Introduction

The methodology chapter precisely outlines the research method(s) employed in your dissertation and considers any relevant decisions you made, and challenges faced, when conducting your research. Getting this right is crucial because it lays the foundation for what’s to come: your results and discussion.

Methods or Methodology?

Some disciplines refer to this chapter as the research methods, whilst others call it the methodology. The two are often used interchangeably, but they are slightly different. The methods chapter outlines the techniques used to conduct the research and the specific steps taken throughout the research process. The methodology also outlines how the research was conducted, but is particularly interested in the philosophical underpinning that shapes the research process. As indicated by the suffix, -ology, meaning the study of something, the methodology is like the study of research, as opposed to simply stating how the research was conducted.

This guide focuses on the methodology, as opposed to the methods, although the content and guidance can be tailored to a methods chapter. Every dissertation is different and every methodology has its own nuances, so ensure you adapt the content here to your research and always consult your supervisor for more detailed guidance. As part of the Writing the Dissertation series, this guide covers the most common conventions found in
What is the methodology?

The methodology of a dissertation is like constructing a house of cards. Having strong and stable foundations for your research relies on your ability to make informed and rational choices about the design of your study. Everything from this point on – your results and discussion - rests on these decisions, like the bottom layer of a house of cards. Without these strong methodological foundations, your results will lack reliability, which hinders your capacity to analyse and discuss the implications of your research, which impairs the quality of your contribution, bringing your house of cards (your dissertation) tumbling down.

The methodology is where you explicitly state, in relevant detail, how you conducted your study in direct response to your research question(s) and/or hypotheses. You should work through the linear process of devising your study to implementing it, covering the important choices you made and any potential obstacles you faced along the way.

What are my markers looking for?

Your markers are looking for your understanding of the complex process behind original (see definition) research. They are assessing your ability to:

- demonstrate an understanding of the impact that methodological choices can have on the reliability and validity of your findings, meaning you should engage with ‘why’ you did that, as opposed to simply ‘what’ you did.
• Make informed methodological choices that clearly relate to your research question(s).

**Definition:** Originality doesn’t strictly mean you should be inventing something entirely new. Originality comes in many forms, from updating the application of a theory, to adapting a previous experiment for new purposes – it’s about making a worthwhile contribution.

**Structuring the methodology**

The methodology chapter should outline the research process undertaken, from selecting the method to articulating the tool or approach adopted to analyse your results. Because you are outlining this process, it’s important that you structure your methodology in a linear way, showing how certain decisions have impacted on subsequent choices. It’s useful, therefore, to think of the methodology in a layered way, as outlined in Figure 1.

*Figure 1 Saunders et al.’s. (2007) ‘research onion’ depicting the layered ‘out to in’ structure of a methodology.*
You don’t need to precisely follow these exact layers as some won’t be relevant to your research. However, the layered ‘out to in’ structure developed by Saunders et al. (2007) is appropriate for any methodology chapter because it guides your reader through the process in a linear fashion, demonstrating how certain decisions directly impacted on others. For example, you need state whether your research is qualitative, quantitative or mixed before articulating your precise research method. Likewise, you need to explain how you collected your data before you inform the reader of how you subsequently analysed the data.

*Using this linear approach from 'outer' layer to ‘inner’ layer, let’s look at the most common layers used to structure a methodology chapter.*

**Remember…** the content of a methodology can vary depending on the nature of the research and the conventions of your discipline, so you might not incorporate these exact layers, or some the wording might be slightly different.

**Introduction and research outline**

**What?** Like any chapter, you should open your methodology with an introduction. It’s good to start by briefly restating the research problem, or gap, that you’re addressing, along with your research question(s) and/or hypotheses. Following this, it’s common to provide a very condensed statement that outlines the most important elements of your research design. Here’s a short example:

*This study adopted qualitative research through a series of semi-structured interviews with seven experienced industry professionals.*

Like any other introduction, you can then provide a brief statement outlining what the chapter is about and how it’s structured.

