

Table 1: Research: tasks, codes and descriptions

Research Strategy: Experimental (Marczyk, DeMatteo, and Festinger 2005)

Code	Description	Comments
R	Randomise sample from population	“A true experimental design is one in which study participants are randomly assigned to experimental and control groups. We have discussed randomization in previous chapters, so this chapter will simply highlight the importance of randomization in terms of the strength of a research design. Although randomization is typically described using examples such as rolling dice, flipping a coin, or picking a number out of a hat, most studies now rely on the use of random numbers tables to help them assign their research participants (as discussed in Chapters 2 and 3).” (Marczyk, DeMatteo, and Festinger 2005, p.124)
O	Observe phenomenon	“Observation is another versatile approach to data collection. This approach relies on the direct observation of the construct of interest, which is often some type of behavior. In essence, if you can observe it, you can find some way of measuring it. The use of this approach is widespread in a variety of research, educational, and treatment settings.” (Marczyk, DeMatteo, and Festinger 2005, p.119)
X	Change experimental variable	“experimental manipulation (independent variable)” (Marczyk, DeMatteo, and Festinger 2005, p.127)
Y	Change other variable	“experimental manipulation (other variable)” (Marczyk, DeMatteo, and Festinger 2005, p.127)

Research Strategy: Quasi-experimental (Marczyk, DeMatteo, and Festinger 2005)

Code	Description	Comments
NR	Non-random sampling	“when randomized designs are not feasible, researchers must often make use of quasi-experimental designs. A good rule of thumb is that researchers should attempt to use the most rigorous research design possible, striving to use a randomized experimental design whenever possible (Campbell, 1969). Cook and Campbell (1979) present a variety of quasi-experimental designs, which can be divided into two main categories: nonequivalent comparison-group designs and interrupted time-series designs. In this section, we will discuss these two major groups of quasi-experimental designs, followed by a brief overview of single-subjects designs.” (Marczyk, DeMatteo, and Festinger 2005, p.138)
REV	Before the intervention, then after	“ Reversal Time-Series Design Also known as an ABA design (detailed on page 145), the reversal time-series design is basically a multi-subject variation of the single-subject reversal design, which will be discussed later in this chapter. The basic goal of this design is to establish causality by presenting and withdrawing an intervention, or independent variable, one to several times while concurrently measuring change in the dependent variable (as depicted in the following). As in the simple time-series design, this design begins with a series of pretests to observe normal fluctuations in baseline. The name “reversal” refers to the idea that causality can be inferred if changes that occur following the presentation of an intervention diminish or “reverse” when the independent variable is withdrawn.” (Marczyk, DeMatteo, and Festinger 2005, p.142)
ABA	Before, Intervention, After	See REV.
ABABA	Iterated ABA	See REV.
ABABA...	Further Iterated ABA	See REV.

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Table 1: Research: tasks, codes and descriptions (Continued)

EC	Establish control	<p>“As with time-series designs, single-subject designs typically begin by establishing a stable baseline. Establishing a stable baseline involves taking repeated measures of a participant’s behavior (dependent variable) prior to the administration of any intervention to make certain that the participant’s behavior is occurring at a consistent rate. To obtain a stable baseline, the researcher must make special efforts to control all relevant environmental variables that otherwise might affect the participant’s responses. If the researcher does not know, or is uncertain, about which variables are relevant, the researcher must attempt to keep the participant’s environment as constant as possible by maintaining highly controlled conditions.” (Marczyk, DeMatteo, and Festinger 2005, p.144)</p>
1P	Single participant	<p>“Not to be confused with non-experimental single-subject case studies, which are covered later in this chapter, the single-subject experimental design has a long and respected tradition in empirical research. According to Kazdin (2003c), single-subject experiments might be seen as true experiments because they “can demonstrate causal relationships and can rule out or make implausible threats to validity with the same elegance of group research” (p. 273). Similar to other experimental designs, the single subject design seeks to (1) establish that changes in the dependent variable occur following introduction of the independent variable (temporal precedence) and (2) identify differences between study conditions.</p> <p>The one way that single-subject designs differ from other experimental designs is in how they establish control, and thereby demonstrate that changes in a dependent variable are not due to extraneous variables. For example, experimental designs rely on randomization to equally distribute extraneous variables and on statistical techniques to control for such factors if they are found. Alternatively, single-subject designs eliminate between-subject variables by using only one participant, and they control for relevant environmental factors by establishing a stable baseline of the dependent variable. If change occurs following the introduction of the intervention, or independent variable, the researcher can reasonably assume that the change was due to the intervention and not to extraneous factors.” (Marczyk, DeMatteo, and Festinger 2005, p.144)</p>
SB	Stable Baseline	See 1P
RC	Retain control of Env	See 1P

