

The Alignment-Theory of Product Cost Management.

A Classic Grounded Theory Approach.

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... for my parents ...



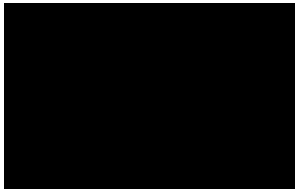
The centipede was happy quite
Until a toad in fun
Said, "Pray, which leg goes after which?"
That worked her mind to such a pitch,
She lay distracted in a ditch
Considering how to run.

(The Centipede's Dilemma: Katherine Craster, 1871)

Declaration of Original Content

I declare that the work in this assessment was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the assessment has been submitted as part of any other academic award.

Any views expressed in this assessment are those of the author and in no way represent those of the University.



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Acknowledgements

A doctoral journey is a journey into the unknown, an expedition into unresearched territory, a chance to boldly go where no one has gone before. But not all those who wander are lost, and not all viruses labelled 'Promo-Vieren' are bad. To marvel at a research problem motivates the solving of it; to struggle during hard times indicates the pushing of boundaries; to stand up again after you fall shows the dedication that is needed to arrive at the ultimate goal: a contribution that makes a difference.

Yet, whenever there is something new, something unknown or different, it is likely that there will be plentiful opportunities to passionately debate or defend it. Being brave enough to leave the beaten path might be stressful but it is worth the effort, the pain and the suffering one may encounter. That being said, all of these components are integral to the excitement and joy that one can experience throughout this type of journey.

As a result, I take pride in saying that this thesis is written differently - on purpose.

This sense of purpose is mainly based on the fact, that, firstly, a contribution to practice, inherent to the Doctor of Business Administration (DBA) should also be achieved by a different communication style of the research report compared to conventional theses. Secondly, with Grounded Theory, a methodology was selected which not only is a family of variants that lacks commonly agreed-upon opinions but is, moreover, in many aspects counter-traditional to the examination criteria of doctoral research. In addition, finally, the ambition to present a thesis which is critical-reflective and differentiated in the major decision points was maintained, so the integration and reference to extant literature account for a considerable share of the overall wordcount, as do the two first aspects. Fortunately, the transparent justification for it is outlined prior to each relevant section, so that it can be discussed terrifically. That's what science is for: Wissenschaft ist, was Wissen schafft.

One can conclude that it is all for the greater good and the quest for the greater good justifies the effort, the frustration, and the joy experienced while aiming for the goal.

This roller coaster of emotions has been accompanied by some extraordinary people who I was privileged to get to know. First and foremost, there is my cohort, *Munich11*, which stands out as an inspiring team composed of outstanding individuals. Carsten, the best-tempered friend you can imagine; Danny, the coolest jack-of-all trades; Johann, my brother-in-arms, never staying inside but always outside the box; Manuel, the man with the clearest mind, who does nothing by halves; Torsten, the most disciplined-yet-easy going wingman. To all of you, thank you! Without you and your support, the journey would have been much tougher and far less enjoyable - I still don't know what to do without you guys on Sunday mornings at 9am.

Finally, there is the (academic) staff surrounding my research at the University of Gloucestershire at Cheltenham. I feel privileged to have had the backing of Adele, Charley, Daniela, Douglas, Elke, Glynn, Jürgen, Malcolm, Paul, Philippa, Robin, Tracy, and Xiaoling, all of whom challenged me during good times and supported and encouraged me to hold on through the hard times. Your patience and understanding truly helped me to not give up. From the bottom of my heart, I thank you all.

Conference Attendance

During this research journey, the author participated in conferences. The conferences will be explicitly mentioned below. Furthermore, the author took full advantage of the module and training sessions of the underlying DBA programme of the University of Gloucestershire.

Modules of DBA Programme

- DB8001 Reflective Professional Development
- DB8002 Literature Review
- DB8003 Methodological Fundamentals
- DB8004 Research Methods and Analysis

The corresponding assignments of the module phase formed the basis for this doctoral thesis and the applied research approach.

Conference Participation

- 5th DBA Doctoral Colloquium, University of Gloucestershire, in Cheltenham, UK
- 6th DBA Doctoral Colloquium, University of Gloucestershire, in Berlin, Germany
- 7th DBA Doctoral Colloquium, University of Gloucestershire, in Cheltenham, UK

Abbreviations

AR:	Action research
CF:	Contingency factor
CGT:	Classic(al) Grounded Theory
CM:	Cost management
CR:	Critical realist
CRGT:	Critical Realist Grounded Theory
C(R)GT:	Classic and Critical Realist Grounded Theory
CSR:	Case study research
DBA:	Doctor of Business Administration
GT:	Grounded Theory
GTM:	Grounded Theory Methodology
IF:	Impacting factor
IT:	Information technology
KSF:	Key success factor
LPCMP:	Level of product cost management profile
MGT:	Multi-Grounded Theory
PC:	Product cost
PCM:	Product cost management
PCMP:	Product cost management profile
PCMS:	Product cost management system
SA:	Strategic alignment
SAM:	Strategic-Alignment-Model
SF:	Strategic fit
SRP:	Strategising-Relevancing-Profiling

Abstract

Product management is a predominant form of organisation in various industries. In addition, product costs account for a major share of a company's overall cost. However, the managerial problem of how product cost management (PCM) activities should be organised has not yet been sufficiently solved. Consequently, the thesis' research goal was to develop a normative theory on how to organise product cost management activities in the manufacturing industry in relation to a specified dominant impacting factor.

To solve the practical problem, a classic Grounded Theory study informed by critical realism (CRGT) was conducted based on the '7-steps-full-package' approach from Walsh, Holton and Mourmant. Based on data collected during 51 interviews with managers and PCM consultants the study revealed a normative 'Product-Cost-Management-Theory' of 'Aligning'. It incorporates an actionable three-stage 'Strategising-Relevancing-Profiling-(SRP)-Procedure' which centres around a novel classification of four different PCM-profiles (from basic to value-oriented) impacted by and to be aligned with the relevance of product cost as the dominant contingency factor. This relevance ought to be aligned with the company's strategic directions (company positioning, business priorities and company strategy) which themselves have to be aligned with the key success factors (KSF) of the company's external environment.

The four PCM-profiles have been sketched with the relevant dimensions and attributes as principle stereotypes being built-on-each-other suggesting different, ordinaly-scaled, levels. Opposing those levels with the relevance of product costs in a company, a 'Strategic-Fit-Matrix' can be set up with aligned zones of fit, which should be targeted, and zones of misfit, which should be avoided. This will enable managers and consultants by providing them a novel and actionable SRP-practice to more effectively organise the manner in which product costs should be managed ('how to'). Ultimately, this aligned and strategically fitting PCM-profile will contribute to increased company performance.

The thesis' nascent propositional theory adds the aspect of PCM onto current organisational theory and is ready to be detailed, modified, or executed.

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1 Introducing the doctoral thesis research project

1.1 Glimpsing into the research topic and research questions

Product management is a predominant form of organisation in various industries (Berndt, Fantapié Altobelli, & Sander, 2023; Gaubinger, Rabl, Swan, & Werani, 2015; Perri, 2018; Tyagi & Sawhney, 2010). In addition, product costs account for a major share of a company's overall cost and cost management is still one of the most fundamental tasks within many companies (Aumayr, 2013, p. 2; Edin & Östberg, 2015; Schicker, 2013). However, the question of how product cost management (PCM) activities should be organised cannot be answered clearly, nor is there management research available which addresses this common practical problem.

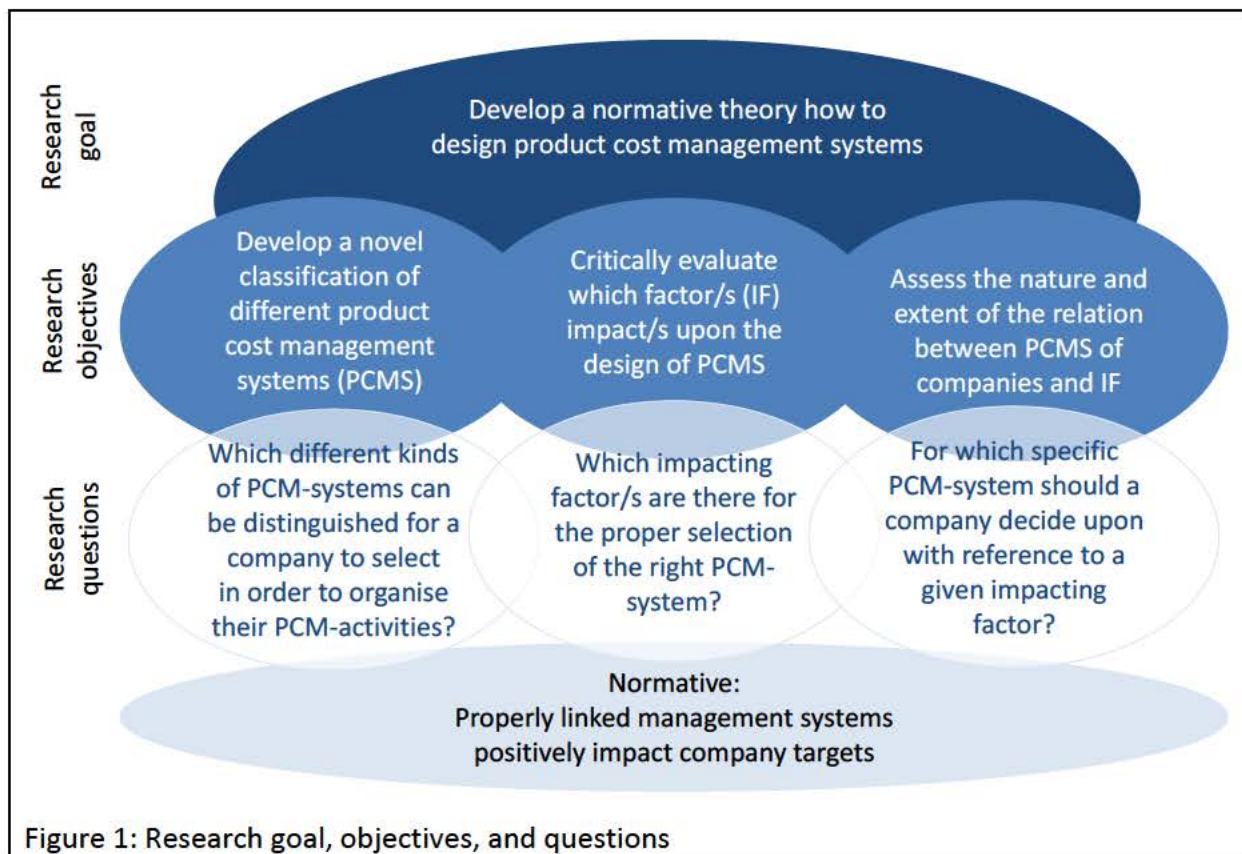
Four acknowledged drivers have shaped the **thesis' step-off point** to identify the substantive research and can be synthesised as follows:

- Lack of conformity concerning cost management systems and their constituting elements, although cost management research shows a long tradition and history
- Lack of clarity regarding factors impacting upon cost management systems
- Ambiguity of nature and extent of the relation between cost management systems and the potentially impacting factor/s
- Insufficient attention of academia on product costs as key cost objects

Therefore, as PCM is often left out of consideration by management research, and due to its practical relevance, this managerial problem was taken up to serve as the research topic for this doctoral thesis. The thesis' **research goal**, as derived out of the four drivers, was to develop a normative theory on how to design PCM-systems or organise PCM-activities in the manufacturing industry in relation to a specified dominant impacting factor.

This goal can be broken down into three distinct research objectives along with three corresponding **research questions** (figure 1) which are answered in chapter 4.8.3 (p. 278):

- (1) Which different kinds of PCM-systems can be distinguished for a company to select in order to organise their PCM-activities?
- (2) Which impacting factors are there for the proper selection of the right PCM-system?
- (3) Which specific PCM-system should a company decide upon with reference to a given impacting factor?



Solving this practical problem has implications for managers and decision makers who are concerned about optimising their organisation as, to date, it is a complex challenge without any guidelines derived by a meaningful scientific approach.

It will be shown that the optimisation of the PCM-organisation has a positive impact on company performance as well as helping to achieve product cost related targets in an effective and efficient way at the same time. The required criteria for decision-making in relation to PCM-organisation as well as the main relevant dimension of this organisation will be outlined. In addition, the principle way forward will be recommended so that the definition of and the implementation of the proper PCM-organisation can follow a structured approach. In summation, the findings will cumulate into the 'Alignment-Theory of Product Cost Management'.

The details of this theory and a transparent audit trail of how the theory arrived at its findings is the content of this thesis.

1.2 Drafting the thesis' rationale

1.2.1 Research process as Martini glass

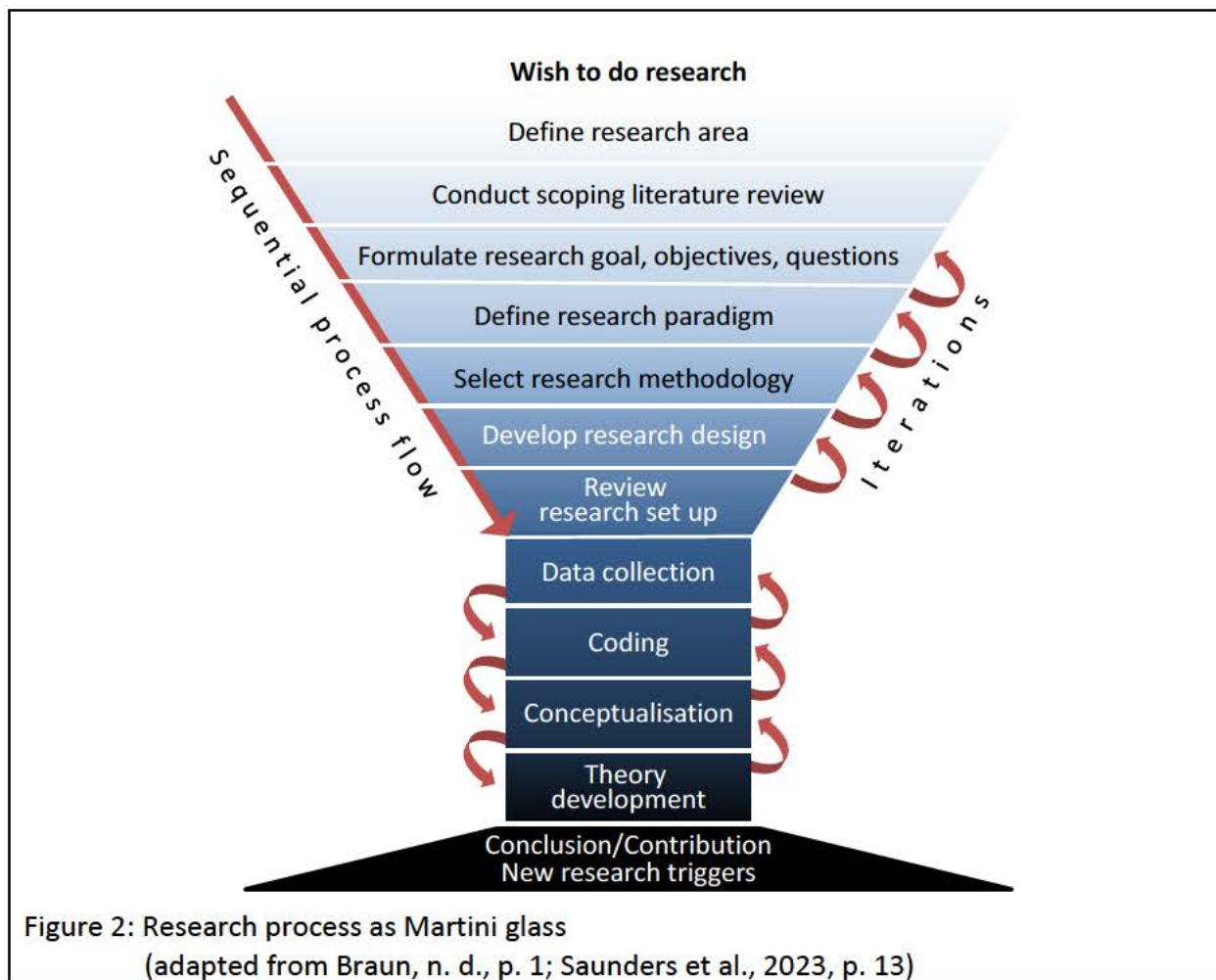
Research implicitly or explicitly follows a certain process in order to reach a research goal. However, within this process the researcher goes through various decision points about how to conduct the research (Burian, Rogerson, & "Skip" Maffei, 2010; Burke, 2007; Creswell, 2014) which leads to multiple variations of research procedures that can impact on the research result, quality and presentation (Lee & Lings, 2008, p. 5). Subsequently, numerous aspects need to be debated including: identification of a general research area, definition of research questions and research paradigms, and development of a proper research design (Ahrens, 2008; Baard, 2010; Fleetwood, 2005; Jönsson, 2010).

Although the reality of these processes show that research might not be a linear but an iterative, spiral or even somewhat messy procedure (Blaxter, Hughes, & Tight, 2010, pp. 9-10; Bryman, 2016, pp. 13-14; Bryman & Bell, 2015, pp. 15/87), several authors argue that there are certain indicators of an ideal research practice (e.g. Aityan, 2022, pp. 51-54).

In terms of process sequence, Guba and Lincoln (1994, p. 105) hold the opinion that issues regarding research methods are less important than issues regarding research philosophies. Holden and Lynch (2004, p. 397) propose that research should not be methodologically-led but based on a defined philosophical stance considering the purpose of the research, which makes the research process a matter of individual choice. Scholars such as Aliyu, Bello, Kasim and Martin (2014, p. 86) point out a more overarching aspect of the research process: the appropriate matching of different research steps. They claim that ontological and epistemological choices have to match, which supports the statement that it is important to make philosophical backgrounds of research explicit (Wahyuni, 2012, p. 69) as it guides the researcher's behaviour (Jonker & Pennink, 2010; Lee & Lings, 2008, pp. 4-5).

Synthesising the inputs from various scholars (e.g. Cooper & Schindler, 2008, pp. 80-94), the approach shown in figure 2 on the next page serves as the research project's rationale and the foundation of the thesis structure. It combines the logic of a "progressive narrowing of the topic" (Hart, 2014, p. 13) during the early stages of a research project with a 'sequential-iterative' process flow as proposed by Saunders, Lewis and Thornhill (2023, p. 13) visualised

by a “Martini glass” (Braun, n.d., p. 1). The narrowing upper part represents the pre-research phase set-off from an individual’s wish to conduct research, down to the definition of the concrete research set up. The straight lower part consequently indicates the execution of the primary research itself, beginning with a first data collection, yet emphasising the iterative nature between data collection and data analysis, finally ending with the research findings, the study’s contribution, and new triggers for future research.



Following this process, two of the various decision points stand out and, as such, should be explained prior to transferring the research process logic into the description of the thesis’ chapters. These act as defining and impacting traits which characterise the research.

1.2.2 Research's characterising traits

This doctoral thesis is written “differently” (Weatherall, 2019, p. 100), compared to conventional standards. Yet, by making this cornerstone of the research transparent and explicit in this early phase of the thesis, comprehension and trustworthiness (Carcary, 2009; Latusek & Hensel, 2022) should be increased, thereby informing the sequence and extent of the successive content. Beyond other characteristics¹, two comparably non-traditional traits that impact upon the research process and the thesis presentation should be mentioned beforehand as conscious decision points:

- Producing a thesis in accordance with the ambition and requirements of the degree of a Doctor of Business Administration (DBA), accentuating a contribution to practice.
- The Research design following Grounded Theory (GT) as methodology in the thesis emphasising interwoven theoretical and procedural emergence without exhaustive prior consideration of extant knowledge.

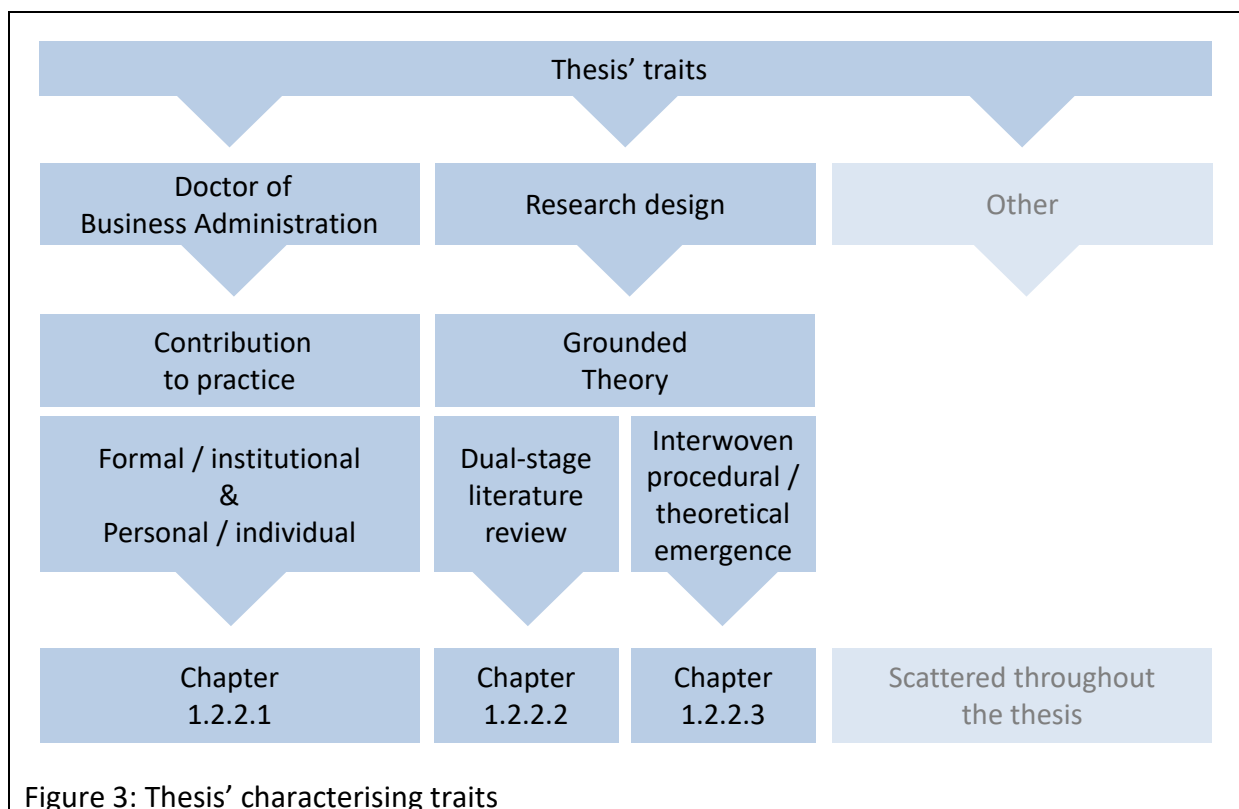


Figure 3: Thesis' characterising traits

¹ Additional central points of investigation that require a specific justification are also brought to the reader's attention at this stage:

- Scoping literature review undertaken in traditional/narrative way (chapter 2.3, p. 25)
- Development of initial research goal, objectives and questions based on 'problematization' instead of 'gap-spotting' only (chapter 2.5.1, p. 49)
- Paradigm simulation to bridge communication-gap (chapter 3.2.2, p. 82)
- Re-discovery of foreshadowed problem to show 'continuing openness' (chapter 4.2, p. 174)

1.2.2.1 Accentuation of contribution to practice in fulfilment of the degree of DBA

Research is motivated by individual ambitions (Guerin, Jayatilaka, & Ranasinghe, 2015; Lange, Smith, Spradley, & Johnston, 2017; Wallace et al., 2015). The ‘wish to do research’ to trigger the subsequent research activities mentioned at the outset was caused by the researcher’s initial wish to add knowledge to an a priori “unknown and unmapped” (Farrell, Oerton, & Plant, 2018, p. 12) research area. More specifically, the doctoral journey aimed to solve an interesting (Bartunek, Rynes, & Ireland, 2006) and relevant (Kieser, Nicolai, & Seidl, 2015) management problem in a managerially actionable, and thus useful, way (Beer, 2011; Markides, 2010; Raelin & Coghlan, 2006).

The action-oriented ambition of the research was founded on the researcher’s personal experiences throughout their professional career (lasting more than two decades) as a management consultant with a particular focus on the field of cost management. However, providing methodologies for companies to utilise when it comes to overcoming their cost-management problems has a peerless character (for characteristics of management consulting see Da Costa, Antonio, Miguel & Martinho, 2014). Consequently, it spurred the idea of offering assistance, advice, and recommendations about a common relevant cost management issue onto a more generalised level.

Gained knowledge has the potential to make a wider impact if it is made available to a greater managerial audience than if it focuses on single clients ‘only’ in singular consulting projects. In addition, the expectation was that, alleging a sound theoretical sensitivity based on the professional experience, the research project could benefit from this wider scope as well (Davies, 2016; Heikkinen, de Jong, & Vanderlinde, 2016),² as long as a ‘mental wall’ could be maintained (see chapter 4.2.1, p. 175), as to not spoil generalisation attempts with biased own experience. By adopting an unideological and pragmatic approach to solving a managerial problem, the practical implications and actionability of the research should be far more meaningful and impactful.

² Foregrounding the researcher’s mind-set at this stage is to condition the reader towards impact on (methodological) choices in other sections.

With this ambition, striving for knowledge-production as a non-academic researcher using a scientific approach (Asimakou, 2011; Fendt, Kaminska-Labbé, & Sachs, 2008), the evolving field of management research (Birkinshaw, Healey, Suddaby, & Weber, 2014; Easterby-Smith, Jaspersen, Thorpe, & Valizade, 2021; Morris, 2011) was selected with a particular focus on the debate regarding academic versus managerial research (Brannick & Coghlan, 2006).

However, one of the overarching aspects of research on management research is what is called the 'research-practice-gap' (Bansal, Bertels, Ewart, MacConnachie, & O'Brien, 2012; Lawler III & Benson, 2020; Wood, Souza, & Caldas, 2022), indicating the unsatisfactory connection between the academic world and gained knowledge on the one side and the awareness, understanding and application of knowledge in practice on the other side. The gap is commonly related to two phases (Carter, 2008; Van de Ven & Johnson, 2006):

- Knowledge-production
- Knowledge-transfer

In terms of **knowledge-production** Starkey and Maden (2001) refer to the 'relevance-gap' in management research, addressing the issue that academic research postulates theories which are not perceived as being sufficiently relevant to management practice (Birkinshaw, Lecuona, & Barwise, 2016; Mesny & Mailhot, 2012). Consequently, one of the solutions to overcoming this assumed relevance-gap is to conduct and contrast comparative aspects of 'managerial/practitioner' research types versus 'academic' research (Amabile et al., 2001).

This discussion about the relevance of management research was echoed by the appearance of a variety of doctoral degrees/programs which have developed over the past decades, adding on and serving as alternatives to the traditional PhD mainly in the Anglo-Saxon area (Archbald, 2011; Kot & Hendel, 2012).³ Gill and Hoppe (2009, p. 29) distinguish between traditional Ph.D., Ph.D. by publication, taught doctorate, work-based or practice-

³ The traditional PhD, building upon the original legacy of Humboldt with the university as the centre of knowledge-production, is accused of conducting research in a university's ivory tower, separated from the needs and demands from practice (Huisman & Naidoo, 2006, p. 4; Lee, 2009, p. 9; Park, 2005, pp. 190-191; Scott, Brown, Lunt, & Thorne, 2004, p. 14), triggering the development that "doctoral education globally is undoubtedly experiencing a period of transition" (Usher, 2002, p. 143).

based doctorate, professional doctorate and an online doctorate. The professional doctorate received comparably high attention in academic, managerial and popular literature (Creaton & Anderson, 2021; Fink, 2006; Huisman & Naidoo, 2006; Neumann, 2005) and is subject to ongoing discourse in relation to the traditional PhD (Erwee & Perry, 2018; Hawkes & Yerrabati, 2018; Robinson, 2018).

For the discipline of management research, the most widely established professional doctorate is the Doctor of Business Administration (DBA) with its origin in Harvard (Gill & Hoppe 2009, p. 32; Kalika & Platt, 2022; Lange et al., 2017; MacLennan, Pina, Moran, & Hafford, 2016, p. 218; Piña, MacLennan, Moran, & Hafford, 2016, p. 7; Thorpe, Anderson, Stewart, & Gold, 2015, p. 3).

The DBA has received recognition in academic debates (Chevalier, Cloutier, & Mitev, 2019; Graf, 2014; Miller & Cameron, 2011; Simpson & Sommer, 2016; Wallace & Marchant, 2018) incorporating also the question relating to the characteristics and differences of the DBA versus the traditional PhD in management research to justify it as a separate degree (Kowalski, 2017; MacLennan, Piña, & Gibbons, 2018; Maguire, Revilla, & Diaz, 2013; Stoten, 2016). These characteristics can, although partially overlapping, be grouped into:

- Formal/institutional characteristics
- Personal/individual characteristics

To summarise the widely discussed **formal or institutional features** of the DBA, which build the thesis' first cornerstone, they can be separated in two categories: the target/ambition of the DBA on the one side and the execution/conduction of the DBA on the other (figure 4).⁴

For the sake of this introduction, the following statement is given in terms of simplifying/condensing the key aspects of the DBA vs. the PhD as debated in literature: Those advocating a justification of the DBA as a separate degree share the conviction that the DBA aims at and emphasises a contribution to practice (next to a contribution to theory) to

⁴ Having sketched the DBA with the mentioned characteristics, these apparently found their echo not only in academic literature but also in popular magazines or in new media (Anonymous, 2008; Bradshaw, 2010; Hergert, 2018; Lewis, 2013; Maguire et al., 2013; Schwertfeger, 2014).

overcome the theory-practice/relevance-gap, whereas the PhD focuses on a contribution to theory (Drake & Heath, 2011; Dwivedi, Ravishankar, & Simintiras, 2015, p. 620).

Characteristics...	
... related to programme target	... related to programme execution
Formal doctoral degree equivalent to PhD	Admission: Sound professional experience
Contribution to theoretical knowledge	Admission: Higher degree or equivalent
Maintain academic rigour	Enrolment: Part-time
Link / bridge academia and practice	Distance learning
Contextualised / broader focus	Cohort approach
Answer to practical problems	Group learning / collaborative
Problem solving focus	Inter-disciplinary approach
Relevant topic	Structured programme approach
Creation of impact / improvement	Taught modules
Enhance reflective and analytical skills	More & other course work
...	Data from work field potentially accessible
...	...

Figure 4: Formal/institutional characteristics of the DBA

Next to this outcome-driven goal of the DBA, also the approach to reach and support the goal is claimed to differ between both degrees, ending in differing program structures, e.g. target group/enrolment or working style through the research project (Gill & Mullarkey, 2015; Graf, 2014; Maguire et al., 2013).

Those denying a justification of a separate degree doubt this dichotomy but view the initially formulated criticism of the relevance-gap as an actuation to further develop PhD-programs (MacLennan et al., 2016; Piña, MacLennan, Moran, & Hafford, 2016) eventually towards a 'contemporary PhD' (Dobele, McMurray, Robinson, Gupte, & De Silva, 2015).⁵

Synthesising the debate's arguments, the impact on the following DBA thesis can be derived: In agreement with the proponents of a separate formal DBA degree and its main postulated institutional requirements, the thesis aims for a distinct contribution to practice

⁵ However, it has to be kept in mind that this is only a simplified snapshot and a "distinction that is far from being commonly acknowledged" (Maguire et al., 2013, p. 32) yet remains debated.

as output-related outcome on top of a contribution to theory. The British Quality Assurance Agency (QAA) in 2008 labelled this as the “dual purpose” (as cited by Farrell et al., 2018, p. 372) of the DBA.

Having selected the format of the DBA degree, it is also acknowledged that in absence of an already widely-spread DBA standard there is the necessity to make this contribution to practice and its supporting decision points explicit, transparent, and trustworthy.

Therefore, next to claiming contributions to practice in the concluding chapter 5, references ‘as we go’ in the thesis, are given for various impacting personal/individual characteristics and decision points as charted in figure 5. Among these are: problem-driven shaping of the research topic, focus on a thematic literature review on cost management or the subsequent methodological choice being based on pragmatism means ‘fit-for-purpose’ of ‘what works’ (Goles & Hirschheim, 2000; Tashakkori & Teddlie, 1998, p. 5).⁶

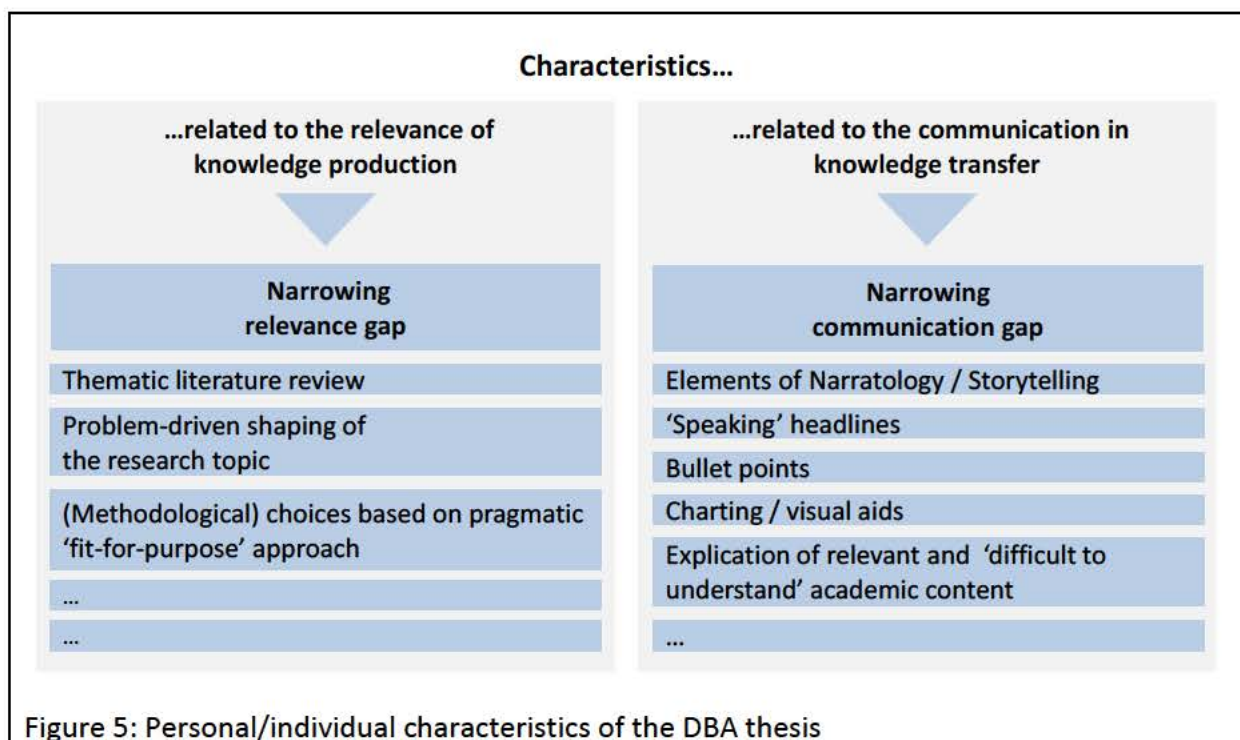


Figure 5: Personal/individual characteristics of the DBA thesis

⁶ This approach to oppose it to any dogmatic approach based on a prior defined research paradigm (Shepherd & Challenger, 2013).