**Why?** Restating the research problem, or gap, and your research question(s) and/or hypotheses creates a natural transition from your previous review of the literature, which helped you to identify the gap or problem, to how you are now going to address such a problem. Your markers are also going to assess the relevance and suitability of your
method and methodological choices against your research question(s), so it’s good to ‘frame’ the entire chapter around the research question(s) by bringing them to the fore.

**Research philosophy**

**What?** A research philosophy is an underlying belief that shapes the way research is conducted. For this reason, as featured in the ‘research onion’ (Figure 1), the philosophy should be the outermost layer – the first methodological issue you deal with following the introduction and research outline – because every subsequent choice, from the method employed to the way you analyse the data, is directly influenced by your philosophical stance. You can say something about other philosophies, but it’s best to directly relate this to your research and the philosophy you have selected – why it’s not an appropriate philosophy for you to adopt, for instance. Otherwise, explain to your reader the philosophy you have selected (using secondary literature), its underlying principles and why this philosophy, therefore, is particularly relevant to your research.

**Definition:** Guba and Lincoln (1994: 105) define research philosophy as “the basic belief system or worldview that guides the investigator”.

**Why?** The research philosophy is sometimes featured in a methodology chapter, but not always. It depends on the conventions within your school or discipline, so only include this if it’s expected. The reason for outlining the research philosophy is to show your understanding of the role that your chosen philosophy plays in shaping the design and approach of your research study. The philosophy you adopt also indicates your worldview (in the context of this research), which is an important way of highlighting the role you, the researcher, play in shaping new knowledge.

**Research method**

**What?** This is where you state whether you’re doing qualitative, quantitative or mixed-methods research before outlining the exact instrument or strategy (see definition) adopted
for research (interviews, case study, etc.). It’s also important that you explain why you have chosen that particular method and strategy. You can also explain why you’re not adopting qualitative or quantitative research, or why you haven’t used a particular instrument, but keep this brief and use it to reinforce why you have chosen your method and strategy.

Why? Your research method, more than anything else, is going to directly influence how effectively you answer your research question(s). For that reason, it’s crucial that you emphasise the suitability of your chosen method and instrument for the purposes of your research.

Definition: In research, the term method can be vaguely applied to mean qualitative, quantitative or mixed, as well as the exact form of data collection, such as interviews. For the latter, instrument (sometimes known as strategy) refers more precisely to the device or tool employed to collect and measure data, such as interviews, focus groups and experiments.

Data collection

What? The data collection part of your methodology explains the process of how you accessed and collected your data. Using an interview as a qualitative example, this might include the criteria for selecting participants, how you recruited the participants and how and where you conducted the interviews. There is often some overlap with data collection and research method, so don’t worry about this. Just make sure you get the essential information across to your reader.

Why? The details of how you accessed and collected your data are important for replicability purposes – the ability for someone to adopt the same approach and repeat the study. It’s also important to include this information for reliability and consistency purposes (see Validity and reliability below for more).
Data analysis

**What?** After describing how you collected the data, you need to identify your chosen method of data analysis. Inevitably, this will vary depending on whether your research is qualitative or quantitative (see note below). Tell your reader which data analysis software (such as SPSS or Atlast.ti) or method you’ve used and why, using relevant literature. Again, you can mention other data analysis tools that you haven’t used, but keep this brief and relate it to your discussion of your chosen approach. This isn’t to be confused with the results and discussion chapters where you actually state and then analyse your results. This is simply a discussion of the approach taken, how you applied this approach to your data and why you opted for this method of data analysis.

**Why?** Details of how you analysed your data helps to contextualise your results and discussion chapters. This is also a validity issue (see **Validity and reliability** below) as you need to ensure that your chosen method for data analysis helps you to answer your research question(s) and/or respond to your hypotheses. To use an example from Bui (2014: 155), “if one of the research questions asks whether the participants changed their behaviour before and after the study, then one of the procedures for data analysis needs to be a comparison of the pre- and postdata.”

