




RESEARCH METHODOLOGY AND PROCEDURE



Introduction

This chapter discusses the research methodology and procedures adopted for collecting data. It starts with a description of the research design, followed by the research method, and ends with an outline of the statistical techniques used to address issues of validity and reliability of the instruments used for the collection of data.



"Methods of Research and Procedures," is a crucial section that outlines how the study was conducted. This chapter provides a detailed account of the research design, sampling methods, data collection instruments, procedures, and data analysis techniques employed in the study.



Research Design

This section elucidates the overarching plan or structure of your study. Whether it's experimental, correlational, qualitative, or quantitative, the research design sets the stage for understanding the approach taken to answer the research questions or test hypotheses.

Population and Sample

Here, you define the group of individuals or elements under investigation (population) and explain how you selected a subset of that group for your study (sample). Detailing the sampling method and justifying its appropriateness is essential for the reader to assess the generalizability of your findings.



Data Collection Instruments

Describe the tools, instruments, or materials used to gather data. Discuss the rationale behind choosing these instruments and, if applicable, provide evidence of their reliability and validity. This section is critical for establishing the credibility and accuracy of your data.

Data Collection Procedures

Present a step-by-step account of how data was collected, including the location, time frame, and any ethical considerations. If there were pilot studies or adjustments made during the data collection phase, these should be explained here. This section ensures transparency and replicability of the study.

Data Analysis Procedures

Detail the statistical or analytical methods applied to the collected data. Justify the choice of these methods and, if necessary, discuss any assumptions or limitations associated with them. This section demonstrates the rigor and appropriateness of your data analysis.

Ethical Considerations

is an architectural pattern that is used for designing and developing software applications. It is based on the concept of services, which are self-contained modules that can be accessed by other modules or applications over a network.

In SOA, services are designed to be independent, reusable, and loosely coupled. This means that a service can be used by multiple applications or systems, and changes made to one service should not affect other services.



Validity and Reliability

Explain the steps taken to ensure the validity and reliability of your study, particularly if you used established instruments. Cite relevant literature on the validity and reliability of these instruments to bolster the credibility of your research.



Limitations

Acknowledge any constraints or limitations in your study. This might include factors that could have influenced the results or aspects that could be improved upon in future research. Being transparent about limitations adds nuance and context to your findings.

Methods of Collecting Data

1. Surveys and Questionnaires:

Surveys involve gathering information from a sample by using a set of structured questions.

2. Interviews:

In-depth conversations between the researcher and participants to gather detailed information.

Methods of Collecting Data

3. Observation:

Directly observing and recording behaviors or events.

4. Experiments:

Manipulating variables to observe their effect on outcomes.

Methods of Collecting Data

5. Case Studies:

In-depth exploration of a single case (individual, group, or situation).

6. Secondary Data Analysis:

Analyzing existing data collected by others.

Introduction to Sampling Design

- Begin by introducing the concept of sampling and why it is essential for your study.
- Clarify the goal of your sampling design, whether it is to generalize findings to a larger population or to gain in-depth insights from a specific group.

Introduction to Sampling Design

The section on sampling design provides an explanation of how the sample for the study was selected. This is a crucial component of the methodology as it influences the generalizability of your findings.

Definition of Population:

- Clearly define the population you are studying. This is the entire group that your research is focused on.
- Specify any inclusion or exclusion criteria that define the boundaries of your population.

Sampling Frame:

- Describe the list or method used to identify potential participants.
- If your population is large and geographically dispersed, explain how you developed a sampling frame to make the selection process more manageable.

Sampling Method:

- Random Sampling: Every member of the population has an equal chance of being selected.
- Stratified Sampling: Population is divided into subgroups (strata) based on certain characteristics, and samples are randomly taken from each stratum.
- Convenience Sampling: Participants are chosen based on their availability or accessibility.
- Purposive Sampling: Participants are selected based on specific characteristics relevant to the study.
- Snowball Sampling: Existing participants recruit future participants.

Rationale for Sampling Method:

- Provide a justification for the chosen sampling method. Explain how it aligns with your research questions, objectives, and the nature of your study.
- Discuss any constraints or practical considerations that influenced your choice.

Sample Size:

- Justify the size of your sample. Consider statistical power, the nature of your analysis, and the resources available.
- Refer to any power analysis or relevant literature that guided your decision on sample size.

Sampling Procedure:

- Outline the step-by-step process you followed to select participants.
- If applicable, detail any recruitment strategies, contact methods, or incentives used.

Characteristics of the Sample:

- Present demographic information about the participants (age, gender, socioeconomic status, etc.).
- Discuss how the characteristics of your sample may impact the generalizability of your findings.

Limitations and Assumptions:

- Acknowledge any limitations associated with your sampling design.
- Address any assumptions made about the population and the potential impact on the study's outcomes.

THANK YOU!