These points can be summarised as targeting the knowledge-production of the theory-practice gap.

However, a transfer and multiplication effect to other practitioners will be affected by any communication efforts, too. Yet, the claim that “academic research is articulated in a manner that is largely incomprehensible to most practitioners” (Tucker & Schaltegger, 2016, p. 374) has been addressed frequently in the past (Beck & Ekbia, 2018, pp. 3-4; Keefer & Stone, 2009, pp. 465-466). Taking up this prevalent argument encompassing that academic publications are more-often-than-not unsuited to raising interest, to be understood nor to trigger actions (Tucker & Lowe, 2014, p. 402), another trait has to be highlighted: the thesis’ presentation style.

Not only is this introductory chapter, aiming to condition the reader (Leshem, Bitzer, & Trafford, 2018, p. 164) towards the thesis’ main traits, ‘different’ compared to typical other theses, but the thesis presentation takes up elements of narratology (e.g. Bal & Van Boheemen, 2009) and storytelling (e.g. Fludernik, 2009; Holloway & Brown, 2016, p. 101) to contribute to the narrowing of the **knowledge-transfer gap**. In doing so, it is agreed that both techniques in academic writing do have a positive impact on reducing the theory-practice gap (Bourbonnais & Michaud, 2018; Glibkowski, McGinnis, Gillespie, & Schommer, 2014; Pollock & Bono, 2013; Taylor, Fisher, & Dufresne, 2002).

Among these there are, following Kaul (2015, pp. 94-100) in general, Shepherd and Suddaby (2017, p. 60) specifically directing towards theory-building and Stern (2010, pp. 121-123) explicitly for GT: formulating headlines in a more attention-grabbing, catchy, informative, and conversational way which can tell the principle story of the research project in an aggregated way, so the reader is able to understand the research course without being forced to read the complete text.

The same argument applies to the visual support of the text by using a comparably high number of figures summarising and condensing major key parts of the thesis (Buckley & Waring, 2013). Again, putting the figures (and tables) one after the other should allow the reader to capture key essences of the research without having to go through the writing in

detail. Finally, in contrast to many academic scripts which are written extensively using prose only, the reader is guided through the thesis by means of bullet points as an outline of subsequent passages to offer shortcuts, if need be, and to increase understanding prior to reading the specific section.

In summation, the elements of the projected contribution to practice which have been outlined as foundation in the introduction are an integral part of the DBA's ambition on knowledge-production and knowledge-transfer to ensure rigour and relevance at the same time (Fraser, Deng, Bruno, & Rashid, 2020). Whereas characteristics of the knowledge-production will be detailed during the course of the thesis, aspects of the knowledge-transfer have been stated as contributing to the overarching writing style of the thesis.

The next key trait of the thesis, however, mainly targets the informed academic reader interested in methodological consistency.

1.2.2.2 Dual-stage literature review in methodological consistency with Critical Realist Grounded Theory

Methodological issues nowadays are a core point in any research (Gray, 2018; Luff, Byatt, & Martin, 2015) and there is, as Marais and Pienaar-Marais (2016, p. 167) point out when exemplifying management research, a substantial variety of different methodologies and methods, which are "indisputably complex" (Jonker & Pennink, 2010, p. v). From a set of potentially eligible research methodologies for this thesis, a classic Grounded Theory (Glaser, 2014a) informed by critical realism was selected.

One of the fundamental decisions to be taken when stepping into a GT approach is the role of the literature review (Thornberg & Dunne, 2019, p. 207). Discussion points in here are the questions about, firstly, if and when to undertake the literature review in the study (Andrews, 2006; Ekström, 2006; Nathaniel, 2006) and, secondly, how to handle a decision which is alleged against a common standard of institutional requirements to fulfil the necessities of the doctoral degree (Luckerhoff & Guillemette, 2011; O'Connor, Netting, & Thomas, 2008). Despite current discourse there appears to be an absence of a commonly

accepted convention, with El Hussein, Kennedy and Oliver (2017, p. 1199) labelling the debate regarding reviewing/considering extant literature in GT as a “conundrum”.

The origin of the debate is the classic GT position advocating the emergence of theory grounded in the empirical data, i.e. to “ignore the literature of theory and fact on the area under study” (Glaser & Strauss, 1967, p. 37) and not to “do a literature review in the substantive area and related areas where the research is to be done” (Glaser 1998, p. 67); a piece of advice still lasting to-date (Christiansen, 2011, p. 21; Glaser & Holton, 2014, p. 386).

Reasons justifying this empiricist ‘tabula rasa’ conviction as a purist stance is to maintain the researcher’s open-minded position without predetermined or deduced acquired prior theory or concepts (Dey, 1999; Glaser, 2011a; McCallin, 2003), as “concepts are generated from empirical data rather than from existing literature” (Hallberg, 2010, p. 1).

A prior investigation of literature is thus claimed to be neither necessary nor meaningful and is a “a waste of time” (Christiansen, 2011, p. 22). “[W]hat is important in the research area will show itself repeatedly [...] what is important will emerge without the “neutral” researcher is doing nothing but listen[ing] and look[ing] with an open mind” (Hallberg, 2010, p. 1).

However, handling of extant literature is not as unambiguous as classic GT suggests but, in contrast, is challenged by alternative techniques (Ali, May, & Grafton, 2019; Bryant & Charmaz, 2010a; Timonen, Foley, & Conlon, 2018). Critics offer an opposite standpoint in order not to enter “empty-headed” (Giles, King, & de Lacey, 2013) into the research. Their argument puts forward the general or preliminary reading of literature entering the research to identify knowledge and research gaps, develop sensitivity for recognising related concepts (Lo, 2016, pp. 178/179) and “to formulate questions that act as a stepping off point during initial observations” (Strauss & Corbin, 1998, p. 51).

In the end, pragmatic reasons account for an execution of an initial literature review:

- Misconception of being empty-headed
- Risk of insufficient novelty of research
- Risk of unintentional plagiarism
- Institutional requirements

First of all, it is a myth, if not a **misconception** and misuse, that any researcher is, like in a vacuum, free from any preconceptions, prior theory or contextualised expertise of the research field and not allowed to make use of it (McGhee, Marland, & Atkinson, 2007; Urquhart, 2023, pp. 31-32).⁷

Secondly, Christiansen's arguments about meaningless and time-wasting initial literature reviewing should be reversed. If an initial literature review is not conducted, there is a higher risk that phenomena are investigated which already have received considerably high levels of attention. This would potentially **reduce the novelty** of the research topic (Crowther & Lancaster, 2008, p. 91) and, due to repeated investigation of a topic, include the danger not to contribute to knowledge. Indeed, the research then would have to be restarted even though a considerable amount of time has already been wasted.

Thirdly, being unfamiliar with the research area at the beginning of a research project, the risk of **unintentional plagiarism** (Bryman & Bell, 2015, pp. 123-125) is logically higher, as no complete understanding or overview was generated. The risk for non-cumulative knowledge and to 're-invent the wheel' is comparably higher (Goldkuhl & Cronholm, 2010, p. 191).

Finally, as the fourth pragmatic reason in favour of an initial literature review, the fact that **institutional requirements** have been shown not always to differ extensively between 'traditional PhD' and 'contemporary DBA', there is still the expectation to deliver an explicit section of literature review in a doctoral thesis (Charles, Farr-Wharton, von der Heidt, & Sheldon, 2017; Joyner, Rouse, & Glatthorn, 2018; Wisker, 2015).

⁷ Furthermore, for a DBA thesis the opposite is even more likely to be the case, as professionals are explicitly encouraged to engage research in their relevant field of professional experience (Graf, 2014, 2017).

Consequently, for GT the discussion is not whether-or-not but when-and-how literature should be incorporated into the study (Cutcliffe, 2000; Dunne, 2011; Nathaniel, 2022, Yarwood-Ross & Jack, 2015). The warning not to conduct an initial literature review in the substantive research area can be interpreted differently. It would be malicious and naïve to accuse GT's theorists of adhering to the illusion of the researcher's unbiased blank slate starting point from the beginning of a 'wish to do research' (Urquhart & Fernández, 2013, p. 1). What actually needs to be aimed for is to minimise the impact of prior knowledge once the research area is defined. This permits the opportunity for a general investigation of the broader research field in order to identify the research area in which little is known and for which the GTM is then subsequently applied.

Following this logic, an initial scoping literature review (Paré, Trudel, Jaana, & Kitsiou, 2015, p. 186) is in-line with CRGT as it is conducted prior to the GTM itself and a common pre-framing solution (Christiansen, 2011, p. 21). However, the researcher should be cautious to limit the early literature review to two main points: to define the research's starting point and to sensitise the researcher in terms of general themes related to the research topic. An exhaustive, in-depth literature review of the research area, in contrast, is not in-line with CRGT and, consequently, not part of this thesis. In that sense, the commonly used formulation of a "preliminary" literature review (Lo, 2016, p. 181; Thistoll, Hooper, & Pauleen, 2016) is misleading and should be replaced by an 'initial' or 'scoping' literature review.⁸

Compared with the sketched discussion about the initial literature review, the handling of literature in later stages of the research is more harmonious as Urquhart and Fernández emphasise "that all the key texts of GTM stress the need to engage the resultant theory with the literature" (2013, p. 3). In GT it is common practice to engage in literature as a further source of data to make use of 'constant comparison' aiming for data saturation and conceptual validity. Likewise, it is expected to address most current knowledge in literature when concluding the research project to mirror the contribution to knowledge after the study, both purposes labelled as "delayed" literature review in GT (Charmaz, 2006, p. 165).

⁸ Following this interpretation, an additional advantage arises. In making the starting point of the research and the initial related themes explicit in a scoping literature review, the prior knowledge is transparent and serves as the first point for reflective practice, thereby improving the audit trail (Bowen, 2009) in the thesis.

Summing up these two steps of dealing with literature in GTM, dual-stage practices seem to incorporate and reflect the requirements of the methodology chosen (El Hussein et al., 2017; Lo, 2016; Urquhart & Fernández, 2013). The first stage (figure 6) is an initial scoping literature review made explicit in a separate section of the thesis to also fulfil institutional expectations, whilst the second stage is interwoven in the continuing process of the theory development as a mean for constant comparison of the emerging theory.

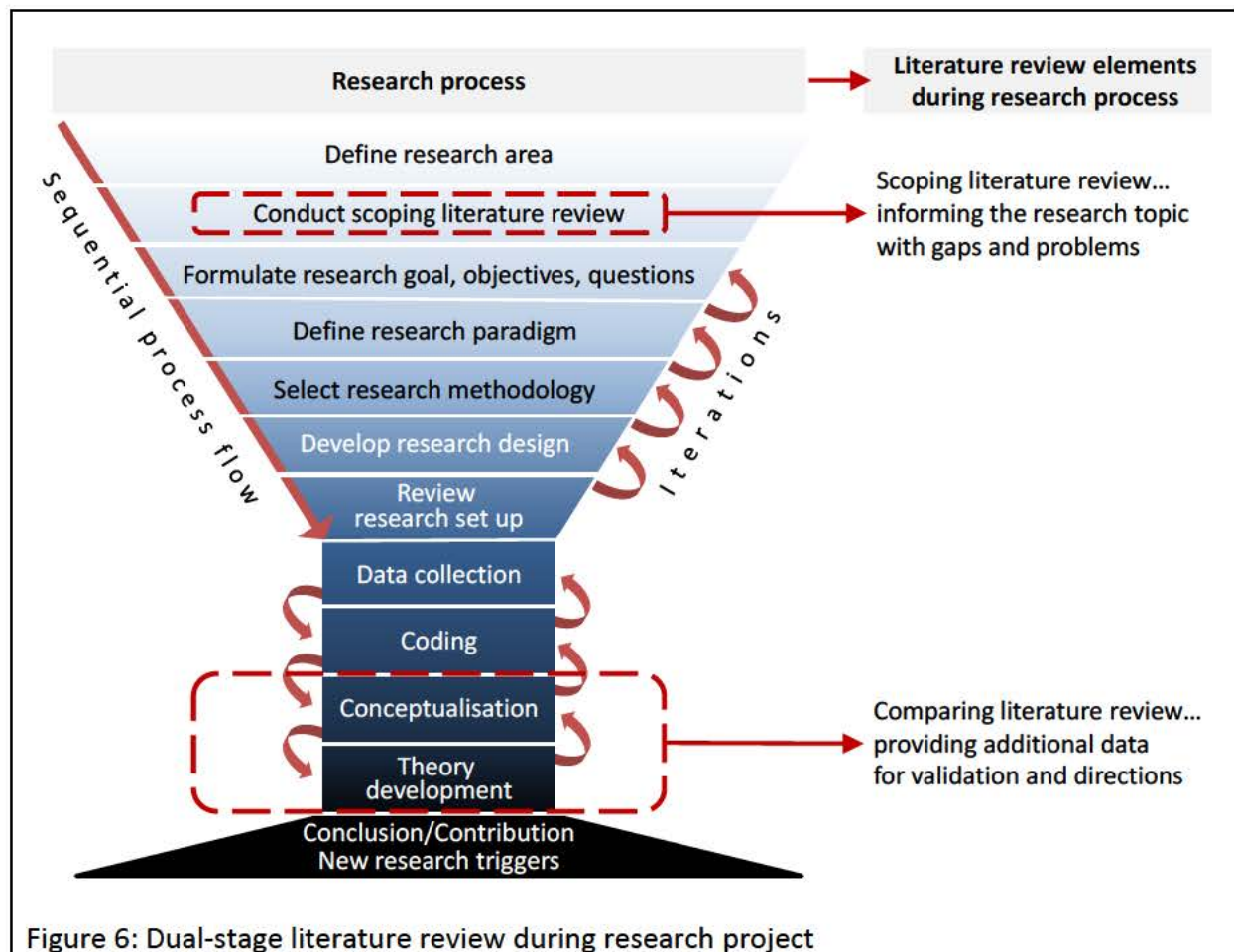


Figure 6: Dual-stage literature review during research project

Leading on from a research topic, the initial literature review will also stimulate theoretical sensitivity and enable reflection on pre-framings by making them transparent. The ongoing comparison of emerging concepts and theory as the second stage will treat literature as additional data, to drive the theory-building process. In addition, this second stage, by informing the final matching of research results with actual knowledge, will exhibit the thesis' actual contribution to knowledge and inform future research directions.

1.2.2.3 Interwoven theoretical/procedural emergence during the theory-development

A second potential challenge of GT regarding the correspondence between methodological needs and institutional requirements is motivated by the historical account of GT with respect to its provocative methodological appearance (e.g. Charmaz, 2014, pp. 1074-1076).

On the one side, GT unequivocally advocates the interwoven connectedness between the emerging theory and the emerging research process (Glaser, 2002a, p. 23). So, for GT “the credibility of a theory cannot be dissociated from the process by which it has been generated” (Breckenridge & Jones, 2009, p. 113), which enforces the decision to prove procedural emergence next to the theoretical emergence of the GT. The presentation of the GT consequently must reveal the discovery process in an explicit-yet-intertwined manner.

In opposition (figure 7 below), doctoral examiners typically expect a conventional and clear distinction between research design, including the respective methodology, findings of the research and the discussion of those findings (Dwivedi et al., 2015; Holbrook, Bourke, Lovat, & Dally, 2004; Weatherall, 2019, p. 101).

Two main justifications exist in favouring the interwoven approach. Firstly, Breckenridge and Jones’ claim about the credibility of the study’s result is valid, especially for doctoral studies in management studies, as there is still a lack of common ground. Therefore, it needs justification not only on the overall level but also within the application. Secondly, in GT the research procedure and (intermediate) findings are closely interlinked in an emerging manner so that one single presentation of the research design prior to outlining the research findings would not be easily, if at all, comprehensible.

Nevertheless, an initial glimpse into the principle research design and the main research methods is provided as a starting point in chapter 3.4 (pp. 137-168).

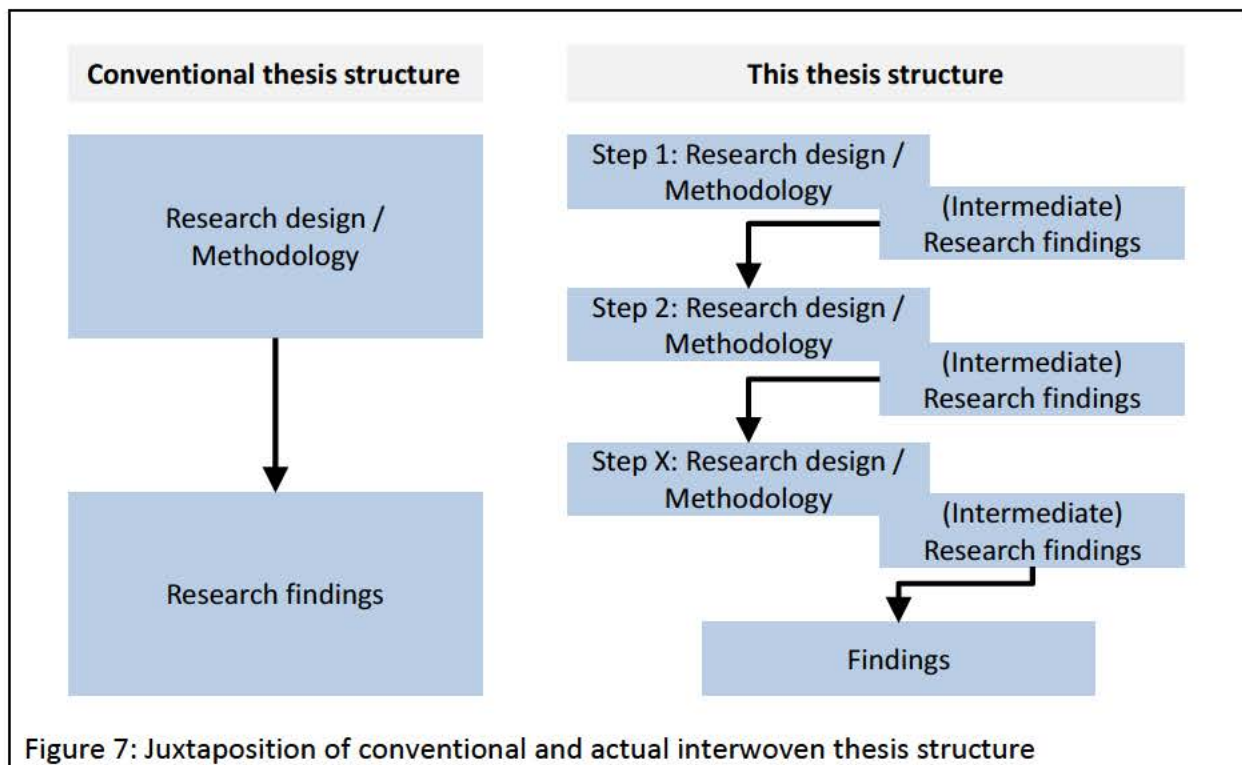


Figure 7: Juxtaposition of conventional and actual interwoven thesis structure

In explicating the study's actual GT process within the thesis' structure, trust and understanding should be enhanced. The separation of research design and overall findings, on the other hand, is regarded as contributing to the above-mentioned theory-practice-gap. In addition, it would be dubious to pretend that there is a straight-forward, easy-to-digest, a priori planning of the study to relay when using a highly iterative/emergent methodology.

Concluding these remarks about the thesis' traits, the overall implication derives from it: in many cases, the thesis presentation is rather unconventional. This implies a challenge, as "[a] potential problem in [...] examining professional doctorates (PDs) is the application of non-traditional methods and outputs that strive to demonstrate criteria for originality and creativity that test narrowly worded regulations and conventional expectations" (Davies, McGregor, & Horan, 2019, p. 204).

The dedicated decision to, nevertheless, proceed as outlined echoes Rowe's plea "towards a greater diversity in writing styles" (Rowe, 2011, p. 491) in this thesis as a consequence of the explicit choice of both, the DBA as professional doctoral programme and GT as research methodology.

1.3 Sketching the thesis' structure

1.3.1 Pre-research phase: Research goal, questions and principle research design

Transferring the thesis' rationale including the specified traits to the thesis structure (figure 8), chapter 2 and 3 outline the pre-research phase while chapters 4 to 5 include the primary research itself as well as the concluding thoughts triggered by it.

More specifically, chapter 2 will unfold the research topic by first mapping the selected research area of cost management through a traditional thematic literature review and then analysing the presented findings by applying a problematisation approach next to gap-spotting.

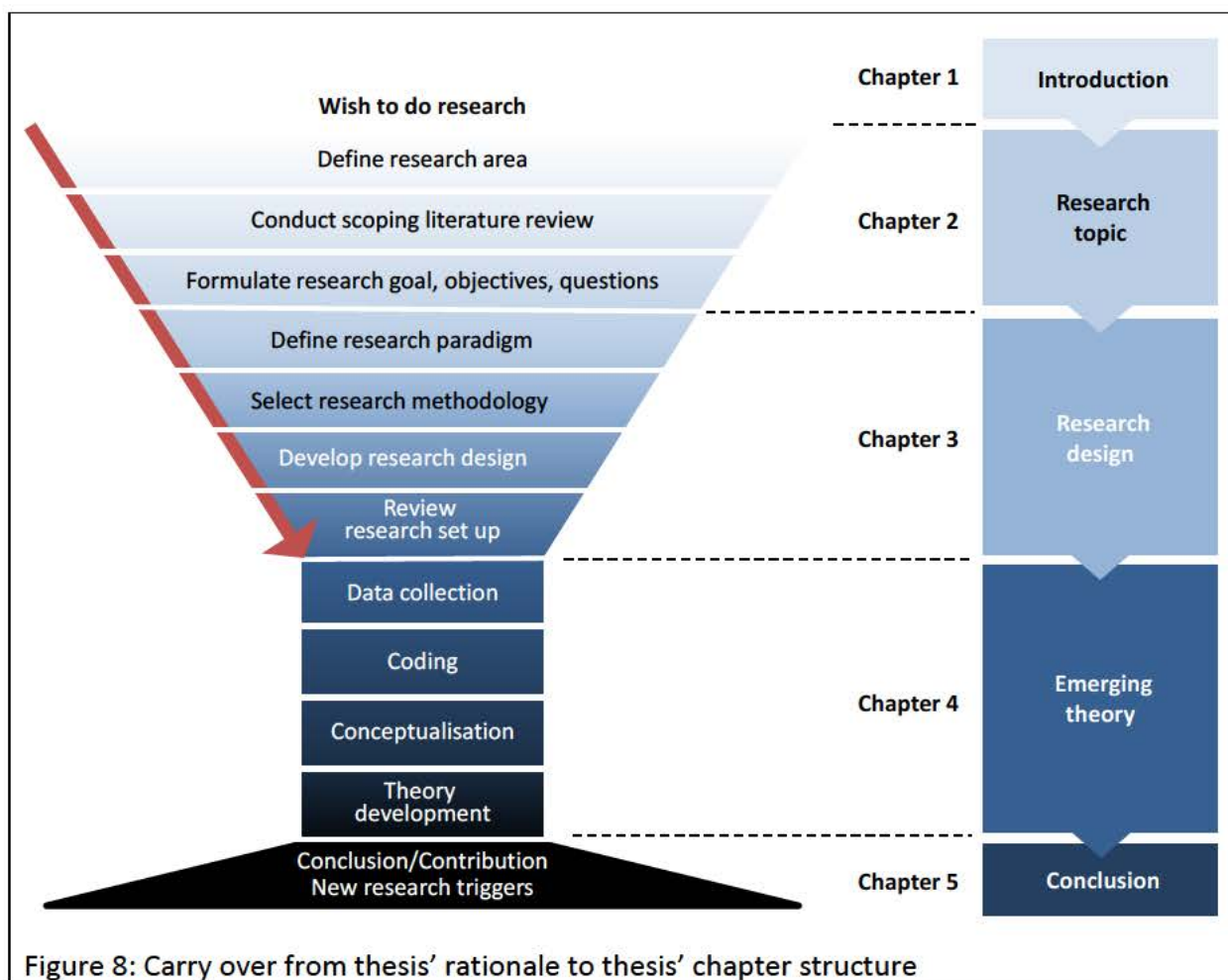


Figure 8: Carry over from thesis' rationale to thesis' chapter structure

Chapter 3, research design, outlines and justifies the major decision points regarding the need and the selection of critical realism as the thesis' research paradigm. This decision is based on a pragmatic paradigm simulation which is portrayed for the non-academic reader

to make this rather theoretical debate more comprehensible. Critical realism is then labelled using its ontological, epistemological, and axiological positions.

After selecting GT as methodology, the jumble of numerous GT variants is dissected to identify classic Grounded Theory (CGT) as being appropriate to answer the research questions. Finally, embedded in CGT, the approach of Walsh, Holton and Mourmant as the latest procedure informed by critical realism is portrayed to demonstrate stringent application of GT's traits and methods.

1.3.2 Research phase: Procedure, findings, implications, and contributions

In Chapter 4, the 'spiral/iterative' theory-building procedure will unfold the 'Alignment-Theory', grounded in data obtained during 51 interviews. After empirically 're-discovering' the research goal as the main concern of managers related to product cost management, the rigorous application of the CRGT's procedures enables to identify the elements of the normative theory.

The findings will show a normative 'Aligning-Theory of PCM' incorporating a '3-Stage-Strategising-Relevancing-Profiling-Procedure'. It centres a novel classification of four PCM-profiles impacted by the relevance of product cost as dominant contingency factor.

The central PCM-profiles are described with the identified relevant dimensions and attributes as stereotypes being built-on-each-other. Opposing the PCM-profile levels with the relevance of product cost in a company, a 'Strategic-Fit-Matrix' can be set up with zones of fit which should be targeted and zones of misfit which should be avoided.

Focus is placed upon providing an explicit audit trail across all seven steps making use of an interwoven approach between emerging theory development procedure and emerging theory itself. Alternating sections, methodological remarks and (intermediate) findings, are a key characteristic of the thesis' research report, yet ending in a focussed portray of the thesis' overall findings and their practical implications.

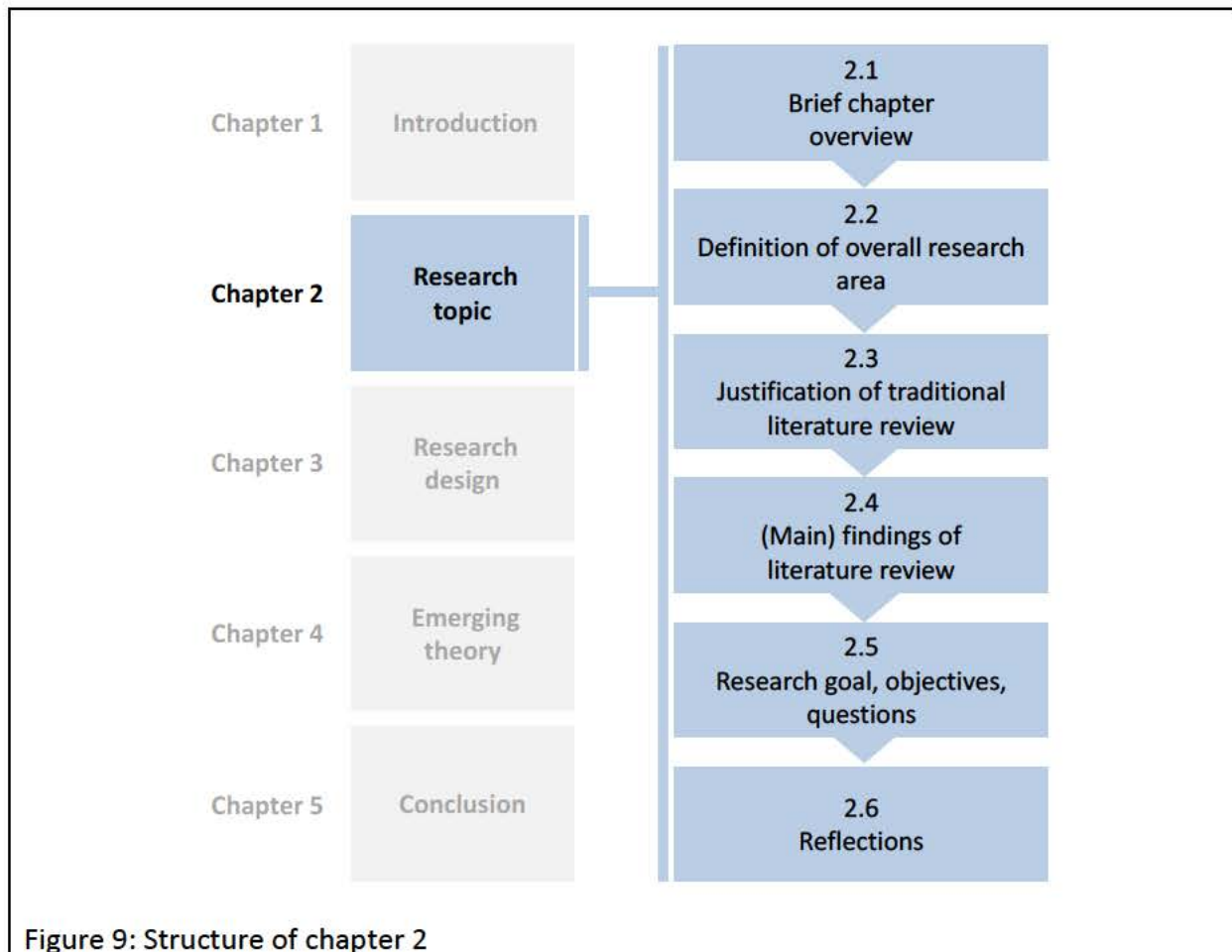
Finally, chapter 5, putting the research findings into the context of their affected knowledge areas, allows the researcher to summarise and challenge the research findings and identify the study's limitations. It also prompts 12 claims about the thesis' contribution to knowledge, allocated not only into theoretical and practical contributions but also, unintentionally, methodological contributions.

Reflections on the research conducted, focussing on its contribution to practice and the methodological challenges to reconcile the CRGT approach with formal/conventional requirements of a thesis, herald the end of the thesis. A set of proposals for new research related to the 'Alignment-Theory of Product Cost Management' then bridge the thesis' end with **new research projects** to further detail and modify the discovered grounded theory.

2 Unfolding the research topic through gap-spotting and problematisation

2.1 Outlining a brief overview of chapter 2

Chapter 2 aims to define the research topic with its goal, objectives, and questions. To do so, the way forward is visualised in figure 9.



First, in chapter 2.2, cost management will be defined as the general research area with its delimitation within management research and with few limitations to focus the further investigation. After explication of traditional and systematic literature, the justification of the traditional literature review to assist with defining the scope of the research is outlined in chapter 2.3 (p. 25). The literature review itself will then be presented by mapping the two main identified schools of cost management in chapter 2.4 (p. 29) which contains findings and condensed discussion of the main findings derived, concluding that a variety of different substantive specific research areas are waiting to be examined.

Finally, in chapter 2.5 (p. 49), the findings are synthesised to highlight key findings by allocating them not only to current research and knowledge gaps but rather also to challengeable assumptions. This is done by making use of the technique of 'problematization' to increase the practical relevance of the defined research topic. Based on those key findings the step-off point of the research is defined in chapter 2.5.2 (p. 58) to:

- give general direction
- transparently portray prior knowledge
- increase theoretical sensitivity

Making use of this step-off point and the four key drivers for the subsequent primary research, in chapter 2.5.3 (p. 63) the overarching research goal and the related research objectives with their corresponding research questions are developed. A first major reflection step in chapter 2.6 (p. 72) finally outlines the rigorous procedure with which the research topic was unfolded.

2.2 Defining cost management as research area

Management practice and science undergo a permanent change over time to react to different and changing business environment conditions (Hannagan, 2008; Kumar & Nagpal, 2011, p. 118) leading to a variety of strategy/management concepts to improve organisational performance (e.g. Scheuss, 2016; Sumer & Bayraktar, 2012).

According to Porter (1980) for example, there is a generic concept of competitive strategies, where companies seek competitive advantage in their specific business environment prioritising either the uniqueness of their offer or a low-cost position. The underlying implication of Porter's original competitive strategies is that the commitment to, and the mind set towards cost differs according to the chosen strategic direction (Akan, Allen, Helms, & Spralls, 2006, p. 48; Ormanidhi & Stringa, 2008).

During and following the economic recession in the 1990s, 'cost management' (CM) has gained remarkable attention in management practice and management science, as indicated by the growing volume of research and publications in relation to that period to

date (Franz & Kajüter, 2002a, p. 8; Hansen, Mowen, & Heitger 2021; Himme, 2009, p. 1052; KPMG International, 2007; McKinsey, 2013; PriceWaterhouseCoopers, 2008).

However, due to the variety and dynamics of the business environment (Howell & Soucy, 1987) or, generally speaking, regarding the “inevitable change, growth, innovation, progress, evolution, diversity, and entropy” (Sowa, 2006, p. 55) of knowledge it is not clear at a given point in time whether the existing expertise about cost management in theory and practice covers all current relevant challenges and needs of managers/practitioners in their particular business environment (Bjørnenak & Kaarbøe, 2013; Faraji, Maghari, & Mirsepasi, 2015; Zawawi & Hoque, 2010, p. 523). Therefore, to initiate this research and focussing on the professional expertise of the researcher (chapter 1.2.1.1, p. 6), the area of cost management was examined by a literature review mapping the research area. This informed the research topic, goal and questions of this doctoral thesis.

Narrowing the relevant wider context of the research, few exclusions to the field of cost management were undertaken prior to the literature review. Being part of the scientific discipline of business and management research, ‘cost management’ within this work is not investigated for non-profit organisations nor organisations in markets in which there is no competition.

The reason for these eliminations is that essential constructs such as ‘cost/s’, ‘management’ or ‘competitive advantage’ carry different weights or even convey other meanings in those organisations (Berens, Karlowitsch, & Mertes, 2000; Friedl, 2009, p. 8; Anheier, 2014), which might disturb or complicate the research at this stage. Figure 10 summarises the context of the basic research area -cost management- as dealt within this literature review.

A literature review can be conducted accordingly thereby allowing for a wider focus on topics, concepts, theories, methods or even authors (Chenhall & Smith, 2011; Lim, Kumar, & Ali, 2022; Paul & Criado, 2020; Webster & Watson, 2002). The DBA emphasises an applied approach in research, enhancing the relevance of a contribution to practice on top of its contribution to theory (Banerjee & Morley, 2013; Piña et al., 2016). Therefore, to identify a practically relevant management topic, a thematic review was conducted first.

