

# Research Methodology, Methods, and Design.

# Methodology vs. Methods

- The confusion between “methodology” and “methods” in research is a common occurrence, especially with the terms sometimes being used interchangeably. Methods and methodology in the context of research refer to two related but different things: method is the technique used in gathering evidence; methodology, on the other hand, “is the underlying theory and analysis of how a research does or should proceed” (Kirsch & Sullivan, 1992, p. 2). Similarly, Birks and Mills (2011, p. 4) define methodology as “a set of principles and ideas that inform the design of a research study.” Meanwhile, methods are “practical procedures used to generate and analyze data (Birks and Mills, 2011, p. 4).
- To summarize these definitions, methods cover the technical procedures or steps taken to do the research, and methodology provides the underlying reasons why certain methods are used in the process.

# Methodological Approach or Methods Used in Research

- Traditionally, academic researchers often approach research studies through two distinct paradigms, namely positivistic and phenomenological (Collis & Hussey, 2013). Also sometimes called qualitative and quantitative (Dumay, 2008), positivistic and phenomenological approaches play a significant role in determining your data gathering process, especially the methods you are going to use in your research.
- Research methods lay down the foundation of your research. According to Neil McInroy, the chief executive of Centre for Local Economic Strategies, not using the appropriate research methods and design creates “a shaky foundation to any review, evaluation, or future strategy (Macdonald et al., 2008, p. 3). In any type of research, the data you will gather can come either in the form of numbers or descriptions, which means you will either be required to count or converse with people (Macdonald et al., 2008, p. 9). In research, there are two fundamental methods used for either approach—quantitative and qualitative research methods. Even if you take the path of a [philosophy career](#), these are still methods that you may encounter and even use.

# Types of Research

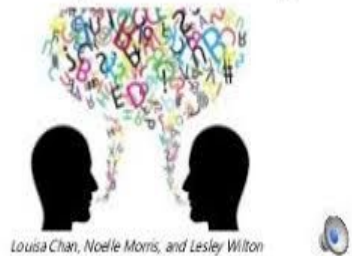
- Descriptive vs. Analytical
  - Applied vs. Fundamental;
  - Quantitative vs. Qualitative;
  - Conceptual vs. Empirical;
  - Some other types (one-time or longitudinal, Field-setting research or laboratory research, historical research, exploratory or formalised)
- (Mishra and Alok)


- **Ontology** is a branch of philosophy that studies assumptions about existence and definitions of reality (Trivedi, 2020).
- Ontology is the study of **the nature of reality** (Creswell and Poth, 2018). Ontological beliefs influences how the researcher develop research questions, understand their significance, and approach data analysis (Moroi)
- Objective ontology or **Objectivism** is the belief in an external reality whose existence is independent of knowledge of it; the world exists as an independent object waiting to be discovered.
- Subjective ontology or **Subjectivism** is a belief that you cannot know an external or objective reality apart from your subjective awareness of it; what we agree exists, exists for us, of and in our intersubjective<sup>[1]</sup> awareness. It is based on the ideas that social facts<sup>[2]</sup> are as real as objective facts (Trivedi, 2020).

- **Epistemology** is a branch of philosophy that studies how we know and what counts as knowledge. Epistemology, the theory of knowledge, tackles issues of truth, belief, and justification (Trivedi, 2020). Epistemology considers **the nature** and **the scope of knowledge** (Creswell and Poth, 2018). These perceptions will lead to the question how researchers will investigate whatever they believe to be known (Slevitch, 2011)
- **Positivism** is an approach to science based on a belief in universal laws and insistence on objectivity and neutrality (Thompson, 1995). Positivists follow the natural science approach by testing theories and hypotheses. Positivism relies specifically on empirical scientific evidence, such as **controlled experiments** and **statistics**. Truth or knowledge can be discovered through scientific **measurement** and **validation** through direct and systematic observations of objective facts about behavior and systems (Nickerson, 2022; Trivedi, 2020). '... these assumptions hold true more for **quantitative** research. This worldview is sometimes called 'the scientific methods' or 'doing science research' (Creswell, 2009).

- **Interpretivism** stands in contrast to positivism and holds that reality is subjective, socially constructed, and a composite of multiple perspectives. Through this lens, research is inherently shaped by the researcher, who brings their own subjective view of observed phenomena based on their personal experience (Roger, 2020). Qualitative research is often associated with interpretivism.

The Interpretivist Paradigm



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- **Research methodology** is a systematic way to solve a research problem by collecting data using various techniques, providing an interpretation of the collected data, and drawing conclusions about the research data. A research method is fundamentally the blueprint of the research or study.
  - Research methodology forms the basis of your research.

