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

Source: Scribbr.com: Qualitative vs Quantitative Research Different Examples and Methods, https://tinyurl.com/bddmkpf2
<table>
<thead>
<tr>
<th>Category</th>
<th>Quantitative research</th>
<th>Qualitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of reasoning</td>
<td>Deductive reasoning used to synthesise data.</td>
<td>Inductive reasoning used to synthesise data</td>
</tr>
<tr>
<td>Focus</td>
<td>Concise and narrow</td>
<td>Complex and broad</td>
</tr>
<tr>
<td>Application</td>
<td>Tests theory</td>
<td>Develops theory</td>
</tr>
<tr>
<td>Basis of knowing</td>
<td>Cause and effect relationships</td>
<td>Meaning, discovery, correlation</td>
</tr>
<tr>
<td>Basic element of analysis</td>
<td>Numbers and statistical analysis</td>
<td>Words, narrative</td>
</tr>
<tr>
<td>Scope</td>
<td>Single reality that can be measured and generalised</td>
<td>Multiple realities that are continually changing with individual interpretation</td>
</tr>
</tbody>
</table>
## Qualitative vs. Quantitative Research Pros and Cons

<table>
<thead>
<tr>
<th>Qualitative Research Advantages</th>
<th>Qualitative Research Disadvantages</th>
</tr>
</thead>
</table>
| • Answers exploratory ‘why’ questions  
  • Enables flexible discourse  
  • Provides face to face / non-verbal indicators | • Relatively small numbers |

<table>
<thead>
<tr>
<th>Quantitative Research Advantages</th>
<th>Quantitative Research Disadvantages</th>
</tr>
</thead>
</table>
| • 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 |
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

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