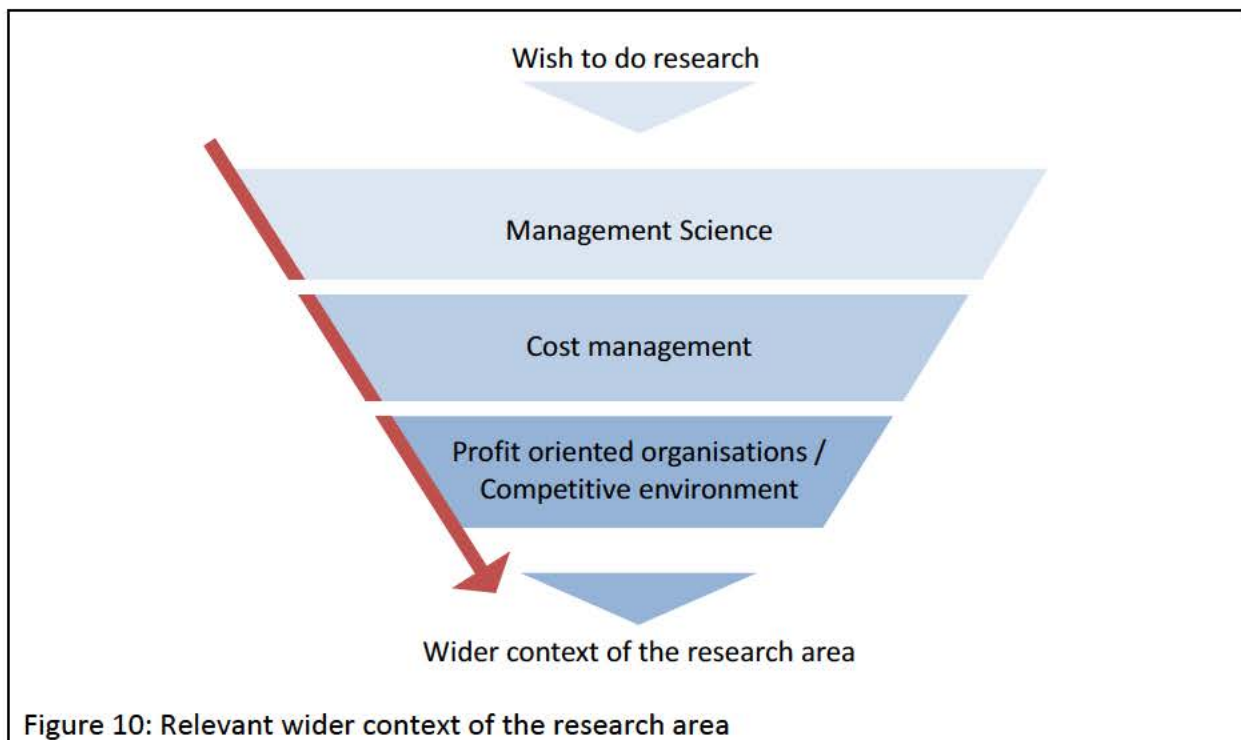


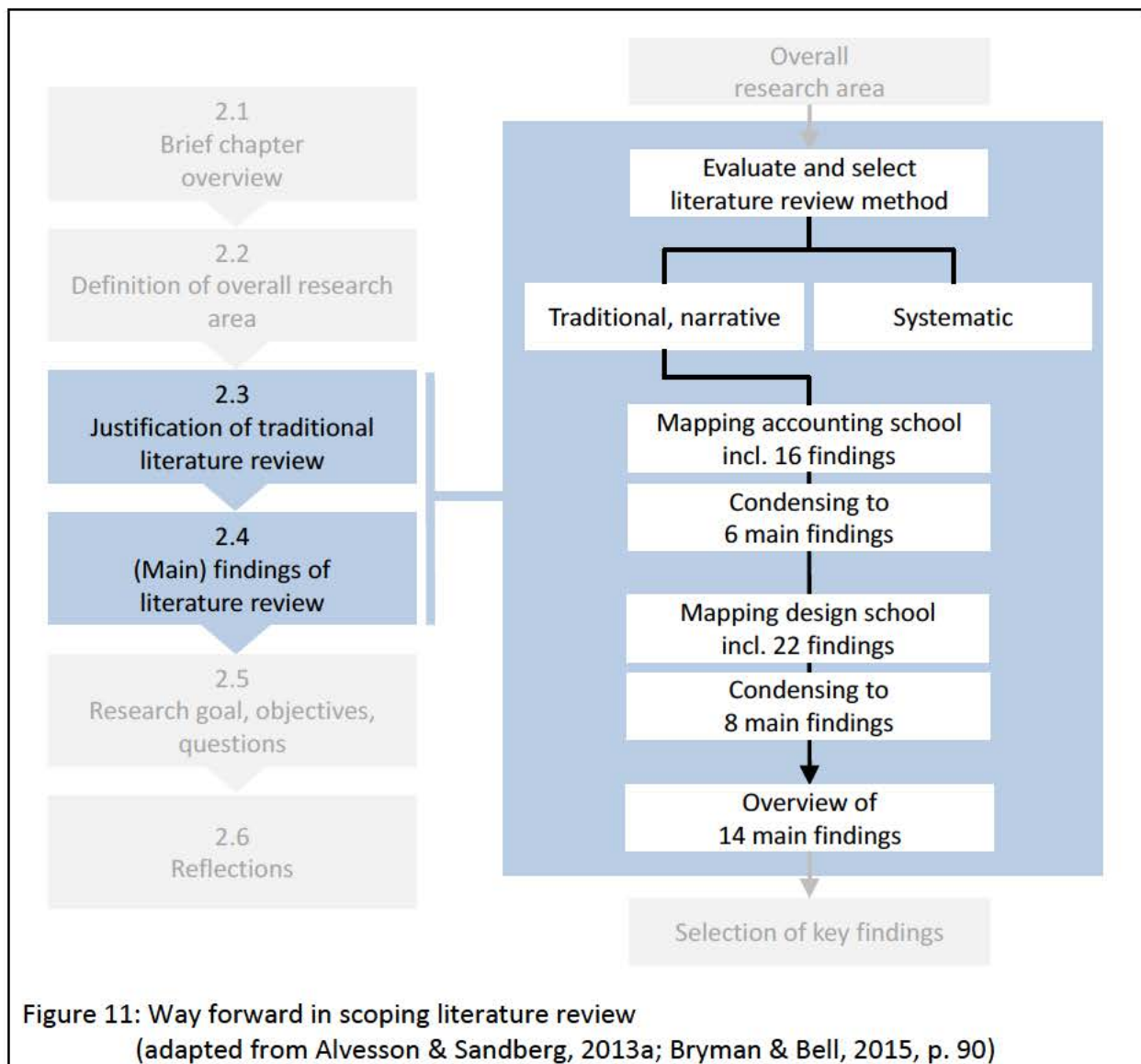
Figure 10: Relevant wider context of the research area

2.3 Justifying the traditional, narrative way forward of the scoping literature review

A literature review “synthesizes past knowledge on a topic or domain of interest, identifies important biases and knowledge gaps in the literature and proposes corresponding future research directions” (Rowe, 2014, p. 243). Although an inherent part of doctoral theses, it is a unique element differing not only in content but also in purpose and procedure, which makes it necessary to explain the way that it will be of importance while moving forward (Hart, 2018, pp. 2-3; Paré et al., 2015).

In the sense of the introductory mentioned “progressive narrowing of the topic” (Hart, 2014, p. 13), the first step of the scoping literature review was to develop a comprehensive understanding and overview of the current research status in cost management. This led to a set of 38 specific findings, which were then condensed to 14 main findings.

Those main findings, after a problematisation approach in the subsequent section, lead to the key findings (figure 11 below) ultimately shedding light on three research questions to guide the research process (Bryman & Bell, 2015, pp. 87-93; Crowther & Lancaster, 2008, pp. 25-26).



The purpose for this way forward was threefold. First, the research undertaken then “fit[s] in with the existing wider research within the subject area” (Easterby-Smith, Thorpe, Jackson, & Jaspersen, 2018, p. 20). In addition, the risk that the research questions have already been addressed was minimised and the novel research objective could be confidently identified (Crowther & Lancaster, 2008, p. 91). Finally, the dedicated literature review minimised the risk for unintentional plagiarism⁹, by having reviewed similar research already having delivered same/similar conclusions and findings (e.g. using different terminology). With the rapidly growing publication of knowledge and the growing accessibility, this issue becomes increasingly challenging (Tractenberg, 2013, p. 105).

⁹ For ‘avoiding plagiarism’ see Bryman and Bell (2015, pp. 123-125).

As highlighted by Easterby-Smith et al. (2018), “there are two main ways of tackling a literature review” (p. 29) being interrelated with the general goal of the literature review, described as either aiming for an initial and broad overall review or targeting a very specific analysis of explicit sources. Selvin and Stuart condensed these two ways as “snooping [...] and [...] fishing” (1966, p. 20) with respect to data-dredging. As the general goal of the literature review on cost management was to generate a broad understanding of the research field first and then to ultimately scope the research topic, ‘snooping’ seemed to be the appropriate approach.

Correspondingly, two basic alternative methods were identified and evaluated to conduct a literature review: the traditional, narrative review which embodies the broader ‘snooping’ and the newer, systematic review, typifying the approach of specific ‘fishing’ (Petticrew & Roberts, 2006; Thorpe, Holt, MacPherson, & Pittaway, 2005).

Traditional literature reviews are challenged by the systematic alternative, claiming mainly two critical aspects, subjectivity and reproducibility, whereas the two focal supporting criteria in favour of traditional reviews are less restrictions and creativity (for a detailed discussion see Curran, Burchardt, Knapp, McDaid, & Li, 2007; Easterby-Smith et al., 2018, pp. 22-24; Jesson, Matheson, & Lacey, 2012, pp. 74-75; Snyder, 2019).

Thus, the first critical claim towards traditional reviews is their potential implicit subjectivity (Jesson et al., 2012, p. 74) in a way that a writer-inherent bias would lead to non-objective results. Secondly, traditional reviews would be hardly reproducible, as there is no obligation to provide a protocol, so that readers would be “unable to judge completeness of the arguments” (Jesson et al., 2012, p. 74) and consequently the quality of the arguments.

Jesson et al. (2012, pp. 23-24) invalidate the critique points against traditional reviews especially in an early stage of research when scoping the research topic. As any research topic is a matter of subjective personal choice and also a traditional review can be executed in an ordered way to increase transparency and repeatability, their recommendation is to start a research initiative with a traditional review.

Furthermore, there are valid arguments promoting traditional reviews, in particular to define and shape the research topic. The two main arguments listed by Easterby-Smith et al. (2018, p. 23) are, to begin with, not to be restricted to prior (well) defined key words or to (easily) accessible sources and, secondly, being less limited in creativity and intuition when defining research questions compared to structured reviews.

In addition, Sandberg and Alvesson (2011) point out an additional value during the scoping of a research topic by formulating research questions based not only on gap-spotting but by problematisation. Whilst the first alternative seems to be more supported by systematic reviews the latter one is more backed by traditional reviews enabling more disruptive modes in research to “produc[e] interesting and influential research” (Sandberg & Alvesson, 2011, p. 41).

Taking the goal of the literature review on cost management as described above (to develop an understanding of the field in order to define the research topic) and to resume the arguments debated in the discussion about both alternatives, the potential downside on reproducibility did not outweigh the risk not to cover the potential complexity and the major relevant aspects of the wider research field if applying a systematic review.

This reflects the initial general approach of ‘snooping’ in a first phase, conducting a “scoping review” (Jesson et al., 2012, p. 74) prior to potential subsequent reviews in related areas, which might then be more target oriented when choosing a systematic review.

Hence, the purpose of the next section 2.4 is to present the findings from the traditional scoping literature review on cost management. Specifically, the current status of knowledge is first portrayed, then challenged by critical debate. Subsequently, it explores major gaps and problems in current knowledge and research based on a comprehensive understanding about cost management topics to ultimately derive research objectives, using an additional step of ‘problematisation’.

2.4 Mapping the research area of cost management

From a historical perspective, literature on cost management started to emerge in the early 1980s, undergoing a significant growth in volume in the 1990s (Friedl, 2009, p. 1). Potential influences for this growing importance of cost management include, on the management side, the reaction of companies to increasing competition in markets, economic/business fluctuations or the general need for rationalisation (Aranout, 2001, pp. 11-14).

In addition, on the research side, the growing divergence in the last decades of the 20th century, leading to the corresponding growth in volume, is the result of increasing and ongoing investigations/debates about numerous aspects and developments in cost management (Himme, 2009, pp. 1052-1053; Kihn & Näsi, 2017).

This is why no common agreed definition has become prevalent so far for cost management. On the contrary, a variety of meanings/approaches have to be recognised and allocated into two major schools in cost management, distinguished by their particular focus/purpose (Friedl, 2009, pp. 2-6; Hansen, Mowen, & Heitger, 2021, pp. 4-6; Himme, 2009, p. 1054; Konle, 2003, p. 14).

Critically evaluating definitions from both schools and synthesising their core focus, the 'accounting school' postulates the purpose of cost management as being mainly an information provider (Hansen, Mowen, & Guan, 2009; Shank & Govindarajan, 1993) whereas the 'design school' takes a more holistic approach to advocate the task of cost management to influence costs by designing/shaping/modelling costs (e.g. Cooper, 1995; Drury, 2012). Table 1 below gives some examples for definitions from both cost management schools.

Accounting school	
"A cost management system provides 1. cost information for strategic decisions; 2. cost information for operational control; and 3. measures for inventory value and cost of goods sold for financial reporting"	Horngren, Sundem, Burgstahler, & Schatzberg, 2014, p. 141
Cost management is "the development and use of cost management information"	Blocher, Stout, Juras, & Cokin, 2016, p. 3
"Cost management produces information for internal users. Specifically, cost management identifies, collects, measures, classifies, and reports information that is useful to managers"	Hansen & Mowen, 2007, p. 4
Design school	
"[C]ost management is a philosophy, an attitude, and a set of techniques to contribute in shaping the future of the company"	Kumar & Nagpal, 2011, p. 118
"Cost management has a much broader focus [and] is concerned not only with how much something costs but also with the factors that drive costs, such as cycle time, quality, and process productivity. Thus, cost management requires a deep understanding of a firm's cost structure"	Hansen, Mowen, & Heitger, 2021, p. 5
"Strategic cost management consists of those actions that are taken by managers to reduce costs"	Drury, 2018, p. 591
"Cost management means the deliberate manipulation of cost aiming to increase the profitability of the organisation" (translated by the author, originally: "Kostenmanagement bedeutet die bewusste Beeinflussung der Kosten mit dem Ziel, die Wirtschaftlichkeit der Unternehmung zu erhöhen")	Kajüter, 2000, p. 11

Table 1: Accounting/Design school related cost management definitions
(adapted from Friedl, 2009, p. 2)

Taking both schools as a starting point to chart the cost management research area, the research map in figure 12 was developed and is presented as an overview prior to explicating the literature review results. It serves as a guideline throughout the presentation of the review or as a short cut for readers who are not interested in the more complex details.

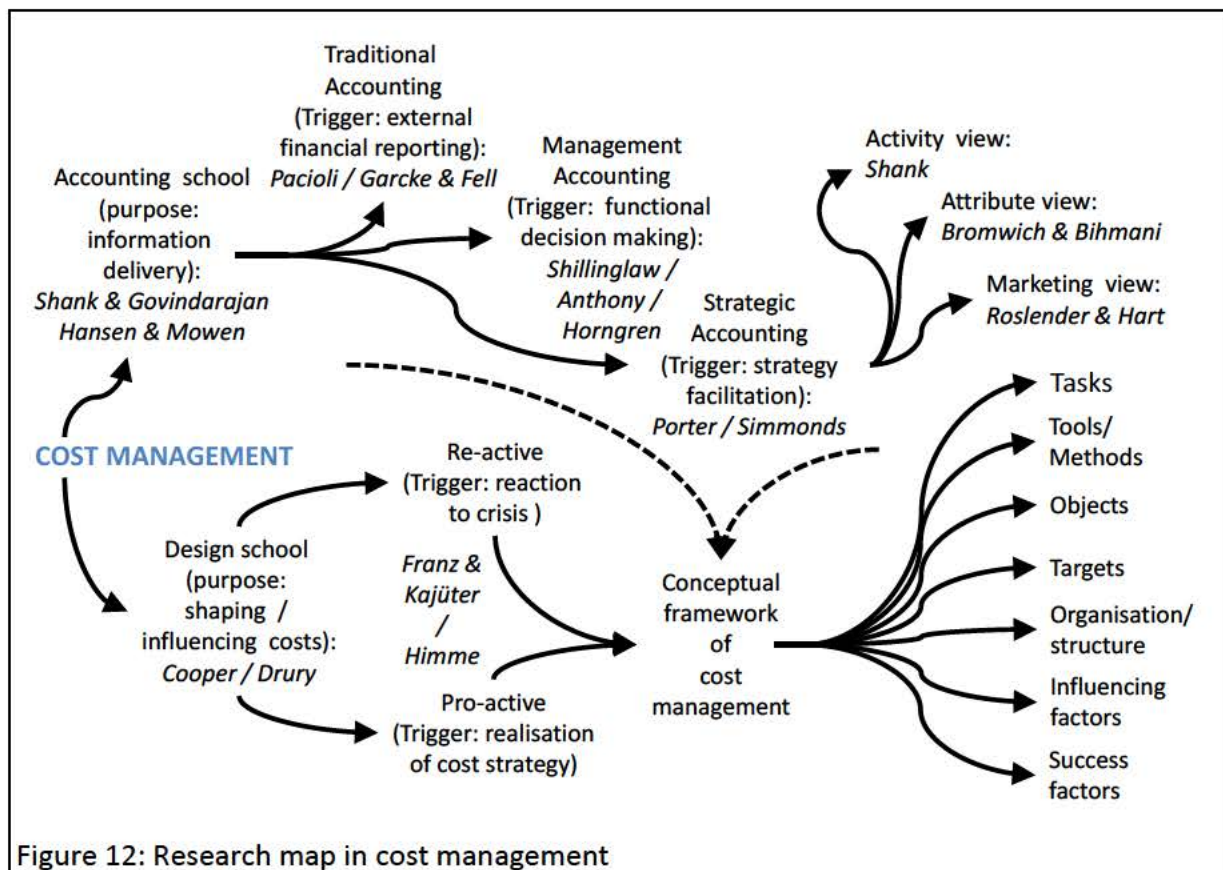


Figure 12: Research map in cost management

2.4.1 Accounting school of cost management

The 'accounting school' had a defined key turning point, driven by an influential 'star burst article' of Simmonds (1981), which initiated the above-mentioned growth in intensiveness of debate and academic discussion. He augmented the existing accounting concepts of that time by aspects from strategic management which developed since the 1970s.

2.4.1.1 Traditional and management accounting

Prior to Simmonds, 'traditional accounting' was predominant until the 1950s, and was used to measure, process and communicate financial information. Accounting primarily focussed on bookkeeping and product costing for external financial reporting looking backwards in time (Bhimani & Bromwich, 2010, p. 2; Shank, 2006, p. 355; Tekavčič, & Sink, 2003, p. 1939; Wikipedia, 2019).

As Shank summarises, a future-oriented management perspective was brought to accounting leading to the term 'management accounting' starting in the 1950s and putting

more focus on information needs for decision-making in functional fields such as marketing, production, operations or finance (2006, pp. 355-356). Early key authors, like Shillinglaw (1959), Anthony (1960) and Horngren (1962), influenced business/management education in the following years and management accounting became the “language of business” (Bloomfield, 2008, p. 433).

2.4.1.2 Strategic management accounting

With roots in the 1960s (Ansoff, 1965; Chandler, 1962), ‘strategic management’ emerged in the 1970s/1980s (Bracker, 1980; Miles & Snow, 1978; Mintzberg, 1978) and influenced the area of accounting. Porter (1980) popularised strategic management by explicitly regarding cost aspects in the strategies and Simmonds published his seminal work on “strategic management accounting” (1981). The new dimension in strategic management accounting was the move away from a discipline-focus to a more integrative strategy-focus of business: the information delivered by accounting should foster strategy definition and execution being directed at the complete business context (Shank, 1989, p. 50; Shank, 2006, p. 356).

The field of strategic management accounting diverged in the following years into three views including related key authors (Langfield-Smith, 2008):

- Activity view (Shank, 2006)
- Attribute view (Bromwich, 1990; Bromwich & Bhimani 1989, 1994)
- Marketing view (Roslender, 1996; Roslender & Hart, 2002)

Shank, as a main promoter of the **activity** oriented strategic management accounting, further detailed the influence of strategic management on accounting into three strategic themes (1989, p. 50). First, the value chain concept influenced the scope of cost management towards a broader, external dimension. Second, strategic positioning influenced the role of cost management, being dependent on the competitive strategy, means differentiation or cost leadership. Finally, the cost driver concept changed the view of costs being a function mainly of output volume towards the view, being a function of several structural (e.g. scale, scope, technology) and executional (e.g. capacity utilisation, product configuration) cost drivers (Cokins & Căpuşneanu, 2010).

A salient point of this view on strategic management accounting was the development of activity-based costing and activity-based management in the late 1980s; the term strategic cost management was used as synonym for strategic management accounting (Lockamy, 2003; Shank, 1989, 2006; Shank & Govindarajan, 1992). The goal was to overcome the functional hurdles of previous management accounting practices, replacing its functional view by an activity/process view enabling strategic decisions on any relevant subject, such as “products, customers, channels, or whatever” (Shank, 2006, p. 357).

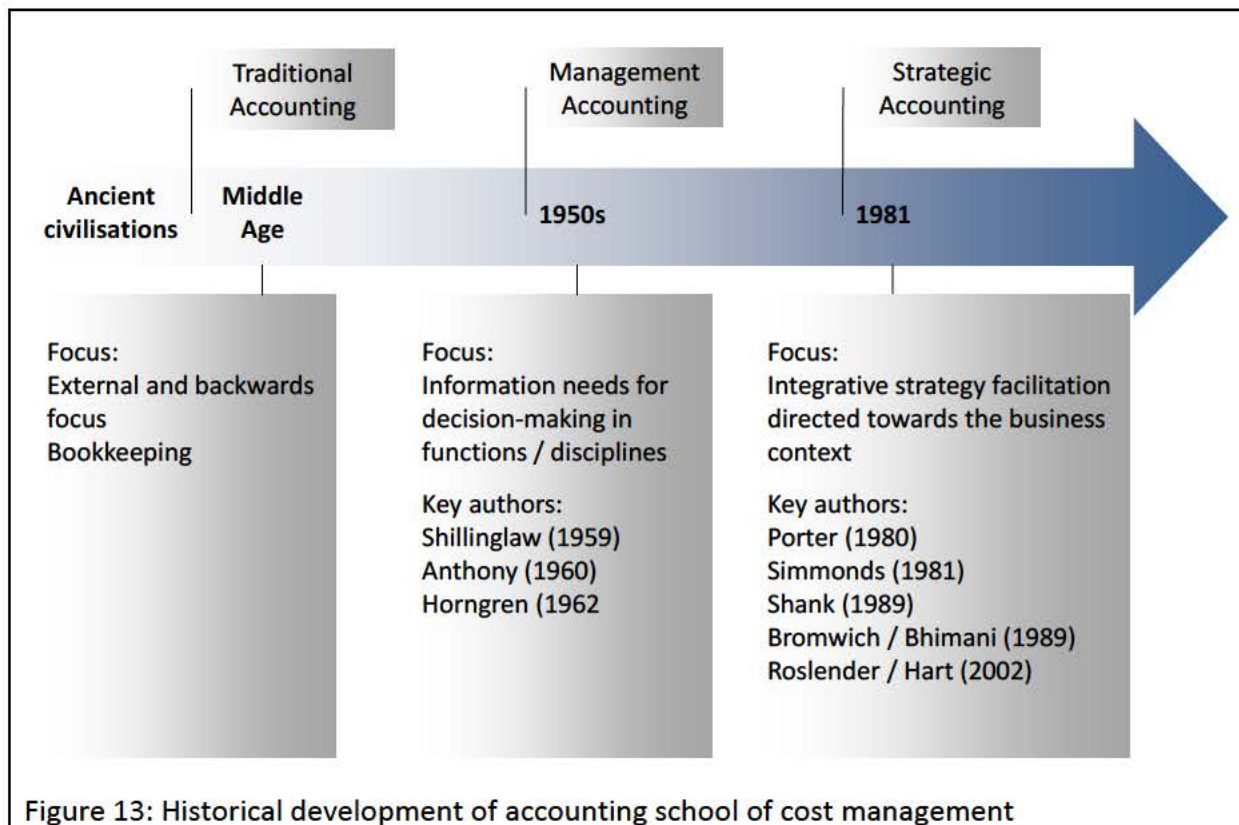
A different approach within strategic management accounting is the **attribute view**, as provided by Bromwich and Bhimani (Bromwich, 1990; Bromwich & Bhimani, 1989, 1994), which shifts the focus of cost information towards a “firm’s value added relative to competitors” (Langfield-Smith, 2008, p. 204). This logic comprises that, firstly, the value-added lies in the attributes of a product, which are demanded and appealed by customers and secondly, that the value-added is judged in comparison with the competitors. Additionally, competitors are meant to be current as well as potential rivals, which exposes the need to also include costs of entry barriers.

The key element of this approach is the concept of attribute costing, which puts into focus the demanded attributes of an offer (product/service) valued by the customer in order to cost them, compared to the activity-based costing focus on activities in the value chain that provide value to the customer (Bromwich & Bhimani, 1994, p. 128).

The third view on strategic management accounting, the **marketing view**, is promoted by Roslender and Hart (Roslender, 1996; Roslender & Hart, 2002). To advance the potential of accounting, accounting and marketing are integrated in this framework. The marketing elements within are the belief to move accounting beyond costs and to explore subjective aspects of the organisational offers (Roslender & Hart, 2002, p. 268). Together, the intensification of the interface/cooperation between accounting and marketing as a function of operation as well as in person is necessary, leading to the concept of “brand management accounting” as a fundamentally interdisciplinary, synergetic notion (Roslender & Hart, 2002, pp. 272-273).

2.4.1.3 Main findings and critical debate about research status

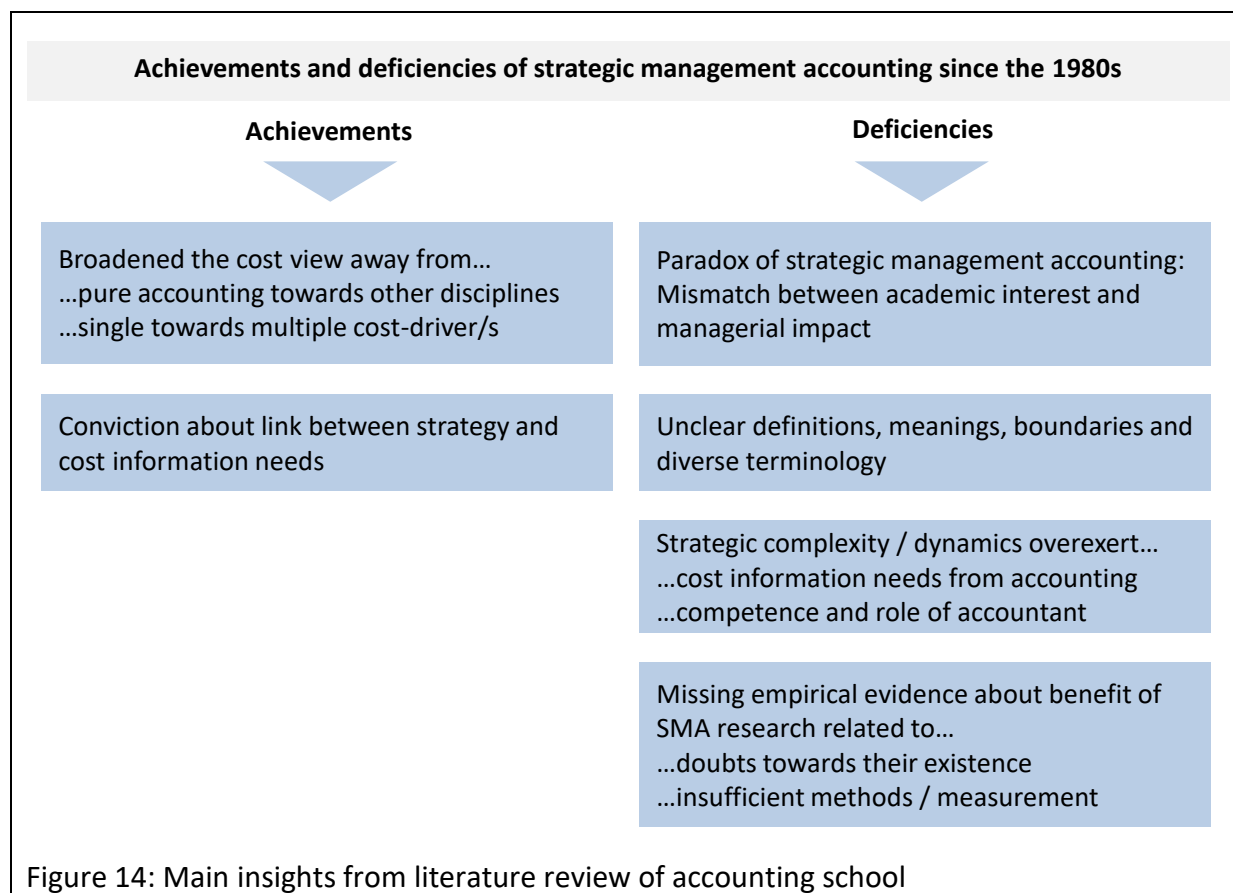
Although the sequential historical demonstration of the accounting's school development and evolving meaning in the last sections suggests an ongoing evolution and advancement of CM approaches (figure 13), each of the resumed theoretical variants should be seen and interpreted as still existing nowadays in parallel to each other.



Due to the variety in perspectives, as indicated above, it interlinks to related disciplines in business science and a plethora of costing techniques subsumed under an accounting umbrella (Wanderley, Frezatti, Beuren, & Carmona, 2017), particularly the field of strategic management accounting has contributed to intensive debate in conceptual and empirical research stream in accounting since the 1980s (Tillmann & Goddard, 2008, p. 81).

Research on strategic management accounting provided useful contributions to management science, as intended by its early proponents. Notably, management science and practice took up the conceptual link between cost and strategy as a rationale in a way that the information needs on costs and the corresponding costing techniques differ,

depending on the defined strategy focus, considering the specific business context of a firm (De Melo & Leone, 2015; Naranjo-Gil & Hartmann, 2006; Shank, 1989, p. 55).



Unfortunately, to date, there is little, if any, insight into what practical implications this conceptual rationale presents for cost management in the accounting school (see Abdel Al & McLellan, 2013 as an exception).

Second, and equally important, strategic management accounting **broadened the cost view** away from 'pure' accounting towards and integrating other disciplines as an interdisciplinary framework (see chapter 2.4.1.2, pp. 32-33). In addition to this, it is considering other, and therefore multiple, cost drivers besides the single-minded approach that concentrates on volume output only (Anderson, 2007). Regrettably, besides the aspiration towards a broader functional focus of strategic management accounting, there is no prevalent normative concept or even theory to make this conviction more explicit and concrete.

Those shortcomings of both intellectual contributions pave the way for a general criticism towards the accounting school of cost management. Conflicting observations of conceptual and empirical research streams have led to what Nixon and Burnes call “**the paradox of strategic management accounting**” (2012, p. 229). This paradox formulates the contradiction between the “great deal of interest in strategic management accounting in the academic community” (Tillmann & Goddard, 2008, p. 81) and its “negligible impact on managerial discourse and practice” (Seal, 2010, p. 95).

Actually, the notion that strategic management accounting has declined in relevance, after a ‘glory decade’ in the 1990s that was full of pilot applications and case studies and an increasing number of academic journals, scholars, professional organisations and consulting firms dedicated to strategic management accounting (Shank, 2006, p. 358), is widely accepted. Various surveys support the paradox phenomenon, indicating low adoption rates of the strategic management framework not neglecting usage of certain individual costing techniques such as activity-based costing or target costing (Emore & Ness, 1991; Guilding, Cravens, & Tayles, 2000; Innes, Mitchell, & Sinclair, 2000; Roslender & Hart, 2003).

Noticeably, this paradox constitutes an example of the introductoryly stated relevance gap in management science, pointing towards an enhancement of practicable contribution to knowledge (Hodgkinson & Rousseau, 2009; Kieser & Leiner, 2009), in this case for cost management research.

The reasons why, despite this credited conceptual value, strategic management accounting did not find its way into normal management practice are various but still not conclusively clarified and explained. This is a research gap that is still under investigation, but it can be structured into categories of:

- Clarity
- Complexity/dynamics
- Evidence/benefit

First and foremost, there is **lack of clear** definitions, meanings and boundaries of cost management from an accounting perspective (Langfield-Smith, 2008, p. 205; Nixon & Burns,

2012, p. 236). Further compounding this issue, intercultural differences aggravate the diversity in cost management terminology (Bhimani & Gosselin, 2009; MacArthur, 2006; Messner, Becker, Schäffer, & Binder, 2008).

Another set of reasons for the slow adoption should be seen in the **complexity and dynamics** inherent to strategic management accounting. Nixon and Burns (2012, p. 237) and Hopwood (2003, p. 11) express the problem of dynamics and variety of strategic concepts on different, simultaneous levels as external context factors, which complicate the broad utilisation due to short lifecycles of strategies and multiple settings. Consequently, the dynamics and plurality of strategic costing techniques on the other side overexert economic decision making as is suggested by management accounting (Bjørnenak & Kaarbøe, 2013; Scapens & Bromwich, 2001, p. 250).

A last aspect concerns the missing empirical **evidence** that strategic management accounting creates a significant, measurable **benefit** for firms (Nixon & Burns, 2012, p. 237). This concern can be divided into two sub sections: existence and measurement. Whether the intended benefits do not exist or whether the methodologies/methods in empirical research are inadequate to provide the evidence is a further gap in accounting research, recognising that empirical research is rather descriptive instead of theory-based (Himme, 2009, p. 1070). Tillmann and Goddard conclude that the current normative research is “too disconnected from reality” (2008, p. 82).

2.4.1.4 Conclusion

Synthesising the review of the accounting school of cost management (see above 2.4.1.3) leads to the insight that a conceptual value of cost management, focussing on information delivery, lies in the link of cost management with firm’s strategies, the inter-disciplinary approach in decision-making for various business contexts and objects and the reflection of multiple cost drivers. In opposition to this, these values are not reflected in practice, suffering from a lack of common terminology as well as complex and dynamic contextual factors leading to multitudinous costing techniques for which the accountant role as information provider seems to be too narrow for successful implementation.

Supposed research topics are easy to identify, when following an 'incremental path', meaning looking for related, similar, unsearched territory coming from changes in the environment, existing literature or managerial perspective (Foster & Young, 1997, p. 65; Zawawi & Hoque, 2010, p. 523).

First of all, the reasons for the low adoption of strategic management accounting are not ultimately clarified. Secondly, empirical research about strategic management accounting is not at its end. Both areas of investigation deal with the current status of research topics, aiming to understand and explain developments which have taken place in the past instead of looking into the future, searching for improvements which aid the cost management of companies. This limits the contribution to practice. Also, further advancement of existing strategic management accounting aspects is unlikely to meet the requirements of all contexts in practice (Tillmann & Goddard, 2008, p. 97), either today or in future. Therefore, major benefits, especially for practical implications, should not be expected when focussing on the accounting school of cost management.

