What Is Research Methodology? (Why It's Important and Types)

[Indeed Editorial Team](#)

Updated April 9, 2024

In a thesis, dissertation, academic journal article or other formal pieces of research, there are often details of how the researcher approached the study and the methods and techniques they used. If you're designing a research study, then it's helpful to understand what research methodology is and the selection of techniques and tools available to you. In this article, we explore what research methodology is, the types of research methodologies and the techniques and tools commonly used to collect and analyze data.

Related jobs on Indeed

[Psychology Researchers jobs](#) ›

[Part-time jobs](#) ›

[Full-time jobs](#) ›

[Remote jobs](#) ›

[View more jobs on Indeed](#) →

What is research methodology?

Research methodology is a way of explaining how a researcher intends to carry out their research. It's a logical, systematic plan to resolve a research problem. A methodology details a researcher's approach to the research to ensure reliable, valid results that address their aims and objectives. It encompasses what data they're going to collect and where from, as well as how it's being collected and analyzed.

Related: **20 Types of Research Design You Can Use For Your Research** ⧉

Why is a research methodology important?

A research methodology gives research legitimacy and provides scientifically sound findings. It also provides a detailed plan that helps to keep researchers on track, making the process smooth, effective and manageable. A researcher's methodology allows the reader to understand the approach and methods used to reach conclusions.

Having a sound research methodology in place provides the following benefits:

- Other researchers who want to replicate the research have enough information to do so.

- Researchers who receive criticism can refer to the methodology and explain their approach.

- It can help provide researchers with a specific plan to follow throughout their research.

- The methodology design process helps researchers select the correct methods for the objectives.

- It allows researchers to document what they intend to achieve with the research from the outset.

Related: **How To Write a Methodology (With Tips and FAQs)** ⧉

Types of research methodology

When designing a research methodology, a researcher has several decisions to make. One of the most important is which data methodology to use, qualitative, quantitative or a combination of the two. No matter the type of research, the data gathered will be as numbers or descriptions, and researchers can choose to focus on collecting words, numbers or both.

Here are the different methodologies and their applications:

Qualitative

Qualitative research involves collecting and analyzing written or spoken words and textual data. It may also focus on body language or visual elements and help to create a detailed description of a researcher's observations. Researchers usually gather qualitative data through interviews, observation and focus groups using a few carefully chosen participants.

This research methodology is subjective and more time-consuming than using quantitative data. Researchers often use a qualitative methodology when the aims and objectives of the research are exploratory. For example, when they perform research to understand human perceptions regarding an event, person or product.

Quantitative

Researchers usually use a quantitative methodology when the objective of the research is to confirm something. It focuses on collecting, testing and measuring numerical data, usually from a large sample of participants. They then analyze the data using statistical analysis and comparisons. Popular methods used to gather quantitative data are:

- Surveys

- Questionnaires

- Test

- Databases

- Organizational records

This research methodology is objective and is often quicker as researchers use software programs when analyzing the data. An example of how researchers could use a quantitative methodology is to measure the relationship between two variables or test a set of hypotheses.

Related: What Is Quantitative Analysis? ☑

Mixed-method

This contemporary research methodology combines quantitative and qualitative approaches to provide additional perspectives, create a richer picture and present multiple findings. The quantitative methodology provides definitive facts and figures, while the

qualitative provides a human aspect. This methodology can produce interesting results as it presents exact data while also being exploratory.

Types of sampling design in research methodology

When creating a sample design, a researcher decides from who or what they'll collect data. They also choose the techniques and procedures they'll use to select items or individuals for the sample. There are several types of sample design that fall into two main categories:

Probability sampling

This sampling method uses a random sample from the pool of people or items you're interested in, called the population, and is random or chance sampling. Every person or item in the population has an equal chance of being selected. Using this method is the best way to get a truly representative sample, and researchers can generalize the study's results to the entire population.

Nonprobability sampling

Nonprobability sampling is not random, as the researcher deliberately selects people or items for the sample. Researchers also refer to this method as deliberate sampling, judgment sampling or purposive sampling. Every person or item in the population doesn't have an equal chance of being selected, and the results are typically not generalizable to the entire population.

