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Research Methods Defined

- Strategy for implementing your research design
- Includes methods to collect and analyze data (surveys, interviews, and experiments)
- Suitable methods typically require understanding the research goal

Source: Virginia Tech University Lib Guides, https://tinyurl.com/21p9fsssv

Qualitative vs Quantitative Research

Comparison basis	Qualitative	Quantitative
Purpose	Concerned with understanding human behavior from the respondent's perspective	Concerned with uncovering facts about social phenomena
Approach	Observe and interpret	Measure and test
Logic	Inductive	Deductive
Researcher's role	Subjective (Participant, insider)	Objective (Observer, outsider)
Sample	Small sample	Large sample
Sampling method	Non-random	Random
Data collection approach	Unstructured (Interviews, focus groups, literature reviews)	Structured questionnaire (Surveys, experiments, interviews,)
Data Analysis	Non-statistical, cannot be expressed in numbers	Statistical, data usually expressed in numbers
Results	Particular findings, less generalizable (Ideographic)	Generalizable findings, can be applied to other population also. (Nomothetic)
Cost	Low	High

Source: Scribbr.com: Qualitative vs Quantitative Research Different Examples and Methods, https://tinyurl.com/bddmkpf2

	Quantitative research	Qualitative research
Category	Objective	Subjective
Type of reasoning	Deductive reasoning used to synthesise data.	Inductive reasoning used to synthesise data
Focus	Concise and narrow	Complex and broad
Application	Tests theory	Develops theory
Basis of knowing	Cause and effect relationships	Meaning, discovery, correlation
Basic element of analysis	Numbers and statistical analysis	Words, narrative
Scope	Single reality that can be measured and generalised	Multiple realities that are continually changing with individual interpretation

Source: Ebling Health Science Library, University of Wisconsin, https://tinyurl.com/ymjbfx8e

Qualitative vs. Quantitative Research Pros and Cons

Qualitative Research Advantages	Qualitative Research Disadvantages
• Answers exploratory 'why' questions • Enables flexible discourse • Provides face to face / non-verbal indicators	• Relatively small numbers

Quantitative Research Advantages	Quantitative Research Disadvantages
• Answers questions such as 'how much?' or 'how many?' • Provides more decision making substance /confirmation • Statistically robust	• Generally more expensive and time consuming • Fixed questionnaire structure

Source: Grand Canyon University, Lissie Hoover, https://tinyurl.com/47ztas6k

Major Quantitative Studies

- **Meta-Analysis -** review of studies on a research question and hypothesis, stringent inclusion criteria, uses statistics to combine samples and analyze results
- **Systematic Review -** review of literature focused on a research question, search strategy used may include grey literature
- **Randomized Control Trial -** prospective study design, subjects randomly allocated to an intervention and control group
- **Cohort -** prospective and longitudinal study design, subjects with causative behavior
- **Case-Control -** retrospective study design, subjects have condition or intervention
- **Case -** analyzing outcomes of interesting or rare cases, no statistical analysis, poor generalizability to populations

Source: University of Texas Arlington Lib Guides, https://tinyurl.com/2p8e2bjp

Major Qualitative Studies

- **Ethnography –** immersion in the target participants' environment to understand the goals, cultures, challenges, motivations, and themes
- **Narrative -** a sequence of events, usually from just one or two individuals to form a cohesive story
- **Phenomenological -** rely on the participants' own perspectives to provide insight into motivations
- **Grounded Theory -** provide an explanation or theory behind the events by using interviews and existing documents
- **Case Studies -** small scale research, complex and bounded

Source: Sage Publications: Creswell qualitative inquiry and research design, https://tinyurl.com/27z6htwx

Other Types of Studies

- **Longitudinal -** observation or measurement over extended period of time, data collected recurrently
- **Quasi-Experimental -** involves non-randomized study and control groups, includes pre and post-intervention measurement
- **Observational -** systematically watching interactions between individuals, recording physical features, behavior, clothing

Source: Pub Med.gov, National Library of Medicine, https://tinyurl.com/2p99k7kh

Research Method Types

- **Survey Research** - explain characteristics of a particular group, cross sectional and longitudinal
- **Experimental Research -** cause-effect relationship among group of variables, assigned to experimental or control groups
- **Correlation Research** - relationship between two close entities and the impact of one another
- **Descriptive Research** - explain and interpret the current status of people, events or settings, does not begin with a hypothesis
- **Causal-Comparative Research** - cause-effect equation between 2 or more variables and the effects of independent variable on the dependent variable are measured

Source: Len Kravitz, Ph.D. University of New Mexico, IAFC Conference Report, https://tinyurl.com/4pjekuzk

Mixed Methods Defined

- Research approach where researchers collect and analyze quantitative and qualitative data within the same study
- Mixing of data collection, analysis, and interpretation
- Combines elements of quantitative and qualitative research
- More complete picture than a quantitative or qualitative study, mixed method integrates benefits of both

Source: Gonzaga University, Foley Library, https://tinyurl.com/2p99k7kh

Use of Mixed Method

Advantages

- **Best of both worlds:** benefits from detailed, contextualized insights of qualitative data and generalizable, externally valid insights of quantitative data
- **Method flexibility:** less tied to disciplines and established research paradigms, offers more flexibility in designing research, combines aspects of different types of studies to distill most informative results

Disadvantages

- **Workload:** labor-intensive, collecting, analyzing, and synthesizing two types of data into one research product takes time and effort, often involves interdisciplinary teams, costs more than stand alone studies.
- **Differing or conflicting results:** challenging to interpret if quantitative and qualitative results do not agree

Source: Patrick Byrne, Qualitative Health Research, 2007, https://tinyurl.com/8w4hub8h