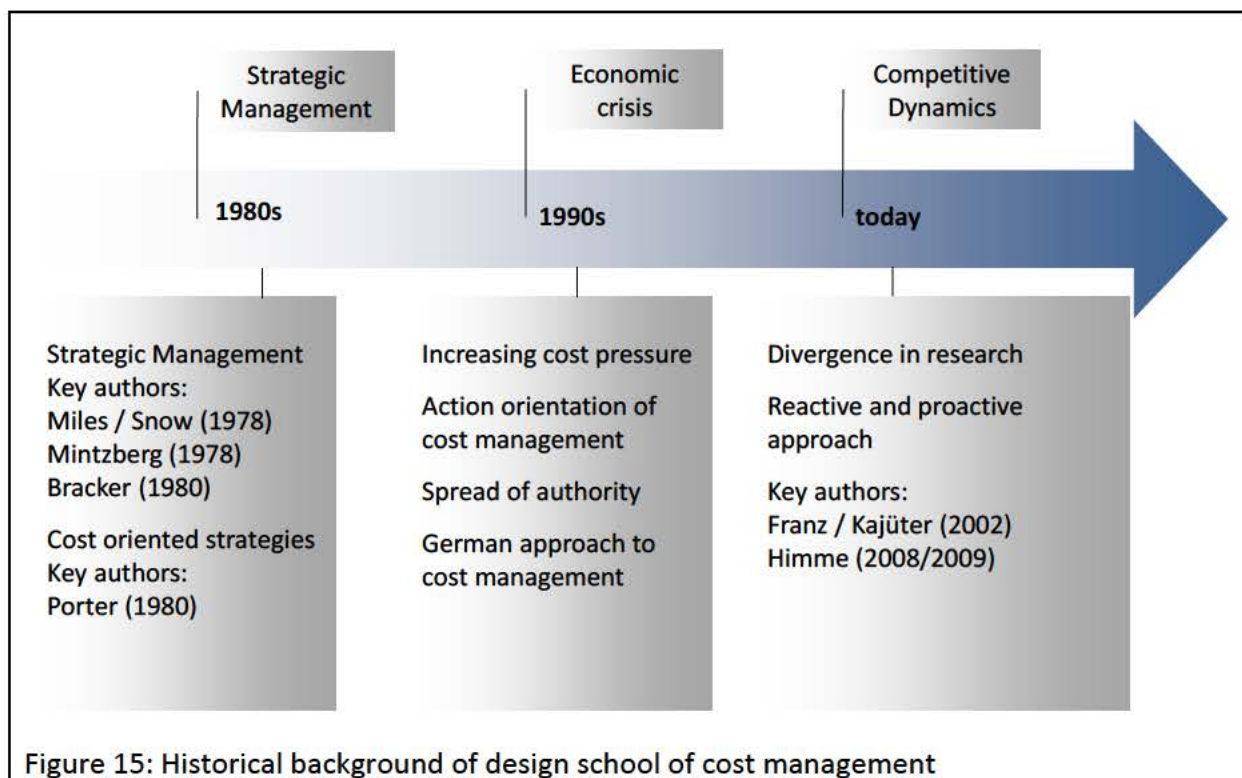
A more 'disruptive path' for advances in cost management is to challenge some of the basic underlying fundamentals of the accounting view, such as the meaning of cost management as information delivery or the central role of the accountant in the cost management process. Considering these aspects, one follows the 'design school' of cost management which is reviewed in the next section.

2.4.2 Design school of cost management

If, at all, any pivotal moment could be mentioned as a starting point for cost management in the 'design sense', then it would be the period in the middle of the 1990s (Franz & Kajüter, 2002a, pp. 8-9; Himme, 2009, pp. 1052-1054) with the economic crisis impacting companies worldwide. Prior to that period (figure 15 as a brief snapshot), sporadic articles made appearances in the early 1980s in German-speaking countries as papers were published (Atzlinger & Mayr, 2010, p. 502; Friedl, 2009, p. 1). Taking this into account, the notion that the design school of cost management is primarily represented and driven by German scholars is a prevailing view in management science, with German-speaking scholars being

most common in contributing to scientific discourse (Atzlinger & Mayr, 2010, p. 504; Friedl, 2004, p. 50; Himme, 2009, p. 1073; Kajüter, 2000, p. 161).

The design school of cost management principally differs from the accounting school by not limiting the purpose and the tasks to information creation and delivery for decision-making only (Franz and Kajüter, 2002a). Moreover, management aspects of decision-making itself, action-implementation or leadership are added to the concept in order to actively shape costs (Friedl, 2009, p. 3; Konle, 2003, p. 14). The second major distinction is the spread of cost management authority away from the accountant's role towards other, multiple functions, which makes organisational questions and decisions more complex (Franz & Kajüter, 2002a, pp. 28-29).



Taking this action-oriented character of the design school, the trigger of cost actions still can vary between a reaction to a cost problem/crisis or the proactive approach to realise a defined strategy (Atzlinger & Mayr, 2010, p. 502/506; Wald, Marfleet, Schneider, Görner, & Gleich, 2013, p. 28), constituting a distinctive feature to distinguish two sub branches of cost management.

2.4.2.1 Differentiation between reactive and proactive cost management

In opposition to proactive cost management, the reactive cost management initiation results either from deviations from defined plans, no matter whether already occurred or expected (Friedl, 2009, p. 99), or any business problem which may arise, e.g. business fluctuations or customer/competitor influences with impact on a firm (Atzlinger & Mayr, 2010, p. 504; Kajüter, 2000, p. 3), which is expected to be solved by cost shaping measures. In practice, emphasis on this reactive approach is drawn to reduce costs (Franz & Kajüter, 2002a, p. 12). To cope with these downsides, a proactive approach on cost management is contrasted and promoted (Atzlinger & Mayr, 2010, p. 509; Franz & Kajüter, 2002a; Himme, 2009; Kajüter, 2000).

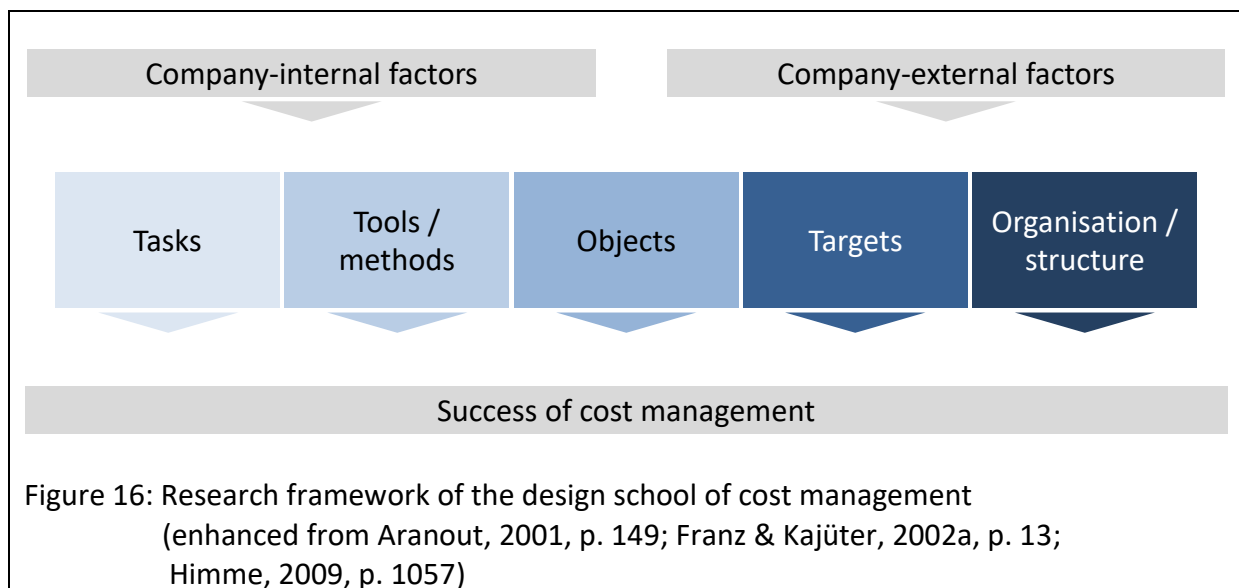
The proactive character of this approach, to shift towards the deliberate and anticipative implementation of a firm's strategy, has some conceptual implications as stated by Kajüter (2000, p. 14): Consecutively, the first implication is its continuous management philosophy compared to the occasional disposition of the reactive concept. A second distinction is its comprehensive approach, starting from a firm's defined cost strategy and not, from an identified problem, which needs to be answered by means of reactive cost management. An external market-orientation replaces the internal focus on financial outcomes such as cost reduction. Furthermore, interdisciplinary ideals are further encouraged in proactive cost management to align the multiple perspectives on costs and their interdependent targets, compared to the focus on cost and financial functions in the reactive philosophy. Finally, the interaction between decision-makers and action-implementing staff in pro-active cost management is not an extensively considered aspect in reactive cost management.

2.4.2.2 Research status

As shown in chapter 2.4.2.1, research in the area of the design school of cost management has been conducted for various elements of cost management as well as in multiple contexts and settings. Conceptual research dominates empirical research, either normatively describing the set-up of cost management aspects or indicating the development status of cost management in practice (Himme, 2009, p. 1052). Studies include

numerous combinations of cost management elements, incorporating a certain level of complexity for management and leadership practice (Friedl, 2009, pp. 1-96).

Although these research activities do not follow a common framework yet, different integrative approaches show similarities. Combining different models in order to not lose aspects during the literature review, a research framework on cost management (figure 16) is used as a guideline throughout the chapter.



The **tasks** of cost management from the design school point of view are the central theme of conceptual research as it is the explicit differentiating dimension between both schools. It is the agreed position that the design school pays particular attention towards the action orientation of cost management (Horváth & Seidenschwarz, 1991; Franz, 1992; Kajüter, 2000).

The most detailed approach to supplement the tasks of cost management compared to the accounting school is stated by Franz and Kajüter (2002a, pp. 14-19). They state a list of tasks commencing with the analysis of the cost situation and cost drivers as well as anticipative cost forecasting. All three tasks should be conducted in order not only to initiate but also to execute the subsequent action formulation and definition. After having defined the cost related actions, the actions finally should be implemented, being accompanied by an action monitoring in order to ensure their success (ibid.).

Research also investigates various **tools and methods** which should support the fulfilment of the cost management tasks, being either evaluative or stimulating (Atzlinger & Mayr, 2010, p. 504). Target Costing, Design-to-Cost, Value Analysis, Cost-Benchmarking, Life-Cycle-Costing and Kaizen-Costing, to mention a few, undergo an intensive study about adoption rates and the design of these methods in practice (Himme, 2009, pp. 1059-1061). Another stated aim is to identify and overcome implementation barriers, such as awareness or the perceived capability of tools (Franz & Kajüter, 2002b, pp. 579-582). Next to varying usage and application, companies seldom use the tools in combination but rather in an isolated manner, although an integrative application should lead to higher benefits (Kajüter, 2000, p. 227).

Research regarding the **objects** of cost management stress their importance and characteristics, due to their influence on the way cost management needs to be set up. Objects of cost management are mainly product, process and resources (Franz & Kajüter, 2002a, p. 19; Kajüter, 2000, p. 161).

As an example, product cost is chosen here to illustrate the logic behind reasoning the importance of why there is a need to distinguish different objects, as it will lead to another paradox in cost management, described during the overall conclusion. Product costs are meant to be important in proactive cost management for two reasons.

On the one hand, the contribution of product costs to a firm's overall costs can take a significant share, either regarding their volume, their structure or their contribution to competitive advantage (Buss & Sitte, 2014, p. 33; Kluge, 2002). Empirical studies on European companies indicate that product attributes next to work organisation show the highest impact if it comes to cost disadvantages (Kluge, 2002).

On the other hand, it is stated that during the product development phase a majority of the product's overall costs are already impacted (Ehrlenspiel, Kiewert, Lindemann, & Mörtl, 2007) leading to fewer potential opportunities to influence product costs in a later phase of the product lifecycle (Labro, 2006, p. 504). This is why management emphasis is put on product-related cost for a product lifecycle perspective (Riezler, 2002; Wang & Potter, 2007)

by contrasting the product development phase (Cooper & Slagmulder, 2002a, 2002b) to the market phase (Cooper & Slagmulder, 2005), a distinction which is unique compared to other cost management objects.

When **targets** of cost management are investigated, theory and practice diverge: Whereas in normative research three cost management target dimensions (object-related, subject-related or structure-related) are stated (Friedl, 2009, p. 47-50), in practice targets linked to cost objects dominate the results of empirical studies (Himme, 2009, pp. 1061-1062). Cost related targets address principally the level, development, structure, transparency, and flexibility (Friedl, 2009, p. 39-44). Out of these, cost level and continuous cost reduction targets dominate current management practice (Friedl, 2009, p. 4; Himme, 2010, p. 27).

Due to the reactive or proactive character of the cost management philosophy, next to the term 'cost reduction', 'cost containment' or 'cost avoidance' are also used, reflecting again the corresponding nature (Friedl, 2009, p. 4). Various studies show that reactive cost reduction has the highest significance in today's businesses but this is not neglecting that other targets, e.g. increase of cost transparency, are valued as well (Atzlinger & Mayr, 2010, p. 507). Person-related targets aim to influence the behaviour of decision-makers and operative staff to act in a cost-conscious sense to increase motivation or to decrease barriers (Konle, 2003, p. 42; Shields & Young, 1991).

Finally, **organisational and structure**-related targets and tasks dispute how to organise cost management activities in terms of frequency, workflow, capacity and company structure (Friedl, 2009, p. 66). Both aspects are mentioned in research but are not deeply addressed or investigated to-date, especially for aspects of cost management organisation/structure despite their differentiation point from the accounting school (Himme, 2009, p. 1062-1063). Besides the discussion about project-related and continuous organisation of cost management activities and workflows, which derive from the use of tools, few of these areas have been examined in research (ibid.)

Research areas which are more widely elaborated consider **internal and external influencing factors** of (Kajüter, 2005) and **success factors** in cost management (Himme,

2008, 2009). It is agreed that internal and external context factors impact the cost management system overall or isolated aspects of it (e.g. intensity and dynamics of competition (Dekker & Smidt, 2003; Kajüter, 2005; Kim, Ansari, Bell, & Swenson, 2002) or defined strategies which are assumed as having the greatest influence on cost (Schweitzer & Friedl, 1997)). The investigation of **success factors** in cost management, although biased by the predominant target of cost reduction, lead to a list of critical aspects such as the comprehensive and systematic analysis of costs (Swenson, Ansari, Bell, & Kim 2003).

2.4.2.3 Main findings and critical debate about research status

Summing up research in the design school of cost management to date, attention is drawn mainly to two aspects (figure 17). The initial aspect is the justification and description of additional tasks of design school compared to the accounting school as well as proactive cost management vs. reactive cost management. The other aspect concerns the effort spent on numerous cost management items, opening up the potential diversity of different cost management systems, related to defined influencing factors, especially strategic aspects.

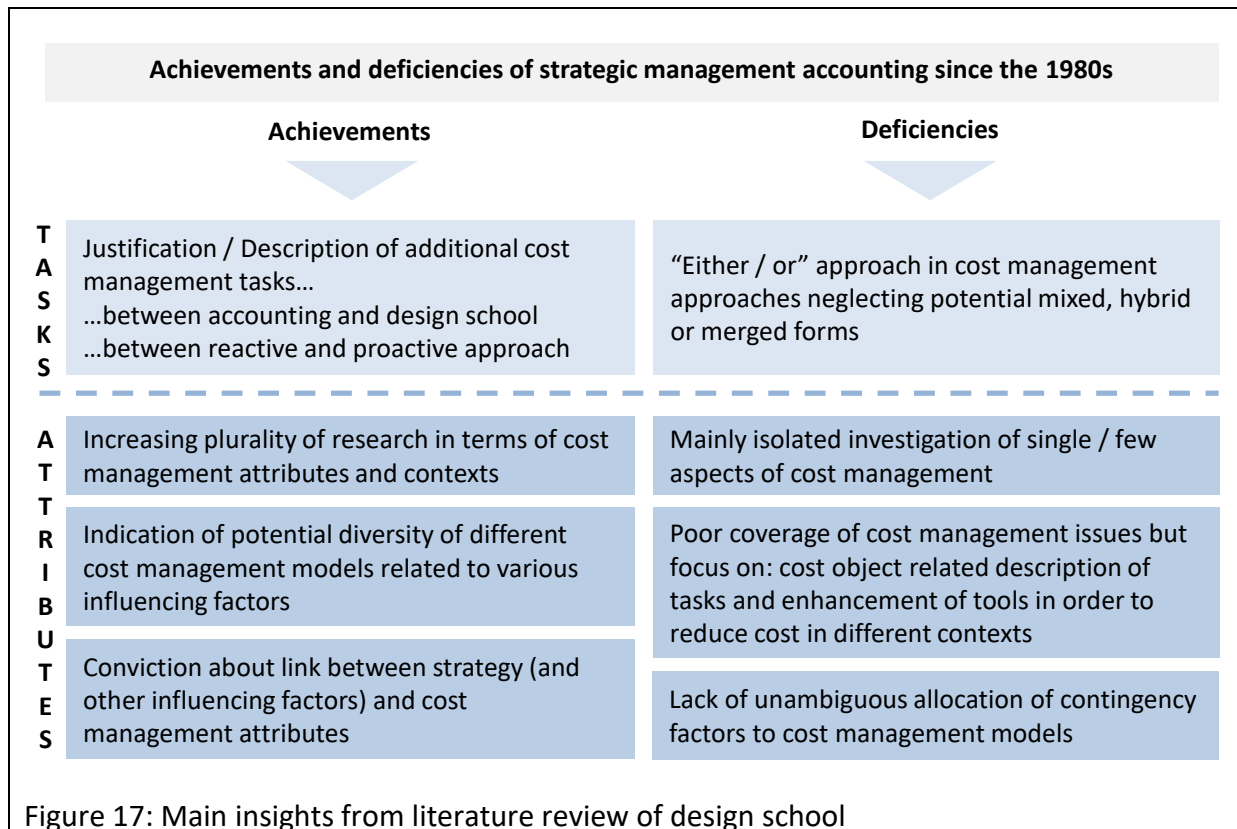


Figure 17: Main insights from literature review of design school

Taking up the first aspect, the explicit distinction of tasks between reactive and proactive cost management, the debate has an 'either/or'-characteristic in current research. However, there are some hints to doubt this bipolar distinction. Reactive cost management is said to react to a problem or crisis that has already occurred... or is expected (see chapter 2.4.2.1, p. 40). To define expectations, information-processing is necessary using specific tools and methods in order to be able to anticipate these developments (Ord, Fildes, & Kourentzes, 2017). The intensity and frequency of information-processing may vary, but it does have an active character. Friedl (2009, p. 99) uses the term "active-anticipative" meaning "proactive", but this provides an impulse to question whether there are more cost management triggers than only the stressed two (e.g. reactive, anticipative, active and proactive), which would follow a set criterion, e.g. 'activity level'.

The same logic applies when critically scrutinising the differentiation between design school overall and accounting school overall. For clarification, information-delivery as the distinguishing purpose of the accounting school is not excluded in the design school, neither is the central accountant's role (see chapter 2.4.2, p. 39). So, it might be interpreted that the accounting school is not a different but rather a less comprehensive approach in cost management, yet with less focus or assumed levels of importance.

The cultural dimension of the accounting school being claimed to be more of an Anglo-Saxon ideology, and the design school being more of a German mind-set (see chapter 2.4.2, pp. 38-39) is implicit in this research area and lacks an empirical investigation. Digitisation and globalisation trends with companies acting in various cultural/geographic regions and with personnel moving around the world, leading to the exchange and diffusion of expertise and know-how (Fuchs, 2016; Klingler-Vidra & Schleifer, 2014; North & Kumta, 2018) challenge the simple dichotomy, further suggesting that there might be mixed forms of the cost management schools imaginable.

Synthesising the arguments, it is not clear to-date whether potentially different cost management approaches are as distinct as those sketched during the mapping of the research area or whether mixed, hybrid or merged variants could be imagined or even become actual practice in reality.

The second impetus for critical debate is given by the increased multiplicity of CM aspects and attributes dealt with when compared to the accounting school (see chapter 2.4.2.2, pp. 40-44). Internal and external influencing factors, aspects about CM tasks, tools/methods, objects, targets or organisational/structural issues along with success factors of and for cost management are, as described beforehand, investigated as potentially relevant categories.

A shortcoming in researching these aspects of cost management is the majority of studies examining only isolated, often single/dual aspects within the framework. Numerous knowledge gaps are identifiable in the details, no matter which aspect or combination of aspects is regarded. To mention a few stated by Himme (2009): cost targets have been investigated as mainly isolated, assuming that they are interdependent from each other; organisational aspects such as responsibility and accountability have been ill-kept so far and time-series analysis to investigate the success of cost management are missing.

Now, due to the inherent complexity of cost management systems, when considering the number of categories and peculiarities within them, one can acknowledge that this claim for comprehensiveness is unrealistic in the early diversification phase of the research area. Thus, not every theoretical combination of the various aspects of cost management is possible in the research framework leading to a specific (partial) cost management model which was already investigated, debated and further developed. However, the coverage of these aspects remains somewhat low. Instead, current research is mainly undertaken in a specific demarcated cluster: object related description of tasks and enhancement of tools in order to reduce cost (as the target dimension) in different settings (e.g. industries or company sizes). To name a few examples: Chen and Pan (2016), Ding and Yao (2016), or Wouters, Morales, Grollmuss, and Scheer (2016). Organisational knowledge, person- and structure-related challenges and interdependent targets / success factors are fairly neglected in such partial investigations.

Himme, claiming to be the first to study success factors of cost reduction projects (2012, p. 204), investigates motivational and procedural aspects and distinguishes different cost objects in addition. Still, this represents only a partial view of the potentially defining aspect of cost management systems.

An overarching comprehensive attempt to identify and describe potentially different cost management models or clusters making use of a 'complete' defined date is still missing. It is not clear to-date, whether there are actually different cost management clusters in practice. They might vary in intensiveness (e.g. more tasks, more frequent execution of tasks, more tool usage, more challenging targets, etc.) or incorporating completely different content and focus (e.g. different strategic focus on cost, different relevant cost categories, different organisational structure, different cost object, etc.).

Adding to (and similar to the findings in) the accounting school, exceeding this missing convergence from cost management details to clusters within the cost management framework poses the question of which actual cost management cluster/configurations as sum of single attributes seem promising/adequate overall? Despite the conviction of strategic factors influencing cost management (see chapter 2.4.2, pp. 38-39), little is said about the definition of these factors and allocation of these to certain cost management models. This would answer the question of which potential cost management system to implement in a firm, depending on the company's given strategic direction. It remains a well-meaning general notion with the vague and ambiguous aim of staying open-ended to date.

Another issue needs addressing when concluding the debate about cost management systems at this stage. Few attempts to make 'system' aspects of cost management explicit do use the term 'system' with a different meaning, emphasising one category of the above sketched framework. Pereira and Mitchell (2013), for example, connect the 'system' term to the tool/method dimension, so do Al-Omiri and Drury (2007) or Abernethy, Lillis, Brownell, and Carter (2001) when exploring influencing factors, or Brierley (2008, 2010) when examining levels of sophistication. So, common terminology is missing and therefore impedes a debate within cost management research. Consequently, the level of scientific discourse seems comparably low. The increased plurality of attributes of cost management has fortified this phenomenon through the diversification of the research by investigating isolated aspects in individual settings rather than exploring commonalities or differences of same research questions in same settings.

2.4.2.4 Conclusion

Due to the plurality of conceptual perspectives, as described in the section above and the variety of potential attributes of each perspective, the research field of the design school-oriented cost management is comparably bigger than the field from the accounting school. Additionally, the research history, with its beginning in the 1990s is comparably short and scientific debate and discourse both seem to be rare.

Instead, a steady broadening and deepening of new aspects of the research area can be observed, further adding on additional facets of cost management. Consequently, the design school is still in a divergence phase, whereas the accounting school already is in a convergence phase. Driven by the ambition to emphasise actionable aspects in the design school of cost management, the motivation to bridge the postulated relevance gap of the accounting school can easily be observed. It becomes apparent through reflecting upon the ongoing atomisation of the cost management research with ever more investigated special cases that there is an attempt to become as specific as possible. The underlying rationale seems to be to break down research on cost management issues into small or even the smallest pieces (like examination of a cost management method such as target costing in a clearly defined context such as small and medium sized companies in the Indian IT industry) to avoid the allegation of being too general or too unspecific and, consequently, not useful.

Practice and research to-date emphasise single aspects of cost management, mainly the isolated use of costing tools or how to further advance certain techniques. As in the more recently developed approach of the design school, an increasing divergence with few discourses needs to be claimed as, it must be doubted whether current knowledge is in a mature stage already for those single aspects. Also, it seems to be likely, on the opposite, that with few scientific debates to-date there are still numerous chances to challenge current knowledge within these isolated and fragmented aspects in cost management (e.g. Ansari, Bell, & Okano, 2006), which is a general rationale for research areas in a similarly early stage such as cost management.

Research directions are therefore multiple and so are research gaps, which either concern details of single aspects in the conceptual framework or highlight the need to investigate cost management models overall, no matter which terminology is used. In the latter case, influencing factors such as defined strategy should be considered and success measures developed.

2.5 Synthesising the literature review to formulate the research topic and questions

2.5.1 Key findings about the research status in cost management

2.5.1.1 Problematisation and gap-spotting as foundation for research topic

The formulation of the research goal and research questions is one of the major milestones and decisions within research, if not the most important part. Or as Bredmar states: “All research is more or less clearly based on a research question, an aim and/or a purpose” (2013, p. 21). Bartunek, as another example, claims with respect to research questions that “indeed, the formulation of these questions may be the most critical aspect of research” (2014, p. 406), a notion which can be claimed to be universally accepted.

Therefore, surprisingly, the question of how research problems / research questions are or could be developed often remains unanswered or is only discussed vaguely in how-to-books or grey literature about research, research processes or research methods (e.g. Easterby-Smith, Thorpe, & Jackson, 2015; Hallebone & Priest, 2009; Lipowski, 2008). As, at the same time, there are different ways to do so (Hällgren, 2015), dedicated effort is taken to expose and to advocate one or the other way to formulate research questions (Alter & Dennis, 2002; Alvesson & Sandberg, 2013a, 2013b; White, 2017).

In the past, the dispute with extant knowledge and literature to identify knowledge and research gaps was the prevailing course of action to ultimately derive research questions (Alvesson & Sandberg, 2013b, p. 29; Jayakody, 2015, p. 60). Being labelled as ‘gap-spotting’ (Sandberg & Alvesson, 2011; Tadjewski & Hewer, 2011), which was supposed to support the argument of ‘novelty’ of research in doctoral theses. Based on the influential work of Locke & Golden-Biddle (1997), “gap-spotting somehow appeared as a more accessible way to construct an opportunity for making a contribution - and hence to construct a research question” (Avenier & Gialdini, 2013, p. 3).

More recently, a different *modus operandi* is advocated by Alvesson and Sandberg, which they label “*problematization*” (Alvesson & Sandberg, 2011, 2013a, 2013b; Phillips, Watkins, & Hammer, 2018). However, their ‘*problematization*’ is meant not as an inter-related process with *gap-spotting* (as do Locke and Golden-Biddle) but as an alternative and opposing approach to question formulation to increase the contribution to knowledge and relevance of research with more interesting research topics and questions.

Reasons for the search for alternative approaches to the generation of research topics are based on the dissatisfaction of research output if based on research questions which avert interesting research from the very start.

Davies points out elements of theories being truly interesting as a major aspect of appreciation for any research (Davies, 1971; Walker & Lloyd-Walker, 2015, pp. 132-133) suggesting that ‘interesting’ is a key element of research, providing the reason why the procedure to arrive at interesting research topic should be made explicit.

Not being interesting then is postulated not to be innovative or imaginative (Bogers, 2012), irrelevant, incremental, rarely read or less attention grabbing (Grøgaard, Sartor, & Rademaker, 2022; Voss, 2003, p. 356) or rarely revolutionary (Ashkanasy, 2011, p. 819), formulaic, too little diverse and ultra-cautious (Alvesson & Gabriel, 2013, p. 245) or at length short of impact and contribution, respectively rarely influential (Alvesson & Sandberg, 2013a, p. 128).

When condensed, these critique points add to the discussion about the relevance gap of research and therefore have to be taken seriously when going back to the thesis’ main trait about a practical contribution (chapter 1.2). Considering the criticality of the formulation of the research goal and questions, not only for the research overall but in particular also for the contribution to practice, this demands a distinct decision on how to derive them.

The traditional gap-spotting method based on an exhaustive literature review to comprehensively understand the research area leads to different knowledge gaps. Sandberg and Alvesson (2011, pp. 27-31) highlight in their typology three basic gap-spotting modes:

- Confusion spotting
(aiming to spot competing explanations)
- Neglect spotting
(searching overlooked, under-researched territory or missing empirical evidence)
- Application spotting
(looking for opportunities to extend or complement extant knowledge)

Furthermore, they indicate that combinations of these are not seldom. Appreciating the rigorous logic to fill in the identified gaps with new knowledge to produce good research, Sandberg and Alvesson proceed to doubt that gap-spotting enables research which goes beyond evolutionary, incremental increase of knowledge, even when research does impact and influence practice.

A prime cause of this is their claim that for influential research there is the need to challenge, question or even to deny basic or prevailing assumptions about the subject matter or extant theories that underlie existing literature. This call for unconventional research/research methods is echoed and put into practice by other scholars supporting this notion and adopting the 'problematization' approach for their studies (Blanchet, Magista, & Perret, 2013; Buchanan & Bryman, 2018; Okimoto, 2014; Patriotta, 2017).

A sketch of how to problematize in order to derive research questions is delivered by Okimoto (2014, pp. 399-400), summarising Alvesson and Sandberg's recommendations in six steps:

- Specify a domain of literature to problematize
- Identify and articulate the assumptions
- Evaluate the assumptions
- Develop an alternative assumption ground
- Consider the audience
- Critically evaluate the alternative

Although the 'assumption' term is central to the discourse, the meaning should include any common or widely accepted conviction, paradigm, belief, principle or view in the field of investigation.

Critically evaluating the new, non-traditional, if not unconventional, approach to scope the research goal and research questions it should be acknowledged first that Alvesson and Sandberg attempt to provide a potential 'better' approach to initiate influential, interesting research following a plausible logic. From a perceived deficiency (relevance gap of management science) they develop a potential solution to overcome this shortcoming (problematization in developing research questions) instead of giving up and claiming that gap to be "unbridgeable" (Kieser & Leiner, 2009, p. 519). Agreeing with Buchanan and Bryman (2018) there is a value in developing an innovative method to overcome a deficiency or "barriers of change" (Symon, Cassell, & Dickson, 2000, p. 457) such as, in this case, the formulation of influential research questions (Hällgren, 2012, pp. 813-814). However, five hesitations to unreflectively adopt their procedure can be stated:

- Neglecting other factors leading to non-influential research
- Undifferentiated demand to use problematization instead of gap-spotting
- Urge for problematization without regard to potential researcher's bias
- Potential risk to irritate target audience if level of assumption questioning is too high
- Missing empirical evidence that problematization leads to higher relevance

First of all, potentially poorly derived and formulated **research questions are not the only factor** for the postulated relevance gap. Amongst others, there are also the aspects of communication, presentation or language towards the target audience or actual policies and mind-sets for reviewing and publishing (Kieser & Leiner, 2009; Oesterle, 2006; Rasche & Behnam, 2009; Wolf & Rosenberg, 2012). In picking one of the reasons 'alone' and advocating more influential research, expectations are raised that there is a simple potential mechanism that through the proposed procedure better research will automatically happen.

The second caution refers to the **undifferentiated use of problematization** instead of gap-spotting as it should produce more revolutionary research results. This does not extol that

gap-spotting could still have its justification, in fact in those cases in which exactly the filling of an identified gap does lead to a remarkable contribution with impact on practice (Hällgren, 2015; Tourish, 2011). In line with Okimoto (2014, p. 401): even if accepting that potentially the contributions derived by gap-spotting would be more incremental, this does not necessarily mean that there is no value in it. Not only are grand theories of interest to practice, but, in contrast, application spotting could well be highly impactful for the target audience of this application.

Another, third, issue of problematisation is the potential risk that the research undertaken based on this novel procedure **urges the researcher into an unacceptable bias** (Burton-Jones, 2009; Chenail, 2011; Podsakoff, MacKenzie, & Podsakoff, 2012). As a novel procedure, the problematisation method potentially needs more intense justification compared to a traditional procedure in terms of rigour and the audit trail. One can imagine that the research outcome should also support the methodological choice leading to the outcome. If a widely accepted assumption is questioned beforehand and the research outcome does not support an alternative assumption then there is no novel theory and consequently no contribution to practice. To avoid this, a researcher could be biased to push the outcome towards the alternative concept showing the success of the method.

A fourth remark on critiquing problematisation is an ambiguous hint on the level and intensiveness of assumption questioning. Even though there is awareness that there are different levels of questioning and with that a potential risk that the **audience gets irritated** by too much challenge of common views (Okimoto, 2014, pp. 401/402), there is little advice on which level is appropriate to avoid irritation and rejection of the research. An incorrectly chosen level of intensity for the challenge might overexert the audience and lead to the opposite intended effect: less influential research.

Finally, next to the conceptual description and growing application of problematisation in research projects, there is currently **no empirical study available** investigating whether the intended benefit, summarised as the self-imposed aspiration to trigger and consequently produce more influential and more interesting research, really does occur.

Weighing up the conceptual values of problematisation and the five discussion points as sketched, Sandberg and Alvesson’s legacy is an increased sensitivity that gap-spotting alone should not be regarded as the one and only saviour to research topic and question formulation. With the offered alternative, problematisation can broaden researcher’s minds to direct the research focus towards research areas which would have been overlooked by gap-spotting. Additionally, it could enable a more reflective approach towards research by not taking for granted what is supposed to be known or what becomes obvious by gap-spotting. Taking the “collaborative and cumulative endeavour” (Tractenberg, 2013, p. 105) of research, the trustworthiness towards past accounts otherwise includes the risk to ‘stew too much in traditional juice’.