Related: Types of Sampling: Choosing the Best Types and What To Avoid ↗

Common data collection methods

Once a researcher has finalized their population sample, they need to decide how to collect data. There are several options for data collection, and the best research method to use will depend on the research topic, methodology, type of data and the population sample.

Although there are many ways to collect data, people often broadly group them in these ways:

- **Interviews**: Researchers can carry out interviews in a structured, semi-structured, or unstructured format, depending on how formal the questions are.

- **Surveys**: Surveys can be online or in-person and have either free-answer, essay-style questions, or closed, multiple-choice style questions. Depending on the data required, a

survey could also use a mixture.

- **Focus groups**: Focus groups have interviewees give their thoughts, opinions, perspectives and perceptions on specific topics. A moderator usually leads the group to help guide the discussion and ensure everyone has a chance to share their thoughts.

- **Observations**: Direct observation involves observing the spontaneous behavior of participants without interference from the researcher, while participant observation is more structured, and the researcher interacts with the participants.

- **Documents and records**: Researchers collect data such as published reports and official documents of international bodies, government agencies or private institutes and internal records such as employees' payroll, raw material quantities and cash receipts.

Related: [Types of Research Methods (Definition and Best Practices)](#) ↗

Common data analysis methods

Researchers use different data analysis methods depending on whether the data is qualitative or quantitative. For example:

Qualitative data analysis

Qualitative data is usually in spoken or written information, such as interview transcripts, video and audio recordings, notes, images and text documents. Qualitative data analysis involves identifying common patterns in participants' responses and critically analyzing them to achieve research aims and objectives.

The most commonly used qualitative data analysis methods are:

- **Content analysis**: This is one of the most common methods used to analyze documented information and is usually used to analyze interviewees' responses.

- **Narrative analysis**: Researchers use this method to analyze content from several sources, including interviews, observations and surveys. It focuses on using people's stories and experiences to answer research questions.

- **Discourse analysis**: This method analyzes spoken or written language in its social context and aims to understand how people use language in day-to-day situations.

- **Grounded theory**: This method uses qualitative data to discover or construct a theory explaining why something happened. It uses a comparative analysis of data from similar

cases in different settings to derive explanations.

Quantitative data analysis

Quantitative data analysis involves turning numbers into meaningful data by applying rational and critical thinking. Most researchers use analytical software to assist with quantitative data analysis. The first stage in analyzing quantitative data is validating, editing and coding the data. Once completed, the data is ready for analysis.

The most commonly used quantitative data analysis methods are:

- **Descriptive analysis**: This method uses descriptive statistics like mean, median, mode, percentage, frequency and range to find patterns.

- **Inferential analysis**: This method shows the relationships between multiple variables using correlation, regression and variance analysis.

Do you need help with your resume?

Yes	No

Factors to consider when choosing a research methodology

Here are some factors to consider when choosing a research methodology:

- **The research objective**: Consider the research project objective. When researchers know what information they require at the end of the project to meet their objectives, it helps them select the correct methodology and research method.

- **Significance of statistics:** Another factor to consider is whether you require concise, data-driven research results and statistical answers. Or whether the research questions require an understanding of reasons, perceptions, opinions and motivations.

- **Nature of the research:** If the aims and objectives are exploratory, the research will probably require qualitative data collection methods. However, if the aims and objectives are to measure or test something, the research will require quantitative data collection methods.

- **Sample size:** How big does the sample need to be to answer the research questions and meet the objectives? The sample size can determine your data-gathering methods, such as whether to use in-person interviews or smaller samples or online surveys for larger ones.

- **Time available:** If there are time constraints, consider techniques like random or convenience sampling and tools that allow for data collection in a few days. If there's more time available for data collection, in-person interviews and observations are possible.

Frequently asked questions

▼   **What's the difference between research methods and methodology?**

Research methods are individual tools, techniques, or behaviors a researcher uses to collect information. A research methodology is a specific way of conducting research that may incorporate multiple research methods. It details the what, where and how of data collection and analysis.

▼   **What are the six basic research methods?**

The six basic research methods, or tools for collecting information, are:

- Social surveys

- Interviews

- Experiments

- Ethnography

- Longitudinal studies

- Participant observation

▼   **How do you choose the right research methodology?**

You can choose the right research methodology by determining the type of data necessary for answering your research question. For instance, you may require numerical

data to generate concrete measurements or test your hypothesis. If you want to explore more abstract concepts, consider collecting qualitative data.

