: the implicit framework, particular details (that are required), and empirical generalizations.

Organizing Evidence

- As evidence starts coming in, the researcher organizes the data. Looks for some preliminary analysis, low level generalizations.
- More evidence may lead to new ways of organizing the data and new questions may emerge.

Synthesizing

Researcher:

- Refines the concepts and moves toward a general explanatory model.
- Looks for patterns across time or units, and draws out similarities and differences with examples.
- Organizes divergent events in sequences and creates a coherent picture. Process.
- Links specific evidence with an abstract model.

Writing a Report

- Combine evidence, concepts, and synthesis into a research report.
- Needs careful crafting of evidence and explanation.
- Weave together evidence and arguments to communicate a coherent, and convincing picture to readers.

DATA AND EVIDENCE IN HISTORICAL CONTEXT

Historical evidence comes from:

Sources of historical-comparative research data:

1. Primary sources

2. Secondary sources

3. Running records

4. Recollections

1. Primary Sources

- Letters, diaries, memos, newspaper or magazine article, movies, novels, articles of clothing, photographs.
- Lived the past and are found in the archives, in private collections, family closets, or in museums.

Potential problems with Primary sources

- Only a fraction of it survives.
- Whatever survived is a non-random sample of what once existed.
- Reading the primary sources with the eyes and assumptions of a contemporary. Difficult to get inside the minds of writings and look at things as they saw. An account of a slave holder. Moral judgments.
- Locating primary documents is time consuming.
- Incomplete, unorganized, decaying.
- Weighing the authenticity.
- Many types of distortions: Bowdlerization – a deliberate distortion designed to protect moral standards, or furnish a particular image.

2. Secondary Sources

- Books and articles written by historians and other researchers, as evidence of past conditions.

Potential problems in secondary sources

- Volumes of descriptions. Needs transformation. Pictures to be consistent, bridge many time periods or locales. Problems:

- Historians do not present value free facts. Problems of inaccurate historical accounts.

- Lack of studies in areas of interest.

- No rigorous definition of concepts – mixture of journalism, everyday language.

- Cannot be used for testing hypotheses. Cannot meet positivist criteria of falsifiability – no replicability.

- Selection procedure is not transparent. It is arbitrary selection. Biases.

- Problem with the organization of evidence. All narrative. Temporal logic. Does not denote causality – meets one of the 3 conditions.

- Historian influenced by historiographic schools, personal beliefs, social theories, and current events.
- History of powerful. His story (History) gets written by the people in power. History may not coincide with what actually happened.

3. Running Records

- Files or existing statistical documents maintained by organizations. Vital statistics.

4. Recollections

- The words written by individuals about their past lives or experiences based on memory. Memoirs, autobiographies, interviews.
- Gathering oral history, conducting unstructured interviews with people. Non-elite, illiterates can provide information.
- H-C researchers often use secondary sources or different data types in combination.

Evaluating the documents

- Who composed the documents? Why were these written? What methods were used to acquire the information?
- What are some of the biases in the documents? How representative was the sample?
- What are the key categories and concepts used?
- What sorts of theoretical issues and debates do these documents cast light on?

Problems in Comparative Research

- The units being compared: Nation-state boundaries may not match those of culture. Nation-state may contain more than one culture
- Problems of equivalence: contextual differences over time, across places. Measurement validity. Meaning of a friend.
- Ethical issues.

37. Focus Group Discussion

Informal Focus Group Discussion

- Visiting a community. Stop by a house, chat with head of household.
- Others come and join the conversation.
- Informal GD is build upon the social networks that operates in a natural setting. Includes both kin and other neighbors. These might be the decision makers.

FGD are a more formal way of getting groups of people to discuss selected issues.

Focus Group Discussion (FGD):

- A focus group discussion is a group discussion of 6-12 persons
- Guided by a facilitator,
- Participants talk freely and spontaneously about a certain issue.

The purpose of FGD:

- To obtain in-depth information on concepts, perceptions, and ideas of the group.
- More than an question-answer interaction.
- Group members discuss the topic among themselves.

Focus groups are:

- Formally constituted (organized in advance);
- Structured groups brought together (people from similar background, age, sex, education, religion, or similar experiences);
- 6-12 persons;
- Guided by a moderator/facilitator;
- To address a specific issue (talk freely, agree or disagree),
- Within a fixed time frame, and
- In accordance with clearly spelled out rules of procedure.

Functions of the Facilitator/Moderator:

- Act as a coordinator, not as an expert.
- Introduce the session.
- Encourage discussion.
- Encourage involvement. Ask for clarifications; reorienting the discussion when it goes off the track; bringing in reluctant participants. Deal with dominant participant
- Build Rapport. Observe nonverbal communication.