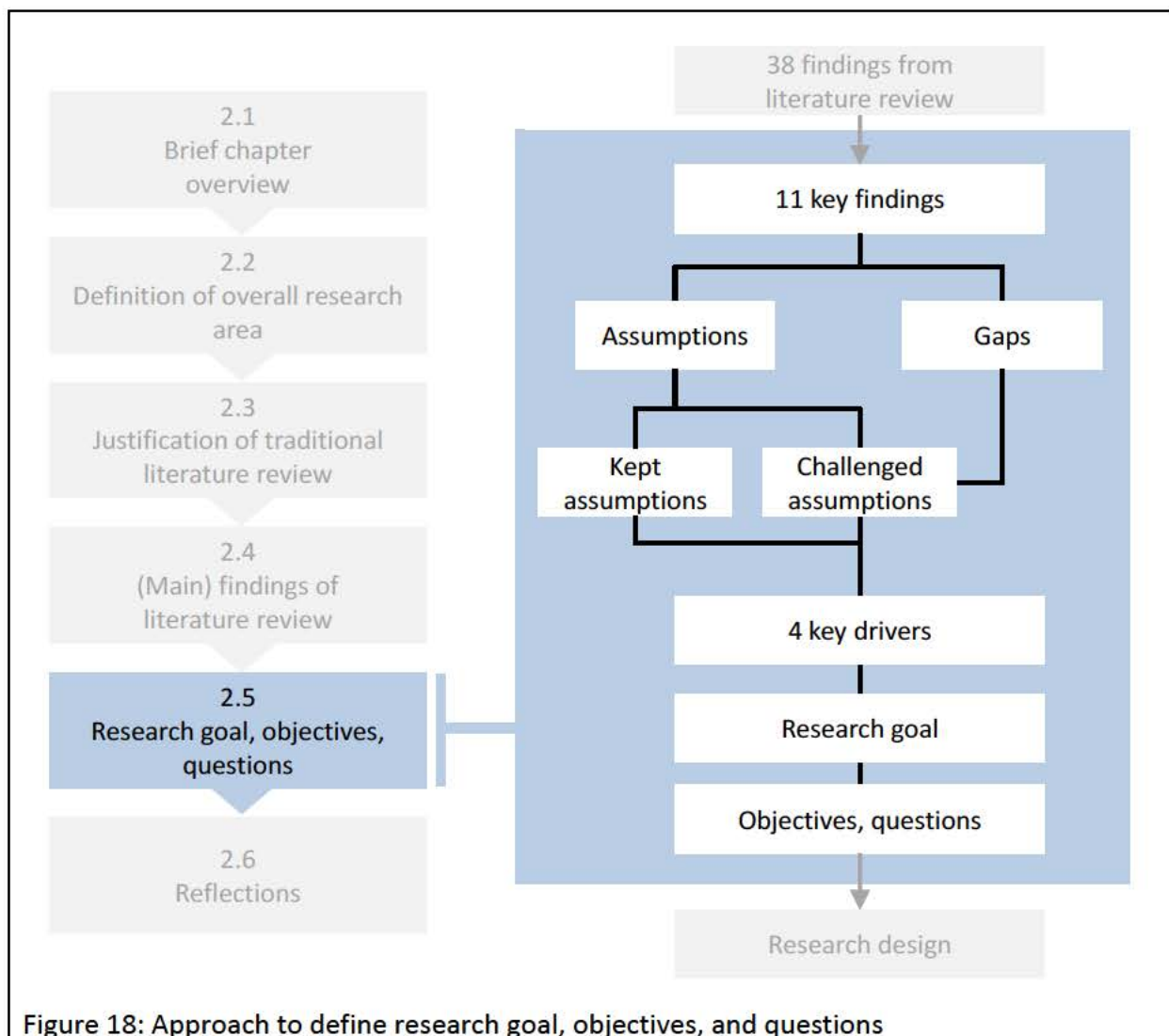


Figure 18: Approach to define research goal, objectives, and questions

So indeed, other and new impulses for research making use of these ‘unconventional’ methods (e.g. Ryan, Hernández-Maskivker, & Valverde, 2018) could be expected. Finally, problematisation also finds its way into DBA literature, showing acceptance of this method (Cloutier, 2019, pp. 84-86).

However, a pure adoption of the proposed problematisation technique incorporates the risk of changing the intended research outcome to the contrary. To avoid the risks, in the thesis a hybrid approach is followed, making use of elements of both alternatives (figure 18).

A practical contribution as one focus point of the DBA thesis, still showing academic rigour, can be achieved when problematisation aspects are emphasised and then added on by identified research gaps, especially when considering the target audience (in the case of this DBA thesis, practitioners in management positions). This was done by explicitly incorporating the following steps, derived by Sandberg and Alvesson’s original proposal:

- Identify and articulate assumptions of cost management research
- Evaluate the assumptions including related research gaps
- Consider the needs and openness of practitioners to challenge the assumptions

The research goal and its objectives, as well as the research questions were derived in combination with the identification and allocation of research gaps in terms of:

- Confusion spotting
- Neglect spotting
- Application spotting

2.5.1.2 Challengeable assumptions and knowledge gaps in cost management

Having reviewed the research area of cost management in accounting/design school a variety of findings have been derived during the mapping in chapter 2.3 (p. 25). Despite being specific and individual by nature, the findings can be structured with respect to their affiliation to either problematisation (meaning questionable assumption) or gap-spotting. Subsequently, an evaluation of their impact on potential research topics will aid in directing the development of the thesis’ starting point to which the research goal is linked.

Appendix 1 (p. 410) presents the 38 individual findings, derived during the mapping of the research area, by first stating the findings and chapter-wise their origin followed by the allocation of the finding to either problematisation/assumption or gap. In case of allocation to problematisation/assumption, an evaluation is added as an initial analysis step. This should take into account that one major characteristic of the problematisation approach for formulating the research goal is the fact to put it at the beginning and not at the end.

As an example (see table 2 for more detailed example), specifically selected due to its central role in the topic shaping procedure, finding 6 can be outlined. The finding 6 from the accounting school highlights that in cost management research there is a rationale about a link between strategic aspects of a company and the costing techniques it should implement which was addressed in chapter 2.4.1.3 (p. 34). The sense of the finding emphasises an important assumption, which needs to be made explicit. The underlying assumption of this rationale is that the information needs for decision-making are dependent on the strategic direction of the company. Consequently, a link between both aspects is claimed. Putting this assumption into context, especially considering that for the design school there is a very similar if not the same pre-dominant finding (finding 33 and the implied assumption that strategic factors do impact upon the choice of a cost management system) the evaluation is to challenge this assumption as a potential step-off point.

The evaluation is different for finding 27 (related to the design school). This finding states a central focus point of the research: cost management tasks are being investigated as distinguishing factors to describe and justify separate cost management approaches, namely between the accounting/design school as well as a re-active/pro-active approach within the design school (stated in chapter 2.3.2.3). There is a dedicated assumption that there are actually different forms of cost management which can be differentiated from each other, an assumption which is so widespread that challenging it would irritate the research audience, therefore it is kept.

A second assumption is closely connected, that is the postulation of two dichotomous forms of cost management which can distinctly be named: re-active and pro-active (or accounting school and design school). This assumption can be challenged. Possibly there is a different

number of variants or there are even different variants. This challenge potentially would not irritate the research audience but instead raise interest and provoke attention.

	Finding	Chapter	Assumption	Gap	Problematism
6	Rationale about link between strategic aspects and costing techniques	2.4.1.3	Cost information needs are dependent on strategic directions of the company		Assumption should be challenged: the strategic link can be used to create a step-off point in order to focus and consequently limit the research scope
21	Distinction between re-active and pro-active tribe	2.4.2	There exists a bi-polar, at least distinct separation of cost management approaches	Neglected spot: distinction is lacking empirical evidence	Assumption can be challenged: possibly there is a different amount of or different variants
26	No common framework yet existing, however research can be allocated into several categories: company-internal or external factors, tasks, tools / methods, objects, targets, organisation / structure as well as success factors.	2.4.2.2	There are categories which comprehensively describe cost management	Neglected spot: integration of currently mainly isolated aspects is overlooked, at least under-researched	Assumption should be kept: this possibly directs the research towards a topic
27	Focus of research: tasks as distinguishing factor to justify separate approach between accounting/design school as well as re-active/pro-active -> action orientation	2.4.2.3	There are different forms of cost management There are two distinctly different forms of cost management	Neglected spot: other factors which support a distinction between accounting/design school and re-active/pro-active approach are under-researched and lacking empirical evidence	Assumption should be kept: this possibly directs the research towards a topic Assumption can be challenged due to neglected spots: lack of empirical evidence (see finding 21), overlooked, at least under-researched integration of currently mainly isolated aspects (findings 26 & 29)

Table 2: Extracted and exemplified findings to scope research topic

Why this evaluation? Adding findings 21, 26 and 27 gap-spotting comes into play. Neglected, or at least under-researched, spots related to the finding that there are two dichotomous forms of cost management, firstly address other factors (next to tasks) which might support a distinction between accounting/design school and re-active/pro-active approach (neglected spot from finding 27) and secondly lack empirical evidence (neglected spot from finding 21). On top of this, the integration of currently mainly isolated cost management aspects into a system approach is overlooked, or at least fairly under-researched (neglected spot from finding 27).

In summary, the assumption that there are two dichotomous variants of cost management as currently sketched by cost management research (no matter whether accounting vs design school or re-active vs pro-active) can be challenged. One line of reasoning is that doubting the assumption does not necessarily lead to an immediate rejection by the research audience but instead could raise interest towards an investigation of the assumption. The finding that there are neglected spots in describing and therefore also in defining the alleged two variants support the assumption challenge as the second part of the reasoning.

Nonetheless, these first examples suggest that the derived findings from the literature review potentially do have similarities, links or connections. Grouping them together reduces complexity and enhances comprehension. Therefore, further proceeding with the shaping of the topic, the grouped findings or so-called 'key findings' can be derived (appendix 2, p. 415) and serve as the foundation to shape the research topic.

2.5.2 Step-off point based on key findings

Having collected the 38 individual findings from the literature review, then allocated them to problematisation or gap-spotting and finally grouping them together, a next step towards the research topic was carried out: the target-oriented evaluation of the assumptions with respect to the question whether they should be challenged or kept. The purpose was that those findings, including their assumption which should not be questioned, could build a framework as a step-off point to put the research into context and to direct the research project (Berman, 2013; Green, 2017; Leshem & Trafford, 2007).

Any research starts with key beliefs which are not questioned, at least when starting out. To make them transparent the explicit presentation aids to raise awareness towards them and in parallel to enable the avoidance of research bias through reflective practice and bracketing (Alvesson & Sköldbberg, 2018, pp. 10-15; Tufford & Newman, 2012) here with respect to the research framework (Berman & Smyth, 2015; Smyth, 2004).



The very first key finding in figure 19 above was that **cost management is a researched territory**. The assumption underlying this very fundamental finding is that cost management research is important to either academics and/or practitioners to a varying extent. If this were not the case, research in this area would not happen. Therefore, this assumption should be kept. Consequently, the research area selection overall was meaningful and does not have to be justified (which would have been the case if no (or almost no) research would have been undertaken so far). The thesis step-off point can be placed in the area of cost management.

The second key finding was that **different variants of cost management are differentiated in cost management literature**: the accounting school was separated into three tribes (with strategic management accounting even further broken down), the design school into two tribes, as well as both schools being opposed to each other. Having sketched the characteristics of these variants there are two assumptions beneath. The first assumption, to make it explicit, is that there are indeed different variants of cost management. Yet, there is a second assumption, which is possibly not that obvious, namely that the variants in cost management are (already) defined. But how should these assumptions be handled?

The first assumption, that there are indeed different variants of cost management in existence, should be kept. As mentioned in the more specific example of the design school in the last chapter, this assumption is so widespread that challenging it would irritate the research audience. Neither are there any hints in research, conceptually or empirically, that there is one single and uniform way of approaching cost management nor does common sense somehow justify to doubt this key belief in cost management. The existence of different cost management systems consequently can be taken over into the research framework.

The second assumption of this finding, namely that the variants in cost management are (already) defined is doubted. Specifically, an interdependent comprehensive cost management model based on an accepted conceptual framework does not exist (Himme, 2009, p. 1069) and is indicated in key finding 9. Research to distinguish different cost management configurations is in its early stages (Balachandran & Balachandran, 2005; ICAI,

2013, 2014; Kajüter, 2000) and in need of further advancement. Combined or inter-related approaches to improve the understanding and knowledge about various inter-relations between different aspect of cost management are rare.

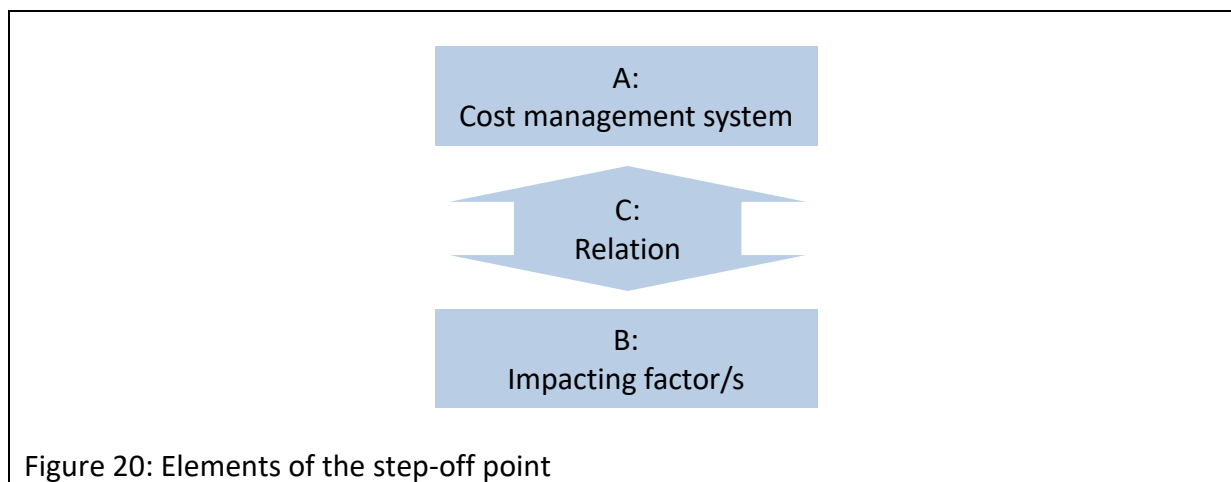
Due to its complex character regarding internal and external context factors and multiple properties within a cost management system there is a potential plurality of different cost management models. The assumption about the existence of different cost management systems therefore can be kept, as no irritation of the audience should be expected, yet the assumed limitations to dichotomous or bipolar concepts to differentiate those systems should be dismissed to create the opportunity for novel classifications. As with previous points, empirical evidence about classifications and descriptions of cost management systems is missing (neglected spot) the questioning of the bipolar assumption is justified.

The third key finding is closely connected to the second, highlighting that **different variants of cost management are not only distinguished from each other but also conceptually sketched**. By nature, the assumption of the existence of different cost management systems from key finding two applies also here, but additionally one should be aware that a further postulation refers to the belief that the variants can be explained using different categories of cost management, meaning that there are various sub-aspects of a cost management system, which can be described and opposed from each other.

Different levels of interdisciplinarity, differing tasks/purposes, different cost drivers, more or less action-orientation, cultural issues etc. are associated to the description of cost management systems. Considering the plurality of research and the key belief about the existence of different cost management system, again it would seem irritating to question this assumption. Therefore, cost management systems being characterised by different sub-aspects should finally be considered in the conceptual framework as a central element.

The fourth key finding is the notion that **cost management is linked to any (strategic) impacting factor**. The assumption is that strategic directions do impact upon the practice of cost management and therefore the cost management system. This finding and the corresponding supposition was derived for both schools in cost management separately.

However, at the same time there is a restriction being formulated as the fifth key finding, namely that **there is little, if any investigation of the relation between such influencing factors on the one hand and cost management on the other.** This neglected spot gives room to challenge this alleged key belief. Consequently, next to different cost management systems, the step-off point can also include any (strategic) factors as well as their relationship to any cost management system (figure 20).

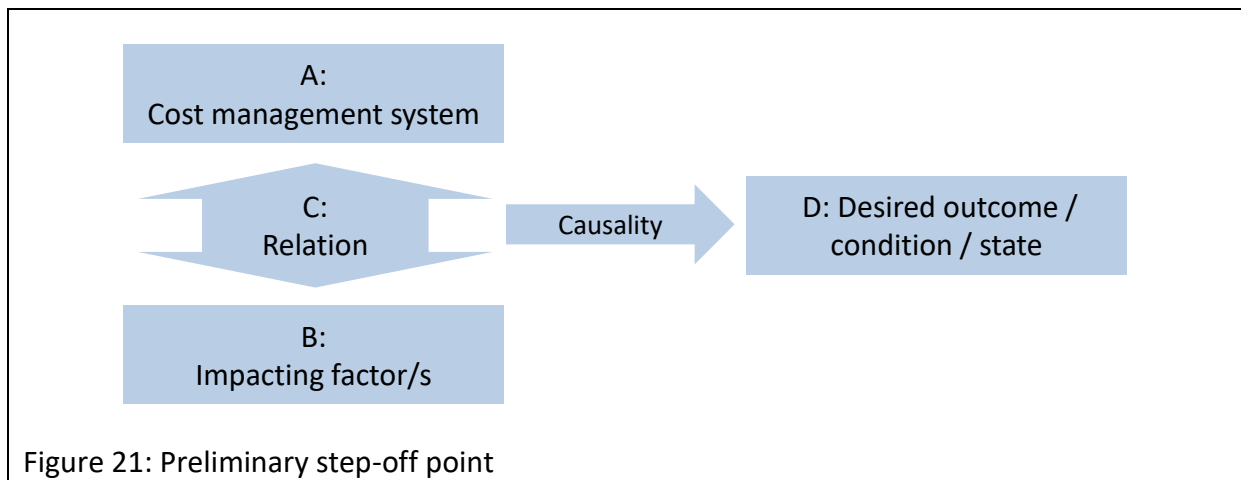


Further directing the research by building the conceptual framework the sixth key finding is the **availability of normative hints for cost management.** Even though focussed on dedicated issues such as the use of costing techniques, enhancement of cost management tools, or aspects regarding how to achieve cost reductions, cost management research has a high conceptual-normative share. The assumption which needs to be brought to the surface is the conviction that there is a demand/need for normative theories as a desirable research outcome.

Normative theories lead to directives or instructions, or at least recommendations, what needs to be done in order to achieve a desirable outcome or condition/state (Bell, Raiffa, & Tversky, 1995, p. 9; Wilkinson & Young, 2005, p. 363).¹⁰ This is therefore an assumption which can be kept as it would support the first trait of the research, the contribution to practice. In doing so, it would also consider the seventh key finding, the **quest to close the**

¹⁰For cost management research, even for management research, these normative rules can serve as one opportunity to overcome the relevance gap as there would be at least a probabilistic claim, indicating: if you do X, then it is (more) likely and 'causes' that Z is achieved. Realising Z by means of doing X would be a practical, influential hint, as long as Z is a relevant aspect of the practitioner.

relevance gap. Applying this logic to the so far sketched starting-point an extension is possible (figure 21).



The meaning of the preliminary step-off point then is that if there is a proper relation (C) between a to-be-defined (strategic) factor (B) and its cost management system (A) then this leads to a desired outcome (D). In sum, this framework, derived from the findings in the literature review and the problematised assumptions as well as spotted research gaps, serves as the step-off point for the research.

2.5.3 Research goal, objectives and questions

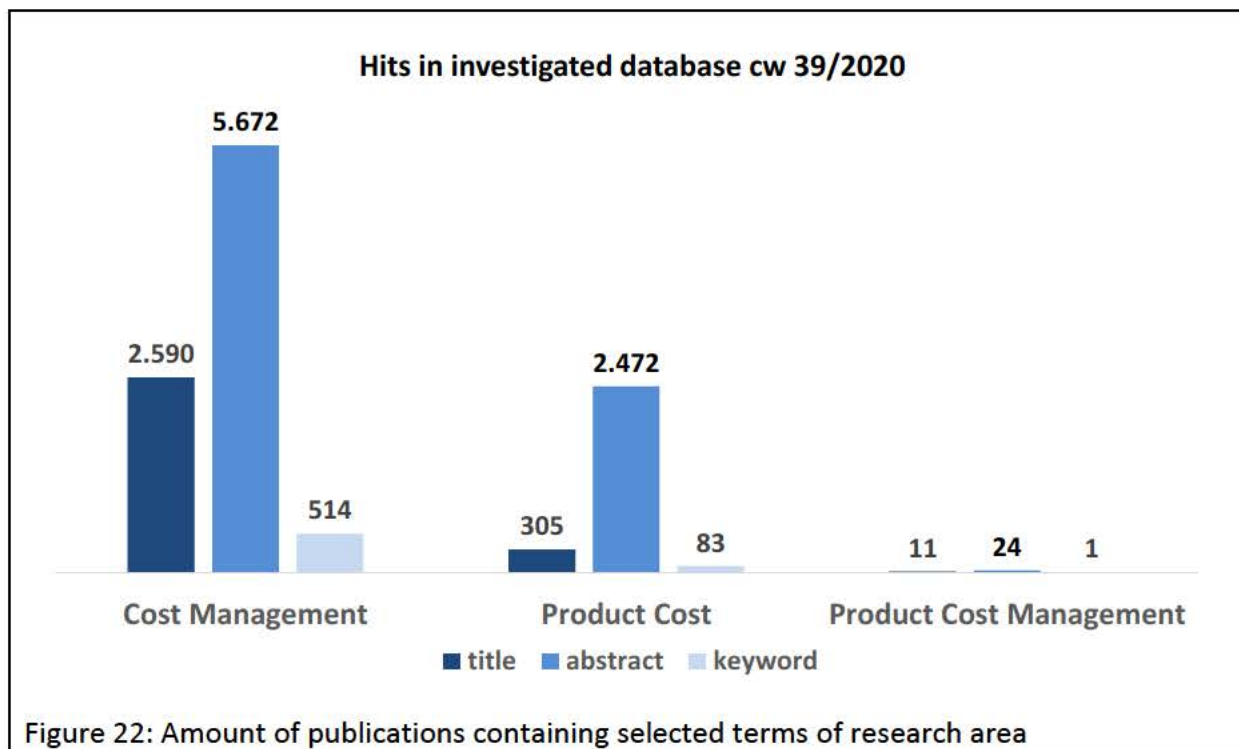
2.5.3.1 The development of a middle-range normative theory of product cost management as research goal

The step-off point as developed above incorporates the findings of the research in cost management to-date as an acceptable point of departure, however is still lacking the novel and interesting research goal as intended by the problematisation approach.

Further following the progressive narrowing of the research area, the scope of cost management, mainly the objects, should be considered as well in more detail. The literature review about cost management highlighted that despite the stated distinction between product, process and resources and their underlying importance only occasional explicit reference to product cost management object is undertaken (Brierley, Cowton, & Drury, 2001).

This finding is supported by investigation, comparing the amount of publications about cost management which explicitly incorporate products as cost object¹¹, indicated by the number of hits in online databases and google scholar (figure 22).

Compared to the volume of publications on the generic area of cost management, PCM has a negligible share, which opens up a further spotted research gap in terms of an under-researched, if not overlooked area: PCM by now is not an explicit research area of its own. With few exceptions, it is characterised by the investigation of specific tools or other partial aspects (Aldaniyazov, 2016; Al-Omiri & Drury, 2007; Okoye, Egbunike, & Meduoye, 2013).



This discovery changes the paradox of cost management to the contrary. From this perspective it is not the management practice which neglects output from the scientific community, but the scientific community which does not pick-up developments of management practices.

¹¹Online database: Business Source Complete, Web of Science, ABI/Inform, Science Direct, Ethos + Google scholar

Terms used: "Product Cost Management", "Cost Management", "Product Cost"

Searched categories: Title, Abstract or Keyword

Searches with variations of the term "product cost management" such as "management of product cost/s", "managing product cost/s", "product costing system", "product cost accounting" have led to the same finding.

Product management, with its roots leading back to Procter&Gamble in the 1920s, was developed to overcome the drawbacks of a purely functional organisation, putting focus on integrating the relevant disciplines in order to solve business problems (Perri, 2018). Steadily emerging, it is now a predominant management concept to organise activities or companies in various industries, regardless of their size (Aumayr, 2013, p. 2; Edin & Östberg, 2015).

Product management practice demands solutions for PCM, consulting firms offer services and tools in the area of PCM, which indicate the relevance of this field in practice (Arthur D Little, 2014; Brown, 2013; Busa, 2011; Harman, 2011; Hiller, 2019a, 2019b; Schröder, 2013; Schuth, 2013). This is also indicated by Schicker (2013), pointing out that 94% of industrial enterprises hold the opinion of a high and even increasing relevance of a professional cost management in the product lifecycle.

Considering this importance of products as cost objects, it seems promising to narrow down the preliminary focus of the research on PCMS 'only' instead of any cost management system, which then would have to incorporate all cost objects. This, in turn, would carry a risk to overload any research topic at this point in time. At the same time, the new focussed starting point informs the overall research goal as to develop a normative theory on product cost management as well (figure 23).

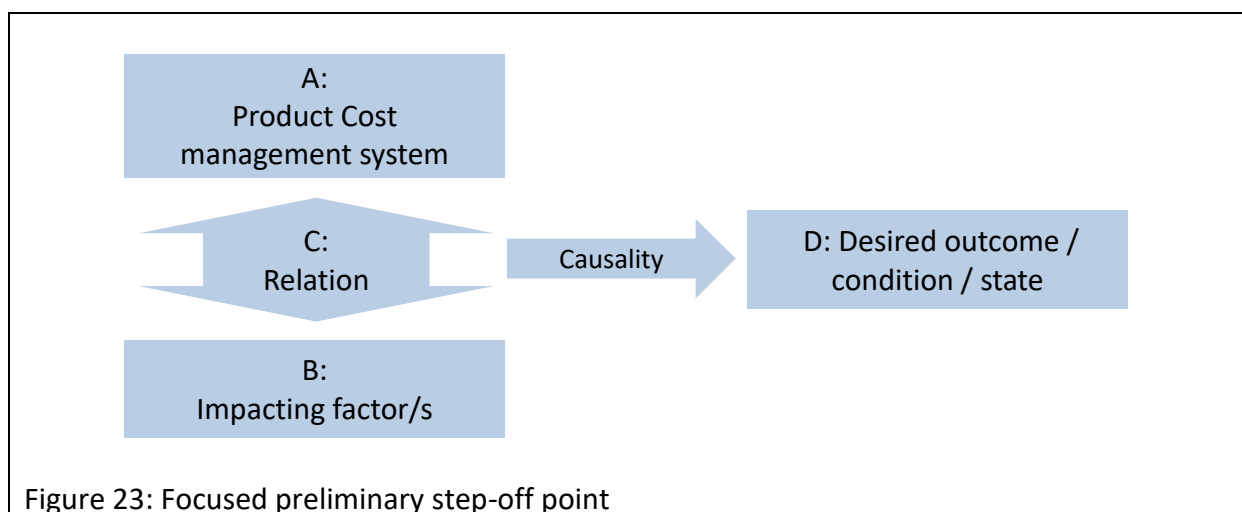


Figure 23: Focused preliminary step-off point

In order to develop the research goal, the above-mentioned key findings and spotted gaps in current knowledge should be further narrowed down, problematised and reflected against managerial needs to support a thesis in business administration with meaningful contribution to knowledge, means theory and practice (Baptista et al., 2015; Sandberg & Alvesson, 2011). As indicated earlier, to justify the scoping literature review on cost management being conducted in a traditional way to fulfil the formal requirements of a DBA, attention in the thesis is drawn on both aspects: contribution to theory and practice.

Although ultimately addressing the contribution debate only in chapter 5.3 (p. 306) to include also the contribution which derives from the chosen research design, the formulation of the research objectives should already support arguments in favour of a theoretical and practical contribution and guide the research process (Bryman & Bell, 2015, p. 88). The reason for this is the ongoing debate about the relevance gap in cost management research (Al-Khater, 2015; Sulaiman, Ahmad, & Alwi, 2004) as one part of the postulated relevance gap in management science (Fincham & Clark, 2009; Hodgkinson & Rousseau, 2009) Consequently, the research topic with its research aim and objectives should be practically relevant.

So, if the focus on single, isolated spots of cost management has not succeeded in obtaining managerial attention and appreciation, one reason can be seen that principle, overarching or fundamental aspects have not been addressed or questioned so far. A more challenging general and overarching approach, based on explicitly questioned assumptions, might overcome the hurdle.

Synthesising the scoping literature review on cost management, it revealed that there is a doubt that cost management systems are already sufficiently described using distinct/ commonly accepted categories and attributes which informs the key drivers to shape the research topic. Although one can start with research acknowledging the existence of different cost management systems there is, at least cautiously formulated, the **first key driver (1)** for the research, the lack of conformity concerning cost management systems and their constituting elements.

Furthermore, in cost management there is the conviction that cost management systems should be dependent on (strategic) factors (see chapter 2.4.1.3, p. 34 and 2.4.2, p. 38). After literature review and critical evaluation by problematisation and gap-spotting this fundamental conviction can be seen as the prevailing opinion but should be challenged and consequently informs the **second key driver (2)** to direct the research goal towards the lack of clarity regarding which (strategic) factors impact upon the cost management systems.

In doing so, the demand for normative research in cost management is included as the assumption that cost management systems and their influencing factors should be linked in order to reach a desired outcome implicitly serves as a rationale of the thesis. However, as the **third key driver (3)**, the literature review indicated the ambiguity relating to the nature and extent of the relation between cost management systems and the potential impacting factors.

Finally, as the **fourth key driver (4)**, although product oriented organisational forms are common practice in companies, the low attention of academia on product cost as a key cost object has been demonstrated. On the one hand, this focal point indicates more of an overlooked, or at least under-researched, research area in terms of a neglected spot.

On the other hand, this focussing with respect to cost objects is an attempt to ensure the feasibility and practical contribution of the research. Feasibility should be ensured as the absence of focussing on a cost object would bear the risk of complicating the investigation as potentially there are interfering aspects between different cost objects such as product cost, project cost, personnel cost, overhead cost, etc.. The aspect of practical contribution could well be supported by the potentially more specific outcome of the research compared to research incorporating all cost objects.

Merging these four key drivers (figure 24 on the next page), the ultimate research goal crystallises. The problem of which potential product cost management configuration or system to manage product costs should be chosen or implemented taking into account any potential influencing factor has not been solved so far. This is a specific managerial problem, as there is no decision aid to select and the implement the 'right' PCMS to-date.

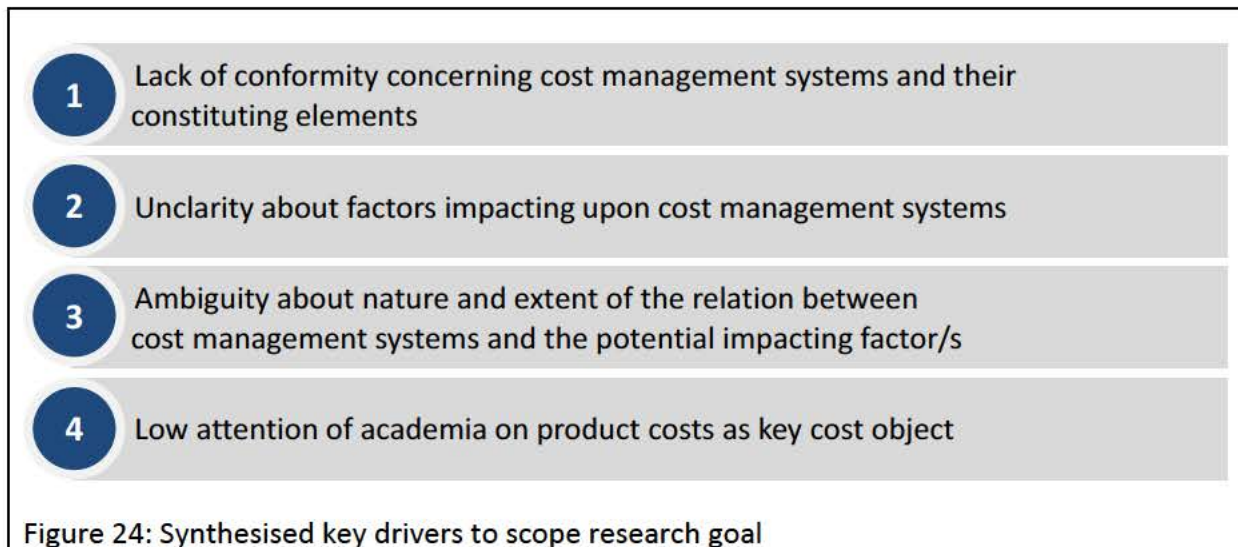


Figure 24: Synthesised key drivers to scope research goal

No matter who is responsible for a PCMS, the person is left alone with the rationale only or receives confusing ambiguity from isolated research aspects. So, finally, the research goal is to develop a normative theory on how to design PCMS in relation to an adequate influencing factor (figure 25).

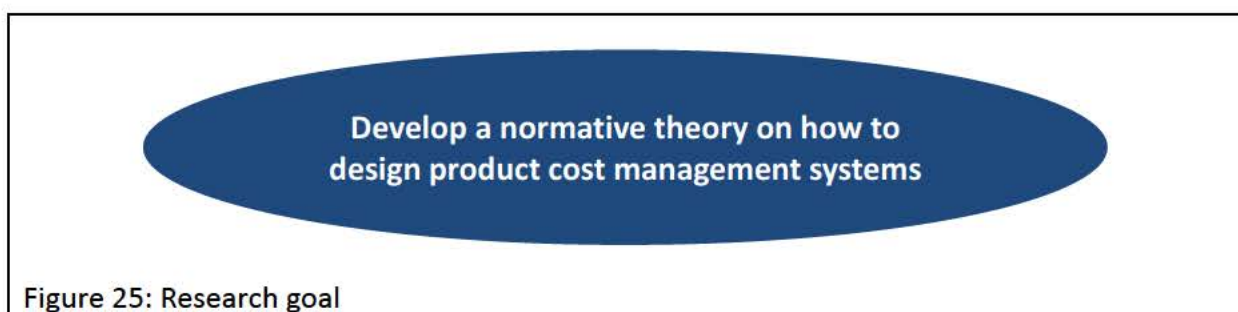


Figure 25: Research goal

In doing so, the relation between the prompting factors and cost management system itself is questioned, and so are the descriptions/definitions of cost management systems and influencing factors, forming together the integrative convergent part of the research in contrast to the identified divergent and isolated character of cost management research to date. In parallel, the demand of normative research as well as the attempt to overcome the relevance gap are incorporated by aiming for a specific decision aid for managers and by focussing on product cost.

The latter aspect also points towards the general characteristic of the targeted theory. Next to the normative character, aspects of level of abstraction, relevance, coverage, scope or

domain can also already be sketched. According to Merton's (1968) concept of middle-range theory, the research goal of the thesis is neither grand theory or even paradigm, nor a narrow bounded filled gap but rather focuses on a specific aspect of organisations that are abstract and concrete enough to not claim universal application but to be substantive for influential decision making (Moore, Johns, & Pinder, 1980; Roy, 2014; Smith & Liehr, 2014; Soltani, Ahmed, Ying Liao, & Anosike, 2014, pp. 1012-1017). What is aimed for is a normative theory of product cost management.

2.5.3.2 Derived research objectives and questions

With the definition of the general research goal in chapter 2.5.3.1 the research had its transparently derived point of departure. However, the clear direction of the continuing research (including data collection and analysis) had to be given by the more specific research objectives and questions while progressing with the narrowing of the research topic (Blaikie, 2009, pp. 56-78; Blaikie & Priest 2019, pp. 67-86; Bryman, 2007). So, to be more specific, the research goal was broken down into three distinct research objectives and corresponding research questions.