**Note:** Qualitative research tends to be narrative-based where forms of ‘coding’ are employed to categorise and group the data into meaningful themes and patterns (Bui, 2014). Quantitative deals with numerical data meaning some form of statistical approach is taken to measure the results against the research question(s).

**Other factors to consider:**

**Validity and reliability**

**Validity** simply refers to whether the research method(s) and instrument(s) applied are directly suited to meet the purposes of your research – whether they help you to answer your research question(s), or allow you to formulate a response to your hypotheses. Validity can be separated into two forms: internal and external. The difference between the two is defined by what exists inside the study (internal) and what exists outside the study.
Internal validity is the extent to which “the results obtained can be attributed to the manipulation of the independent variable” (Salkind, 2011: 147), **External validity** refers to the application of your study’s findings outside the setting of your study. This is known as **generalisability**, meaning to what extent are the results applicable to a wider context or population?

**Definition:** Bui (2014: 150) defines validity as “the extent to which the instrument measures what it was intended to measure.”

**Reliability** refers to the consistency with which you designed and implemented your research instrument, or instruments. The idea behind this is to ensure that someone else could replicate your study and, by applying the instrument in the exact same way, would achieve the same results. This is crucial to quantitative and scientific based research, but isn’t strictly the case with qualitative research given the subjective nature of the data. With qualitative data, it’s important to emphasise that data was collected in a consistent way to avoid any distortions. For example, let’s say you’ve circulated a questionnaire to participants. You would want to ensure that every participant receives the exact same questionnaire with precisely the same questions and wording, unless different questionnaires are required for different members of the sample for the purposes of the research.

**Note:** Both validity and reliability are sometimes written as their own section in a methodology chapter, but you could discuss these factors throughout, where relevant, when responding to the ‘why?’ question of a particular methodological decision.

**Ethical considerations**

Any research involving human participants needs to consider ethical factors. In response, you need to show your markers that you have implemented the necessary measures to cover the relevant ethical issues. These are some of the factors that are typically included:
• How did you gain the consent of participants and how did you formally record this consent?
• What measures did you take to ensure participants had enough understanding of their role to make an informed decision, including the right to withdraw at any stage?
• What measures did you take to maintain the confidentiality of participants during the research and, potentially, for the write-up?
• What measures did you take to store the raw data and protect it from external access and use prior to the write-up?

These are only a few examples of the ethical factors you need to write about in your methodology. Depending on the nature of your research, ethical considerations might form a significant part of your methodology chapter, or may only constitute a few sentences. Either way, it’s imperative that you show your markers that you’ve considered the relevant ethical implications of your research.

**Note:** Any research at the University of Southampton requiring ethical approval has to be authorised via the University’s ERGO (Ethics Research Governance Online) system. You need to explicitly state that your research has been approved via ERGO, whilst it might be useful to include any relevant documentation that you submitted for ethical approval as an appendix.

**Limitations**

Don’t make the mistake of ignoring the limitations of your study (see **What to avoid**) – it’s a common part of research and should be confronted. Limitations of research can be diverse, but tend to be logistical issues relating to time, scope and access. Whilst accepting that your study has certain limitations, the key is to put a positive spin on it, like the example below:
Despite having a limited sample size compared to other similar studies, the number of participants is enough to provide sufficient data, whilst the in-depth nature of the interviews facilitates detailed responses from participants.

**Tip:** You can return back to these limitations when providing recommendations for future research. The recommendations section can either appear in the discussion chapter or in the conclusion. See our [Writing the Results and Discussion](#) guide and [Writing the Conclusion](#) guide for more.

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**What to avoid**

**Ignoring limitations** – it might seem instinctive to hide any flaws or limitations with your research to protect yourself from criticism. However, you need to highlight any problems you encountered during the research phase, or any limitations with your approach. Your markers are expecting you to engage with these limitations and highlight the kind of impact they may have had on your research. Just be careful that you don’t overstress these limitations. Doing so could undermine the reliability and validity of your results, and your credibility as a researcher.