How to conduct FGD?

1. Preparation

Selection of topic, questions to be discussed (open ended).

Selecting the study participants:

- Purposive or convenience sampling.
- Similar background. Age, sex, status.
- 6-12 persons in a session.
- Contact the participants. Invitations.

Making physical arrangements.

2. Conducting the session:

- One of the members of the research team should act as 'facilitator' for the focus group. One should serve as 'recorder' (rapporteur).

38. Focus Group Discussion (continued)

Some guidelines for the facilitator:

- Observe verbal as well non-verbal communication. What are they saying? What does it mean to them? Empathize.
- Do not try to comment on everything that is said
- Control the timings unobtrusively.
- Summarize the main issues at the end of FGD.
- Check whether all participants agree.
- Thank the participants.
- Listen for the added comments after meeting has closed.

Functions of the Recorder

- Keep a record of the content as well as emotional reactions and nature of group interactions.

- Record the following:

- Date, time, and place.

- Names and characteristics of participants.

- Description of group dynamics (level of participation, presence of a dominant participant, level of interest).

- Opinions of the participants, as far as possible in their own words, especially the key statements.

- Emotional aspects (reluctance, strong feelings attached to certain opinions)

- Vocabulary used.

- Assist the facilitator by drawing his/her attention to missed topics or missed comments from the participants.
- Help the facilitator resolve the conflict if necessary.
- Make sure a copy of the list of topics and key probe questions is available and referred to during the FGD.

Duration of FGD

- Between one hour to one hour and a half.

3. Analysis of Results

- After each FGD the facilitator and recorder meet to review and evaluate the discussion.
- The full report is prepared using the participants own words, listing the key statements, ideas and attitudes.
- Additional questions are formulated if needed.
- Answers of different sub-groups are compared.
- The findings must be recorded in a coherent way.
- The most useful quotations should be selected.

4. Report Writing

- Start with a description of the selection and composition of the group and participants, and a commentary on the group process.
- Present your findings, following your list of topics and guided by the objectives of FGD.
- Include questions whenever possible, particularly the key statements.

Uses of FGDs

- Produce a lot of information far more quickly, and at less cost than individual interviews.
- Help focus research and develop relevant research hypotheses. In-depth analysis of the problem and its causes.
- Help formulate appropriate questions for more structured, large scale surveys
- FGDs are excellent for obtaining information from illiterates.
- Means to discover attitudes and opinions that might not be revealed through surveys. Help explore controversial topics.
- Usually well accepted by the community as this form of communication already exists.
- Generate new ideas, questions (about a program)
- Supplement information on community KAP already available.
- Flexibility in discussion.
- Direct link with the population under study.

- Focus groups are good fun.

Limitations

- The moderator may influence the participants (bias).
- FGDs have limited value in exploring complex beliefs of individuals.
- FGDs can paint a picture of what is socially acceptable in a community rather than what is actually occurring or believed. (real and ideal problems)

THE CASE STUDY

Case Study

- A comprehensive description and analysis of a single situation or number of specific situations i.e. cases.
- An intensive description and analysis of a case.
- Often use qualitative approach to explore the case in as rich a detail as possible.
- Explore new areas of inquiry.

Examples

Case study of a highly successful:

Organization,

A Project (OPP at Karachi),

A group, a couple, a teacher, a patient.

Data sources:

Naturalistic observations (ethnographic).

Interviews.

Life histories

Tests (psychological

Preserve the unitary character of the object under study

Study the unit as a whole. Collect the breadth of data about the totality of life.

Data not necessarily related to one discipline. Look at from different perspectives. Triangulation.

Case control studies

Select two groups (cases), one with an effect (study group) and the other without (control group). Similar except for effect. Case of Manga Mandi village.

Deformities in the bones of children.

Explore the totality of the background of affected and unaffected. Develop hypothesis out of fishing expedition.

CS is empirical because:

A. It investigates a contemporary phenomenon within its real life context (retrospective study: process from effect to cause. Back in time. Manga Mandi case);

B. When the boundaries between the phenomenon and context are not clearly evident; and

C. Multiple sources of evidence are used.

Case study limitations:

Lacks rigor,

Reliability, and

Representativeness

39. Report Writing

Every report is custom-made, yet some conventions of format.

- Many companies and universities also have in-house, suggested report formats or writing guides that researchers should be aware of.

Report Format:

- The general plan of organization for the parts of a written or oral research report.