Researchers might also choose between primary and secondary data when determining whether they want to collect data first-hand or analyze vast amounts of existing information. Additionally, note that experimental methods are appropriate for establishing relationships between variables while descriptive methods can help you better understand the characteristics of whatever you're studying.

▶ **What are the main components of a research methodology?**

Psychology researchers
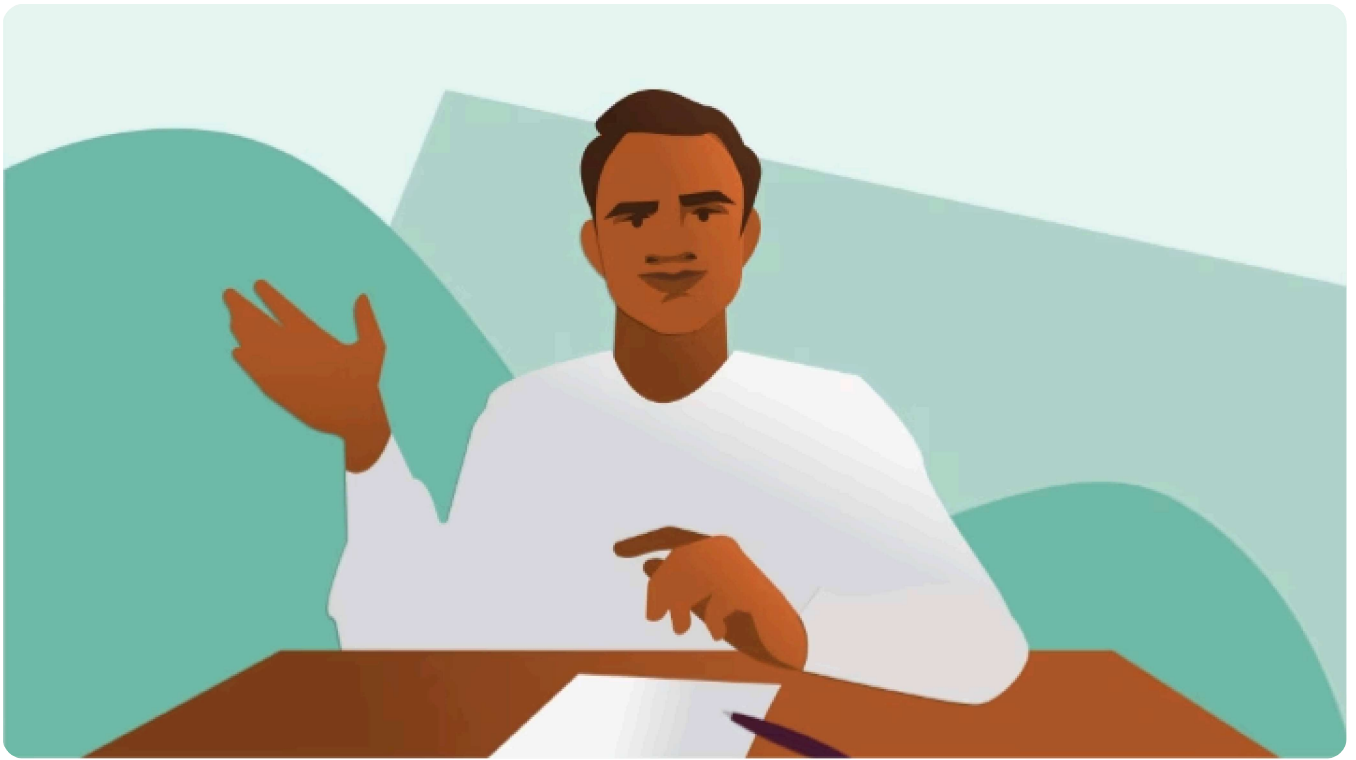
Share:

Is this article helpful?