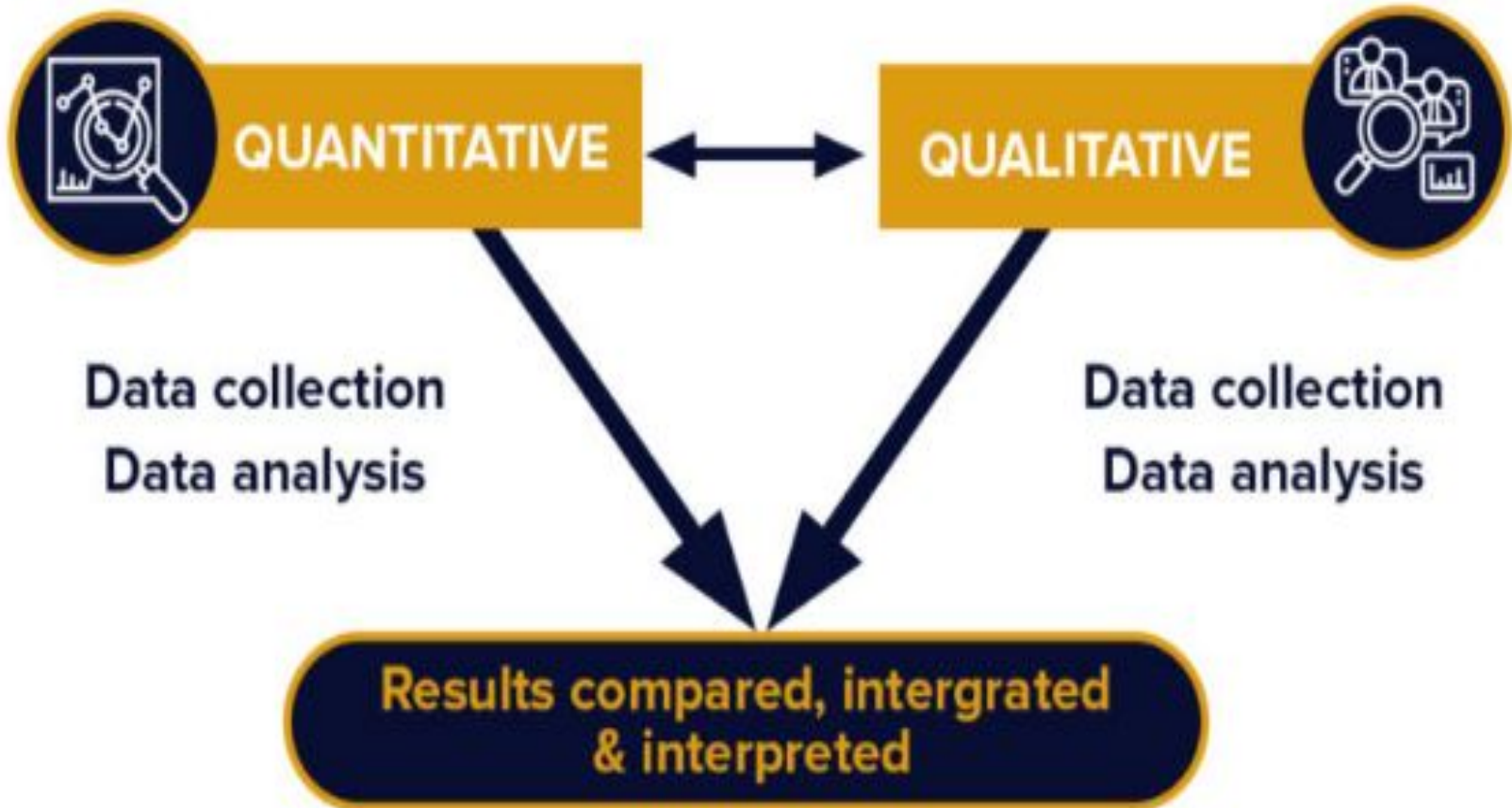


## Mixed methods

A contemporary method sprung from the combination of traditional quantitative and qualitative approaches. According to Brannen and Moss (2012), the existence of the mixed methods approach stemmed from its potential to help researchers view social relations and their intricacies clearer by fusing together the quantitative and qualitative methods of research while recognizing the limitations of both at the same time.

Mixed methods are also known for the concept of triangulation in social research. According to Haq (2014, p. 11), triangulation provides researchers with the opportunity to present multiple findings about a single phenomenon by deploying various elements of quantitative and qualitative approaches in one research. This is the kind of method that one may use when studying [sleep and academic performance](#).