Tailoring the format to the project -- 2 reasons:

- To obtain the proper level of formality.
- To decrease the complexity of the report.

We shall look at the most formal type i.e. a report for a large project done within an organization or one done by a research agency for a client company. Usually bound with a permanent cover. May be hundreds of pages.

The makeup of the report – the report parts:

- Prefatory parts.
- Main body.
- Appended parts.

Prefatory parts

1. Title fly page.
2. Title page.
3. Letter of transmittal
4. Letter of authorization.
5. Table of contents
6. Executive summary (Synopsis):

- - Objectives
- - Results
- - Conclusions
- - Recommendations

Main body

- Introduction:

  -- Background

  -- Objectives

- Methodology.
- Results → can be divided into different areas.
- Limitations.
- Conclusions and recommendations
- References.
- Acknowledgements.

Appended parts

- Data collection forms (questionnaires, check list, interview guide, other forms).
- Detailed calculations.
- General tables.

- Other support material.
- Bibliography, if needed.

Title fly page:

- Only the title appears on this page
- For the most formal reports, a title fly page precedes the title page.

Title Page:

- Title of the report. Give a brief but complete indication of the project purpose.
- The name/s of the person/s for whom the report was prepared. Titles and addresses to be given.
- The name/s of person/s who prepared it. Titles and addresses to be included.
- Date of release or presentation.

Letter of Transmittal:

- Included in relatively formal and very formal reports.
- Purpose to release or deliver the report.
- Serves to establish some rapport between the reader and the writer.
- The transmittal should not dive into report findings except in the broadest terms.

December 15,

2006 Mr. K. M. Khalil

Vice President for

Marketing

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……

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Subject: Report on Employee Satisfaction and Organizational Commitment

Dear Mr.

Khalil,

Here is a report on Employee Satisfaction and Organizational Commitment. The report was prepared according to your authorization letter of April 15, 2006.

……

……

…… ……

We are grateful to you for your cooperation in this important

study. Sincerely,

……

..

……

..

Letter of Authorization:

- This is the letter to the researcher approving the project, detailing who has responsibility for the project and indicating what resources are available.
- Researcher would not write this letter. Reference to this letter has already been made in letter of transmittal. Sufficient.
- Only in some cases exact copy of the original may be reproduced.

Table of Contents:

- Essential to any report.
- List the divisions and subdivisions of the report with page references.
- It is based on the final outline of the report.
- Should include the divisions and first level subdivisions. For short reports, only main divisions may be included.
- If report includes many figures and/or tables, list of these should immediately follow the table of contents.

Summary:

- Vital part of the report. Most managers always read a report's summary.
- The only chance the writer may have to make an impact on the management. Summary tells:

-Why the research project was conducted?

-What aspects of the problem considered?

-What the outcome was?

-What should be done?

Furthermore:

- Summary should be written after the report completion. It is the essence of the report.
- 2-3 pages. Properly condensed.
- Should be self sufficient. Often only summary is circulated.

1. Objectives stated, inclusive of background and purpose.

2. Major results are presented. Key results regarding each purpose.

3. Conclusions based on results. Interpretations.

4. Recommendations for action based on the conclusions. In many cases managers may not like recommendations in summary.

Main Body:

- Constitutes the bulk of the report. It includes: Introduction, methodology, results, and limitations of the study. It finishes with conclusions and recommendations based on results.
- Let us look at each:

Introduction:

- Explain why the project was undertaken and what is it aimed to discover. Based on the information provided in TOR. It is the:
- Background: Explain why the project was worth doing.

- What objectives? What research question to be answered? At the end of the study see that each objective has been addressed.

For thesis

- Review of literature (not looking for pieces of summaries)
- Theoretical framework and derivation of hypothesis (es)
- Hypothesis (es) or research questions. Operationalization of the variables

Methodology:

Technical procedures must be explained.

Supplement the material in this section with more details in the appendix. This part should address six topics:

1. *Research design.* Purpose of study → exploratory, descriptive, or explanatory. Why specific design suited to the study?

2. Data collection methods. Primary or secondary data used. How primary data were collected – survey, experiment, observation. Multiple techniques used – triangulation.

3. Sample design: What was the target pop? Sampling frame. Type of sample. Selection process.

4. Instrument of data collection: What instrument and why? Copy in appendix.

5. Fieldwork/Data collection: how many, type of field workers used? Training/supervision How was quality control assured?

6. Analysis: How was analysis carried – score index applied, statistics used

40. Referencing

Results:

- Present the findings in line with the objectives.
- Organize as a continuous narrative, designed to be convincing.
- Summary table and charts should be used
- Tables and charts may serve as points of reference to the data being discussed and free the prose from an excess figures.
- Detailed charts may be reserved for appendix.