Research Strategy: Non-experimental (Yin 2009)

Code	Description	Comments
CS	Choose subject	<p>“single-subject designs eliminate between-subject variables by using only one participant, and they control for relevant environmental factors by establishing a stable baseline of the dependent variable. If change occurs following the introduction of the intervention, or independent variable, the researcher can reasonably assume that the change was due to the intervention and not to extraneous factors.</p> <p>As with time-series designs, single-subject designs typically begin by establishing a stable baseline. Establishing a stable baseline involves taking repeated measures of a participant’s behavior (dependent variable) prior to the administration of any intervention to make certain that the participant’s behavior is occurring at a consistent rate. To obtain a stable baseline, the researcher must make special efforts to control all relevant environmental variables that otherwise might affect the participant’s responses. If the researcher does not know, or is uncertain, about which variables are relevant, the researcher must attempt to keep the participant’s environment as constant as possible by maintaining highly controlled conditions.” (Marczyk, DeMatteo, and Festinger 2005, p.144)</p>

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Table 1: Research: tasks, codes and descriptions (Continued)

Comp	Comprehensive description	“the focus of the case-study approach is on individuality and describing the individual as comprehensively as possible. The case study requires a considerable amount of information, and therefore conclusions are based on a much more detailed and comprehensive set of information than is typically collected by experimental and quasi-experimental studies.” (Marczyk, DeMatteo, and Festinger 2005, p.148)
IDIP	In-depth interviews with participants	“Case studies of individual participants often include in-depth interviews with participants ...” (Marczyk, DeMatteo, and Festinger 2005, p.148)
IDIC	In-depth interviews with collaterals	“...and collaterals (e.g., friends, family members, colleagues), review of medical records, observation, and excerpts from participants' personal writings and diaries” (Marczyk, DeMatteo, and Festinger 2005, p.148)
RA	Review of artefacts	“According to Kazdin (1982), the major characteristics of case studies are the following: <ul style="list-style-type: none"> • They involve the intensive study of an individual, family, group, institution, or other level that can be conceived of as a single unit. • The information is highly detailed, comprehensive, and typically reported in narrative form as opposed to the quantified scores on a dependent measure. • They attempt to convey the nuances of the case, including specific contexts, extraneous influences, and special idiosyncratic details. • The information they examine may be retrospective or archival. ” (Marczyk, DeMatteo, and Festinger 2005, p.148)
PROPS	Identify propositions	“ Study propositions [...] each proposition directs attention to something that should be examined within the scope of study.” (Yin 2009, p.28)
UNITS	Identify units	“ Unit of analysis [...] related to the fundamental problem of defining what the ‘case’ is [... what the primary unit of analysis is]. Without such questions and propositions, you might be tempted to cover ‘everything’ about the individual(s), which is impossible to do.” (Yin 2009, p.29)
LINKS	Identify how is data linked to propositions	“be aware of the main choices and how they might suit your case study]” (Yin 2009, p.34ff)
CRITS	Which are criteria to interpret findings	“Criteria for interpreting a study’s findings” (Yin 2009, p.34)
THD	Theory Development	“[including types on p.37]” (Yin 2009, p.35)
GEN	Generalisation	“[including Fig 2.2]” (Yin 2009, p.38)
NAR	Narrative	“Certain types of narrative, produced by a case study investigator upon completion of all data collection, also may be considered a formal part of the database and not part of the final case study report. The narrative reflects a special practice that should be used more frequently: to have case study investigators compose open-ended answers to the questions in the case study protocol. This practice has been used on several occasions in multiple-case studies designed by the author (see BOX 24). [Box 24] In such a situation, each answer represents your attempt to integrate the available evidence and to converge upon the facts of the matter or their tentative interpretation. The process is actually an analytic one and is the start of the case study analysis. The format for the answers may be considered analogous to that of a comprehensive “take-home” exam, used in academic courses. You the investigator [Should be included, or does this come from other writing bits?]