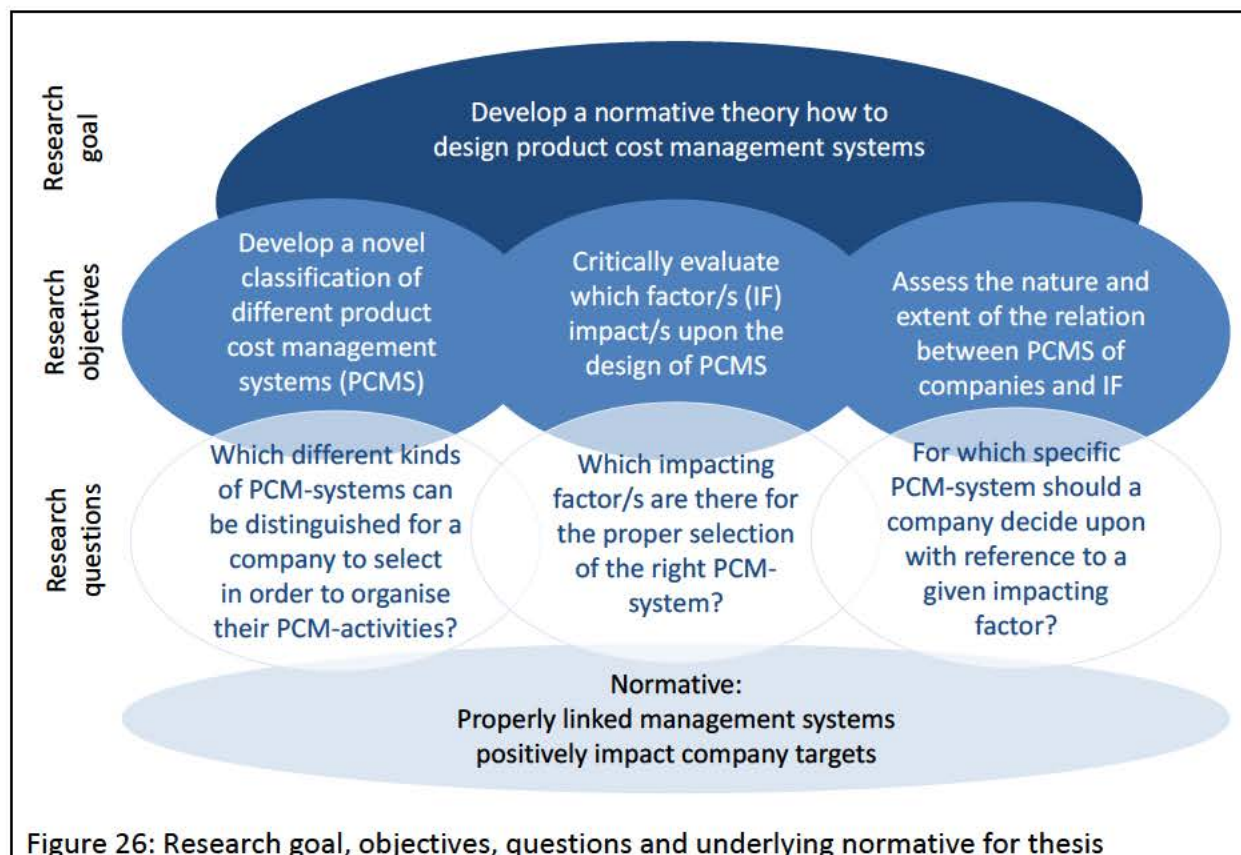
In order to develop a normative theory on how to design PCMS in relation to a 'to-be-defined' factor, one first needs to have a potential classification of different PCMS which are distinguishable from each other as alternatives to choose from. As the assumption that different cost management systems are already sufficiently described through dichotomous alternatives was challenged, this played a central role in this research project and constituted the first specific research objective which was to develop a novel classification of different PCMS. This answered the research question: **Which different kinds of PCM-systems can be distinguished for a company to select in order to organise their PCM-activities?**

Next to this first objective (putting the PCMS into focus) the potentially relevant factor impacting upon the PCMS had to be juxtaposed in opposition (as already done having defined the step-off point) and investigated as the second core element of the research. As little was known about this specific prompting factor, there was the need to investigate the

impacting factor as central objective of the thesis. Therefore, the second research objective was to explore which factor(s) impact(s) upon the design of PCMS answering the research question: **Which impacting factors are there for the proper selection of the right PCMS?**

Finally, when having achieved clarity about both basic constructs, the PCMS on the one side and the impacting factor on the other side, the binding construct, the relation between both, had to be determined. Hence, the third research objective was to assess the nature and extent of the relation (R) between PCMS of companies and the impacting factor/s. This answered the question: **Which specific PCM-system should a company decide upon with reference to a given impacting factor?**

All three research objectives together contributed to the research goal to develop a normative theory on how to design PCMS (figure 26). The underlying normative of the research goal and research objectives, to complete the scoping of the research topic, was that an adequate relation between identified influencing factor and PCMS positively impacts company targets (Congden, 2005; Donaldson & Joffe, 2014; Zott & Amit, 2008).



In recognising this, the step-off point could be finalised. Taking the research goal, objectives and corresponding research questions as formulated, the step-off point contained four directly related and major elements: PCMS, impacting factor/s (IF), relation (R) as well as the desired outcome which builds up the normative and was not focus of the study itself.

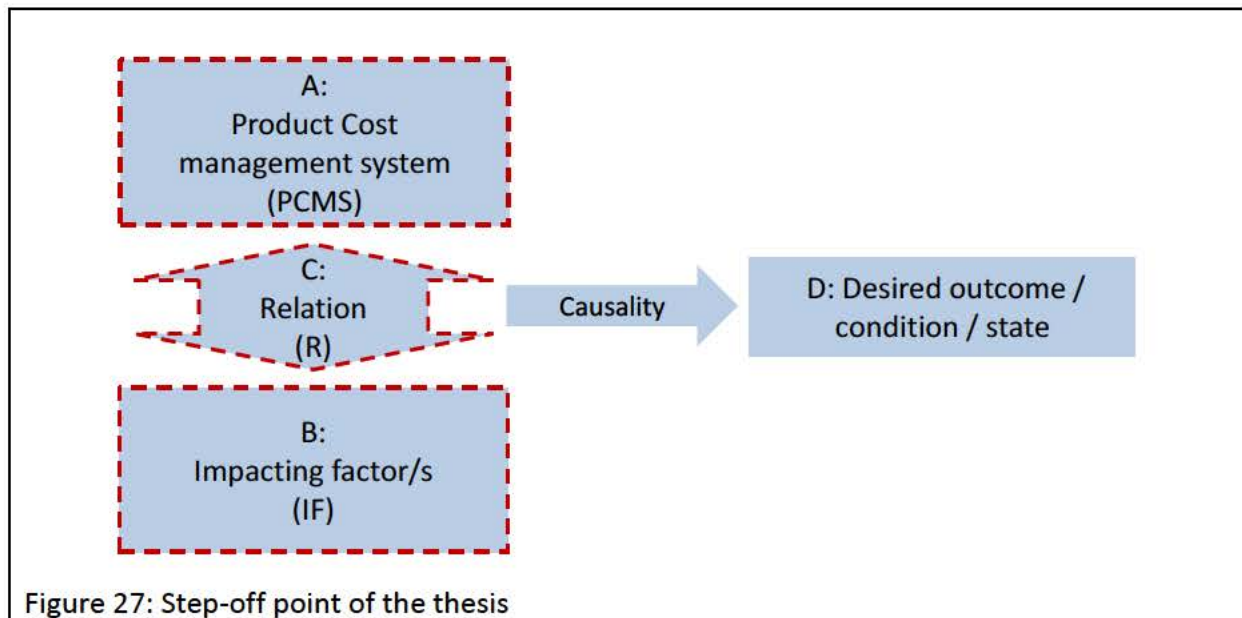


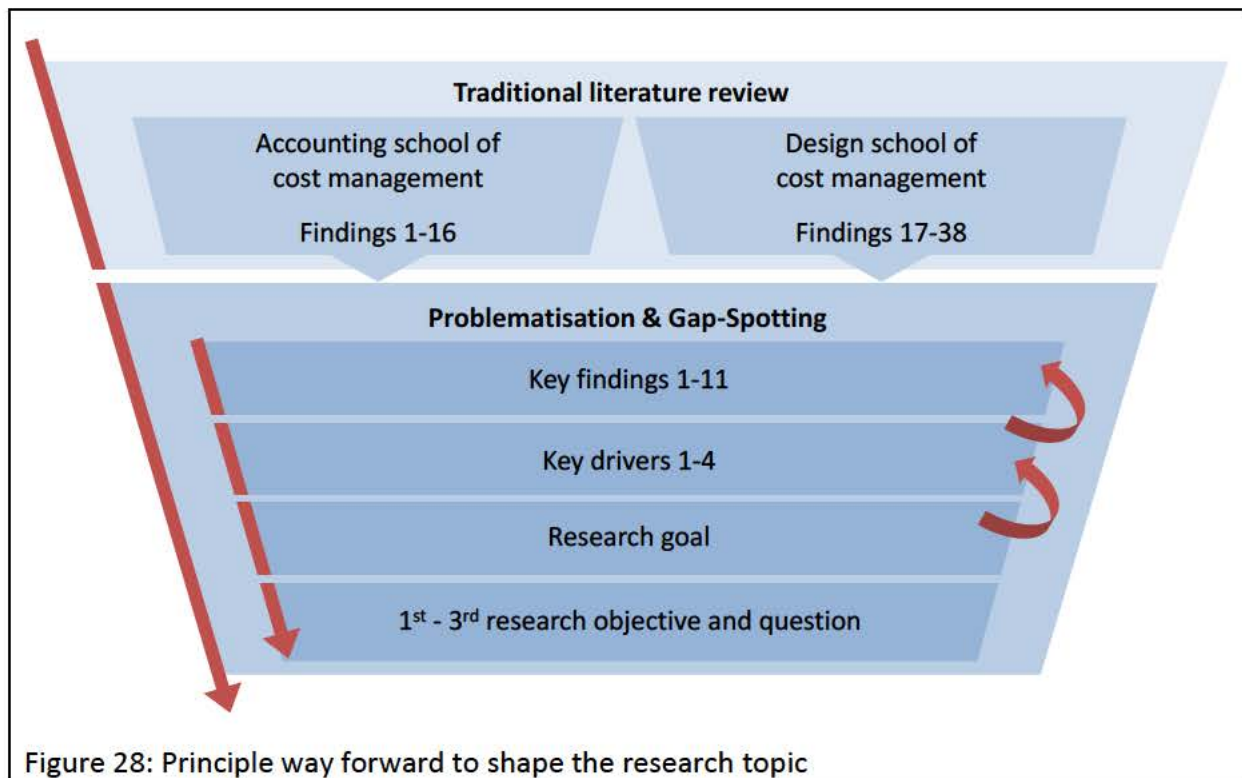
Figure 27: Step-off point of the thesis

Due to its simplicity, yet appropriateness, this starting point guided the design of the research, showing the rationale of the questions under investigation. The framework addresses the first research objective, the classification of PCMS as part A and the identification of influencing factor/s as part B. Both concepts then are related with part C, which should also be assessed in terms of nature and extent. All three concepts are explicitly dealt with in the thesis, this is why they are highlighted by a red dotted line. The fourth element of the framework is no longer indicated with a red dotted line due to its implicit nature as underlying normative only, without intention to be considered through dedicated investigation.

As will be developed in chapter 3 and shown in 5.3.4 (pp. 324-326), an extra contribution to knowledge of the thesis was delivered by the chosen research design and methodology, a Critical Realist Grounded Theory approach. To highlight this and to ease communication of the thesis' results and procedures (Tucker & Schaltegger, 2016), means faster recognition of the methodology, the methodological aspect was added to the thesis' title.

2.6 Summarising reflections on shaping the research topic

As outlined in chapter 1.2 (thesis' structure, pp. 3-4), chapter 2 ought to develop the research goal. Stepping aside from the original intention in order to potentially find another perspective on how the research topic was actually derived, four main aspects are recognised (figure 28).



First of all, the scoping literature review with a traditional narrative approach has brought to the surface 38 findings in two schools of thought of cost management (appendix 1, pp. 410-414). Recognising a lack of conformity of terminology in the research and considering the initial ignorance about the research area this early decision was meaningful. Not knowing what to search for or not knowing which different meanings of same terms or same meanings of different terms might exist, a systematic review would have been predestined to fail.

Secondly, the findings derived from the literature review served as the focus points to develop the starting point as well as to narrow down the research goal, objectives and questions through steady synthesis to identify key findings (for cost management overall) and key drivers (for straight impact on the research goal) as outlined in chapter 2.5.3 above.

This demonstrates a rigorous procedure enabling an audit trail not only on how the research goal was developed and how it is placed into context but also on preconditions or the degree of novelty of the research topic.

In doing so, as the third feature, a problematisation approach was emphasised over the more conventional gap-spotting method attempting to overcome the relevance gap in cost management (chapter 2.5.1, pp. 49-58). Based on the finding about currently more incremental contributions in cost management research (via investigation of single and isolated aspects) problematisation aspects indeed have led to a more integrative research goal of a potential middle-range theory which could be expected to turn out to be influential for theory and practice. Nonetheless, this adaption of the way forward clearly shows the dynamics of research with the permanent need to review whether any insight gained so far implies an adaption of the intended way forward.

Finally, not only was the research goal developed in the way described but also the step-off point was established in parallel, finding a feasible level of assumption questioning in order not to irritate the audience. In contrast, it is strongly interlinked with the research goal which clearly shows the convictions kept or challenged and suggests an acceptable yet stimulating starting point for the research.

Not identified as a key theme up to this point is the situating of the thesis in relation to any theoretical framework(s) (Grant & Osanloo, 2014), even though the first hints were already obvious (organisational theory) or even have been made explicit (Grounded Theory). As with GT's delayed literature review it is correspondingly a delayed integration into extant theory towards the end of the thesis study (chapter 4.7, p. 235).

Having shaped the research goal with the inherent objectives and questions, content-wise a first milestone of the research is thus reached. Nonetheless the second milestone is neither less important nor less ambitious as "the challenge is to transform a novel research question into a valid study design" (Aslam & Emmanuel, 2010, p. 50), which will be done in chapter 3.

3 Defining the basic research design

3.1 Outlining a brief overview of chapter 3

Having defined the research goal and questions in chapter 2.5.3, which represent the ‘what’ of the thesis, chapter 3 describes and justifies the ‘how’. In doing so, the process moves down the Martini glass to further narrow the scope of the research project.

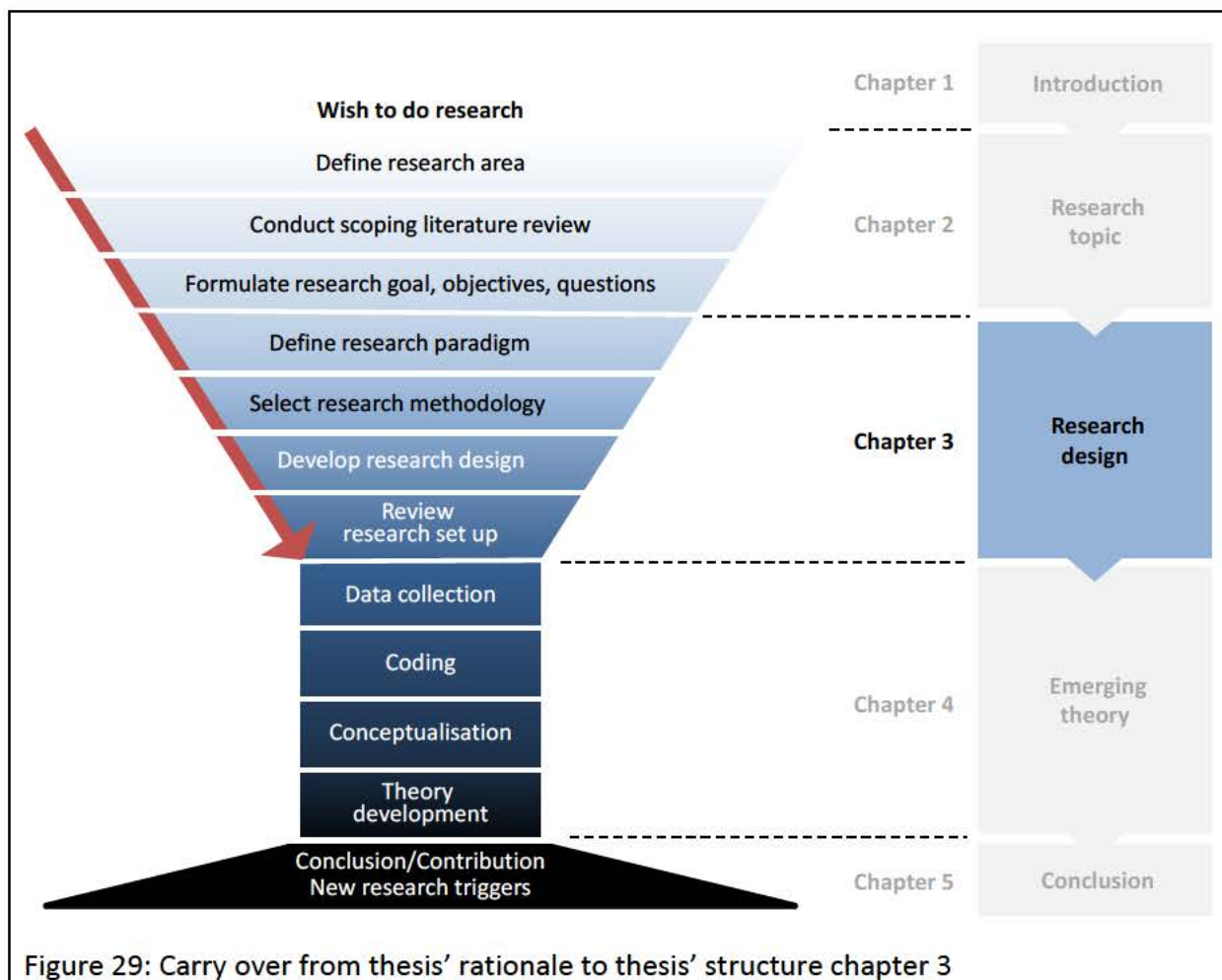
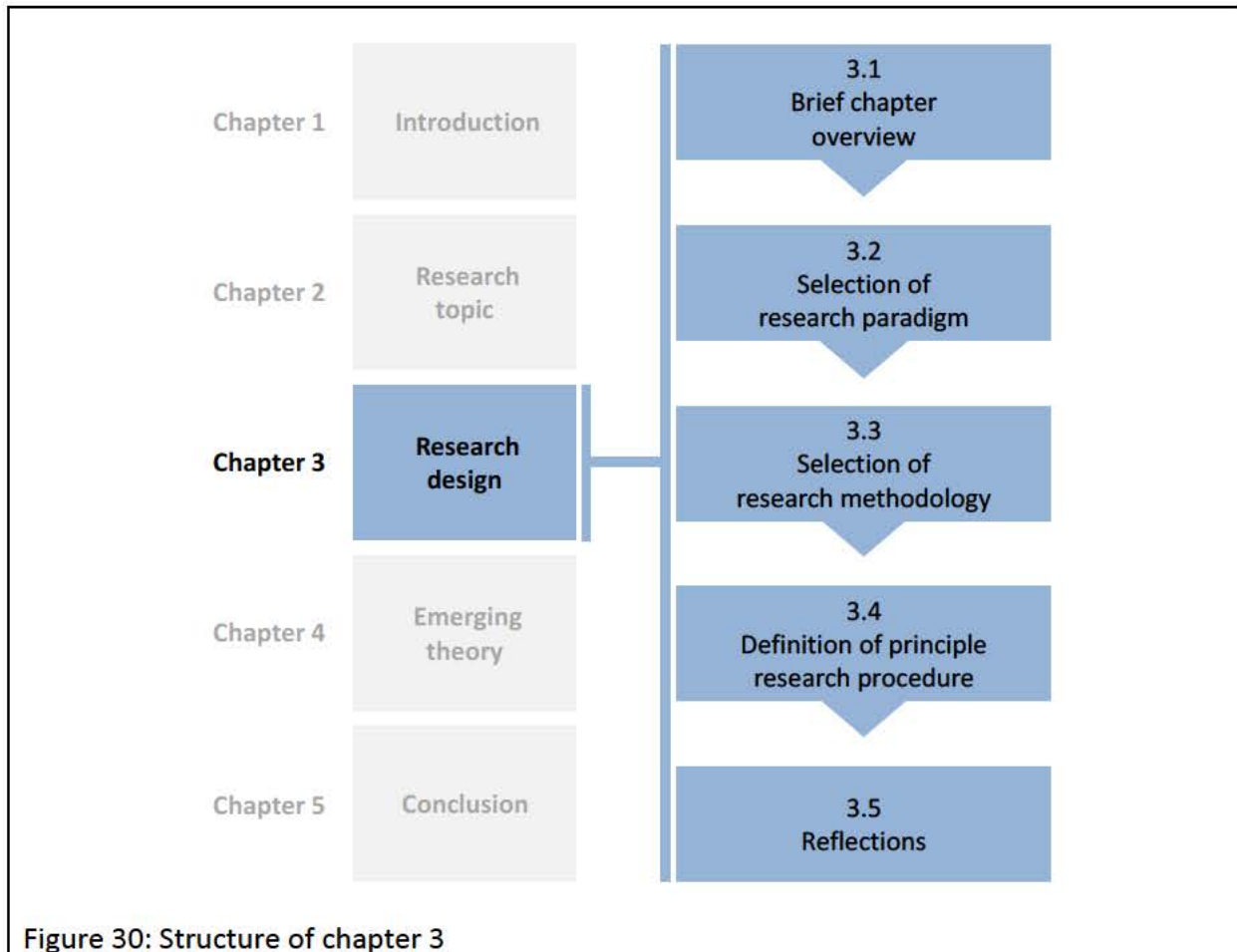


Figure 29: Carry over from thesis' rationale to thesis' structure chapter 3

Therefore, the goal of this chapter is to develop the thesis' basic research design. As “the function of a research design is to ensure the evidence obtained enables us to answer the initial question as unambiguously as possible” (De Vaus, 2001, p. 9), it simultaneously forms the second critical milestone of the research (Denscombe, 2014, p. 3; Maxwell, 2013, pp. 1-3). This criticality is echoed in the literature focussing on either general overviews and introductory explanations (Gaus, 2017; Saunders et al., 2016, pp. 122-124) or on the particularities of certain research design (sub-)aspects (Biedenbach, 2015; Etikan, Musa, & Alkassim, 2016; Ketchen Jr, Craighead, & Cheng, 2018).

Critically reviewing the literature on research designs, it becomes obvious that in regards to this aspect of the research process there is a lack of common terminology with similar, let alone the same use of the terms such as 'research design', 'research set up' or 'research strategy' (Mason, 2018; Neuman, 2014).¹²



This underlines the necessity to explicitly demonstrate the rigour of the research design by making the process transparent to the reader (Cheek, 2008; Wahyuni, 2012, p. 69). As outlined in chapter 1, the development of the research design is principally informed by Holden and Lynch (2004) and Aliyu et al. (2014). The latter authors (as well as Crotty, 2015, pp. 2-6; O'Gorman & MacIntosh, 2015) advocate an appropriate matching of all different research steps, the former authors (as well as Žukauskas, Vveinhardt, & Andriukaitienė,

¹²Similar unclear is the inclusion of aspects into those terms, such as methodology, methods or techniques, which are related but different (Lystbaek, 2017; Opoku, Ahmed, & Akotia, 2016), yet equally important in terms of developing the research design as a whole.

2018) promote a research-goal-related foundation of research designs and only subsequently defined research methods. In doing so, the basic research design includes:

- the research paradigm
- the general research methodology
- application of a meaningful sequence and succession
- matching between all aspects

Consequently, the development of the research design will be founded on the selection of an appropriate research paradigm in chapter 3.2 (critical realism). The methodological aspect of the research planning will be carried out in chapter 3.3 (GT as methodology) and 3.4 (CRGT's essential research principles), followed by summary reflections in chapter 3.5.

3.2 Embedding the research into a critical realist research perspective

In agreement with Connell and Nord (1996, p. 408) there is no general concept of right or wrong for research philosophies, so choices have to be justified in each individual research case (Aliyu et al., 2014, p. 87). Therefore, this chapter has the goal of defining and justifying the research philosophy for the doctoral dissertation.

Sub goals are used, firstly, to outline the author's understanding about the different perspectives (Lee & Lings, 2008, pp. 49/50). Secondly, the established understanding should help to advocate the selected research perspective and the choices related to its alternatives (Johnson & Clark, 2006). Thirdly, it should open up the mind and enhance confidence in the selected approach (Holden & Lynch, 2004, p. 406) in order to ensure the quality, relevance and rigour of the research that is undertaken (Aldag & Fuller, 1995; Schön, 1995). Finally, following the ambition to close the communication gap of management research, the derivation of the research perspective has to be formulated in a way that is comprehensible to practitioners who are unfamiliar with this rather theoretical topic (see chapter 1.2.2.1, pp. 11-12).

Matching these goals, the way forward is to first provide an overview of research paradigms, beginning with a historical account followed by a brief description of principle

alternative research perspectives, indicating the criticality of the decision (figure 31). Central to the definition of the research paradigm then is a paradigm simulation indicating the impact of the paradigms upon the research topic (Morgan, 2014, p. 1047).

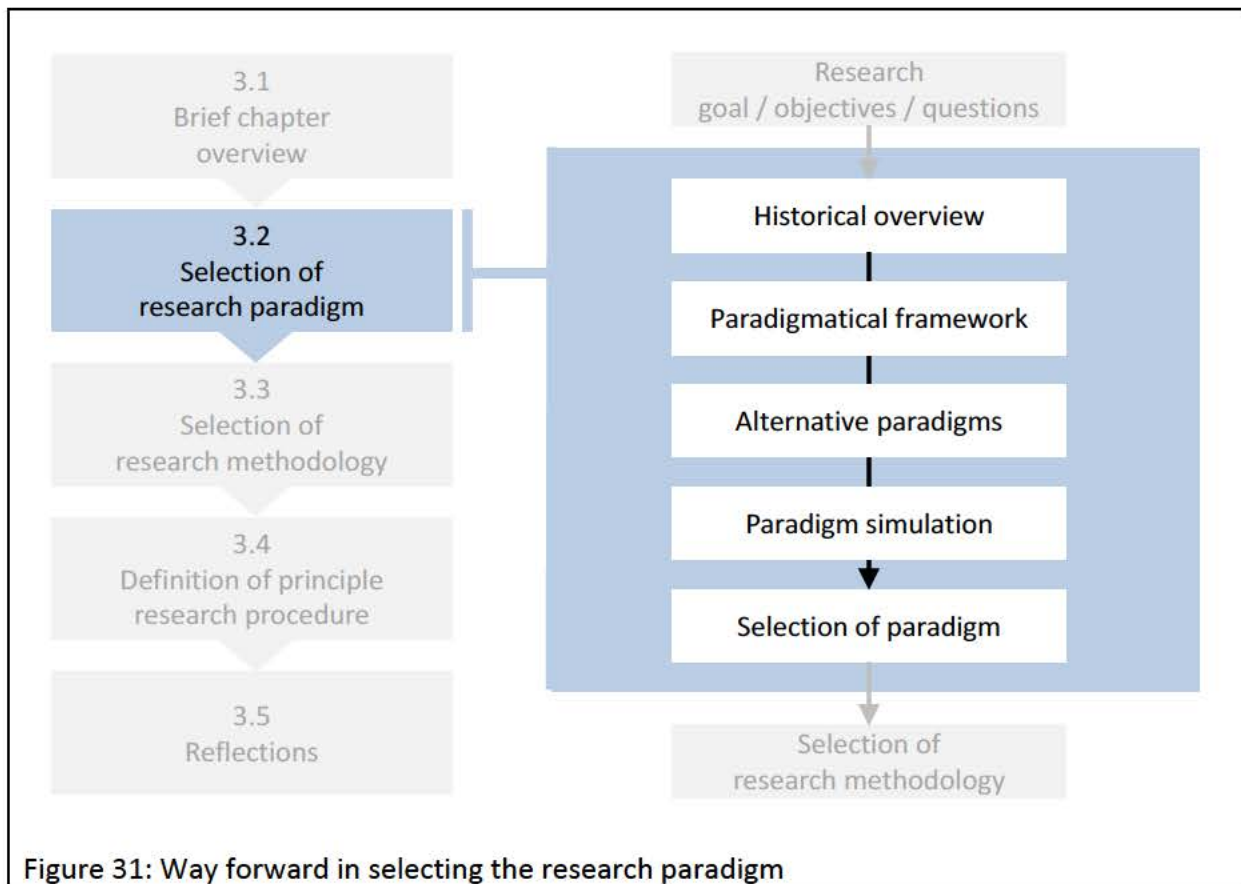


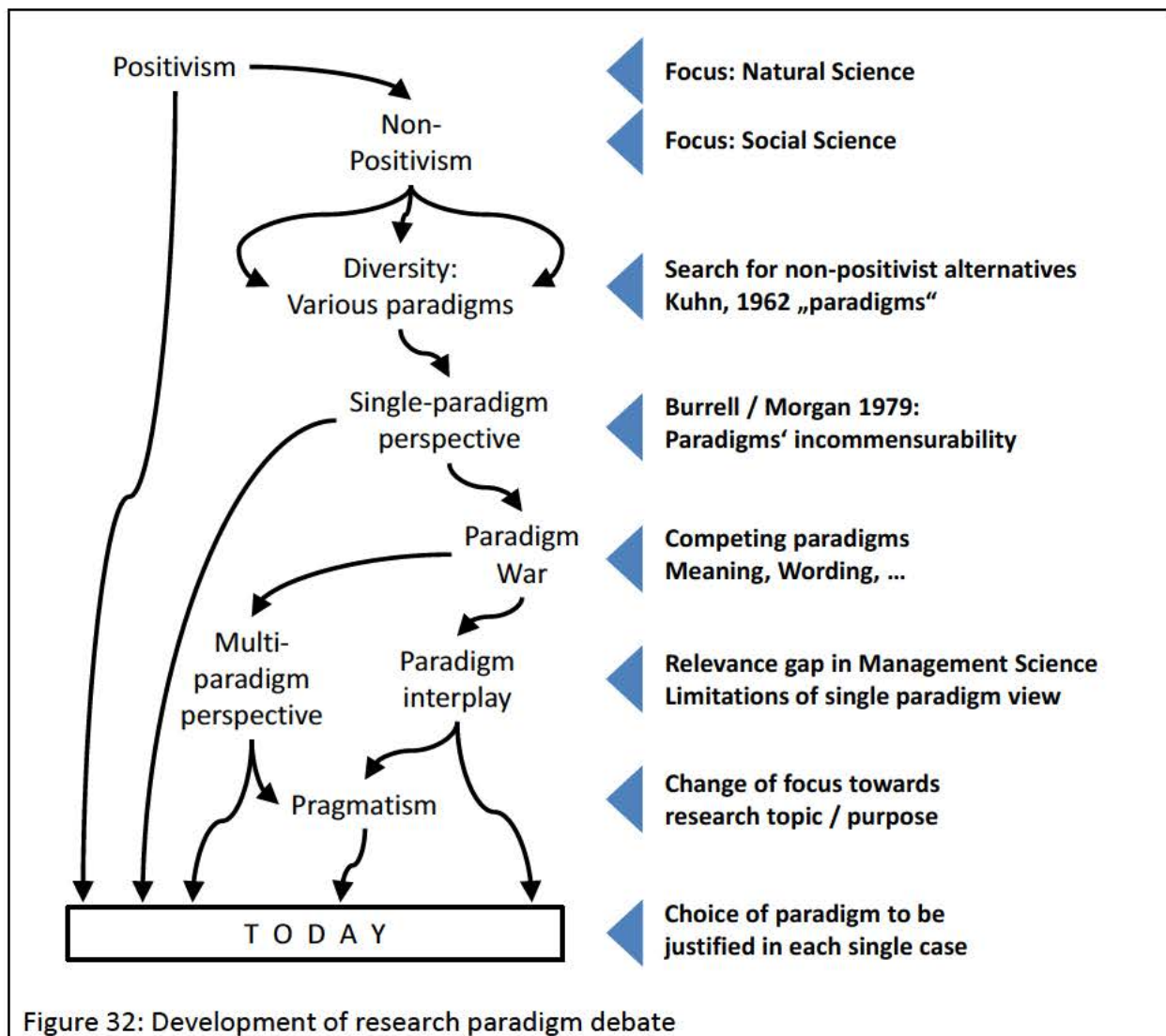
Figure 31: Way forward in selecting the research paradigm

3.2.1 Brief overview about research paradigms

3.2.1.1 Historical view on research paradigms

For the purpose of this thesis a short summary of research paradigms and how they emerged is given (figure 32 below) prior to the more detailed exploration of the major research perspectives in order to develop a mutual understanding between the reader and the author's wording.

As Goles and Hirschheim (2000) state, there are "two essential problems in science" (p. 250), the questions of "how do we know what we know" and "how do we acquire knowledge", which are addressed by different research perspectives.



Whereas in natural science the positivist view is predominant, in social science (including management research) the situation is more opaque and is therefore subject for debate (Fendt et al., 2008). The positivist view claims that there is an objective reality/truth that is independent from the researcher, which can be measured in order to gain knowledge, whereas non-positivists, especially in social science, argue that knowledge is conditional, relative and therefore subjective (Aliyu et al., 2014, pp. 81-82). Thus, for social science, post-positivists developed alternative views on research philosophies, thereby trying to create more suitable approaches for research (Aliyu et al., 2014, pp. 83/84).

Seminal works of Kuhn (1962) or Burrell and Morgan (1979) about research paradigms have stimulated controversy and contributed to ongoing debate about single competing research paradigms as alternatives to the positivist view, cumulating in what is nowadays called the

“paradigm war” (Datta, 1994; Klaes, 2012; Shepherd & Challenger, 2013). The meaning of a paradigm in Kuhn’s sense is to share basic assumptions about core beliefs and values in research as well as “unspoken norms, taken-for-granted assumptions, and implicit codes of conduct” (Anderson, 1998, p. 32).¹³

As one trigger for the intensive ongoing debate (Lincoln, Lynham & Guba, 2018) regarding the concept and advancing of research paradigms was Burrell and Morgan’s claim about the ‘incommensurability’ of (single) paradigms (Shepherd & Challenger, 2013, p. 225), two ways to overcome this have been added to the paradigm debate: multi-paradigm perspectives (Gioia & Pitre, 1990) and paradigm interplay (Cupchik, 2001; Schultz & Hatch, 1996). Both views claim that a single research perspective might be too narrow to comprehensively cover the complexity of social reality (Feyerabend, 1985; Willmott, 1993).

Tashakkori and Teddlie, finally, see pragmatism as an attempt to make use of “whatever philosophical [...] approach [...] works best for the particular research” (1998, p. 5) to end the pointless paradigm war (Goles & Hirschheim, 2000). This position of pragmatism (Dewey, 1916; Peirce, 1905; Scheffler, 2013) is well in-line with the practice-oriented nature of the thesis, emphasising the contribution to practice. The way forward to select the guiding research paradigm for the research topic in the next sections, therefore, makes use of the plausible link between pragmatism and practice-orientation (Simpson, 2009).

3.2.1.2 Framework to describe research paradigms using ‘ologies’ and impact on research

Although Kuhn’s introductory publication paradigms have been (and still are) heavily debated, to-date, there is still no common agreed definition but rather a widespread, sometimes confusing, use of the term ‘paradigm’ with varying characteristics and different meanings (Elder-Vass, 2022, p. 261; Guba, 1990a, p. 17; Killam, 2013; Mkansi & Acheampong, 2012). This roots back to Kuhn himself, who used the term with more than 21 different meanings (Masterman, 1970). In addition, as Hassard (1988, p. 248) states, synonyms for the term ‘paradigm’, such as ‘perspective’, ‘school’, ‘discipline’ or ‘worldview’

¹³Hence, Baum and Dobbin (2000, pp. 390-391), referring to authors such as Pfeffer (1993), list major benefits of a paradigm in science, which can be summarised as the facilitation of scientific progress, e.g. in terms of easier communication, evaluation of results or coordination of research activities.

have randomly been used and applied, reflecting the “individual nature of paradigm-building” (Lincoln, 1990, p. 67; Charmaz, 2008). Taking up this practice, within this thesis paradigm, philosophy, and perspective are used as alternating synonyms, whereas other terms are avoided for the purpose of simplification.