Limitations:

- No report is perfect, so indicate its limitations. For example problems with:
- Sampling procedures.
- Non response.
- Avoid over emphasizing the weaknesses.

Conclusions and recommendations

- Conclusions are based on results.
- Recommendations emerge out of conclusions. These are suggestions for action.
- Conclusions and recommendations presented in more detail than in summary.

For your Thesis

- Introduction
- Review of Literature
- Theoretical Framework

- Hypothesis and Operationalization of Concepts
- Research Design
- Analysis of Data
- Summary, Conclusions and Recommendations

Appendix:

- Appendix presents the "too …" material.
- Any material that is too technical or too detailed should be in appendix. Material of interest only to some readers. Subsidiary materials.

REFERENCING

Distinction:

A bibliography is the listing of the works that are relevant to the topic of research interest arranged in alphabetical order of the last names of authors.

A reference list is a subset of the bibliography, which includes details of all the citations used in the literature survey and elsewhere in the report, arranged again, in the alphabetical order of the last names of authors.

Goals:

Crediting the author (s).

Enabling the reader to find the works cited.

Different modes are followed

Publication Manual of the APA.

Chicago Manual of Style.

Turabian Style.

APA style is usually followed in Management journals / writings

Specimen format:

Book by a single author

Leshin, C. B. (1997). *Management on the World Wide Web.* Englewood Cliffs, NJ: Prentice–Hall.

Book by more than one author

Cornett, M., Wiley, B. J., & Sankar, S. (1998). *The pleasures of nurturing.* London: McMunster Publishing.

More than one book by the same author:

Roy, A. (1998a) *Chaos theory.* New York: McMillian Publishing Enterprises.

Roy, A. (1998b). *Classic chaos.* San Francisco, CA: Jossey Bamar.

Edited Book

Pennathur, A., Leong, F. T., & Schuster, K. (Eds.). (1998). *Style and substance of thinking.* New York: Wilson Press.

Chapter in an edited book:

Riley, T., & Brecht, M. L. (1998). The success in mentoring process. In R. Willams (Ed.) *Mentoring and career*

success. pp. 129- 150. New York: Wilson Press.

Journal Article

Jeanquart, S., & Peluchette, J. (1997). Diversity in the workforce and management models. *Journal of Social Work Studies,* 43 (3), 72-85.

Conference Proceedings Publications:

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Gardezi, H. N. (2005) Population Policy of Pakistan. In Z. Sethar (Ed.), *Proceedings of the Third Conference on Research and Population,* (pp. 100-107). Islamabad: Population Council.

Doctoral Dissertation:

Chaudhary, M. A. (2004) *Medical advances and quality of life.* Unpublished doctoral dissertation, Virtual University.

Paper presented at conference:

Quareshi, Q. A. (2005, May 16). *Practical tips for efficient management.* Paper presented at the annual meeting Entrepreneurs, Lahore.

Unpublished Manuscript:

Kashoor, M. A. (2005) *Training and development in the '90s*

Unpublished manuscript, Virtual University.

Newspaper Article:

The new GM pact. (2005, May 16). *The Dawn*, p.4.

Referencing Electronic Sources:

Ahmad, B. (2005) Technology and immediacy of information. [on line] Available http://www.bnet.act.com

- Some more guidelines about citations will be provided in the handout.

Referencing and quotation in the literature review:

Cite all references in the body of the report using the author-year method of citation:

Rashid (2005) has shown …

In recent studies of dual earner families (khalid, 2004, Hameed, 2005) it has been ..

In 2004, Maryium compared dual earner and dual career families and found that …

Note the following:

1. Within the same paragraph, you need not include the year after the first citation.

2. When work is authored by two, always cite both names every time the reference occurs in the text.

3. When a work has more than two authors but fewer than six authors, cite all authors the first time the reference occurs, and subsequently include only the surname of the first author followed by "et.al."

4. When the work is authored by six or more authors, cite only the surname of the first author followed by et al. and the year for the first and subsequent citations.

5. Join the names in a multiple-author citation in running text by the word *and.* In parenthetical material, in tables, and in the reference list, join the names by an ampersand (&).

