The Essential Guide to

Zina O'Leary
Emma Tennent

Sage

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1 Oliver's Yard
55 City Road
London EC1Y 1SP

2455 Teller Road
Thousand Oaks
California 91320

Unit No 323-333, Third Floor, F-Block
International Trade Tower
Nehru Place, New Delhi 110 019

8 Marina View Suite 43-053
Asia Square Tower 1
Singapore 018960

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TABLE OF CONTENTS

About the Authors		vii
Acknowledgements		ix
Online Resources		xi
1	Taking the Leap into the Research World	1
2	Setting Up and Getting Started	23
3	Developing Your Research Question	39
4	Undertaking Credible and Ethical Research	59
5	Crafting a Research Proposal	89
6	Reviewing Literature	103
7	Designing a Research Plan	125
8	Understanding Methodologies: Quantitative and Qualitative Approaches	141
9	Understanding Methodologies: Mixed Approaches	173
10	Understanding Methodologies: Evaluative, Action-Oriented and Emancipatory Strategies	187
11	Identifying and Selecting Samples, Informants and Cases	215
12	Primary Data: Surveys, Interviews and Observation	237
13	Secondary Data	277
14	Online-Generated Data	297
15	Analysing Quantitative Data	317
16	Analysing Qualitative Data	341
17	The Challenge of Writing Up	367
18	Final Hurdles	387
Glossary		403
References		419
Index		431

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ABOUT THE AUTHORS

Zina O'Leary is an internationally recognized leader in research methodologies and has a keen interest in the application of research to evidence-based decision-making. She is an Adjunct Professor at the Jospeh R. Biden School of Public Policy and Administration at the University of Delaware and a Senior Fellow at the Australia and New Zealand School of Government where she coordinates research and project units for their Executive Masters and Executive Education Programmes. She also has an extensive history as a consultant to both government and the private sector and was the research coordinator for the Centre for Environmental Health Development at the World Health Organization Collaborating Centre. She is the author of *Researching Real World Problems*, *The Social Science Jargon Buster*, *Workplace Research* and three books in Sage's Little Quick Fix Series: *Research Questions*, *Research Proposals* and *Presenting Your Research*.

Emma Tennent is a senior lecturer at Te Herenga Waka – Victoria University of Wellington. She has experience teaching research methods and research paradigms to undergraduate and postgraduate students across a range of disciplines. She is the recipient of an Early Career Teaching Excellence Award and an accredited Fellow of the Higher Education Academy. She works with Zina at the Australia and New Zealand School of Government as a research project advisor for the Executive Master of Public Administration. She has co-published with students and academic colleagues in the open-access book *The Power of Partnership: Students, Staff, and Faculty Revolutionizing Higher Education*.

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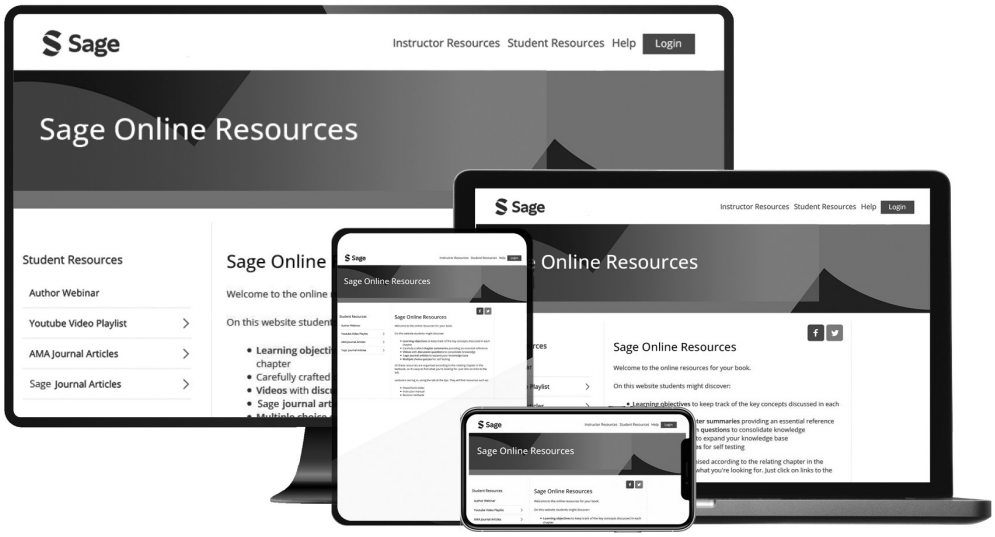
ONLINE RESOURCES



Designed to support students through every step of the research process, the fifth edition of The Essential Guide to Doing Your Research Project offers a range of online resources for lecturers. Find them at: **https://study.sagepub.com/olearyandtennent5e**.

FOR LECTURERS

A detailed **Lecturer's guide** supports you to teach using the book, featuring case studies, real datasets, teaching suggestions, checklists, as well as additional further reading resources for each chapter.

Download **PowerPoint slides** for each chapter featuring content summaries, key figures, examples and discussion point which can be customized for use in your own lectures and presentations.

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1

TAKING THE LEAP INTO THE RESEARCH WORLD

Learning Objectives

- The challenge of tackling a research project
  - To understand research as both a challenge and an opportunity
  - To understand the responsibility inherent in producing 'truth'
- So what is this thing called research and why do it?
  - To understand the need for research
  - To understand the power of research as a tool for situation improvement
- Delving into the 'construct' of research
  - To understand the thorny worlds of epistemology and ontology
  - To understand the paradigms that drive research
  - To become comfortable with the concept of reflective practice and mixed methodologies
  - To understand the difference between methodology and method
- Getting help along the way
  - To understand how to get the most from this book

Research is formalized curiosity. It is poking and prying with a purpose.

Zora Neale Hurston (1942)

THE CHALLENGE OF TACKLING A RESEARCH PROJECT

It's actually quite exciting. Before you lies the opportunity to tackle your own **research** project! You get to drive the process and make all the calls. But we get it – it can also be a bit daunting.

After all, you're not an expert on research and suddenly you are confronted with a need to manage the entire process: pick a topic, develop a researchable question, navigate your way through **ethics**, work with literature, develop a methodological approach, design **methods**, construct a coherent proposal, find **respondents**, collect data, analyse that data and write it up – all within a timeframe that can seem completely unrealistic!

