

Research methodology chapter guiding tool for M & D

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Research design and methodology chapter for the M & D.

5.1. Introduction

Refer to the previous chapter and link with your reference to this chapter. Cross-reference what you wrote in chapter 1/proposal regarding the research methodology definition to avoid repetition (e.g. Research methodology was defined in chapter 1, section 1.5). Draw from that research methodology definition and expand for this chapter. Conclude the section with an outline of this chapter and have a sentence linking to the next section.

5.2 Research paradigm

Cross-reference what you wrote in chapter 1/proposal and remind the reader about your selected research paradigm. Expand on the paradigm you selected, emphasising your reasons for choosing it and the role of this paradigm in this study. Conclude the section with a linking sentence that links this section and the next section. Tables 1 and 2 will remind you of the suitability of your selected paradigm.

Table 1: Research Paradigms

Paradigm	Ontology <i>(What is reality?)</i>	Epistemology <i>(How do I know reality?)</i>	Methodology <i>(How do I go about finding out)</i>	Method <i>(What techniques should I use to find out?)</i>
Positivism	There is only one single truth	Reality can be measured, and there are reliable and valid tools to do this	<ul style="list-style-type: none"> - Experimental research - Survey design 	Usually, quantitative may include: <ul style="list-style-type: none"> - Measurement & scaling - Statistical analysis Seldom quantitative and may use: <ul style="list-style-type: none"> - Focus group interviews
Constructivism/ Interpretivism	There is no single reality or truth. Individuals create reality in groups	Therefore, reality needs to be interpreted in order to uncover the underlying meaning of events, activities and behaviours	<ul style="list-style-type: none"> - Ethnography - Grounded theory - Phenomenological research - Heuristic inquiry - Action research - Discourse analysis - Feminist standpoint 	Usually, qualitative may include the following: <ul style="list-style-type: none"> - Interviews - Observation (researcher as participant/non-participant) - Case Study - Life History - Narrative

				- Theme Identification
Pragmatism	Reality is constantly renegotiated, debated, and re-interpreted in light of its usefulness in new situations	The best method is one that solves the problem. Finding out is the means to change the underlying goal	<ul style="list-style-type: none"> - Mixed methods - Design-based research - Action research 	Combination of any of the above, as well as data mining, usability testing, physical prototypes
Transformative/ Subjectivism	Reality is what we perceive to be real	All knowledge is purely a matter of perspective	<ul style="list-style-type: none"> - Discourse theory - Archaeology - Anthropology - Genealogy - Deconstruction 	<ul style="list-style-type: none"> - Auto-ethnography - Semiotics - Literary analysis - Pastiche - Intertextuality
Critical Realism	Realities (plural) are socially constructed under the constant internal influence	Reality and knowledge are both socially constructed by power relations within society	<ul style="list-style-type: none"> - Critical discourse analysis, - Critical ethnography - Action research - Ideology critique 	<ul style="list-style-type: none"> - Ideological review - Civil actions - Open-ended interviews/ - Questionnaires/ observations, - Journals

Adapted from Creswell (2018)

N.B: The last column of Table 1 shows the research methods and designs suitable for each research paradigm. For Positivism and Constructivism/ Interpretivism, the word usually implies that the research paradigm is predominately used in that research method and seldom used in other methods.

Table 2: Research Paradigms and Research Methods

Paradigm	Suitable Research Method (Primarily)	Data Collection Tools (Examples)
Positivism/ Post-positivism	Quantitative methods predominate, although qualitative methods can be used.	Experiments Quasi-experiments Tests Scales
Interpretivism/ Constructivism	Qualitative methods predominate, although quantitative methods may also be utilised.	Interviews Observations Document reviews Visual data analysis
Transformative	Qualitative methods with quantitative and mixed methods. Contextual and historical factors are described, especially as they relate to oppression.	A diverse range of tools is needed to avoid discrimination; for example, sexism, racism and homophobia.