6. When a work has no author, cite in the text the first two or three words of the article title. Use double quotation marks around the title of the article. Example: While examining unions (" with GM pact, " 2000)

7. When a work's author is designated as 'Anonymous," cite in the text, the word *Anonymous* followed by a comma and the date: (Anonymous,1979). In that reference list, anonymous work is alphabetized by the word *Anonymous.*

8. When more than one author has to be cited in the text, these should be in the alphabetical order of the first author's surname, and the citations should be separated by semi colons: In the job design literature (Aldag & Brief, 1996; Alderfer, 1999; Beatty, 2000; …), …

Personal communication through letters, memos, telephone conversations should be cited in the text only and not included in the reference list since these are not retrievable data. In the text, provide the initials as well as the surname of the communicator together with the date. A. Hameed (personal communication, May 14,2005) feels …

Quotations in text:

Quotations should be given exactly as they appear in the source. The original wording, punctuation, spelling, italics must be preserved even if they are erroneous. The citation of the source of a direct quotation should always include the page number (s) as well as the reference.

Use double quotation marks for quotation in text. Use single quotation marks to identify the material that was enclosed in double quotation marks in the original source.

If you want to emphasize certain words in a quotation, italicize them and immediately after the italicized words insert within brackets the words: italics added.

Use three dots (…) to indicate that you have omitted material from the original source.

If the quote is more than 40 words, set it in a free-standing style starting on a new line and indenting the left margin a further five spaces. Type the entire quotation double spaced on the new margin.

Example:

In trying to differentiate dual earner and dual career families Quereshi (2005) states:

> Various terms are used to refer to dual-earner families: dual-worker families, two-paycheck families, dual-income families, two-job families, and so on. Spouses in dual earner families may both hold jobs, or one of the partners may hold a job while the other pursues a career … (p. 4)

If you intend publishing an article in which you have quoted extensively from a copy- righted work, it is important that you seek permission from the owner of the copyright.

Make sure that you also footnote the permission obtained with respect to quoted material. Failure to do so may result in unpleasant consequences, including legal action taken through copyright protection laws.

41. Qualitative Techniques

Qualitative techniques

- Qualitative research attempts to broaden and/or deepen our understanding of how things came to be the way they are in our social world.
- If the research question involves exploring how people experience something, or what their views are, exploring a new area where issues are not yet understood or properly identified researchers probably need to adopt qualitative methodology.
- Qualitative research is a form of social inquiry that focuses on the way people interpret and make sense of the experiences and the world in which they live.
- This kind of research has an aim to understand the social reality of individual, group and cultures.
- The basis of qualitative research lies in the interpretive approach of social reality and in the description of lived experience of human beings.
- Qualitative researchers argue that if you want to understand people`s motivations, their reasons, their actions, and the context for their beliefs and actions in an in-depth way, qualitative research is best.

Comparison of Qualitative and Quantitative Research:

Qualitative research

- To gain an in depth understanding and explanation of some particular social phenomenon.
- The data collection is done by interviewing; however, an understanding of the social phenomenon and personal lived experiences of individuals might be gained via non-intrusive qualitative approaches in which the researcher might use texts, journals, written narratives or observations.
- Qualitative research questions begin with "How?" and/or "Why?" questions, but can begin with a "What?" question as well.

Quantitative research

- Quantitative research, on the other hand, explores descriptive analysis of characteristics through variables or answers questions about the relationships among variables.
- Quantitative research studies generally end with a summation of the verification process, which is a confirmation or disconfirmation of the hypotheses tested via deductive reasoning.
- Conclusively, the aim of qualitative research is discovery, while the aim of quantitative research is verification.

Qualitative Research Methods:

- Five qualitative research methods are discussed in this subject as discussed by John W. Creswell in his book. Following are the five qualitative research methods:
- 1. Narrative Research.
- 2. Phenomenology.
- 3. Grounded Theory.
- 4. Ethnography.
- 5. Case Study.

42. Narrative Research

Narrative research

- “Narrative is understood as a spoken or written text giving an account of an event/action or series of events/actions, chronologically connected".
- The procedures for implementing this research consist of focusing on studying one or two individuals, gathering data through the collection of their stories, reporting individual experiences, and chronologically ordering (or using life course stages) the meaning of those experiences.

Types of narrative research

- 1. A biographical study is a form of narrative study in which the researcher writes and records the experiences of another person's life.
- 2. Autobiography is written and recorded by the individuals who are the subject of the study.
- 3. A life history portrays an individual's entire life, while a personal experience story is a narrative study of an individual's personal experience found in single or multiple episodes, private situations, or communal folklore.
- 4. An oral history consists of gathering personal reflections of events and their causes and effects from one individual or several individuals.

Procedures for Conducting Narrative Research

1. Determine if the research problem or question best fits narrative research. Narrative research is best for capturing the detailed stories or life experiences of a single life or the lives of a small number of individuals.