Well, you're not alone if you find yourself asking: How in the world am I going to manage all that? Believe it or not, the answer is pretty straightforward. Whether you are tackling a one-semester project at the end of your undergraduate degree or undertaking a PhD, the answer is the same. You do it one step at a time. There is a logic and rhythm to doing research, a logic and rhythm that you need not only to become familiar with, but also to be able to apply with some level of confidence and competence.

But, yes, it can be intimidating. Even if you do not consciously recognize it, 'doing' research represents a huge shift in your learning journey. Up until this point, you've probably been limited to being a knowledge consumer. The information is already out there – you just need to find it, memorize it, engage with it, synthesize it and, as your skills build, form opinions about it and maybe even critique it. But undertaking research is a whole new world. You move from being a knowledge consumer to a knowledge producer, someone who must use their critical thinking skills to create and transmit knowledge. And this means taking on a whole new realm of responsibility and gaining competence with a host of new skills. This is the challenge of 'doing', and not just knowing about, research.

So What Is This Thing Called Research and Why Do It?

It is easy to think you've got a broad grasp of this concept we call 'research'. After all, it's something you probably do in your daily life on a regular basis. You do 'research' when you are deciding what car to buy. You do 'research' to help you determine what university you should attend. And, of course, you do 'research' when you have to find things out for an assignment.

But there is a distinct difference between this kind of everyday research and the construct of research that you're about to tackle. The author Zora Neale Hurston said: 'Research is formalized curiosity. It is poking and prying with a purpose' (Hurston, 1942: 143). And this is certainly one part of it. Research demands formalization, systemization and rigorous processes. But 'formalized curiosity' is also required in order to make a new contribution to knowledge. As the *Oxford English Dictionary* (2012) puts it, research is 'the systematic study of materials and sources in order to establish facts and reach new conclusions'. So more than engaging in what might be haphazard processes to find out something *you* did not know, academic research is about systematically finding out something not known in the wider world. It is your opportunity to contribute to a body of knowledge.

If you think about it, that's actually quite exciting. Through research, you have the capability to create knowledge, knowledge that just might impact on real change. After all, knowledge for knowledge's sake is a luxury many argue we cannot afford. Rarely is research undertaken simply to satisfy curiosity. Much more often we are after knowledge that can help us tackle pressing problems and issues, and help improve situations.

The Need for Research Knowledge

We know that for some of you, the main driver for undertaking a research project is simply the requirement that exists within your degree. But beyond requirements, the potential to have your research make a contribution to the betterment of some situation should be a real motivator. As the physicist Richard Feynman said, 'We are at the very beginning of time for the human race. It is not unreasonable that we grapple with problems. … Our responsibility is to do what we can, learn what we can, improve the solutions, and pass them on' (Feynman, 1997: 102).

Research is about facilitating situation improvement. It is about offering ways forward. And we need that. There are so many areas where we can, and need to, make a difference. Governments, for example, are riddled with problems – in fact, governments themselves can be a problem. The environment is under stress. Our planet is turning into a giant greenhouse, there is salinity in the soil, and we do not have enough clean and safe drinking water to go around. In fact, we can't find a way to distribute money, food or medicine so that everyone with a need gets a share. Health care and education are far from adequate and/or equitable, and from the global arena to the local playground we cannot seem to overcome racism, sexism, prejudice or discrimination. Domestic violence and child abuse occur daily in every corner of the world, and child pornography is a multi-billion-dollar industry.

We also have to deal with the threat of terrorism as well as our fear of that threat. We poison ourselves daily with toxic chemicals – from alcohol, cigarettes, factories and automobiles. Children are starving – some due to war and political upheaval, some from mass-media-induced anorexia. Meanwhile, schools struggle with violence, drugs, and sexual and racial tension.

And then there is the workplace, where more than 6,300 people die every day owing to work-related accidents and disease (International Labour Organization, 2016). Meanwhile, 'survivors' deal with significant stress from the boss, massive bureaucratic inefficiencies, gross inequities and the need to balance work with a thousand other responsibilities.

So, the stakes are high, and researchers are but one group, among many, dedicated to situation improvement.

The Potential of Research Knowledge

So what is the role of research in making the world a better place? Well, research is the process of gathering data in order to answer a particular question and this question will generally relate to a need for knowledge that can facilitate problem-solving. More broadly, research can highlight how we think about problems and solutions, and help us understand which problems need solving.

Does this then make research the answer to our problems? Well, unfortunately no – but research can be an instrumental part of problem resolution. Research can be a key tool in informed decision-making. It can be central to determining what we should do, what we can do, how we will do it and how well we have done it. Research may not be the answer to our problems, but it can supply some of the data necessary for us to begin to tackle challenges we all face.

Research can help us:

- understand more about particular issues and problems – including all the complexities, intricacies and implications thereof;
- find workable solutions – vision futures, explore possibilities;
- work towards that solution – implement real change;
- evaluate success – find out if problem-solving/change strategies have been successful;
- offer robust recommendations – as an extension of findings, recommendations can be used to influence practice, programmes and policy.

If you think about it, from local to global levels, all of these activities can be, and should be, informed by research. Research can be the key to finding out more; that is, uncovering and understanding the complexity of the issues that surround us. It can also help us in our quest for solutions. It can be key to assessing needs, envisioning futures, and finding and assessing potential answers. It can also allow us to enact and learn from change through the use of '**action research**' strategies. And finally, **evaluative research** can be central to monitoring and refining our attempts at problem-solving. In short, research may not be the answer – but it is certainly a tool that can help us move forward.

I Have a Question!

Does My Research Really Have the Potential to Solve the World's Problems?

It's about scale. Sure you might like to save the world's children from hunger, do away with the evils of terrorism or put a stop to religious persecution, but few of you will be in a position to fully address these types of problems through research processes. Generally speaking, conducting a research project will find you engaged in issues, or aspects of issues, that, while still important and significant, are local, grounded and practical. Even more so than projects that are overly grandiose and theoretical, there can be genuine value in projects that respond to real and tangible needs. Your goal should be to do what you can to add to a body of knowledge and see if you can offer some evidence that can aid evidence-based decision-making for situation improvement.