Pragmatism	Qualitative and /or quantitative methods may be employed. Methods are matched for the specific questions and purpose of the research.	It may include tools from positivist and interpretivist paradigms—for example, interviews, observations, testing and experiments.
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Mphahlele R.S.S (2018)

5.3 Research type and approach

Cross-reference what you wrote in chapter 1/proposal and remind the reader about your selected research type and approach. Emphasise the link between the selected approach and the research type and expand on the motivation for your choices concerning the research problem, questions, or hypothesis. Conclude the section with a linking sentence that links this section and the next section.



Types of
research.pdf

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5.4 Research design

Refer to the research design you selected in the proposal/chapter 1 and elaborate on why you selected it. Conclude the section with a linking sentence that links this section and the next section.

The various research approaches and some of their research designs are described below to assist you in verifying your choice.

QUALITATIVE RESEARCH DESIGNS

Narrative

Narrative research refers to qualitative data collected from participants in written, oral or visual form. Meanings are found in the words and phrases used by research participants. Narrative research seeks to explore people's lives using their own words.

Case Study

A "case study" is a research design that can describe each research participant individually according to work, socioeconomic status, special needs, living situation, life story, etc. It can be a group of people (a university department, a group of students with shared circumstances, a lecturer, etc.) or individual details such as facilities or problems (or problems), processes, phenomena or events at a particular facility.

Phenomenology

Phenomenological research seeks to gain deeper insights regarding a particular phenomenon. This outcome is achieved by exploring participants' lived experiences regarding the phenomenon of interest while suspending the researchers' subjective assumptions.

Ethnography

Ethnography is an approach that gathers data through observations, interviews and documents. The main aim of ethnography is to understand social phenomena. The ethnographic researcher immerses him/herself in the social setting of the study to produce rich insights into the lives, customs, practices, and ways of those he/she seeks to know.

Grounded Theory

Grounded theory is a means to develop conceptual thinking and theory building, not empirical theory testing. The grounded theory's literature review and research questions support conceptual thinking and theory building.

Please read more on the designs and select one that you may use for your study.



Figure 1: Qualitative Research Designs

QUANTITATIVE RESEARCH APPROACHES

Non-Experimental Designs

Cross-Sectional Survey

Cross-sectional approaches involve using different groups of people who are different in the variable of interest but similar in other characteristics such as socioeconomic status, race, educational background etc. The studies are observational and study different groups at the same time.

Longitudinal Study

Longitudinal studies involve the observation of a variable over a (usually) extended period.

Experimental Designs

An **Experimental Design** utilises the principle of manipulating the independent variables and examines its cause-and-effect relationship with the dependent variables by controlling the effects of other variables. Usually, the experimenter assigns two or more groups with similar characteristics. Different interventions will be given to the groups. If there are differences in the outcomes among the groups, the experimenter can conclude that the differences result from the interventions the experimenter performed (Frey, 2018).

Quasi

Quasi-experiments are carried out to determine a cause-and-effect relationship between an independent and dependent variable.

Descriptive Designs

Descriptive research describes the characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. It addresses the "what" question (what are the characteristics of the population or situation being studied?) (Shields et al., 2013).

Correlational Designs

Correlational Research Designs are non-experimental and seek to establish the relationship between two variables. This design is done with no manipulation or control of the variables.

Figure 2 gives a visual overview of quantitative research designs.

Please read more on the designs and select one that you may use for your study.