**Literature review of methods** – don’t mistake your methodology chapter as a detailed review of methods employed in other studies. This level of detail should, where relevant, be incorporated in the literature review chapter. Any reference to methodological choices made by other researchers should come into your methodology chapter, but only in support of the decisions you made.

**Unnecessary detail** – it’s important, where necessary, to be thorough in a methodology chapter. However, don’t include unnecessary levels of detail. You should provide enough detail that allows other researchers to replicate or adapt your study, but don’t bore your reader with obvious or extraneous detail. Any materials or content that you think is worth including, but not essential in the chapter, could be included in an appendix (see definition). These don’t count towards your word count, unless otherwise stated, and they
can provide further detail and context for your reader. For instance, it’s quite common to include a copy of a questionnaire in an appendix, or a list of interview questions.

**Definition:** An appendix is a section at the end that includes supplementary information that is not essential, but which helps provide further context or detail. You refer to an appendix in the main body of your text by saying something like: ‘Appendix 1 shows…’ or ‘(Appendix 1)’. It’s simply ‘Appendix’ if you only have one.

### FAQs

**Q** Should the methodology be in the past or present tense?

**A** The past tense. The study has already been conducted and the methodological decisions have been implemented, meaning the chapter should be written in the past tense. For example: ‘Data **was** collected over the course of four weeks…’

**Q** Should the methodology include secondary literature?

**A** Yes, where relevant. Unlike the literature review, the methodology is driven by what you did rather than what other people have done. However, you should still draw on secondary sources, when necessary, to support your methodological decisions.

**Q** Do you still need to write a methodology for secondary research?

**A** Yes, although it might not form a chapter, as such. Including some detail on how you approached the research phase is always a crucial part of a dissertation, whether primary or secondary. However, depending on the nature of your research, you may not have to provide the same level of detail as you would with a primary-based study. For example, if you’re analysing two particular pieces of literature, then you probably need to clarify how you approached the analysis process, how you use the texts (whether you focus on particular passages, for example) and perhaps why these texts are scrutinised, as opposed to others from the relevant literary canon. In such cases, the methodology may
not be a chapter, but might constitute a small part of the introduction. Consult your supervisor for further guidance.

**Q Should the methodology be in the first person or third?**

**A** It's important to be consistent, so you should use whatever you've been using throughout your dissertation. Third person is more commonly accepted, but certain disciplines are happy with the use of first person. Just remember that the first person pronoun can be a distracting, but powerful device, so use it sparingly. Consult your supervisor for further guidance.

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**Summary and Checklist**

It’s important to remember that all research is different and, as such, the methodology chapter is likely to be very different from dissertation to dissertation. Whilst this guide has covered the most common and essential layers featured in a methodology, your methodology might be very different in terms of what you focus on, the depth of focus and the wording used. What’s important to remember, however, is that every methodology chapter needs to be structured in a linear, layered way that guides the reader through the methodological process in sequential order. Through this, your marker can see how certain decisions have impacted on others, showing your understanding of the research process.

Here’s a final checklist for writing your methodology. **Remember that not all of these points will be relevant for your methodology, so make sure you cover whatever’s appropriate for your dissertation. The asterisk (*) indicates any content that might not be relevant for your dissertation.**

- **I have structured my methodology in a layered, linear way** that guides the reader through the research process in sequential order
- **I have** ensured that my chosen method and methodological decisions **directly relate to my research question(s)**
• I have engaged with the limitations of my study
• I have addressed any relevant ethical issues *
• I have only included relevant detail that allows my study to be replicated
• I have briefly explained why certain methodological decisions were made

References


Further support

**Academic Skills website**
library.soton.ac.uk/sash/academic-writing

**Academic Skills Hub**
Drop in Mon-Fri, 10-12 or 2-4, Hartley Library

**Training and Workshops**
library.soton.ac.uk/sash/workshops/library

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