Delving into the 'Construct' of Research

Now that you have some sense of what research is and why you might be motivated to take it on, it is time to delve a bit deeper into the philosophical underpinning of the research game. You might think that there's only one way to do research, but in fact there are huge differences (and debates!) about what research even is and how it should happen. Now, for many of you the first image of 'research' that might come to mind is the **scientific method**, a technical rule-following enterprise to observe both natural/physical and social worlds. But the scientific approach to research is just one paradigm and many of its key assumptions are critiqued by other paradigms. The tricky thing about assumptions is they often go unstated (both in our

personal lives and research endeavours). But it's important to understand how assumptions about reality and knowledge shape different approaches to research.

Ontology and Epistemology

These long and somewhat frightening terms refer to sets of assumptions about reality and assumptions about knowledge. It is important to become familiar with these terms since they help us understand debates and diversity related to the production of knowledge and, consequently, the research processes you are about to engage in.

All right, so let's break this down. The main question addressed by **ontology** is 'What types of things actually exist?', while the main question addressed by **epistemology** is 'What are the rules for knowing what exists?' Now these two questions actually work in concert and have a tendency to lead to great debate. Because there are different rules for knowing (epistemologies), there can be quite varied conceptions of what exists or what is 'real' (ontology).

Consider the following. 'Empiricists' believe that all knowledge is limited to what can be observed by the senses (their epistemology). They therefore have a difficult time acknowledging as real anything that cannot be measured and tend to believe in an objective reality (their ontology). But there are other ways of knowing (competing epistemologies) which lead to differing conceptions of what's 'real' (alternative ontologies). For example, those with religious epistemologies based on faith (rather than measurement) would say God is real even if you cannot physically touch Him or Her. Postmodernists, however, may question whether there is any way we can find 'truth', and might suggest that 'truth' is a slippery concept that is always political.

In the world of social science research, the tension and debate between competing epistemologies and ontologies requires researchers to consider their own orientation to knowledge and truth. Even new researchers need to consider their positioning. For example, do you have a sense that the truth is 'out there' and believe you can only know what you can physically observe? As a researcher, what limits will this put on your research? Or do you have a sense that truth is actually ambiguous, fluid and relative, and people play a large part in the construction of knowledge? Certainly, holding those beliefs will impact on how you approach your research.

Okay, so let's say the Department of Education is reviewing its indicators for educational success of third-graders. Are you in the empiricist camp ready to review and measure traditional indicators of mathematical and English literacy? Or are you from a more postmodern camp ready to delve into the world of the students to get a genuine feel for experiences of worth, contentment, creativity and ingenuity?

Within social science research, the debate that rages between such differing ways of knowing is enormous, leading to an overly defensive, emotive and often unproductive divide between empiricists and more postmodern researchers. Both camps believe they hold the key to legitimate knowing, which unfortunately lessens the potential for them to work together down a path of holistic knowing (see Figure 1.1).

There's one other 'ology' worth knowing about. **Axiology** gets less attention than ontology and epistemology but is an important principle that acknowledges the role of ethics and values in research. The research questions we ask, our personal values, the values embedded in our culture or community, and even how we conceptualize research all reflect ethics and values. We cover this in detail in Chapter 4.

Competing Positions

Let's pause here and have a quick look at some of the ways in which we can come to have an understanding of our world, and how a particular way of knowing might influence research processes. Now it would be helpful if these terms were mutually exclusive – but given their varied disciplinary roots, many overlap, which, we know, can be confusing. We'll give a brief overview here, but if you really want to get into the nitty-gritty of each of these 'isms', have a look at the readings recommended at the end of this chapter.

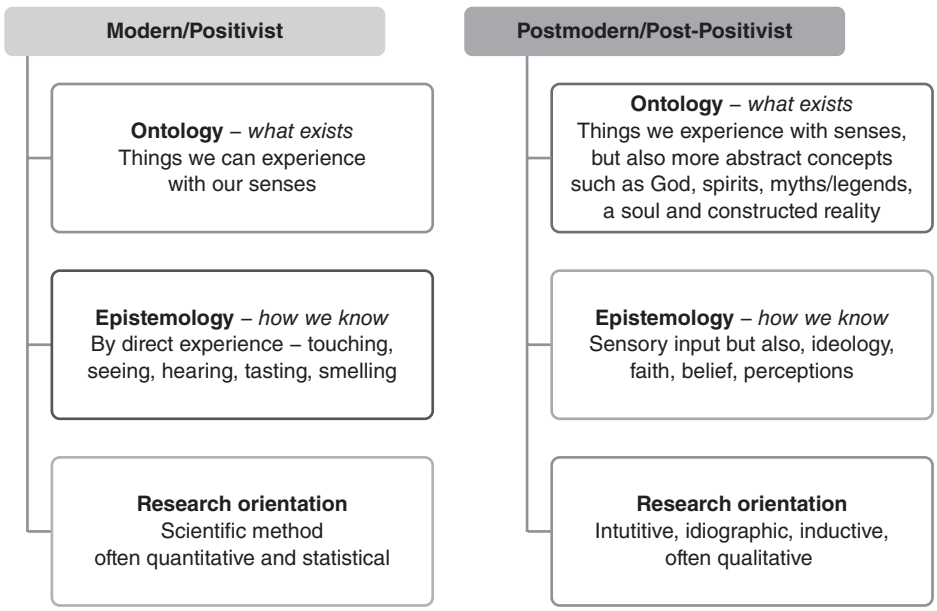


Figure 1.1 Modern/positivist vs postmodern/post-positivist

In combination, the three terms – **realism**, **empiricism**, **positivism** – present a relatively straightforward approach to attaining a single truth about an objective world. In the conduct of research, they suggest that what we can know comes from sensory experience best served through scientific method. These terms represent an approach to research that has been dominant since the Enlightenment.

In the social science research world, this approach to knowing is often the underlying assumption of how the world works, and what needs to be studied. We, as social scientists, are in the business of looking for evidence: evidence of better sales; evidence of increased consumption; evidence of weight loss; evidence of increased life expectancy; evidence of smoking cessation; evidence of better test scores. We measure what people did, what people do and how often they do it.

However, this black and white way of seeing is increasingly being called into question. Physicists now recognize the role of chaos and complexity in a universe that we may never 'capture'. And what about the nature of truth in the social world? Whose truth is it anyway? There are many '**post-positivist**' philosophers and researchers alike who question the assumptions of these ways of knowing and openly critique, oppose and/or reject positivism's central tenets.