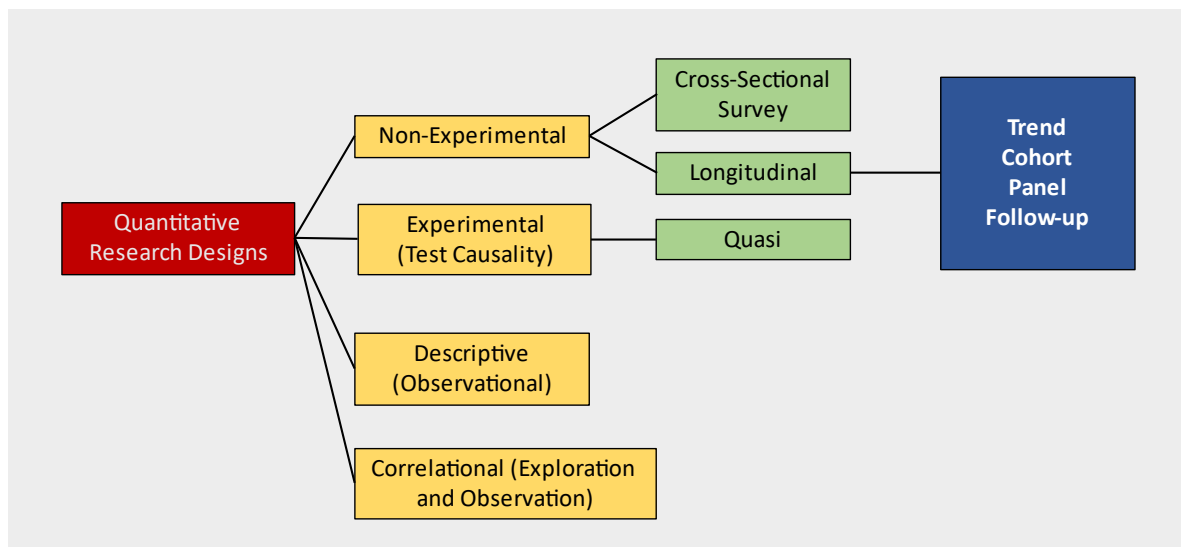


Figure 2: Quantitative Research Designs

MIXED-METHOD RESEARCH DESIGNS

The mixed methods research design combines the strengths of both quantitative and qualitative approaches to answer research questions.

Sequential Exploratory

In sequential exploratory research designs, the researcher begins with a qualitative research phase and explores participants' views. The quantitative phase follows the qualitative phase of the study, and data are analysed and integrated to answer the research question and hypotheses.

Sequential Explanatory

The sequential explanatory design was adopted to merge and mix different datasets to be collected and analysed (Othman et al., 2020).

Embedded

In an embedded mixed methods design, the qualitative data set is embedded within and supports the quantitative data. Alternatively, a qualitative method may be used as the primary method and a survey method as the embedded research approach (Yu et al., n.d.)

Concurrent Triangulation

In this approach, the researcher collects quantitative and qualitative data at designated points and triangulates (Creswell, 2009; Creswell, Plano Clark, Gutmann, & Hanson, 2003). Data are then compared to identify similarities, differences, gaps, and unanswered questions (Salyers et al., 2014).

Concurrent nested

Quantitative and Qualitative data are collected simultaneously; however, one method is “nested” or “embedded” in another. The secondary research method is subsumed by the primary one and addresses secondary research questions.

Sequential transformative

Suitable for complex research projects, sequential transformative mixed methods are an iterative, cyclical design. In this design, prototypes can be developed and tested, and each step's evaluation results can be used to inform the next. Figure 3 gives a view of the mixed method designs.

Please read more on the designs and select one that you may use for your study.