2 . Select one or more individuals who have stories or life experiences to tell, and spend considerable time with them gathering their stories through multiples types of information.

3. Collect information about the context of these stories. Narrative researchers situate individual stories within participants' personal experiences (their jobs, their homes), their culture (racial or ethnic), and their historical contexts (time and place).

4. Analyze the participants' stories, and then "restore' them into a framework that makes sense. Restoring is the process of reorganizing the stories into some general type of framework.

5. Collaborate with participants by actively involving them in the research. As researchers collect stories, they negotiate relationships, smooth transitions, and provide ways to be useful to the participants.

Challenges

- The researcher needs to collect extensive information about the participant, and needs to have a clear understanding of the context of the individual's life.
- It takes a keen eye to identify in the source material gathered the particular stories that capture the individual's experiences.
- Active collaboration with the participant is necessary, and researchers need to discuss the participant's stories as well as be reflective about their own personal and political background, which shapes how they "restore“ the account.
- Multiple issues arise in the collecting, analyzing, and telling of individual stories.

43. Phenomenology

Phenomenology

- A *phenomenological study* describes the meaning for several individuals of their *lived experiences* of a concept or a phenomenon.
- The basic purpose of phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence.

Types of Phenomenology

- Two approaches to phenomenology are highlighted in this discussion:
    - Hermeneutic phenomenology
    - Empirical, transcendental, or psychological phenomenology
    - Hermeneutical phenomenology describes research as oriented toward lived experience (phenomenology and interpreting the "texts" of life (hermeneutics) as available in blogs and tweets etc.
- Transcendental or psychological phenomenology is focused less on the interpretations of the researcher and more on a description of the experiences of participants.

Procedures for Conducting Phenomenological Research

1. The researcher determines if the research problem is best examined using a phenomenological approach. The type of problem best suited for this form of research is one in which it is important to understand several individuals' common or shared experiences of a phenomenon
2. A phenomenon of interest to study, such as anger, professionalism, what it means to be underweight, or what it means to be a wrestler, is identified.
3. Data are collected from the individuals who have experienced the phenomenon. Often data collection in phenomenological studies consists of in-depth interviews and multiple interviews with participants. . Other forms of data may also be collected, such as

observations, journals, art, poetry, music, taped conversations, formally written responses, accounts of vicarious experiences of drama, films, poetry, novels and other forms of art.

4. The participants are asked two broad, general questions: What have you experienced in terms of the phenomenon? What contexts or situations have typically influenced or affected your experiences of the phenomenon? Other open-ended questions may also be asked.
5. *Phenomenological data analysis* steps are generally similar for all psychological phenomenologists. Building on the data from the first and second research questions, data analysts go through the data (e.g., interview transcriptions) and highlight "significant statements," sentences, or quotes that provide an understanding of how the participants experienced the phenomenon.
6. The significant statements and themes are used to write a description of what the participants experienced *(textural description).* They are also used to write a description of the context or setting that influenced how the participants experienced the phenomenon, called *imaginative variation* or *structural description.*
7. From the structural and textural descriptions, the researcher then writes a composite description that presents the "essence" of the phenomenon, called the *essential, invariant structure (or essence).* Primarily this passage focuses on the common experiences of the participants

Challenges

- Phenomenology requires at least some understanding of the broader philosophical assumptions, and these should be identified by the researcher.
- The participants in the study need to be carefully chosen to be individuals who have all experienced the phenomenon in question, so that the researcher, in the end, can forge a common understanding.
- *Bracketing* personal experiences may be difficult for the researcher to implement.
- An interpretive approach to phenomenology would signal this as an impossibility for the researcher to become separated from the text.

44. Grounded Theory

What is grounded theory?

Grounded Theory is an inductive methodology. It is a systematic methodology in the social sciences involving the construction of theory through the analysis of data.

to move beyond description and to generate or discover a theory, an abstract analytical schema of a process

It is the systematic generation of theory from systematic research. It is a set of rigorous research procedures leading to the emergence of conceptual categories.

Thus, grounded theory is a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, action, or interaction shaped by the views of a large number of participants (Strauss & Corbin, 1998).

Types of grounded theory studies:

- The two popular approaches to grounded theory are the systematic procedures of Strauss and Corbin (1990, 1998) and the constructivist approach of Charmaz (2005, 2006).
- In the more systematic, the investigator seeks to systematically develop a theory that explains process, action, or interaction on a topic.
- Charmaz"s approach is known as the constructivist grounded theory method as it adheres to a constructivist philosophical approach, wherein both the researcher and participants mutually co-construct meaning during data collection and analysis.