” (Yin 2009, p.121)

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Table 1: Research: tasks, codes and descriptions (Continued)

NSC	Nuance from the specific	“According to Kazdin(1982), the major characteristics of case studies are the following:
NEI		<ul style="list-style-type: none"> • They involve the intensive study of an individual, family, group, institution, or other level that can be conceived of as a single unit. • The information is highly detailed, comprehensive, and typically reported in narrative form as opposed to the quantified scores on a dependent measure. • They attempt to convey the nuances of the case, including specific contexts, extraneous influences, and special idiosyncratic details. • The information they examine may be retrospective or archival.
NID	context/extraneous influences/idiosyncratic details	” (Kazdin 1982)

Research Strategy: Design Science Research (Oates 2007)

Code	Description	Comments
PSA	Problem solving awareness	“Awareness is the recognition and articulation of a problem, which can come from studying the literature where authors identify areas for further research, or reading about new findings in another discipline, or from practitioners or clients expressing the need for something, or from field research or from new developments in technology.” (Oates 2007, p.111)
PSS	Problem solving suggestion	“Suggestion involves a creative leap from curiosity about the problem to offering a very tentative idea of how the problem might be addressed” (Oates 2007, p.112)
PSD	Problem solving development	“Development is where the tentative design idea is implemented. How this is done depends on the kind of IT artefact being proposed. For example, an algorithm might need the construction of a formal proof. A new user interface embodying novel theories about human cognition will require software development. A systems development method will need to be captured in a manual that can then be followed in a systems development project. A new approach in digital art might require the development of an art portfolio tracing the development of the artist’s creative ideas.” (Oates 2007, p.112)
PSE	Problem solving evaluation	“Evaluation examines the developed artefact and looks for an assessment of its worth and deviations from expectations.” (Oates 2007, p.112)
PSC	Problem solving conclusion	“Conclusion is where the results from the design process are consolidated and written up, and the knowledge gained is identified, together with any loose ends - unexpected or anomalous results that cannot yet be explained and could be the subject of further research.” (Oates 2007, p.112)

Research Strategy: General (<empty citation>)

Code	Description	Comments
VALID	Threats to validity	“fours (general) tests for validity” (Yin 2009, p.40)
BIAS	Reflection on bias	“[Avoiding bias for case studies]” (Yin 2009, p.72)

References

- Kazdin, AE (1982). “Single-case designs: Methods for clinical and applied settings”. In: *New York* (cit. on p. 4).
- Marczyk, Geoffrey, David DeMatteo, and David Festinger (2005). *Essentials of Research Design and Methodology*. Ed. by Alan S. Kaufman and Nadeen L. Kaufman. Essentials of Behavioral Science Series. John Wiley & Sons, Inc. (cit. on pp. 1–3).
- Oates, Briony J (2007). *Researching Information Systems and Computing*. Sage South Asia Ed.). New Dellhi: Sage South Asia Publication. ISBN (cit. on p. 4).
- Yin, R.K. (2009). *Case study research: Design and methods*. Vol. 5. Sage publications, Inc (cit. on pp. 2–4).