This has led to acceptance of alternative paradigms that can be broadly classed under the umbrella of a 'postmodern' or 'post-positivist' worldview. For these approaches, the certainty

implied above is replaced by an acceptance of chaos, complexity, the unknown, incompleteness, diversity, plurality, fragmentation and multiple realities.

In social sciences this means complexity in research methods themselves. For example, how do we judge the quality of parenting when sibling memories and perceptions are completely at odds with each other? What is the best approach for understanding why people speed even when we have objective measures of risk? People are complex, their social systems are complex, their morals and values and where they come from are complex. Postmodern researchers try to be true to this complexity, while still doing 'research'.

I Have a Question!

Do I Really Need to Engage with All These 'isms' and 'ologies'?

The short answer is yes. These concepts might seem vague and abstract (after all, they are philosophical terms) but they're actually fundamental to how we see ourselves, the world and our research. We might go through our lives without explicitly declaring our 'ontology' but when you are doing research, you are producing knowledge. And as someone who is going to conclude something, you need to put your cards on the table; you need to declare your positioning in relation to knowledge, and that means knowing what your positioning is and being able to articulate it to others. So it's time to embrace your 'isms' and 'ologies'.

Quantitative, Qualitative and Mixed Approaches

In common research parlance, we often refer to the realist, empirical, 'truth is out there' approach as **quantitative** – an unfortunate label that confuses the assumptions of various paradigms with the practice of quantifying data through the use of numbers. Similarly, the assumption of multiple, constructed, **subjective** truths and complexity is aligned with what is referred to as **qualitative** – again an unfortunate term that also confuses the assumptions of various paradigms, but this time with the practice of preserving the spoken word. Quantitative and qualitative are, therefore, often loaded terms that point to belief systems and value judgements. In other words, a continuation of paradigm wars. We, however, are strong advocates of adopting research approaches based not on tradition, but on the goal of best answering a well-considered research question. This may indeed take researchers down the path of **mixed methodology** – approaches that draw on the methods of both quantitative and qualitative traditions and demand a highly reflexive researcher (a much richer discussion of the quantitative and qualitative and mixed approaches is taken up in Chapters 8 and 9).

One way to think about the dichotomies between positivism and post-positivism, and between the quantitative and qualitative, is the distinction between the right and left brain. The logical left brain likes the certainty, **objectivity** and rules and processes associated with positivism and the 'quantitative', while the rebellious right gives much less credence to structure and is more comfortable with the uncertainty, complexity and **relativism** of the post-positivist, 'qualitative' paradigm.

So just maybe these various ways of knowing represent more than simply paradigmatic shifts over time. Perhaps they represent a more fundamental division within the perception of each individual. We certainly have the capacity to see in more than one way. We can exercise both sides of the brain. We can even work towards a whole-brain, more integrated approach.

And this is certainly true of research. If we accept that these two ways of knowing are both valuable, and that they can and do coexist, then, within the research world, both approaches should be validated and, as discussed below, traversed.

The Position of the Reflexive Researcher

Being reflexive as a researcher is more than just reflecting on the research process. **Reflexivity** is about critically reflecting on your role as the researcher. How does your position (what you know and believe) shape how you act? What are the taken-for-granted assumptions that underlie your approach to research?

Undeniably, there is a divide in the research world between those who accept chaos, complexity, the unknown and multiple realities, and those who do not. But we would argue that this divide can and should be traversed. Many researchers feel a need to identify themselves with a particular way of knowing and only engage in methodological approaches that sit under their own epistemology.

There are even researchers who rely on, and even come to 'believe' in, particular methodological approaches. Janesick actually coined the term 'methodolatry' – a combination of method and idolatry that she defines as a 'preoccupation with selecting and defending methods to the exclusion of the actual substance of the story being told'; she describes methodolatry as a 'slavish attachment and devotion to methods' (2007: 48). It is, therefore, well worth considering whether divergent, disparate and distinct ways of knowing can each offer credible knowledge production.

Critical Thinking Challenge 1

Researcher Identity

Good research is a thinking person's game. It is a creative and strategic process that involves constantly assessing, reassessing and making decisions about the best possible means for obtaining trustworthy information, carrying out appropriate analyses and drawing credible conclusions. And this starts with you.

Think about your own ontology and epistemology. How do you see the world? How do you understand the world? And how will this influence how you research the world?

I Have a Question!

What Is Better, Quant. or Qual.?

Put simply, there is no 'best type' of research. Particular research strategies are good or bad to the exact degree that they fit with the questions at hand. Good questions need to be matched with appropriate procedures of inquiry, and this is always driven by the researcher, not the methodology. The perspectives you will adopt and the methods you will use need to be as fluid, flexible and eclectic as is necessary to answer the questions posed.

Box 1.1 highlights the advantages of not being pigeonholed. Each research situation and research question is unique, and assumptions can be as varied as the situations. The trick is to understand what assumptions you are working under and how they might affect your study.

Box 1.1

Banana Consumption Assumptions!

Zina once had a student who wanted to explore whether recycled 'grey' water could be used to irrigate bananas. She did this in two phases. The first phase involved the formulation of a **hypothesis** that stated there would be no biophysical differences between bananas irrigated with town water and those irrigated with recycled grey water. For this phase of the study she (quite appropriately) accepted the positivist assumptions and conducted her research according to the 'rules' of scientific method – she was the consummate lab-based objective scientist.

Her second phase explored whether consumers would buy bananas irrigated with recycled water regardless of 'no difference' in quality. For this phase of the study, the student thoughtfully explored her assumptions and realized that, in relation to this particular question, she found herself moving into 'post-positivist' territory. She struggled with her own subjectivity and realized that 'truth' and 'reality' can be two different things (many consumers who believed findings of 'no difference' claimed they still would not purchase the bananas irrigated with recycled water). There was no defined set of rules to best answer this question, but her willingness to 'think' her way through the process and be flexible in her approach allowed her to draw conclusions that were seen as both credible and valuable.

Methodology, Methods and Tools

Once you have worked your way through the paradigm question, there is still a need to be clear about constructs that sit within any research approach. We're talking here about methodologies and methods. While we will delve into the details of various approaches throughout the book, it's important to underscore the difference between methodologies and methods now and how they are related to the design of a study.