Subsequently, it is necessary to clarify terminology and the meaning of paradigms to avoid confusion or misunderstanding (see as an example Amaratunga & Baldry, 2001). Also, returning once again back to the main thesis’ characterising trait, contribution to practice, the non-dogmatic approach of a paradigm simulation (similar: Ganesha & Aithal, 2022) is used as decision aid for the selection of the research paradigm.¹⁴

Resuming the two essential problems in science concerning knowledge and how to gain it, research paradigms can be described mainly using four different ‘ologies’ called the philosophy of science (e.g. Gannon, Taheri, & Azer, 2022; Killam, 2013; Neuman, 2014, pp. 91-124; Rehman & Alharthi, 2016; Scotland, 2012):

- Ontology
- Epistemology
- Axiology
- Methodology

Ontology is consistently defined as being concerned with the scientist’s assumptions about “the nature of reality” (Lee & Lings, 2008, p. 11; Saunders et al., 2016, p. 127; Easterby-Smith et al., 2018, p. 64). In doing so, it forms the basis for most debates on research perspectives and is the core of a researcher’s set of beliefs. Saunders et al. (2016, p. 128) simplify the ontological debate, being framed between objectivist and subjectivist views. Proponents of the objectivist view, which was popularised by Comte (Crotty, 2015, p. 19), claim that the nature of reality is independent of our individual perception, so that an objective reality exists ‘out there’ (as a dictum). Advocates of the subjectivist view, on the

¹⁴This practical approach goes back to Dewey’s and Peirce’s pragmatic-yet-systematic approach on inquiry to consider or simulate potential alternatives to investigate a problem, evaluate the occurring differences and to decide afterwards on the most promising alternative (Feilzer, 2010, p. 10; Morgan, 2014, p. 1047; Scott & Briggs, 2009, pp. 228-229).

other hand, hold the opinion that reality is (mind-inter-)dependent and created by human perceptions (Holden & Lynch, 2004; Sayer, 2000, p. 2).

Epistemology describes ways and methods for inquiring into the nature of the world, being stereotyped with positivism and constructionism (Easterby-Smith, Thorpe, & Jackson, 2013, p. 21/22). Remenyi, Williams, Money, and Swartz (1998, p. 32) explain positivism as aiming for an observable and measurable inquiry of the reality, leading to causality, comparable with outcomes of the natural sciences. The opposing stereotype, constructionism, places emphasis “on the ways that people make sense of the world - especially through sharing their experiences” (Easterby-Smith et al., 2018, p. 70) leading to the appreciation of different interpretations and meanings of individuals.

Axiology should be aligned with the other ‘ologies’ and addresses “in essence [...] the ‘aims’ of your research”, “the overriding goal” (Lee & Lings, 2008, p. 11/59), what is valued by the researcher and whether or not the researcher’s values play an important role in the research (Saunders et al., 2016, p. 128). In a nutshell, a researcher either aims for a value-free explanation/prediction of the reality, or for a value-bound understanding/description of the reality, taking a matching etic or emic position towards research (Wahyuni, 2012, p. 70).

Methodology finally completes the description of different perspectives by most commonly distinguishing, amongst others, quantitative and qualitative approaches (Bryman & Bell, 2015; Lee & Lings, 2008, p. 12) describing two ends of a continuum with mixed method approaches in between but without a ‘discrete’ distinction (Creswell, 2014, p. 3).¹⁵

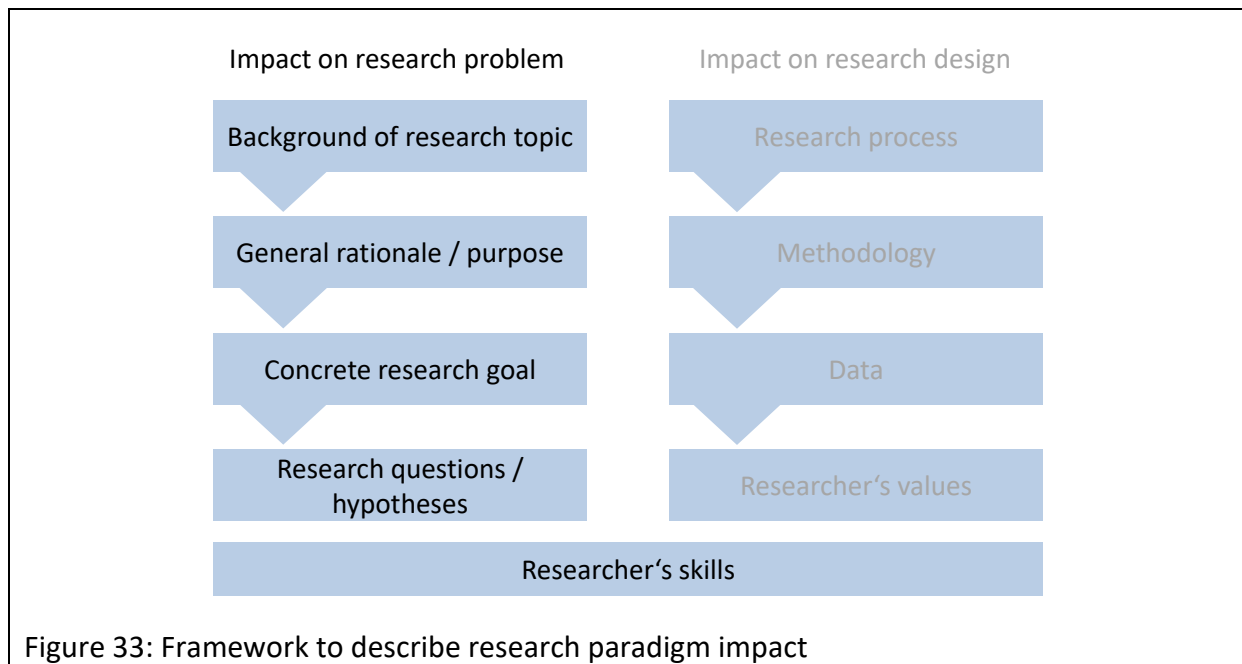
A complete paradigmatic framework would also include its ‘impact on the research design’.¹⁶ At the same time, it can be stated that debates about what aspects to include or omit when outlining the impact of research paradigms are less intense compared to the

¹⁵An alternative scheme to classify methodological approaches is to separate nomothetic ways of inquiry and ideographic methods (Holden & Lynch, 2004, p. 399), the latter one more matching with qualitative, the first one more resembling the quantitative approach.

¹⁶This should take into account that “the practical implications of the disparity between the importance of philosophies and paradigms, on the one hand, for conducting research, and their application, on the other hand” (Mkansi, 2018, p. 278) are ill-kept yet aid the development of transparency with regards to the self-imposed demand to link each research step with the other steps.

paradigm debate itself. Comparing, for example, text book structures/frameworks from Easterby-Smith et al. (2021), Saunders et al. (2016) and Hallebone and Priest (2009), it can be concluded that they share similar and overlapping aspects.¹⁷

Yet, as ‘impact on research design’ is seen as a consequence of the paradigm choice it is excluded from the simulation (grey letters in figure 33).



3.2.2 Paradigm simulation to evaluate major research paradigms

Due to the variety of paradigms/paradigm classifications (e.g. Abbott, 2004, pp. 43-48; Burrell & Morgan (1979), Meredith, Raturi, Amoako-Gyampah, & Kaplan, 1989), the definition of potentially appropriate paradigms is challenging. Condensing major classifications (by looking for commonalities while aiming to identify the most-basic-yet-distinguishable paradigms) from the variety of different research perspectives (Bloomberg & Volpe, 2019, pp. 44-45; Crotty, 2015; Easterby-Smith et al., 2018, pp. 78-87; Myers, 2013, pp. 36-47; Saunders et al., 2016, pp. 136/137; Sekaran & Bougie, 2016, pp. 18-33), three

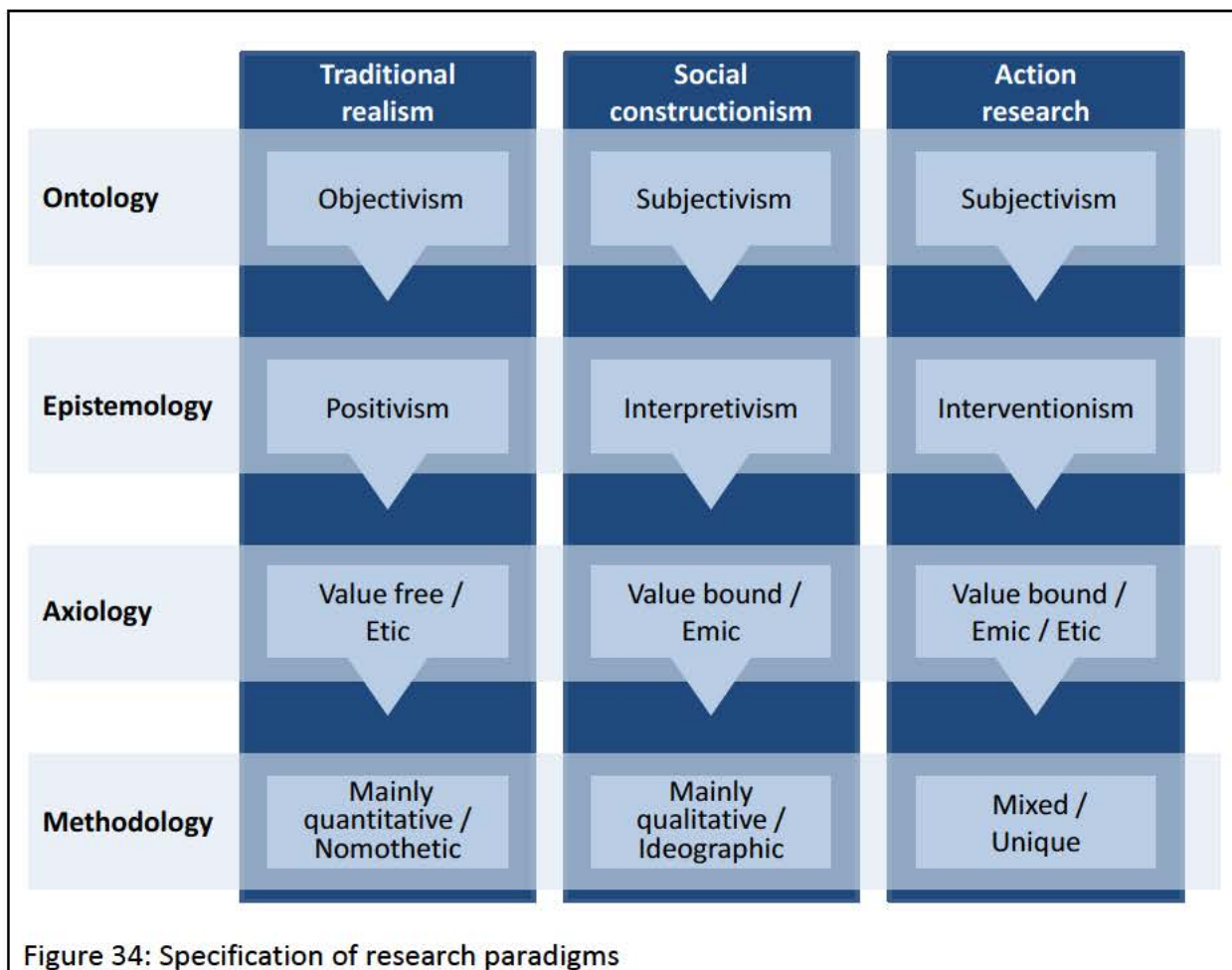
¹⁷Notably, the description of these aspects in the paradigm simulation does not qualify for three distinct and completely cohered research proposals. Conversely, the examples within one paradigm are loosely, if at all, connected in order to elucidate the differences between the different paradigms selected. Nevertheless, it must be underlined that this section on research perspectives aims only to prepare the ground for the successive paradigm simulation. More detailed explanations or debates (e.g. Baert, 2015; Guba, 1990b; Morgan & Smircich, 1980) are left out due to space limitations.

have been selected in order to develop a sufficiently differing glimpse into their specific implications on the research. These three paradigms (and a typical variant of them), for the sake of a pragmatic simplification in this thesis, partially follow Creswell (2014, pp. 6-11).

These are:

- Realism (Traditional realism)
- Constructionism (Social constructionism)
- Interventionism (Action research)

These paradigms can be sketched using the aforementioned 'ologies' (figure 34). For all three, as a first step, a general description of the specific perspective is outlined prior to briefly portraying their impact on the understanding of the research problem to make transparent the differences of the alternatives to inform the subsequent evaluation.



This paradigm simulation accounts for a comparable amount of the thesis for two reasons: Firstly, to fulfil institutional requirements it should support the evidence about the researcher's familiarity with research paradigms (being aware of the consequences the choice of the research paradigm entails). Secondly, to represent a further aspect of the contribution to practice, it aims to develop better understanding within the targeted audience outside academic groups (Bernstein, 1999, pp. 65-66), in terms of the more theoretically-driven debate about research philosophies.

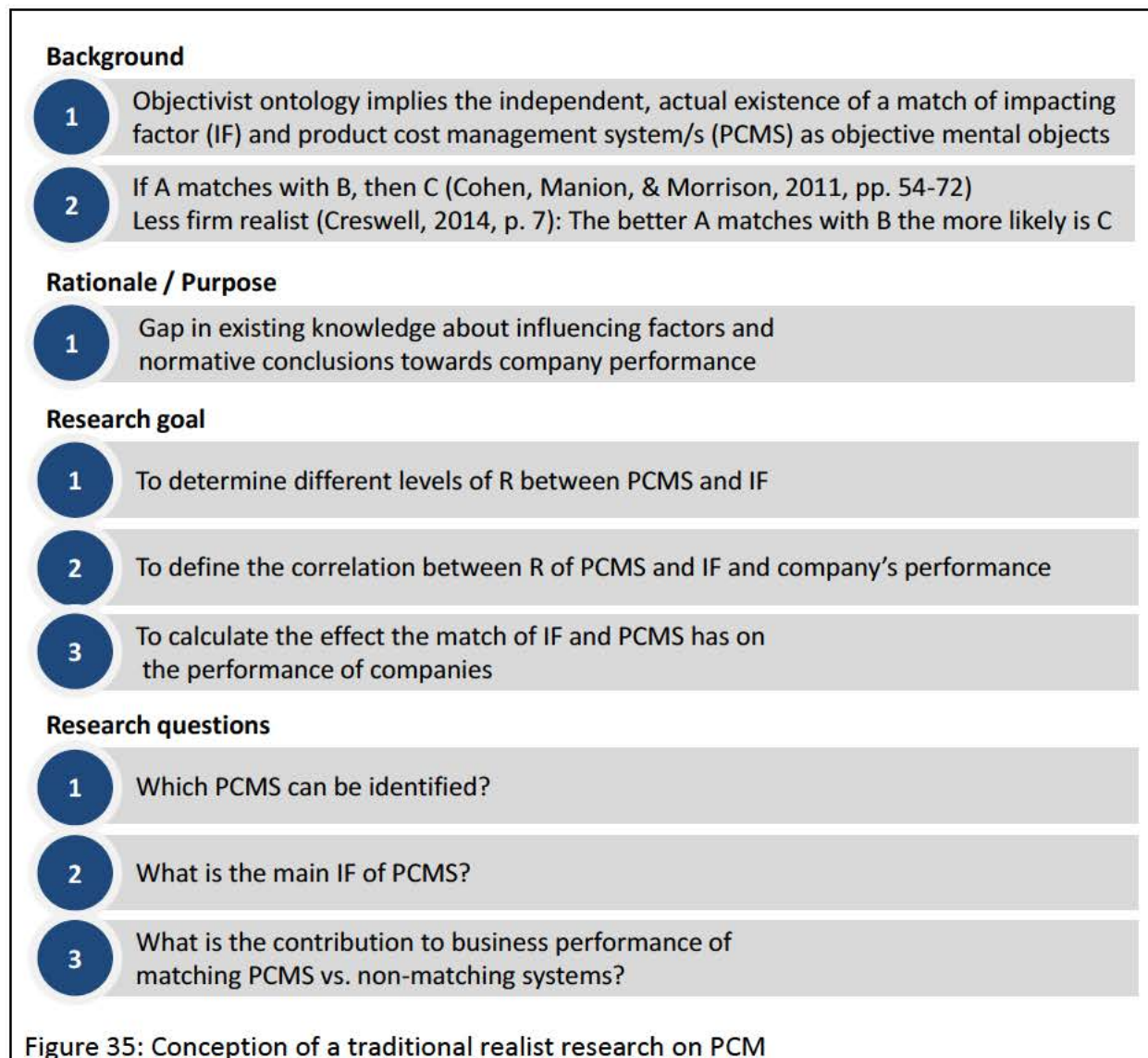
It assumes that philosophical discussions should be made very specific and concrete for non-academics in order to increase the understanding of and confidence in the relevance and impact of related decisions.

3.2.2.1 Description of realist paradigm and its impact on research project

Realism in the social sciences is "an approach with its own specificity [...] developed since the mid-1970s" (Burrows, 1989, p. 46). Although there is an ongoing debate about detailed descriptions regarding a realist's distinguishing features (Donnelly, 2019; Saatsi, 2018), the general realist's profile can be sketched. Ackroyd and Fleetwood state that "entities exist independently of us and our investigations of them" (2000, p. 6), indicating that it is the objectivist **ontological position** which distinguishes the realist view from other paradigms.

Whereas this ontological position coheres realist scholars, the **epistemological stance** is "relatively open or permissive" (Sayer, 2000, p. 32), although not ignored (Ackroyd & Fleetwood, 2000, p. 6). While traditional (classical, naive) realists claim that only observable/measurable phenomena can create knowledge by focussing on causality and law-like generalisations, internal and critical realists hold the opinion that potentially reality cannot be observed directly and only indirect evidence can be generated (Easterby-Smith et al., 2018, p. 67; Wahyuni, 2012, p. 70). Consequently, observations and measurements on the empirical domain can be misleading, so that explanations of mechanisms and contexts are included (Saunders et al., 2016, p. 136; Wahyuni, 2012, p. 70). Similar easing, or not restricting of, cautious realism indicates that only imperfect approximations of reality can be known (Ormston, Spencer, Barnard, & Snape, 2014, p. 5).

In terms of **axiology**, realist perspectives are mostly value-free (traditional, classic, naive realism) but, more seldom, value-laden/aware (critical realism) if the research “is biased by world views, cultural experiences and upbringing” (Saunders, Lewis, & Thornhill, 2009, p. 119). The latter holding an intermediate position between value-free and value-bound as it corresponds to the ontological position that there is an external, objective reality, however it may be individually understood and therefore it may be biased by (co-)researchers.



Indeed, critical realism “acknowledges differences between the real world and their particular view of it” (Sobh & Perry, 2006, p. 1200), while traditional realists, focussing on causality and law-like predictions, consequently have to adopt a value-free, etic position in order to advocate the independence of reality from the researcher (Wahyuni, 2012, p. 70).

In order to create a certain breadth in this thesis, the realist perspective which is most opposed to the constructionist or the interventionist view is selected: traditional realism. Research from a traditional realist position can be sketched (see figure 35 on the previous page) with respect to the background and rationale/purpose of the research as well as the derived research goal and questions.

3.2.2.2 Description of constructionist paradigm and its impact on research project

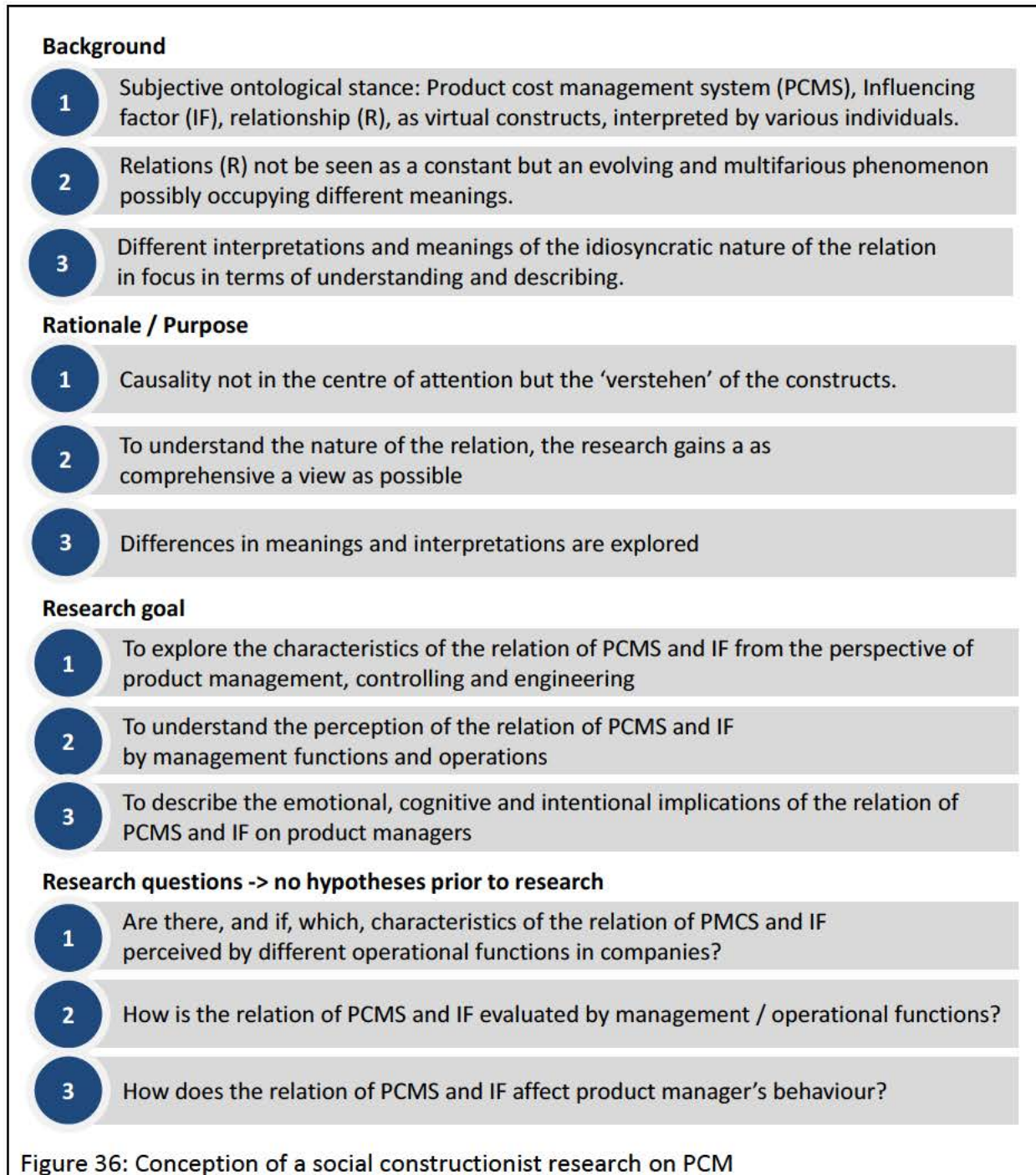
Constructionism as a research paradigm in social science emerged in the 1960s as a response to the criticism which was postulated against the positivist approach (Gubrium & Holstein, 2008, p. 3; Lincoln, 1990). The fundamental difference lies in the subjectivist **ontological position** as opposed to the objectivist view of realism (Saunders et al., 2009, pp. 107-116; Neuman, 2014, pp. 91-124). Moreover, this fundamental distinctive feature of constructionism is so unique that it prompted Guba to claim that constructionists “celebrate subjectivity” (1990a, p. 17).

Although for constructionism it is difficult to provide a single definition due to the diverse use of similar/related terms such as constructivism or interpretivism, which are often used as synonyms (Moses & Knutsen, 2012, p. 9; Bryman & Bell, 2015, p. 33; Hallebone & Priest, 2009, p. 113; Greene, 1990, p. 233), different ‘sub-perspectives’, such as social, discursive or critical constructionism (Lee & Lings, 2008, pp. 60-64; Holstein & Gubrium, 2008) share the same basic beliefs with regard to the four ‘ologies’ (Gubrium & Holstein, 2008, p. 5).

The subjective character of this paradigm is the belief that there is no objective, independent reality ‘out there’ but that reality is interpreted and (re)constructed by individuals (Chua, 1986, p. 615) or even, in an extreme position, only a “projection of human imagination” (Morgan & Smircich, 1980, p. 492). Thus, there are multiple realities, dependent on the individuals’ interpretations, which are, on top, constantly changing (Saunders et al., 2009, p. 119; Van der Meer-Kooistra & Vosselman, 2012, p. 251).

This subjectivist ontological belief of constructionism (see Myers, 2013, pp. 40-41; Moses & Knutsen, 2012, p. 10) is then manifested in the **epistemological position** as the conditional,

idiosyncratic nature of knowledge. This knowledge is context-related and cannot be obtained by observing/measuring but by experience and reflection in relation to different contextual factors. Hence, the exploration of differences/differentiation is stressed but it is not the aim to unify knowledge in law-like generalisation (Saunders et al., 2009, p. 116).



Consequently, the constructionist's **axiological view** is a value-bound position, taking an emic approach towards the research as the reality is not independent of the observer but, in

contrast, interpreted in interaction with the subjects being observed (Lee & Lings, 2008, p. 60; Holden & Lynch, 2004, p. 403). This is not 'cause-and-effect' to predict the reality but 'meaning-and-understanding' to describe the reality as the researcher's overarching goals.¹⁸ In doing so, the assumption is that the researched problem is best understood if investigated comprehensively from different point of views and not reduced to a few variables (Holden & Lynch, 2004, p. 403).

Out of the various different constructionist sub-paradigms social constructivism is selected for the paradigm simulation as it is one of the paradigms which is highlighted as an opposing alternative to the dominant realist paradigms in management science and organisation studies (Samra-Fredericks, 2008, p. 129). Research from a social constructionist perspective can be sketched (see figure 36 above) with respect to the background and rationale/purpose of the research as well as the derived research goal and questions.

3.2.2.3 Description of interventionist paradigm and its impact on research project

Interventionism as the third of the selected research paradigms goes back to the influential work of Lewin (Lewin, 1946; Fendt et al., 2008, p. 482; Suomala, Lyly-Yrjänäinen & Lukka, 2014, p. 305) as one prominent advocate.

The research perspective is not only a response to positivism but also to constructionism by those scholars who "felt that the constructivist stance did not go far enough" (Creswell, 2014, p. 9) to develop a meaningful alternative to positivism and to narrow the relevance-gap between practice and academic theory (Lukka, 2006, p. 36; Westin & Roberts, 2010, p. 8). Research approaches within interventionism are categorised as (participative) action research, (critical) action learning, or co-operative inquiry (Easterby-Smith et al., 2018, pp. 111-116; Heron 1996; Howell, 1994).

Although this paradigm is still in development (and therefore knowledge about the approach is still in its adolescence) a distinguishing feature of interventionist research

¹⁸The central nature of the goal to understand reality in constructivism is condensed in the German term 'verstehen' which is even used in the English paradigm debates to elevate the distinct focus of this approach (Lee & Lings, 2008, p. 59).

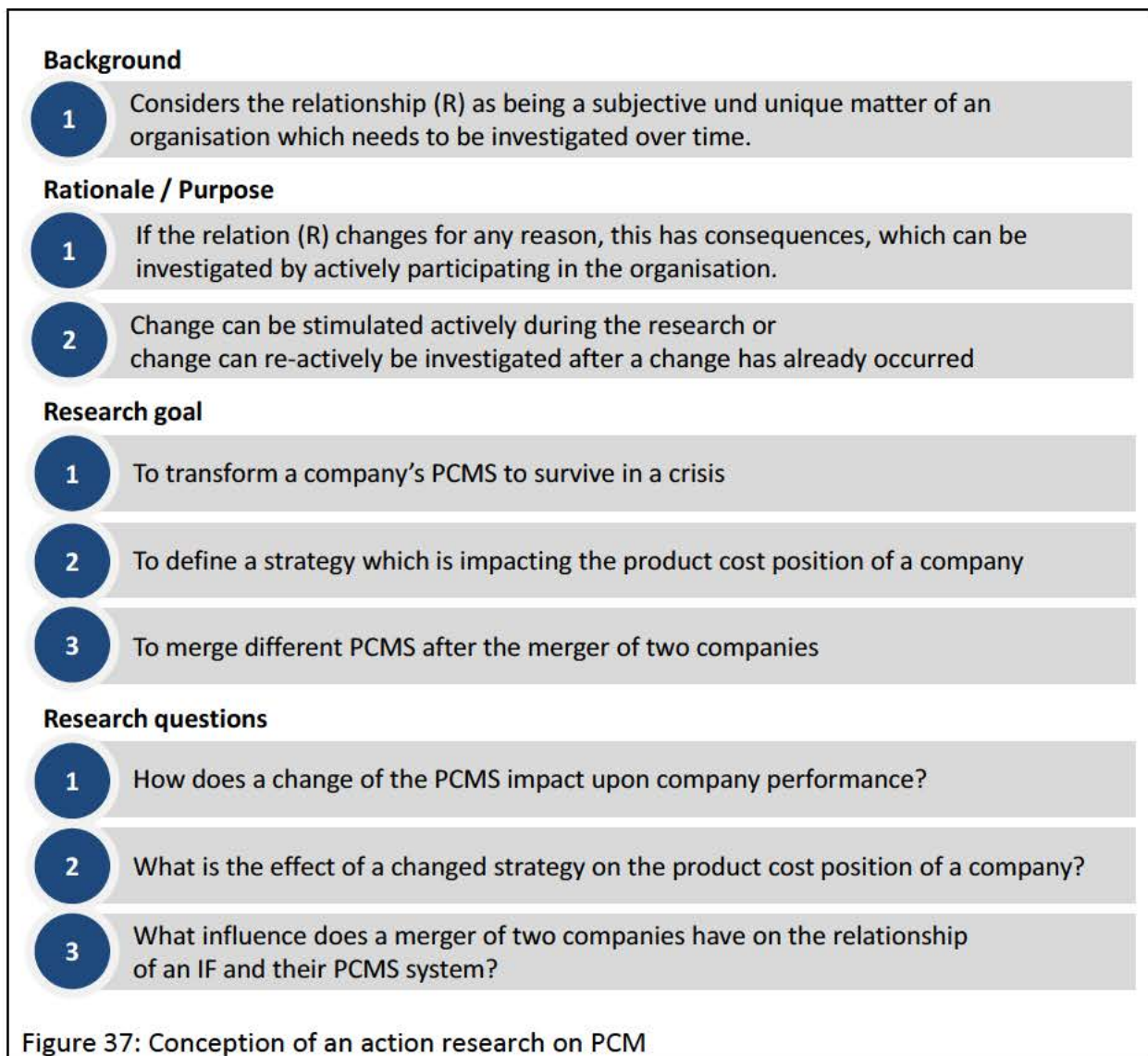
approaches is the intervention/interference of the researcher itself as an actor in organisational contexts (Argyris, Putnam, & Smith, 1985; Babüroglu & Ravn, 1992; Suomala et al., 2014), which presents potential implications for the four 'ologies' of research paradigms.

The **ontological and epistemological position** of interventionist research is close to the interpretive stance "where understanding and knowledge is built on close interaction and communication between practitioner and the researcher [and] socially constructed by that interaction" (Westin & Roberts, 2010, pp. 7-8).

Nonetheless, in terms of epistemology the intervention itself sheds light on two distinct beliefs. The first one claiming that in order to understand and get in touch with reality, the researcher has to make his/herself part of the reality (Hastrup, 2005, p. 141), the second that reality can only be understood, when it is changing by investigating 'what' changes and 'how and why' changes evolve (Creswell, 2014, p. 9; Van de Ven & Poole, 1995; Westin & Roberts, 2010, p. 8).

With reference to **axiology** (Suomala et al., 2014, p. 305), interventionists have to be effective in the emic (being an insider of the subject under investigation) and etic (to link outcome to theory) way. In interventionism, the researcher does not only influence the research by creating contact points with social actors in order to investigate their interpretations and interpreting the already interpreted reality through own values. Furthermore, the researcher becomes one with reality, participating and actively impacting other actors/reality. Then again, the researcher has to step back in order to reflect and to develop findings, although they derive from value-laden positions.

In order to indicate the interventionist's **impact on the research topic**, an action research approach is sketched as shown in figure 37 below.



3.2.2.4 Conclusion of paradigm simulation

Having outlined the impact of the three selected research paradigms on the thesis' research, concluding reflections should now be summarised and the impact on the choice of approach explained. This step aims to consolidate the major conclusions of the paradigm simulation for each approach.

3.2.2.4.1 Reflections on paradigm simulation

The main trigger for the paradigm simulation was the ongoing paradigm debate, primarily discussing whether one alternative or another is (more) scientific or at least more appropriate compared to the other(s) (Anderson, Herriot, & Hodgkinson, 2001; Hodgkinson,

Herriot, & Anderson, 2001).¹⁹ Reflecting the differences of the three research philosophies, which became obvious in the paradigm simulation focussing on the research problem, they can be mirrored versus their potential relevance. Although three completely different approaches have been sketched, with almost no single equality regarding the described categories, they do have general characteristics in common.

First and foremost, for each of the paradigms a meaningful research problem, including its background, purpose, concrete goals, and key questions can be developed (chapters 3.2.2.1-3.2.2.3). Secondly, they will potentially lead to defined outcomes which contribute to theory according to the paradigm's philosophical background and practice, no matter whether they are implemented immediately for one company or lagged for a larger number of companies.

In conclusion, all three approaches deliver a certain contribution to knowledge and by contrast, no single approach can deliver all the contributions alone. This suggests that a single research perspective might be too narrow to “fully reflect the multifaceted nature of social, organisational, and phenomenological reality” (Goles & Hirschheim, 2000, p. 256).

Transferring this logic to the reflection on the **researcher's values** would mean that a distinct, complete value-free or value-laden position, taking an extreme emic or etic approach alone, would not qualify for comprehensive research in management science but only for a partial view on certain aspects. This suggests that multi-paradigm-approaches or paradigm interplay, at least as an intermediate position, should be aimed for to further

¹⁹Practical relevance, as a criterion of science and as a reaction to overcome the postulated relevance gap of management science (Fendt et al., 2008; Tucker & Parker, 2014), is a key trait of this thesis. So, a contribution to practice is demanded by scientific work (Ghoshal, 2005; Gibbons et al., 2009; Huff, 2000; Ittner & Larcker, 2002; Shrivastava, 1987).

Likewise, a contribution to theory has long been claimed as a key component of contributing to 'good' science deriving from rigour. Whereas there is agreement about the requirement itself, less harmony has to be stated about the opinion of what constitutes rigour or a theoretical contribution (Whetten, 1989; Wright, 2015). Emphasis is put on the difference between qualitative and quantitative research approaches being evaluated by different criteria of rigour such as: reliability, validity, replicability, generalisability for quantitative and credibility, transferability, dependability, confirmability for qualitative research (Wahyuni, 2012, pp. 76/77; Lincoln & Guba 1985; Parker, 2012).

advance knowledge in a particular research area (Aram & Salipante, 2003, p. 192; Cox & Hassard, 2005; Holden & Lynch, 2004, pp. 406/407).²⁰

3.2.2.4.2 Impact on choice of approach

The paradigm simulation, therefore, clearly showed that the topic of product cost management systems and their influencing factors does have the potential to be worked on in a doctoral thesis according to the three described research paradigms. This is in-line with the ongoing paradigm shift in accounting research as well as (strategic) management research (Baum & Dobbin, 2000, p. 391; Suomala et al., 2014, p. 304; Wahyuni, 2012, p. 72).