# The Mixed Methods Concurrent Triangulation Strategy

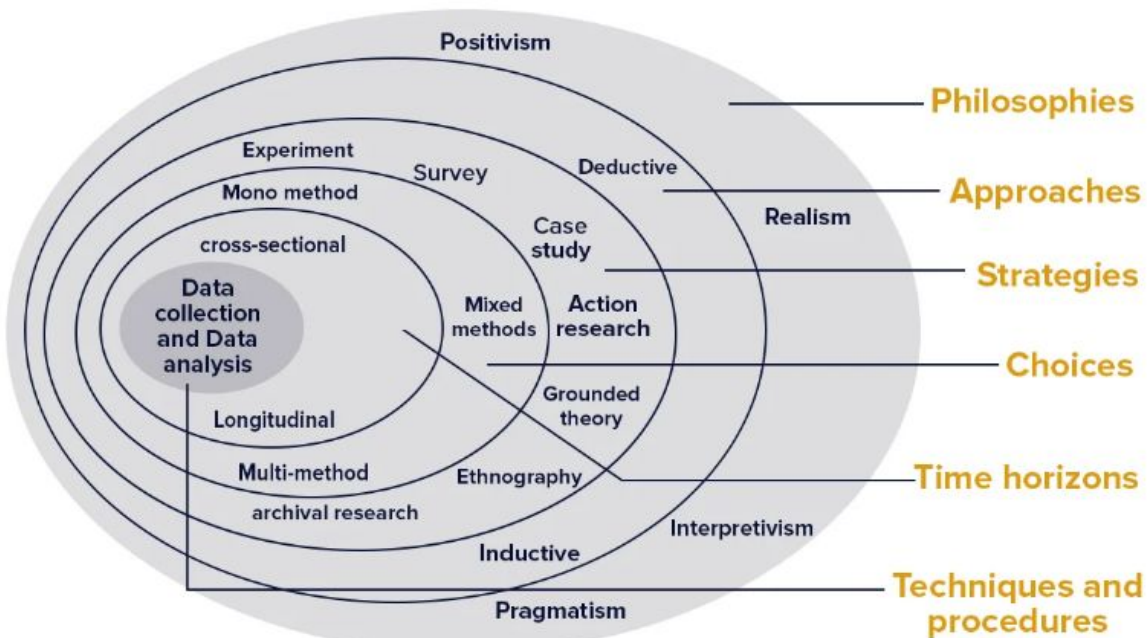


# Writing Your Research Paper

## Methodology

Saunders et al. (2007) proposed the concept of the research onion model to help researchers develop a methodology and construct a research design within the field of future studies. This research onion model has six main layers, which serve as a step-by-step guide for researchers to create and organize their research methodology.

### The Research Onion Model






# Ethical Considerations

- Researchers must adhere to ethical norms to ensure trust, accountability, mutual respect, and fairness (Resnik, 2015). According to Saunders, Lewis, and Thornhill (2003, p. 131), there are some ethical considerations that researchers must be mindful of, especially during the process of gathering and presenting research data:
- The rights to privacy of the individuals involved.
- The nature of participation in the research must be voluntary and the individuals involved must have the right to withdraw partially or completely from the process.
- All participants must provide their consent first.
- Maintenance of the confidentiality of data provided by individuals as well as identifiable participants' anonymity.
- How participants react to the researchers' methods in seeking to collect data.
- How the participants will be affected by the way in which data is analyzed and reported.
- The behavior and objectivity of the researcher.
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# Ethical Principles of Research



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- It's now clear that the methodology section is where a researcher indicates and elaborates on the plans that must be put into motion in order to achieve the objective of the research. Being acquainted with research methodologies, however, does not make choosing the appropriate methodology easier. Walker (2006) states that selecting which research methodology is a difficult step in the research process. It can be confusing and overwhelming, especially for novice researchers. Even if you are aiming for a [career in the humanities and social sciences](#), having a clear research methodology is still essential.
  - According to Holden and Lynch (2004), research should not only be “methodologically led” but the choice of which methodology to use should be consequential not only to the social science phenomenon to be investigated but also to the philosophical stance of the researcher. Similarly, Goulding (2002) claims that the choice of methodology should be based on the researcher's interests, beliefs, and convictions. Meanwhile, other significant factors such as epistemological concerns must also be taken into consideration when choosing a research methodology (Buchanan & Bryman, 2007). On top of philosophical underpinnings and personal convictions, there are also practical considerations that can affect a researcher's decision on what methodology to use, including the amount of existing data or knowledge, available time, and other resources (Ahmed et al., 2016, p. 32).
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