As you begin to develop a plan for your research, you will need to come to grips with elements that are as broad as questions related to paradigm, and as specific as questions dealing with the nuts and bolts of who, where, when, how and what.

Now it is not uncommon for students to want to jump straight into the details of their research methods without engaging at the level of research **methodology**. They want to fast-forward to designing strategies for data collection and cannot understand why it's important to grasp, adopt and apply frameworks that sit at a higher macro level.

But methodologies are crucial to the research process and, in fact, provide us with much more than just research strategies. They actually provide us, as researchers, with legitimization for knowledge production. They are our means of showing the outside world that we are

not just random people with an opinion, but that we are researchers who are engaging with well-considered, rigorous processes. The adopting of various methodological positions (as discussed in Chapters 8 and 9) shows that we have grappled with the responsibilities and controversies associated with the production of knowledge.

Credible research design therefore requires more than just the adoption of data collection and data analysis methods. It requires that such methods are nested within more macro-level frameworks, or methodologies, that work in concert with methods to provide researchers with a voracious design that can stand up to the highest level of scrutiny. Figure 1.2 from Brown and Dueñas (2020) details this.

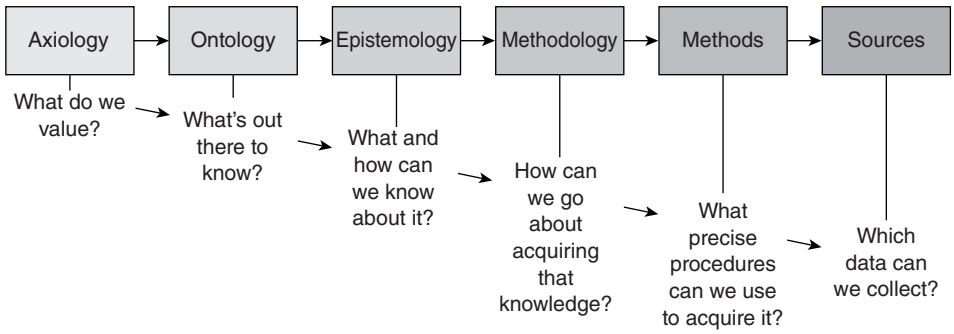


Figure 1.2 Methods and methodologies: the building blocks

GETTING HELP ALONG THE WAY

By now you are probably getting some sense of why research is often referred to as a journey. You haven't even finished the first chapter of this book, and already there's a whole lot you've been asked to consider. And that's before you even start thinking about your own research project. But don't worry, you are not alone. The goal of this book is to be your guide. It is designed to accompany you on your journey; to lay out the processes and procedures you will need to engage with; to help you through the logic of research; to offer guidance on all the decisions that are part and parcel of conducting a research project; and to send you down the right road when you need to delve deeper into relevant methodologies and methods.

At the same time, it is important to know that this is not a 'recipe book'. It does not lay out sets of 'steps' that you blindly follow. Yes, it will logically work you through the processes and procedures, but this is a book that recognizes that good research is always reliant on reflexive researchers, researchers who must weigh up all decisions in light of a quest for credible data and findings, limited by unavoidable practicalities.

So whether you are about to tackle a small-scale project, or undertake a major thesis, this book will engage your critical thinking skills to take you on a journey of rich discovery, a journey that will have you unearth not only 'findings' related to your research

question, but also the process of research, as well as the thorny challenges associated with project management.

I Have a Question!

What Does AI Mean for Research?

(Zina O'Leary, Emma Tennent and Gemini AI)

The last few decades have left us with unprecedented access to a vast array of research studies, as well as the ability to access an extraordinary amount of data. This makes AI the tool researchers have been waiting for.

AI can locate, identify, extract, summarize, synthesize, analyse and write. And the programs and apps using AI are proliferating and advancing at lightning speed. So we need to know how to manage this technological juggernaut.

We thought it might be fun to ask Gemini AI a few questions about AI and the research process. Here are its answers, some good advice we think. (Please note, this is the only section of this book written by our friend Gemini AI!)

Can AI write a literature review?

AI can be a valuable tool in writing a **literature review**, but it's important to *remember its limitations and utilize it responsibly*. Here's how AI can assist you in the process:

1 Identifying Relevant Literature:
   - Some AI tools can *search vast databases* based on your keywords and research topic. They can help you discover a wider range of relevant literature, including obscure sources you might miss through conventional methods.

2 Summarizing and Extracting Information:
   - AI tools can **summarize papers automatically** and extract key points, saving you time and effort in reading through large volumes of text. This can be particularly helpful when dealing with a large pool of research.

3 Identifying Themes and Trends:
   - AI can **analyse the content of multiple papers** and identify overarching themes, trends and debates within the field. This can help you organize your review and understand the current state of knowledge on your topic.

4 Identifying Gaps in the Literature:
   - Some AI tools can **analyse the themes and methodologies present in existing research** and suggest potential gaps or areas where further research is needed. This can help you identify your niche and refine your research question.

(Continued)

However, it's crucial to remember:

- **AI cannot replace critical thinking and analysis.** You need to evaluate the information AI provides, assess its accuracy and relevance, and avoid relying solely on AI-generated summaries or interpretations.
- **AI systems can be biased based on the data they are trained on.** Be aware of potential biases and critically evaluate the information retrieved through AI tools.
- **AI cannot write a literature review for you.** It can provide tools and insights, but you still need to synthesize the information, formulate arguments and structure the review following proper academic conventions.

Here are some **ethical considerations** when using AI for literature reviews:

- **Be transparent about the use of AI.** Acknowledge that you used AI tools as part of your research process, but clearly state that the final review and interpretations are your own.
- **Cite all sources correctly.** Even if you use AI to identify relevant literature, you still need to properly cite all the sources you use in your final review.

Overall, AI can be a valuable **supplementary tool** in writing your literature review, but it cannot replace your own critical thinking, analysis and writing skills. Use AI responsibly, be aware of its **limitations** and focus on utilizing it to enhance your own research efforts.

Can AI write up a research report?