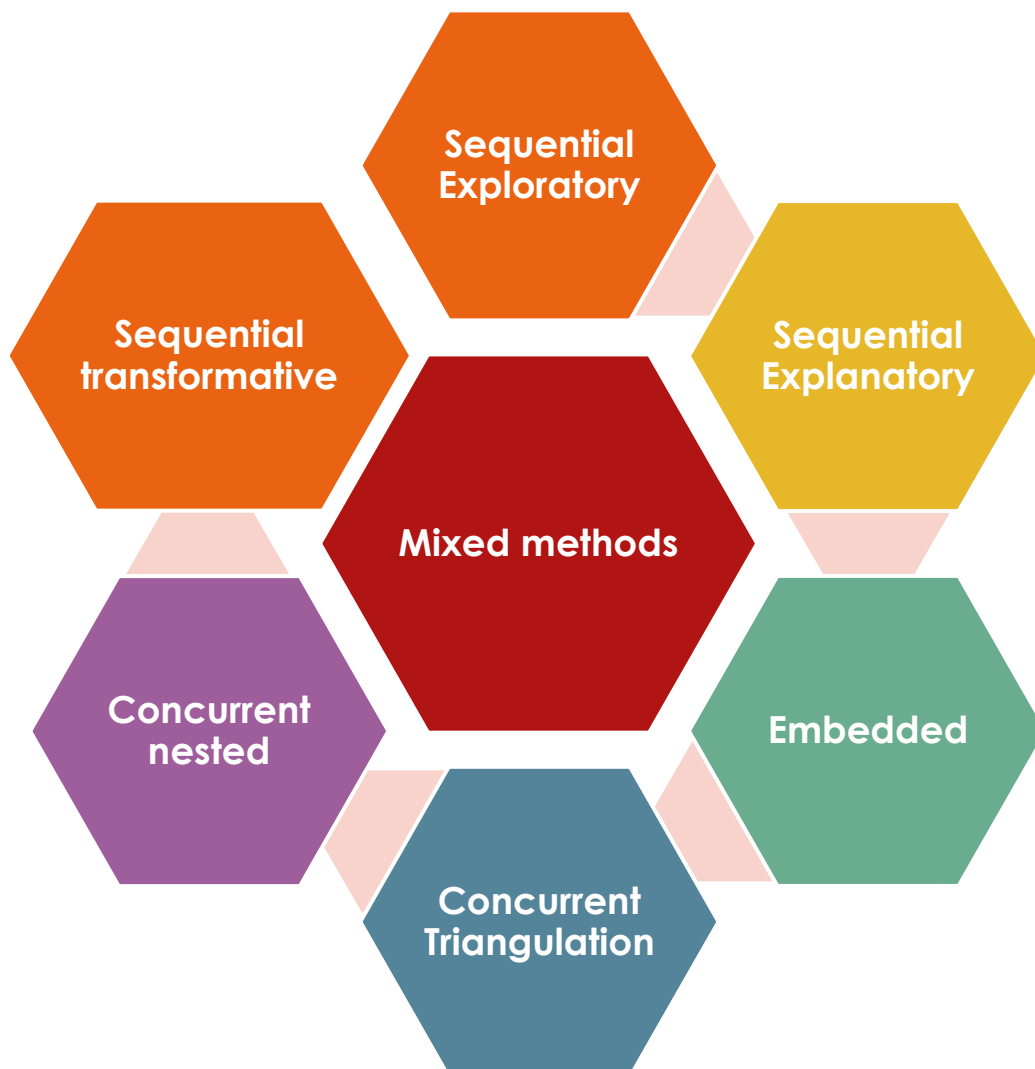


Figure 3: Mixed methods research designs

5.5 Population and sampling

5.5.1 Population

Reflect briefly on the definition you provided in chapter 1/proposal of this study. Remind the reader about the estimated population. Conclude the section with a linking sentence that links this section and the next section.

5.5.1 Sampling

Since you selected the sampling strategy in chapter 1/proposal, remind the reader by cross-referencing that section. Indicate in detail how you would sample each set of participants outlining inclusion and exclusion criteria. Conclude the section with a linking sentence that links this section and the next section.

5.6 Data collection methods

Remind the reader of the data collection definition in chapter 1/proposal and the selected data collection methods. Emphasise your reasons for the selection, not repeating what is in chapter 1/proposal. Describe each data collection method in detail and explain how you will use each in your study. N.B do not repeat what is chapter 1/proposal; expand on it. Conclude the section with a linking sentence that links this section and the next section.

5.7 Data analysis and interpretation

Reflect on the data analysis definition provided in chapter 1/proposal and remind the reader of your selected data analysis strategy. Indicate how you will prepare the data for analysis (for example, if you have audio data, mention how you will transcribe and indicate if there will be any translations done if the data was collected in a language that is not English). Detail step by step how you will analyse the data and how you will present your findings (e.g. using tables, figures/charts or visuals). Conclude the section with a linking sentence that links this section and the next section.

5.8 Validity, Reliability, Credibility and Trustworthiness

Cross-reference the definitions in chapter 1/proposal and expand on how you will apply each concept in your study. Conclude the section with a linking sentence that links this section and the next section.

5.9 Ethical considerations

Indicate steps that you will take to obtain permission to conduct this study from various gatekeepers to avoid repeating what you wrote in chapter 1/proposal.

5.10 Conclusion

Give an overview of the whole chapter to give the reader a clear understanding of what you have addressed and link this chapter to the next.

5.11 References

- Frey, B. B. (2018). *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. SAGE Publications, Inc. <https://doi.org/10.4135/9781506326139>
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