

Method Sections for Empirical Research Papers

an overview

If you have not already, you may wish to review the [Overview of Empirical Research Papers](#) before using this resource. An annotated Method section and other empirical research paper resources are available [here](#).

What is the purpose of the Method section in an empirical research paper?

The Method section (also sometimes called Methods, Materials and Methods, or Research Design and Methods) describes the data collection and analysis procedures for a research project. In short, it answers the question, “What did you do?” The purpose of this section is to demonstrate the integrity of a study’s research methods so that its results will be seen as valid, reliable, and trustworthy. A Method section should show that the researcher(s) measured or described what they intended to, that they implemented research procedures in a precise and consistent manner, and that they interpreted their data in strategic, unbiased way. The section should provide readers with enough detail to replicate the study. It should also give readers a “feel for what it was like to be a participant,” as Daryl Bem stated in his [instructions](#) for writing journal articles.

Typical structure of a Method section in an empirical research paper:

Most Method sections are organized chronologically. That is, they begin with what happened first (e.g., the recruitment and selection of participants) and end with what happened last (e.g., the coding and analysis of data). Method sections are commonly divided into labeled subsections that describe different aspects of the project’s procedures. These subsections vary by project type and by discipline. Below is list of subsections that may appear in a Method section:

- **Research design / Study design.** What was your research design (your overall strategy for answering your research question)? Was this an experimental, observational, qualitative, or mixed-methods study? Why is the method you chose considered legitimate within the field or discipline? Why is this method the best approach for answering your research question(s) or accomplishing your purpose? *Note: Sometimes this information is provided in the Method section’s opening paragraph, rather than a subsection.*
- **Ethical approval.** What governing board or regulatory body approved this study? If your study was approved by an Institutional Review Board, what number did it assign to your project?
- **Setting.** How did you determine the location of the research? Why is this a suitable location for the project? Do you have a previous connection to or institutional affiliation with this location?
- **Participants / Sample / Subjects.** When, where, and how were participants recruited to your study? Was the purpose of the study hidden from them? If so, why? How were participants selected (i.e., what were the criteria for inclusion and exclusion)? What were the demographic characteristics (age, sex, race, education level, etc.) of the participants? What, if anything, was done to ensure the participant sample is representative of a larger population? What was the intended sample size, the sample size at the beginning of the study, and the sample size at the end of the study? If relevant, why did participants drop out of the study?
- **Instruments / Measures.** If you used a survey, questionnaire, or structured set of interview questions, describe that instrument. Did you create the instrument, or did you use an existing one (if this is the case, name and cite it)? Who administered the instrument? Where and how was it administered? How many questions or items did the instrument include? What topics or themes did it cover (you may wish to provide some sample questions)? What types of questions did it ask (e.g., Likert-type, multiple-choice, open-ended)? What variables were measured? What evidence do you have, if any, that the instrument is reliable and valid? *Note: If your study uses multiple instruments, consider describing them under separate subheadings.*
- **Procedure(s)/Intervention.** If you conducted an experiment or used a clinical or educational intervention, describe it. Were participants divided into groups? Was there a control group? How were participants sorted into groups? Where did the experiment/intervention take place? What was the duration of the experiment/intervention, and did it take place over multiple sessions? Who delivered the intervention/experiment, and how did they interact with participants? What instructions did participants receive? What mechanical apparatuses (e.g. heartrate monitors) were used, and what were their settings?

What clinical treatment (e.g., a drug or therapy regimen) was used, and how was it administered? What was the nature of the educational intervention (e.g., online modules or a series of lectures)? What happened during the experiment/intervention?

- **Data collection.** If you conducted a qualitative study (e.g. observation, ethnography, open-ended interviews, artifact analysis), describe your protocol for collecting or capturing data. Who collected the data? How was the data collected and in what form (e.g., field notes, videos, audio recordings)? Over what time period and in what intervals was the data collected? How was the data recorded and stored? What steps did the researcher take to ensure reflexivity (self-awareness) and consistency and to limit bias in the data collection process?
- **Data analysis / Statistics / Statistical analyses.** Were the data transformed in any way to facilitate analysis (e.g. converted from audio recordings to transcripts)? Who analyzed or interpreted the data? How was it analyzed or interpreted? What software was used? What kinds of biometric or statistical tests were run? How were scales or instruments scored? Was there any missing data? Was any of the data excluded from the analysis? How were coding categories or themes developed? *Note: In some fields, this information appears at the beginning of the results section.*

Tips and pitfalls to avoid:

- Make sure to review examples of Method sections from sample papers or journal articles in your discipline, as conventions for structure, content, length, and level of detail vary by discipline and among journals. You may find it useful to locate a paper that employs a similar methodology to your study—consider using the subheadings and structure of its Method section as a template for your own.
- If you haven't yet collected data for your research project, consider keeping a set of procedural notes during the process that can serve as the foundation for your Method section.
- If you are writing a Method section as part of a project proposal, make sure to use future tense (e.g. "We will recruit participants via...") as opposed to past tense. You will not yet be able to describe some things, like the demographics of your participant sample, but you should be able to articulate goals, such as how many participants you intend to recruit and how you plan to get a representative sample.
- Pay close attention to the order in which you present information. It may be helpful to envision this as a set of instructions (written in past tense) for a reader who wishes to replicate your study.
- Be careful to avoid redundancy. There should be little (if any) overlap in the content of each subsection.