AI currently cannot **independently** write up research in its entirety. While AI offers valuable tools that can assist in various stages of research, it lacks the critical thinking, creativity and understanding of the research context that are essential for generating original, accurate and well-structured research outputs. Here's a breakdown of AI's current capabilities and limitations in research:

What AI can do:

- **Data Processing and Analysis:** AI excels at handling and analysing large datasets, summarizing and extracting key information, and identifying patterns and trends. This can be helpful in tasks like data cleaning, preparing research materials and conducting preliminary exploratory analysis.
- **Literature Review Support:** AI tools can assist in searching for relevant literature, summarizing research papers, and identifying themes and gaps in existing research. This can save researchers time and effort and help them refine their research questions.
- **Generating Textual Content:** Some AI tools can generate text based on specific prompts and parameters. However, this generated content often lacks originality, depth and critical analysis, and may require significant revision or human intervention to be accurate and relevant to the research question.

What AI cannot do (yet):

- **Formulate Research Questions and Hypotheses:** AI cannot independently define research questions or develop testable hypotheses. These require a deep understanding of the research field, existing knowledge and creative problem-solving skills that AI currently lacks.

- **Design Research Methods:** Designing a research method that is robust, ethical and appropriate for the topic requires a nuanced understanding of the research problem, potential biases and ethical considerations involved. This level of critical thinking and ethical awareness are beyond the current capabilities of AI.
- **Analyse and Interpret Data:** While AI can perform statistical analysis and identify patterns, it lacks the ability to critically interpret the results, draw meaningful conclusions or connect them to broader theoretical or real-world implications. This requires human judgement, expertise in the research field, and the ability to consider alternative explanations and potential biases.
- **Write Cohesive and Informative Research Reports:** AI cannot currently write a complete and well-structured research report that seamlessly integrates different elements like literature review, methodology, findings, discussion and conclusion. This requires the ability to organize information logically, write with clarity and coherence, and present findings in a way that is relevant and meaningful to the target audience.

Overall, while AI is a powerful tool that can significantly enhance the research process, it cannot replace the critical thinking, creativity and overall intellectual contribution of human researchers. AI should be viewed as a valuable assistant that can automate certain tasks and provide insights, but not as a replacement for the human mind's capabilities in conducting rigorous and meaningful research.

How can AI Best Help in the Conduct of Social Science Research?

AI plays a **supportive and transformative role** in social science research, offering valuable assistance at various stages of the process. Here's how AI can best contribute:

1 Enhanced Data Analysis:

- AI excels at analysing **large, complex datasets** from diverse sources like social media, surveys and online platforms. This allows researchers to extract **unprecedented insights** into human behaviour, social trends and public opinion.
- AI algorithms can identify **hidden patterns and correlations** within data that might be missed by human analysis, leading to breakthroughs in understanding complex social phenomena.

2 Streamlined Research Tasks:

- AI tools can **automate repetitive tasks** like data cleaning, preparing research materials and conducting preliminary analysis. This frees up valuable time for researchers to focus on more **complex tasks** like designing research methods, interpreting results and drawing meaningful conclusions.

3 Advanced Text Analysis:

- **Sentiment analysis** utilizes AI to analyse the tone and emotions expressed in text data, offering deeper insights into public opinion, cultural trends and individual attitudes.
- AI can also **extract key information and summarize textual content** from documents, interviews and online forums, allowing researchers to efficiently capture important details from large volumes of data.

(Continued)

4 Predictive Modelling and Simulation:

- Machine Learning, a branch of AI, allows researchers to create **predictive models** that forecast future outcomes based on historical data and current trends. This can be helpful in understanding the potential impact of policies, predicting social unrest and anticipating changing demographics.
- **Agent-based models** powered by AI can simulate interactions within social systems, helping researchers test hypotheses and understand the dynamics of group behaviour under various cnditions.

5 Facilitating Research Collaboration:

- AI tools can **bridge the gap between geographically dispersed researchers**, enabling efficient collaboration by facilitating data sharing, analysis and report generation.

However, it's crucial to remember:

- **AI is a tool, not a replacement for human expertise.** Researchers must critically analyse AI-generated insights, ensuring data quality, identifying potential biases and maintaining ethical considerations throughout the research process.
- **Transparency and responsible use** are critical. Researchers should be transparent about the use of AI in their work and ensure the algorithms and data used are unbiased and ethically sourced.

In conclusion, AI empowers social science research by:

- Unlocking deeper insights from data
- Facilitating broader analysis
- Streamlining research workflows
- Enhancing collaboration

As AI continues to evolve, its impact on social science research will likely **expand significantly**. However, ethical considerations and responsible use remain paramount to ensure AI truly facilitates meaningful and trustworthy research.

THE STRUCTURE OF THE BOOK

This book consists of 18 chapters that will take you logically through all aspects of conducting a research project from conception to dissemination. In other words, the chapters mirror the processes necessary for the conduct of most research projects.

PRELIMINARIES – As well as introducing the book's objectives and offering guidelines for how to get the most out of the work, this section will take you through foundational work needed before embarking on research.

- Chapter 1 introduces you to some of the more fundamental and theoretical aspects of research, including an understanding of how knowledge is understood and produced. This level of understanding can go a long way in helping to ground your own research approach.

- Chapter 2 is about practicalities. This chapter acknowledges that undertaking research can be a difficult and alienating activity, and attempts to offer strategies for staying on top of the process. It covers: what you need to know to start your research journey; how to best navigate the research process; and how to stay on track.
- Chapter 3 takes you through the art and science of knowing what you want to know. It guides you through the process of defining a feasible, clearly articulated research question that acts to direct 'methods'. It is amazing how much simpler it is to adopt, adapt or create appropriate methodological approaches when you are absolutely clear about what it is you want to know.
- Chapter 4 covers the concept of integrity. The chapter starts with an exploration of power and politics in research processes before moving on to traditional indicators of credibility as well as alternatives more appropriate to qualitative data. The chapter then discusses ethical responsibilities and ethics approval processes.

PLANNING – The next three chapters are about effective planning.

- Chapter 5 covers research proposals and the opportunity they present to clarify thinking, bed down ideas, articulate thoughts in a way that provides a blueprint for future action and, most importantly, 'sell your project'.
- Chapter 6 explores the varied ways in which literature informs research. Zina often tells students that before 'doing' research, they need to convince her of three things: that the questions they wish to answer are worthy of research; that they are the right person to add to a body of knowledge (they know their stuff); and that their methodological approach is the best 'doable' way of getting the answers to their question. And to do this, they need to read. This chapter covers issues related to sourcing, managing and utilizing the literature to its full potential.
- Chapter 7 looks at designing your study such that it grows from questions rather than falls from paradigms, and offers a framework for delving into the basic questions that drive method.

