

Structuring a Research Method Document for a Quantitative Approach



**Structuring a Research Method Document:
Focus on Quantitative Research**

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Introduction to Quantitative Research

- **Focus on numerical data and statistical analysis.**
- **Aims for generalizability and objectivity.**
- **Uses structured tools like surveys, experiments, and data from secondary sources.**

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Typical Structure of a Quantitative Research Method Section

- 1. Research Design**
- 2. Variables and Hypotheses**
- 3. Participants/Sampling**
- 4. Data Collection Methods**
- 5. Data Analysis**
- 6. Ethical Considerations**

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Research Design

- **Types of Design:** Experimental, quasi-experimental, correlational, descriptive.
- **Define:** The design you've chosen and why it fits your research question.
- **Explain:** The process for how data will be collected and analyzed.

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Variables and Hypotheses

- **Define Your Variables:**
 - **Independent variable(s) (what you manipulate)**
 - **Dependent variable(s) (what you measure)**
- **State Your Hypotheses:**
 - **Null Hypothesis (no effect or relationship)**
 - **Alternative Hypothesis (expected effect or relationship)**
- **Justify the variables and expected outcomes.**

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Participants/Sampling

- **Population:** Describe the population of interest.
- **Sampling Method:** Random sampling, stratified sampling, cluster sampling, etc.
- **Sample Size:** Use statistical methods (e.g., power analysis) to justify sample size for generalizability.

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Data Collection Methods

- **Tools and Instruments: Surveys, questionnaires, tests, or secondary data.**
- **Measurement: Describe how each variable will be measured (e.g., Likert scales, performance scores).**
- **Reliability and Validity: Explain how the tools have been validated and their reliability in prior studies.**

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Data Analysis

- **Statistical Methods:** Define which statistical tests you'll use (e.g., t-test, regression, chi-square).
- **Software:** Mention software used for analysis (e.g. R, Excel).
- **Significance Level:** State the level of significance (typically $p < 0.05$).
- **Data Presentation:** How the results will be presented (e.g., tables, graphs).

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Ethical Considerations

- **Informed Consent:** Detail the process for obtaining consent.
- **Confidentiality:** How will data and participant information be protected?
- **Data Handling:** Describe how data will be stored, shared, and anonymized.

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Conclusion

- **Summarize:** The importance of a well-structured method section in quantitative research.
- **Highlight:** The clarity and transparency that a quantitative method provides for replication and generalizability.