Procedures for conducting grounded theory research

- The researcher needs to begin by determining if grounded theory is best suited to study his or her research problem.
- The research questions that the inquirer asks of participants will focus on understanding how· individuals
- experience the process and identifying the steps in the process
- These questions are typically asked in interviews, although other forms of data may also be collected, such as observations, documents, and audiovisual materials.
- The analysis of the data proceeds in stages.
- In axial coding, the investigator assembles the data in new ways after open coding.
- Finally, the researcher may develop and visually portray a conditional matrix that elucidates the social, historical, and economic conditions influencing the central phenomenon.
- The result of this process of data collection and analysis is a theory, a substantive-level theory, written by a researcher close to a specific problem or population of people.

Challenges:

A grounded theory study challenges researchers for the following reasons:

- The investigator needs to set aside, as much as possible, theoretical ideas or notions so that the analytic, substantive theory can emerge.
- The researcher faces the difficulty of determining when categories are saturated or when the theory is sufficiently detailed.
- The researcher needs to recognize that the primary outcome of this study is a theory with specific components: a central phenomenon, causal conditions, strategies, conditions and context, and consequences.

45. Ethnographic Research

What is ethnographic research?

- Ethnography is a qualitative design in which the researcher describes and interprets the shared and learned patterns of values, behaviors, beliefs, and language of a culture-sharing group (Harris, 1968).
- An ethnography focuses on an entire cultural group which may be small, but typically it is large, involving many people who interact over time
- 'ethnography involves extended observations of the group, most often through participant observation

Types of ethnographies

- There are many forms of ethnography, such as a confessional ethnography, life history, auto-ethnography, feminist ethnography, ethnographic novels, and the visual ethnography found in photography and video, and electronic media. Two popular forms are:
- The realist ethnography is a traditional approach used by cultural anthropologists. It reflects a particular stance taken by the researcher toward the individuals being studied
- The critical ethnography involves the authors advocate for the emancipation of groups marginalized in society

Procedures for conducting an Ethnography:

- Determine if ethnography is the most appropriate design to use to study the research problem.
- Identify and locate a culture-sharing group to study

- Select cultural themes or issues to study about the group
- To study cultural concepts, determine which type of ethnography to use.
- Gather information where the group works and lives.
- Forge a working set of rules or patterns as the final product of this analysis.

Challenges:

- The researcher needs to have a grounding in cultural anthropology and the meaning of a social-cultural system as well as the concepts typically explored by ethnographers.
- Time to collect data is extensive
- In many ethnographies, the narratives are written in a literary, almost storytelling approach, an approach that may limit the audience for the work
- the researcher needs to acknowledge his or her impact on the people and the places being studied.

46. Case Study Research

What is case study research?

- Study of an issue explored through one or more cases within a bounded system over time, through detailed, in-depth data collection involving multiple sources of information
- it as a methodology, a type of design in qualitative research, or an object of study, as well as a product of the inquiry.
- Espouses both quantitative and qualitative approaches to case study development and discusses explanatory, exploratory, and descriptive qualitative case studies.

Types of case studies:

- In single instrumental case study, the researcher focuses on an issue or concern, and then selects one bounded case to illustrate this issue.
- In collective/multiple case study, the one issue or concern is again selected, but the inquirer selects multiple case studies to illustrate the issue.
- In intrinsic case study, focus is on the case itself because the case presents an unusual or unique situation.

Procedures for conducting a case study:

- First, researchers determine if a case study approach is appropriate to the research problem
- Researchers next need to identify their case or cases
- The data collection in case study research is typically extensive, drawing on multiple sources of information
- The type of analysis of these data can be a holistic analysis of the entire case or an embedded analysis of a specific aspect of the case.
- the researcher reports the meaning of the case, whether that meaning comes an instrumental case or an intrinsic case

Challenges:

- The case study researcher must decide which bounded system to study
- The researcher must consider whether to study a single case or multiple cases.
- Selecting the case requires that the researcher establish a rationale for his or her purposeful sampling strategy for selecting the case and for gathering information about the case.