METHODOLOGY – The design of social science studies has become incredibly diverse over the past 30 or so years, and can be a daunting realm of exploration for those new to research. Chapters 8, 9 and 10 delve more specifically into methodologies that inform research.

- Chapter 8 takes you through what are often described as qualitative and quantitative methods.
- Chapter 9 explores the opportunities, challenges and methods associated with mixed methodologies.
- Chapter 10 explores more purposive approaches such as evaluative, action-oriented and emancipatory strategies.

DATA COLLECTION – The focus of the next four chapters is effective data collection.

- Chapter 11 looks at who holds the data you seek, your 'respondents', and covers the logistics, challenges and methods of defining and selecting samples, key informants and cases.

- Chapter 12 concentrates on the opportunities and challenges associated with primary data collection, such as surveys and interviews.
- Chapter 13 takes you through options for collecting and working with secondary data sources.
- Chapter 14 explores the ever-expanding world of online-generated data.

DATA ANALYSIS – Next comes making sense of, and presenting, your data.

- Chapter 15 takes you through the basics of quantitative data management and analysis, and covers variable types, measurement scales, descriptive and inferential statistics, the selection of statistical tests and data presentation.
- Chapter 16 focuses on qualitative data and takes you through the logic and methods of general qualitative analysis, as well as specific branches of analysis such as content, discourse, conversation and narrative analysis, plus semiotics and hermeneutics. The chapter concludes with examples of how to present qualitative data.

FINISHING UP – Finally, writing it all up and sharing your work.

- Chapter 17 will help you tackle the challenge of writing your report in impactful ways. It explores writing as a communication exercise that demands a convincing narrative. It then takes you through all required sections of a credible research report.
- Chapter 18 covers those incredibly important post-write-up aspects of the research process, namely disseminating your research, presenting your research and making the transition from student to professional.

HOW TO GET THE MOST OUT OF THE BOOK

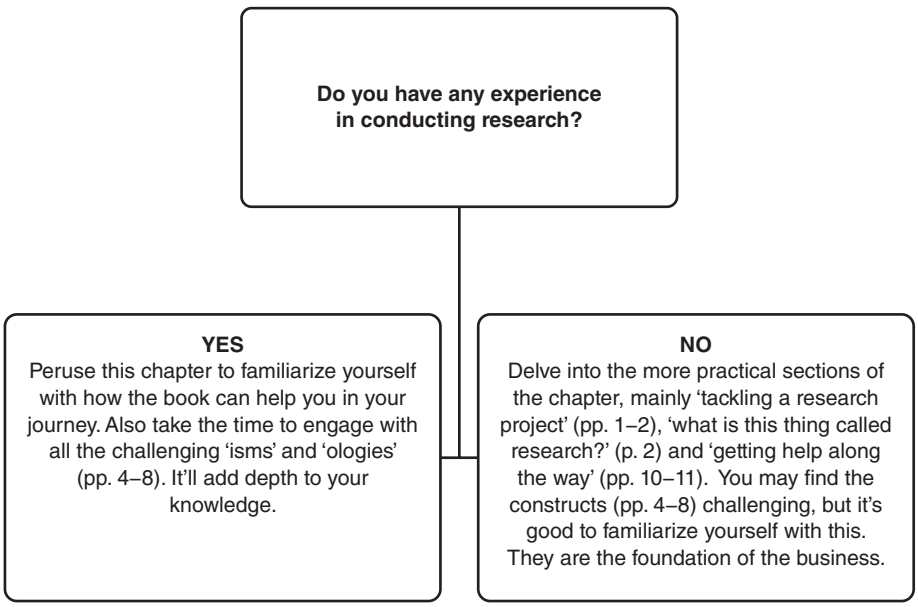
There are actually a few ways you can use this book and you may find yourself dipping in and out of these four strategies:

1 Read it through. You will become familiar with the processes and procedures associated with research.
2 Use it as a reference. As you progress through your research project, you will inevitably need to look things up. You are likely to find the answers within this book's 18 chapters. And if you can't, the recommended readings should give you some good leads.
3 Use this book as a companion to your research processes. This is where the book really comes into its own. While each chapter will introduce you to a new area of content, the main goal is to take you through the development processes you need to undertake when doing your own project. The emphasis is to arm you with the knowledge and skills you will need to get you from 'clueless' to 'completed'. When using the book in this way, a good approach is to read as you go. We would recommend starting here and working your way through to the last page of Chapter 18, when you will be ready to submit your work.

Chapter Summary

- Research is the process of developing new knowledge by gathering data that answer a particular question. It is your opportunity to contribute to a body of knowledge and perhaps even influence change. It can also be a key tool in informed decision-making. It can be central to determining what we should do, what we can do, how we will do it and how well we have done it.
- Scientific research was born of 'positivism' and adopted the assumptions of that paradigm. These assumptions include: a knowable and predictable world; empirical and reductionist research; objective and expert researchers; hypothesis-driven methods; and statistically significant, quantitative findings.
- Largely based on critiques of positivism, a range of post-positivist approaches acknowledge: an ambiguous and variable world that is ambiguous and variable; intuitive and holistic research; subjective and collaborative researchers; inductive and exploratory methods; and qualitative findings.
- Rather than positioning the researcher according to paradigmatic assumptions, the reflexive researcher can consider whether it is possible to explore the assumptions of various paradigms as they relate to particular research questions.
- While undertaking a research project can be somewhat intimidating, using this book as a guide to your journey will help you best navigate all the ins and outs of the research process.

FIND YOUR NEXT STEP



FURTHER READING

There are some heavy theoretical concepts in this chapter that you may want to explore in a bit more depth. There are some accessible reads below, but we thought we'd start with two more general reads.

Killman, L. (2013) *Research Terminology Simplified: Paradigms, Axiology, Ontology, Epistemology and Methodology*. Sudbury, ON: Author.
We like this book because it has all the relevant terms in one place. It is self-published but could be extremely helpful.

O'Leary, Z. (2007) *The Social Science Jargon Buster*. London: Sage.
Honestly, Zina would say this is the book she's most proud of. It covers key terms across the social sciences and includes all relevant research terminologies.