👍 👎

Related Articles
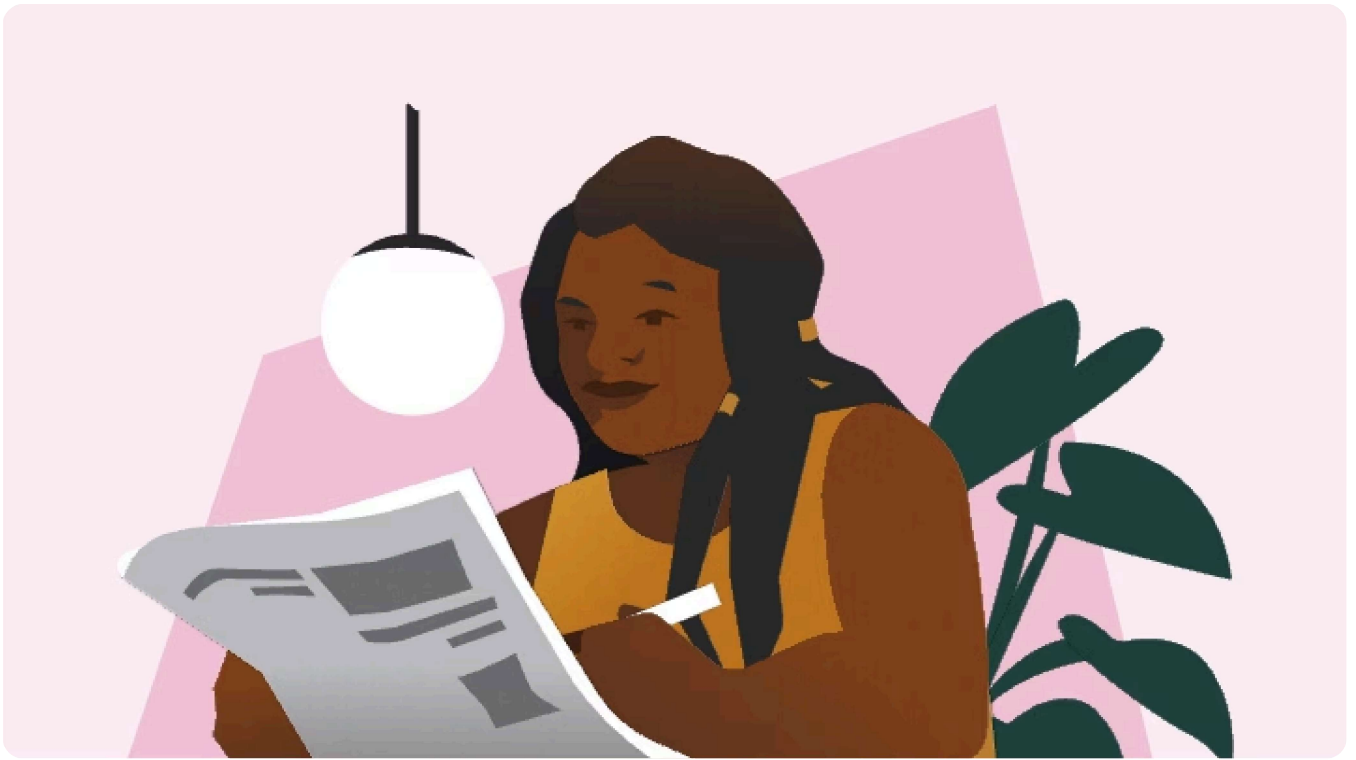
How To Find Psychology Research Assistant Jobs With 13 Strategies

What Is a Clinical Research Coordinator? A Complete Career Guide

Tips To Write A Research Assistant Resume (With Examples)

Explore more articles

Expectancy Theory of Motivation: Guide for Managers

10 Types of Organizational Structures for Businesses

Judgment Skills: Definition and Examples

How to Schedule a Google Meet Session (Methods and Steps)

How To Split Cells in Excel in 5 Steps (With Benefits and Tips)

Resignation vs. Quitting: Differences, Dos and Don'ts

What Is Cost Analysis? (Plus How To Calculate in 7 Steps)

How To Create a Macro in Excel (With Uses and Tips)

How To Write a Follow-Up Email After Sending a Proposal in 6 Steps

[How To Categorize Small Business Expenses (With 20 Examples)](#)

[7 Ways To Improve Your Personal Development Skills](#)

[7 Ways To Rephrase 'That's Not My Job' and What To Say Instead](#)