47. The Five Approaches Compared

THE FIVE APPROACHES COMPARED

- Narrative research
- Phenomenology
- Grounded theory
- Ethnography
- Case study

Characteristics	*Narrative Research*	*Phenomenology*	*Grounded Theory*	*Ethnography*	*Case Study*
Focus	Exploring the life of an individual	Understanding the essence of the experience	Developing a theory grounded in data from the field	Describing and interpreting a culture-sharing group	Developing an in-depth description and analysis of a case or multiple cases
Type of Problem Best Suited for Design	Needing to tell stories of individual experiences	Needing to describe the essence of a lived phenomenon	Grounding a theory in the views of participants	Describing and interpreting the shared patterns of culture of a group	Providing an in-depth understanding of a case or cases
Discipline Background	Drawing from the humanities including anthropology, literature, history, psychology, and sociology	Drawing from philosophy, psychology, and education	Drawing from sociology	Drawing from anthropology and sociology	Drawing from psychology, law, political science, medicine
Unit of Analysis	Studying one or more individuals	Studying several individuals that have shared the experience	Studying a process, action, or interaction involving many individuals	Studying a group that shares the same culture	Studying an event, a program, an activity, more than one individual
Data Collection Forms	Using primarily interviews and documents	Using primarily interviews with individuals, although documents, observations, and art may also be considered	Using primarily interviews with 20–60 individuals	Using primarily observations and interviews, but perhaps collecting other sources during extended time in field	Using multiple sources, such as interviews, observations, documents, artifacts
Data Analysis Strategies	Analyzing data for stories, "restorying" stories, developing themes, often using a chronology	Analyzing data for significant statements, meaning units, textural and structural description, description of the "essence"	Analyzing data through open coding, axial coding, selective coding	Analyzing data through description of the culture-sharing group; themes about the group	Analyzing data through description of the case and themes of the case as well as cross-case themes
Written Report	Developing a narrative about the stories of an individual's life	Describing the "essence" of the experience	Generating a theory illustrated in a figure	Describing how a culture-sharing group works	Developing a detailed analysis of one or more cases

General Structure of Study	• Introduction (problem, questions) • Research procedures (a narrative, significance of individual, data collection, analysis outcomes) • Report of stories • Individuals theorize about their lives • Narrative segments identified • Patterns of meaning identified (events, processes, epiphanies, themes) • Summary (Adapted from Denzin, 1989a, 1989b)	• Introduction (problem, questions) • Research procedures (a phenomenology and philosophical assumptions, data collection, analysis, outcomes) • Significant statements • Meanings of statements • Themes of meanings • Exhaustive description of phenomenon (Adapted from Moustakas, 1994)	• Introduction (problem, questions) • Research procedures (grounded theory, data collection, analysis, outcomes) • Open coding • Axial coding • Selective coding and theoretical propositions and models • Discussion of theory and contrasts with extant literature (Adapted from Strauss & Corbin, 1990)	• Introduction (problem, questions) • Research procedures (ethnography, data collection, analysis, outcomes) • Description of culture • Analysis of cultural themes • Interpretation, lessons learned, questions raised (Adapted from Wolcott, 1994b)	• Entry vignette • Introduction (problem, questions, case study, data collection, analysis, outcomes) • Description of the case/cases and its/their context • Development of issues • Detail about selected issues • Assertions • Closing vignette (Adapted from Stake, 1995)

48. Data-Collection in Qualitative Research

- Qualitative research is multi-model.
- The researcher may adopt a variety of research techniques, or a combination of such, as long as they are justified by the needs.

Three broad categories of methods and techniques which are mostly used in qualitative research:

- *Observations*
- *Interviews* and
- *Study of documents*.

Observations

- Observation usually means the researcher's act to find out what people do (Bernard, 1988:62).
- Observation may be obtrusive or unobtrusive.
- A researcher may simply sit in the corner of a school playground and observe how students behave during breaks, it is an example of unobtrusive.
- The researchers may not apply any stimuli, but their presence *per se* may have some influence on the scene. The most common example in this category is classroom observation. Although the researcher may just sit quietly at the corner of a classroom, the presence of the researcher may change the classroom climate. It is, nonetheless, still observation. It is an example of unobtrusive observation.

Participant Observation

- Participant observation is immersion in a culture. Ideally, the ethnographer lives and works in the community for six months to a year or more, learning the language and seeing patterns of behaviour over time. Long-term residence helps the researcher internalize the basic beliefs, fears, hopes and expectations of the people under study. (1989:45)

Nonparticipant Observation

- Non-participant observation involves merely watching what is happening and recording events on the spot.

- “Non-participant observation exists only where interactions are viewed through hidden camera and recorder or through one-way mirror" (1984: 143).

Interviewing

- Interviewing is trying to understand what people think through their speech.
- Types of interviewing:
- informal interviewing,
- unstructured interviewing,
- semi-structured interviewing, and
- formally structured interviewing.

Informal Interviewing

- *Unstructured Interviewing*
- Unstructured interviewing applies minimum control over the informant and the responses
- *Semi-structured Interviewing*
- Semi-structured interviewing is interviewing with an interview guide (Bernard, 1988:205).