Paradigms

Smith, L. T. (2022) *Decolonizing Methodologies: Research and Indigenous Peoples*. Third edition. London: Zed Books
This influential book points out how scholarly research is implicated in legacies of colonialism and offers a visionary new 'decolonizing' approach to research methodology. Challenging and inspiring.

Blaikie, N. and Priest, J. (2017) *Social Research: Paradigms in Action*. Cambridge: Polity Press.
The conduct of social research rests on paradigmatic assumptions. We like the way this book acknowledges this and guides researchers with illustrative examples.

Bingham A. J., Mitchell, R. and Carter, D. S. (2024). *A Practical Guide to Theoretical Frameworks for Social Science Research*. Abingdon: Routledge.
A good overview that includes examples of studies within the different theoretical frameworks from a broad range of academic disciplines

The 'ologies'

Moon, K. and Blackman, D. (2017) 'A guide to ontology, epistemology, and philosophical perspectives for interdisciplinary researchers'. https://i2insights.org/2017/05/02/philosophy-for-interdisciplinarity/
A blog post summarizing the authors' research article with some great diagrams and links to the whole thing if you want to read it.

McCain, K. and Kampourakis, K. (2019) *What Is Scientific Knowledge? An Introduction to Contemporary Epistemology of Science*. Abingdon: Routledge.
Accessible introductory chapters around the key debates about scientific knowledge. We like the range of different perspectives here.

Goldman, A. and McGrath, M. (2014) *Epistemology: A Contemporary Introduction*. Oxford: Oxford University Press.
Written by two important contributors to the field, this is a solid and accessible introduction. We particularly liked the section on evidence.

Martin, R. (2010) *Epistemology: A Beginner's Guide*. London: Oneworld Publications.
We like this beginner's guide. It is designed to make you think about what knowledge is, how to obtain it and whether we can trust it. Very accessible.

Conee, E. and Sider, T. (2015) *Riddles of Existence: A Guided Tour of Metaphysics*, 2nd edition. Oxford: Oxford University Press.
While highly philosophical, this book actually makes ontology somewhat accessible. The challenge of thinking through what exists is a worthwhile exercise for any researcher.

Effingham, N. (2013) *An Introduction to Ontology*. Cambridge: Polity Press.
An accessible introduction to the aims and methods of ontology. We like that it's clear and conversational.

Positivism and Empiricism

Carey, S. S. (2011) *A Beginner's Guide to Scientific Method*. Belmont, CA: Wadsworth.
While strongly rooted in the belief that scientific method is 'the way', this is nonetheless a good introduction to both 'what is' and 'how to do' scientific method.

Robinson, D. (2013) *Introducing Empiricism: A Graphic Guide*. New York: Totem Books.
Good critical introduction to what we experience and if/how we can trust it. Engaging graphics in this book make it more accessible.

Steinmetz, G. (ed.) (2005) *The Politics of Method in the Human Sciences: Positivism and its Epistemological Others (Politics, History, and Culture)*. Durham, NC: Duke University Press.
Good comparative read. Varieties of positivism and alternative ways of seeing are explored by their assumptions and applications.

Realism and Relativism

Oreskes, N. (2021) *Why Trust Science?* Princeton, NJ: Princeton University Press.
With the trustworthiness of science coming under increasing scrutiny, it's important to understand how and why science continues to give us some of the best evidence we have around. Clearly written and engaging.

Wei, W. (2017) *Philosophy of Science: An Introduction to the Central Issues*. Abingdon: Routledge.
An English translation of a widely used Chinese textbook, this provides a concise introduction to the Western philosophy of science alongside Chinese perspectives.

Chakravartty, A. (2010) *A Metaphysics for Scientific Realism: Knowing the Unobservable*. Cambridge: Cambridge University Press.
A useful look at how realism has evolved in the social sciences, culminating in an argument for scientific realism underpinning scientific knowledge.

Finkelde, D. and Livingston, P. (eds) (2020) *Idealism, Relativism and Realism: New Essays on Objectivity Beyond the Analytic-Continental Divide*. Berlin: De Gruyter.
An interesting set of essays that explores the challenges of objectivity under various paradigms.

Boghossian, P. A. and Coliva, A. (2019) *Fear of Knowledge: Against Relativism and Constructivism*. Abingdon: Routledge.
Relativism can be seen as a threatening enemy – and the goal of this book is to take the enemy down. This is a great read if you want to understand the arguments against relativism (and constructivism) as well as the passion paradigm wars can evoke.

Baghramian, M. & Coliva, A. (2019) *Relativism*. Abingdon: Routledge.
A deep dive into the principles of relativism as well as arguments for and against. A good companion piece to Boghossian and Coliva (above).

Social Constructionism

Berger, P. L. and Luckman, T. (1967*) The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. New York: Anchor.
This is a classic work that challenges the proposition that there is a single truth 'out there'. It argues that we can only understand the world by understating those who seek to know it. Beyond this, these seekers of knowledge are also the creators of it.

Burr, V. (2015) *Social Constructionism*, 3rd edition. New York: Psychology Press.
A good introduction – sympathetic yet critical. We like the use of examples to explain and articulate key concepts.

Hjelm, T. (2014) *Social Constructionisms: Approaches to the Study of the Human World*. London: Red Globe Press.
We like the way this book breaks down the construct, links it to our understanding of the social world and discusses relevant critiques.

Walker, C. A. (2015) 'Social constructionism and qualitative research', *Journal of Theory Construction & Testing*, 19(2): 37–8.
It is good to see a direct connection between theory and method.

Objectivity and Subjectivity

Gaukroger, S. (2012) *Objectivity: A Very Short Introduction*. Oxford: Oxford University Press.
Like it says, this is a very short introduction that gives you quick answers and starting points for further exploring objectivity.

John, S. (2021) *Objectivity in Science*. Cambridge: Cambridge University Press.
Is it possible to do value-free research? This book tackles that claim (amongst others) in a thorough discussion of objectivity. A more expansive read within the philosophy of science.

Letherby, G., Scott, J. and Williams, M. (2012) *Objectivity and Subjectivity in Social Research*. London: Sage.
We like the practical approach taken in this book and the resistance to dichotomizing objectivity and subjectivity. An informative look at how they work in concert.