Likewise, it supports Feyerabend's view that there is no perspective superior to another and one single set of beliefs, rules and procedures is not enough to gain full knowledge (Feyerabend, 1985; Lee & Lings, 2008, p. 32). Moreover, there is a growing recognition that paradigmatic and theoretical pluralism is fruitful (Van der Meer-Kooistra & Vosselman, 2012, pp. 246-247; Hassard & Kelemen, 2002; Hopwood, 2002; Luft & Shields, 2002; Lukka & Mouritsen, 2002). Nonetheless, there is much to be said for the idea that this pluralism might be more promising for a research discipline overall than on an individual research project level (Chua, 1986; Chua & Mahama, 2012; Parker, 2012). Consequently, the first impact on the choice of approach is that choice exists.

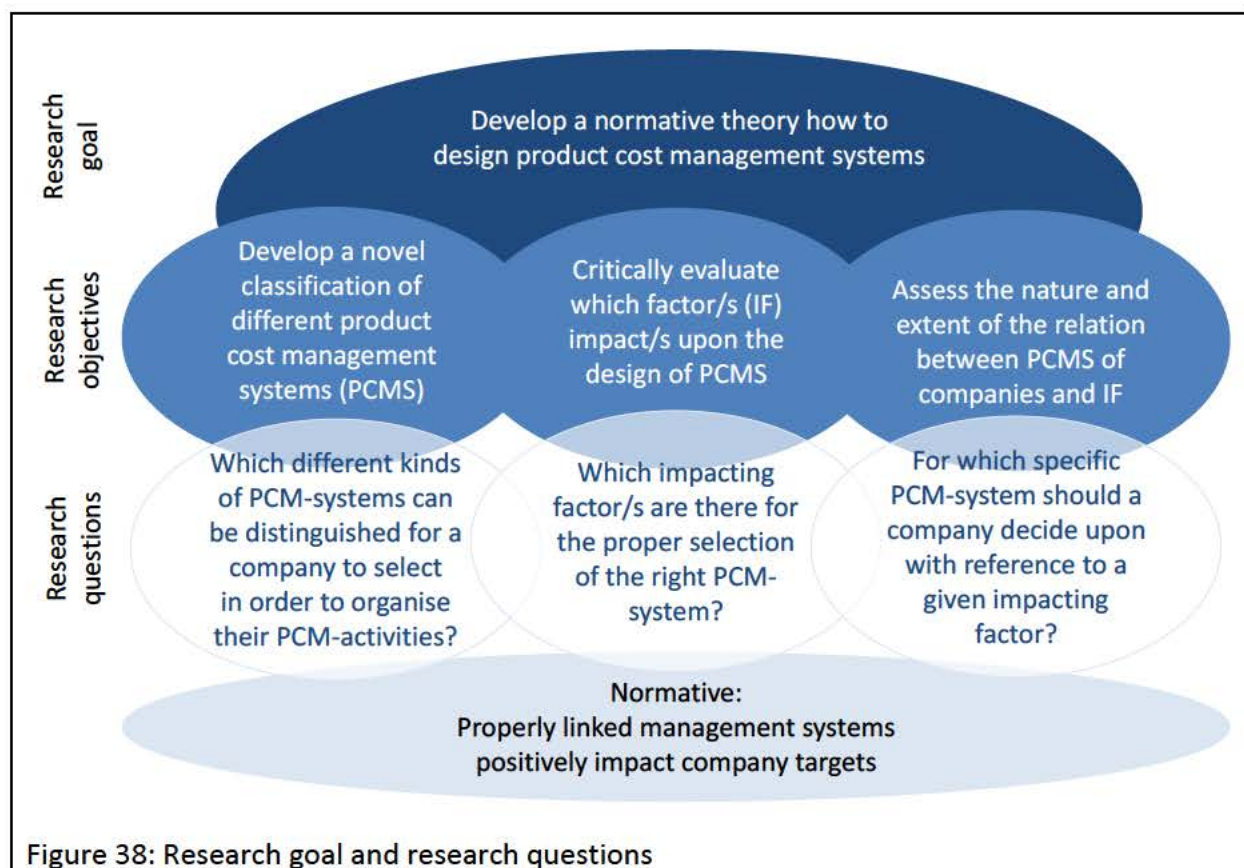
With respect to the remaining impact on a researcher's skills, one should avoid being trapped by a decision based on the familiarity with methods or the absence of skills as this contradicts the goal of further development of knowledge, in this case on a personal level (Lee & Lings, 2008, p. 64; Moses & Knutsen, 2012, p. 1). The second impact on the choice of approach therefore is 'only' the awareness of the required skills which might be developed prior to a study.

²⁰Consequently, this creates impact on the required researcher's skills. The majority of competencies should be inherent to every researcher, independent of the research approach (Easterby-Smith et al., 2013, p. 6; Lee & Lings, 2008, p. 70). Due to the fact that some research methods can contribute to different research paradigms (Holden & Lynch, 2004, p. 401) and that a researcher should be able to justify decisions about selected and discarded methods, basic skills should be acquired prior to the research.

Synthesising what remains after advocating pluralism in general and moderating skills as a consequence of the paradigmatical choice, is a pragmatist's view, holding the opinion that out of the set of various different potential approaches the one should be selected that "works for the particular research program under study" (Tashakkori & Teddlie, 1998, p. 5). This underlines the importance of the researcher's research goal with the need to justify the research approach in terms of match of purpose and research approach as stated at the beginning. This should be seen as the ultimate impact of the paradigm simulation on the choice of approach, independent from the concrete outcome of the choice itself.

3.2.2.4.3 Rejection of described paradigms and selection of critical realism

The background of the paradigm simulation was based on two reasons, as stated at the beginning of the chapter: first and foremost, the need to select from a variety of alternative research perspectives and to justify the decision; secondly, the lack of normative guidance, although paradigms are still heavily debated to-date, with regard to which paradigm to choose for a specific research purpose (Agazzi, 2017; Hassan & Mingers, 2018).



As the research paradigms differ in terms of their varying “ologies”, the decision-making point is to determine which ontology, epistemology and axiology fit best to the research goal, objectives and questions according to the current researcher’s position. These can then be applied to develop actionable recommendations for management practice (figure 38 on the previous page).

With respect to **ontology** the research assumes a reality which is independent from the researcher. In this particular case, different types of product cost management systems and impacting factor/s as well as their relation to each other are considered. However, it is likely that not all aspects of this reality will be directly observable or accessible. In this case, this might be the relation between or mechanism of impacting factor/s and PCMS. A differentiated view (observable-/-not observable) of this system therefore seems plausible, while still holding the realist’s ontological position of objectivism.

Regarding the research’s **epistemology**, the indirect accessibility of parts of the PCMS’ reality means that human perceptions of it can differ, as do their actions. Knowledge about PCMS or relations to impacting factors can be relative, uncertain, and fallible. Therefore, it needs scientific approaches to arrive as close as possible to the truth. Holding this position, the research moves away from the traditional realist epistemology of positivism towards a position of epistemological relativism.

Relating to **axiology** the normative goal of the research (aimed at a desirable outcome of the decision-making mechanism towards PCMS) as well as the at-least-partial dependency of the knowledge on human perceptions (which are typically biased and impacted by individual experiences) indicate a value-laden/value-aware approach.

Comparing those markers with the markers from the paradigm simulation it becomes apparent that none of those paradigms actually fit well to the research as they inhibit reasons for rejections (see figure 39).

A mainly traditional realist position would fit due to ontological congruence, but, by referring to the positivist stance, this fails to achieve epistemological fit as to not accept the

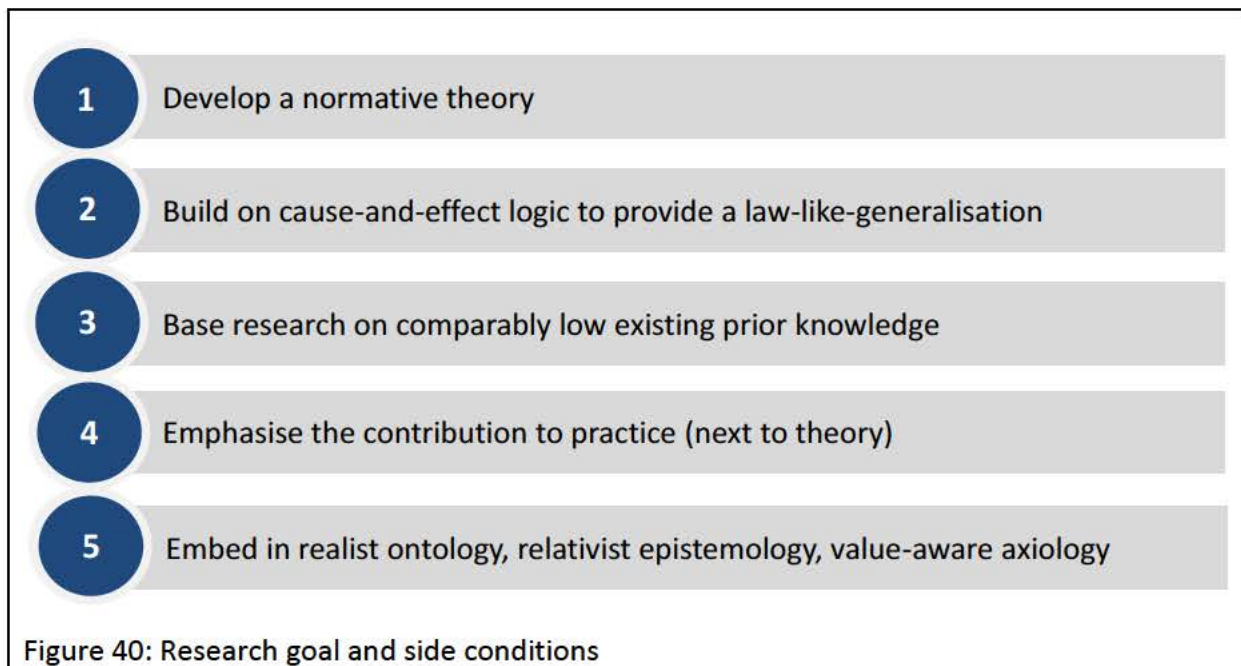
at least partial relative and uncertain nature of the gained knowledge (Eriksson & Kovalainen, 2016, pp. 19-20; Lincoln, Lynham, & Guba, 2018, pp. 109-116), which is obvious for rather complex social systems as the investigation of PCMS and their IF in competitive, non-closed environments. Neither is it a common approach for theory development but rather for theory testing (Easterby-Smith et al., 2021, pp. 72-84).

	Thesis' position	Traditional realism	Social constructionism	Action research
Ontology	PCMS and IF independent 'out there'	Objectivism Appropriate	Subjectivism Inappropriate ⚡	Subjectivism Inappropriate ⚡
Epistemology	Knowledge about PCMS / IF relative and uncertain	Positivism Inappropriate ⚡	Interpretivism Problematic	Interventionism Possible
Axiology	At least value-aware	Value free Problematic	Value bound Possible	Value bound Possible

Figure 39: Main reasons for rejection of simulated paradigms

The social constructionist perspective already fails on the ontological level by not accepting an objective reality and holds an even weaker position on epistemology by claiming a purely interpretivist access to the reality (Lincoln, Lynham, & Guba, 2018, pp. 109-116; Žukauskas, Vveinhardt, & Andriukaitienė, 2018, p. 123). The action research, with a clear focus on interventionist, participatory and transformative methodology, also differs strongly in terms of ontology emphasising the situational, context-bound nature of reality as well as the access to it (Baard, 2010, p. 16; Lincoln, Lynham, & Guba, 2018, pp. 109-116) compared to the study's objectivist approach which underlies the research goal, objectives, and position. Although the researcher's expertise within the area of investigation taking an AR approach is said to be potentially beneficial (Suomala, Lyly-Yrjänäinen, & Lukka, 2014, p. 307), interventionist paradigms were rejected for the thesis' study as well.

Thus, next to the general research goal of theory-building on the basis of causality, starting with comparably little prior knowledge and aiming for a contribution to practice, in essence the research should follow a paradigm with an objectivist ontology such as we see in realism, a relativist epistemology and a value-laden/value-aware or emancipatory axiology (figure 40).



To have these characteristics/requirements reflected, the critical realist research paradigm was selected for this study. The reasoning and its implications are described in more detail below.

3.2.2.4.4 Justification of critical realism as thesis' research paradigm

Critical realism as a paradigm of its own is commonly associated to Bhaskar and his seminal work "A Realist Theory of Science" (Bhaskar, 1975, 1978) in the field of social science. Further publications by Bhaskar as well as the acceptance and adaptation by other scholars lead to a dissemination of CR in various disciplines (Baert, 2015, pp. 88-89).²¹

²¹The distinction into three phases of Bhaskar's CR (Maisuria & Banfield, 2023) plays a subordinate role for the thesis, considering the focus on contribution to practice.

A first allocation of critical realism into the landscape of other paradigms indicates an intermediate position between realism and interpretivism, positioned more towards a variant of realism. Carlsson, referring to Bhaskar, claims “Bhaskar says that it is not a question of being a realist or not, but what type of realist ... Critical realism can be seen as a specific form of realism” (Carlsson, 2009, p. 61; Bhaskar, 1991). Baert correspondingly states:

CR “...is realist in a weak sense in that it assumes that there is an external reality that exists independently of people’s descriptions, and, in particular, of the conditions und which people gain access to it. It is realist in a strong sense in that it assumes that scientists are, in principle, able to gain access to this reality” (Baert, 2015, p. 90)

To bridge the realist **ontology** with its relativist **epistemology**, critical realism extends the ‘flat’ traditional realist ontology into a layered reality, comprising three layers known as observable (empirical), partly observable (actual) and not observable (deep) levels with more depth down to causal generative mechanisms (Blundel, 2007, pp. 52-53; Fletcher 2017, p. 183).

Transferred to the step-off point developed in chapter 2 a potential layered critical realist view can be exposed. This view takes up a characteristic element of the CR’s view on reality that is the existence of interconnected causal powers and mechanisms (Armstrong, 2019, p. 572; Elder-Vass, 2022, p. 266; McAvoy & Butler, 2018, p. 162). These mechanisms are typically not directly observable or sensitive to situational surroundings but cause apparent results (Astbury & Leeuw, 2010, pp. 367-374; Armstrong, 2019, p. 573).

This step-off point indicates the potential observability of PCMS as an entity, any impacting factors or events, whether they are observable or not and a potentially unobservable mechanism causing the occurring and observable PCMS as well as other outcomes. This realist **ontology** potentially reflects the reality of the thesis’ phenomenon under investigation.

With respect to **epistemology**, critical realism holds a relativist position (Armstrong, 2019, p. 572; Elder-Vass, 2022, p. 268). The at-least-partial direct unobservability of the reality, incompletely perceived by individual actors, makes knowledge claims necessarily fallible

(Bednarek, 2011, p. 59; Lawani, 2021, p. 321; Wynn & Williams, 2012, p. 789), as “critical realism acknowledges the role of subjective knowledge of social actors in a given situation” (Wynn & Williams, 2012, p. 787).

Therefore, although reality exists independently from its identification, one can understand it and know about it in perceived contexts “under particular descriptions” (Bhaskar, 2008, p. 240). In the critical realist’s open system view, facing various contexts, knowledge is fragile and probably true, with the aim of coming as close to reality as possible (Fleetwood, 2014, p. 192; Wynn & Williams, 2008, p. 3). Consequently, theory in CR is not deterministic but rather probabilistic (Bygstad, Munkvold, & Volkoff, 2016, p. 83).

For this thesis this is equivalent to the idea that any identified PCMS, any influencing factor (or causal powers) and any relation (or mechanisms) between the entities are probably true and that any normative theory should lead to probable outcomes in reality as it is likely that not all parts of the reality and not all contextual factors can be identified and understood (Bunt, 2018). Therefore Bhaskar agreed to Outhwaite’s statement that CR is “ontologically bold but epistemologically cautious” (Bhaskar, 1998, p. 176; Outhwaite, 1987, p. 34).

However, it is possible to develop knowledge which comes close to reality as researchers “can have the capacity to make reasonable, justified [...] judgements about the objects that populate it” (Elder-Vass, 2022, p. 269) and theory “can [...] be identified through the practical and theoretical work of the social sciences” (Bhaskar, 2011, p. 2). A claim, which is called “judgemental rationality” (Isaksen, 2022; Quraishi, Irfan, Schneuwly Purdie, & Wilkinson, 2022).

From the point of view of **axiology**, due to its epistemic relativism the research is biased by experiences, frameworks and perceptions of actors and researchers. Therefore it is partially value-bound, or at least value-aware (Wynn & Williams, 2008, p. 4). However, the research can emancipate itself as CR “provide[s] ways to identify what is empowering [...] through revealing what is constraining and what supports the emancipation of those involved” (Thorpe, 2020, pp. 37).

For the purpose of this thesis, the goal was to aim for a normative theory, based on the rationale to create positive impact on company performance. In other words: once having accepted to strive for ‘performance’ the actors emancipate themselves and are empowered for decision-making. On top, ‘judgemental rationality’ aids to emancipate the research from values due to the theoretical procedures, inherent to CR methodology. So, from an axiological point of view, critical realism also supports the thesis’ study.

In order to arrive at a theory, critical realism is comparably open in terms of **methodology**, (Armstrong, 2019, p. 572). It should be causal-explanatory and “explanation comes via uncovering and understanding causal mechanisms” (Fleetwood, 2014, p. 192). Typically, the study is thorough and comprises retrodution: observing and theorising patterns to explain the research object (Belfrage & Hauf, 2017; Bygstad & Munkvold, 2011; Lawani, 2021 , p. 322). Various methods such as (comparative) case studies, surveys or statistical analysis can be applied (Wynn & Williams, 2008, p. 4).

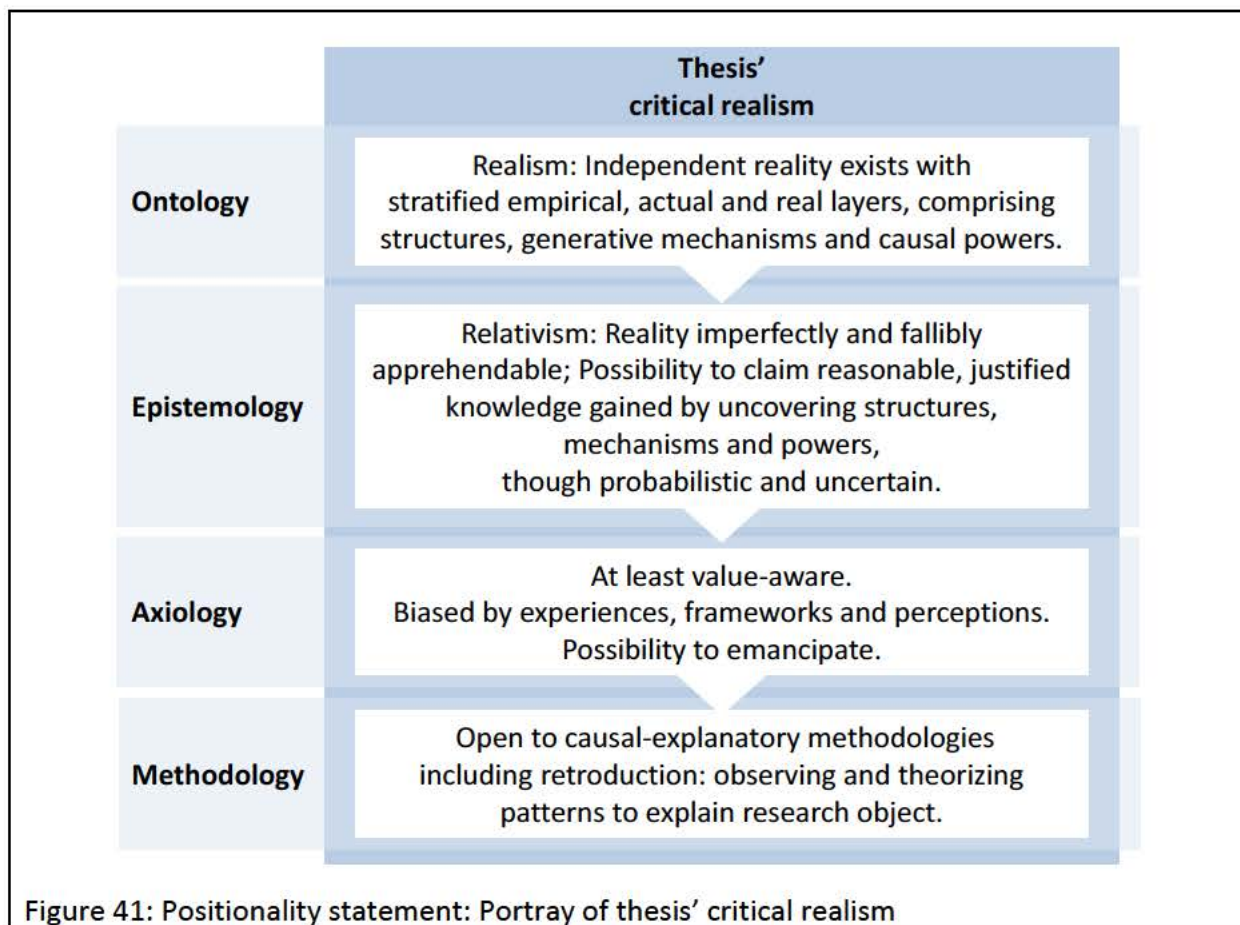


Figure 41: Positionality statement: Portray of thesis’ critical realism

Having outlined why critical realism is well-suited to the research intention in terms of its theory of science, figure 41 above summarises the thesis' CR approach. In addition, further arguments (see figure 40, p. 96) supported this choice, including:

- Goal of theory-building
- Cause-and-effect logic (generative mechanism) to provide law-like (probabilistic) generalisation
- Absence of prior knowledge
- Contribution to practice

As in critical realism “there is more emphasis on **theory-building**” (Easterby-Smith et al., 2018, p. 81) and focus on causation to understand phenomena, it is acknowledged that CR can aid in “suggest[ing] practical policy recommendations [and] solutions for social change” (Fletcher 2017, pp. 181-182). Thus, normative theory development is supported by CR.

As CR is commonly seen as a “[v]ehicle for delivering **causal-explanatory** accounts” (Fleetwood, 2014, p. 192), with the “goal [...] to explain the mechanisms and structures” (McAvoy & Butler, 2018, p. 162), the thesis' intention can be approached using the CR's paradigm. The goal to arrive at **law-like generalisations**, which step back from accurate predictions, is also supported by CR as it arrives at the idea that:

“tendencies generated by objects of the type they are observing, rather than necessarily producing the same outcomes in all cases ... any given occasion any given causal power may be frustrated by the effects of others. The consequence is that causality operates without producing exceptionless regularities” (Elder-Vass, 2022, p. 266)

Fleetwood states accordingly that CR delivers: “[t]endential prediction based on knowledge of causal mechanisms. Tendential prediction is not precise, but not spurious either” (2014, p. 193). Hence, “[g]eneralisations derived from critical realist research [...] concern a probabilistic truth, rather than an absolute truth” (Bisman, 2010, p. 9). Considering point three of the thesis' characteristics from figure 40 on page 96, the comparably small amount of **prior knowledge** available, it has been shown that studies using critical realism do not necessarily need a sound step-off point in the concrete area of investigation (Elder-Vass, 2015; Fox, 2009; McGhee, & Grant, 2017). The open stance towards methodology therefore

also comprises research procedures which start from a less well-informed point, which is the case in this thesis study.

Lastly, an important thesis' trait is the intended **contribution to practice** which is, in terms of knowledge production, influenced by the selection of the appropriate research paradigm. Scholars advocate the potential power of CR studies to arrive at practical implications due to its understanding of reality as being composed of deeper levels instead of only one (Armstrong, 2019, p. 581), the subjective and contextual information recognising independent patterns at the same time (Lawani, 2021, p. 321; Sayer, 2010, pp. 8-30) and the understanding of the structures and mechanisms (Blundel, 2007, p. 63; Bisman, 2010, p. 9). Bhaskar summarises the pre-requisites for concrete actions and change by saying that "we will only be able to understand-and so change-the social world if we identify the structures at work that generate those events or discourses" (Bhaskar 2011, p. 2). Saxena (2019, p. 18) agrees with Wynn and Williams that "CR also offers a way to address the rigor-relevance gap in management research" (2012, p. 788) leading Armstrong to claim CR's main goal is to provide "[e]xplanation[s] to improve practice" (Armstrong, 2019, p. 572).

Although sufficient reasons have been outlined to select CR as the thesis' research perspective, positioning it, finally, in the field of business, management and organisational research helps to enhance trustworthiness in this decision. It is rightly stated, that "[i]n the social and business world, [...] mechanisms exist independent of our investigation of them but they are themselves both transformed and reproduced by humans [...]. An examination of these mechanisms is essential in applied business research methodology" (McAvoy & Butler, 2018, p. 161). This view is congruent with the CR paradigm so that it "provides researchers with novel opportunities to explore/investigate complex organisational occurrences in a holistic way" (Lawani, 2021, p. 321).

Subsequently, CR not only is present in the social sciences in general (Wynn & Williams, 2012, p. 788) but has been "adopted by a number of management and organisational researchers because it provides a structured way of thinking about social and organisational problems" (Easterby-Smith et al., 2018, p. 80). In doing so, CR has gained rising popularity in

economic, business, management and organisational studies (Fleetwood, 2014; Fleetwood & Ackroyd, 2004; McAvoy & Butler, 2018, p. 160; Morgan, 2016; Toledo & Carrera, 2023).²²

Concluding the justification of CR as the thesis' research paradigm, it is stated for the sake of clarity that, generally speaking, CR is not seen as being "superior to the existing alternatives" (Zhang, 2023, p. 25), which corresponds with Feyerabend's view on paradigms (chapter 3.2.2.4.2, p. 92). The paradigm simulation and the reasoning of CR in relation to the research goal has shown that CR is a suitable and promising approach to answer the research questions.

3.2.2.4.5 Describing the research's critical realist position

As shown before, the choice of the research paradigm does impact upon the research problem and how it is approached, mainly with respect to background of the research topic, the general rationale and purpose as well as the specific research objectives with the corresponding research questions.

Having passed this cornerstone of the research design, a summary description of the research problem from the critical realist perspective, using its relevant jargon, should clarify the status and outline the approach.

The **background of the research problem**, to develop a normative theory on how to design a company's product cost management system is based on the view that there is an independent reality of PCMS and its influencing factors which can only be partially observed and understood by individual actors. The PCMS is likely to be directly observable, whereas influencing factors might be partially hidden and a generative mechanism with its inherent causal powers to explain the PCMS design might be unobservable. Therefore, a law-like theory with tendinous claims / probabilistic truth seems reasonable using the CR paradigm.

The **research's rationale** is the absence of an explanation of generative mechanisms and a range of causal powers which exist in order to decide how to design a PCMS (Wynn &

²² Thorpe (2020) even endorses the more frequent use of critical realism in management research.

Williams, 2012, p. 787). This decision should be based on finding out what it “must be like” (Wynn & Williams, 2012, p. 789) in order to ensure it is “able to suggest strategic recommendations” (Lawani, 2021, p. 320). The possibility that “nature and strength of existing mechanisms can be achieved by quantitative means” (Lawani, 2021, pp. 320-321) cannot be ruled out.

The **research purpose** therefore is to identify the “structures, along with the powers or tendencies inherent to the components of these structures, and the interactions between them” (Wynn & Williams, 2012, p. 789) and to ensure a meaningful contribution to practice.

The **research goal** ultimately is to arrive at a value-aware but emancipated normative theory of how to design PCMS relying on “the potential CR has in achieving thought-provoking and insightful research” (Lawani, 2021, p. 321). As CR research also “centers on developing law-like statements about reality” (Armstrong, 2019, p. 571), the theory should be clear and easily comprehensible, taking into account managerial values and perspectives.

The **research questions** finally could be transferred into a critical realist’s jargon (figure 42). Having done this, the research now is embedded into a CR research paradigm. Aspects of methodology, which are sub-ordinate to ontology, epistemology, and axiology, but nonetheless also highly important are addressed in the next section.

	Initial formulation	CR jargon
Research question 1	Which different kinds of product cost management systems can be distinguished?	How can the event be described?
Research question 2	Which impacting factor/s are there?	What are the causal powers?
Research question 3	Which specific PCM-system should a company decide upon with reference to a given impacting factor?	What is the generative mechanism?

Figure 42: Research questions transferred into CR jargon

3.3. Selecting Critical Realist Grounded Theory (CRGT) as research methodology

Based on a research paradigm and directly informing the applied research methods, the research methodology is the next central linking element of a research project (Mackenzie & Knipe, 2006, p. 198; Opoku et al., 2016, p. 33). Still, the absence of a universal and generally accepted scheme regarding which methodologies should be applied to which type of research is unfortunate. This discussion roots back to the ongoing 'Methodenstreit', started in the late Nineteenth Century (Baert, 2015, p. 41). In this discussion, scholars like Max Weber debate the suitability of differing research methodologies to differing research types (Božilović, 2017; Kolev, 2020; Maclachlan, 2016).

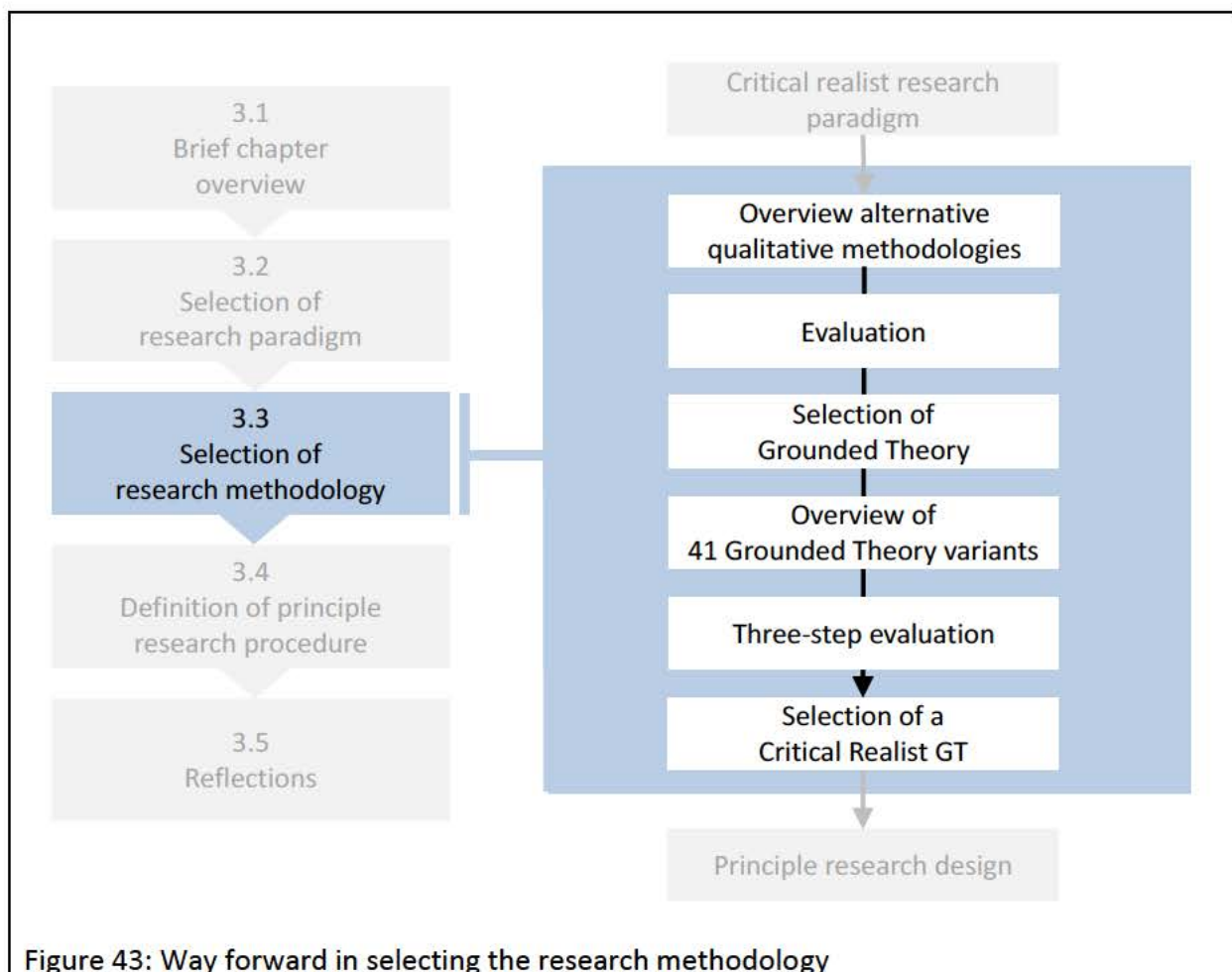
Jonker and Pennink correspondingly state: "The essence of methodology is structuring one's actions according to the nature of the question at hand and the desired answer one wishes to generate" (2010, p. 21). To critically reflect on this rather successively formulated statement, caution is advised as this aspired structural aid of methodology does not only highly impact upon the theorising effort but also the other way round. Van Maanen, Sørensen and Mitchell state that "method can generate and shape theory, just as theory can generate and shape method. There is a back-and-forth character in which concepts, conjectures and data are in continuous interplay" (2007, p. 1146).

This rightly suggests an interdependency between methodology and theory with influence on the research as "[t]his double bind between theory and method also means that the nature of our methods [...] press particular ways, or styles, of theorizing on us" (Cornelissen, 2017, p. 369).

A consequence of this interplay is to first make the reasoning for the selection of the research methodology explicit, as it is done in this chapter, to create researcher's awareness and sensitivity about the implications of the selection on the research. Second ramification is to conduct an iterative and reflective step after the methodology selection process and prior to commencing the primary research as suggested in the Martini Glass approach and shown in figure 43.

In sum, these arguments again imply that there are different methodologies to choose from or to develop in order to match with the research goal/questions. Consequently, the definition of the research project's methodology is yet another cornerstone of the research (Crane, Henriques, & Husted, 2018; Guercini, 2014; Lê, Smith, Crook, & Boyd, 2019) with business and management studies particularly showing a widespread range of different methodologies (Marais & Pienaar-Marais, 2016, p. 167).

The same argument applies to the framing of the research into the critical realist paradigm, as despite its openness to different methodologies there is a lack of recommendations with regard to which methodology should be used for research projects (Fletcher, 2017; Hu, 2018), so justification is mandatory.



One key belief about methodologies is cascaded down from Feyerabend's opinion (see 3.2.2.4.2, p. 92) and shared with Gehman et al. about no single paradigm being superior to another. This conviction is that, as for paradigms, no single methodology is superior to another, however, one may be more suitable to enable and support different research goals as "methods are tools; some tools are good for certain purposes, whereas other tools are good for other purposes" (Gehman et al., 2018, p. 285).

Agreeing with this approach, the most suitable, most 'fit-for-purpose' methodology, Grounded Theory, was selected for the undertaken research; its justification forms the content of the subsequent chapter relating to the basic research methodology.

3.3.1 Choosing Grounded Theory to develop novel theory

3.3.1.1 Initial considerations on theory development

The starting point of the selection of the research approach is the principle research goal of theory-building (Creswell & Poth, 2018, pp. 8/66; Weick, 1989) as stated and more precisely defined in chapter 2.4.3 as "theory building out of data collection" (Collins & Stockton, 2018, p. 4) with five dimensions outlined in chapter 3.2.2.4.3 (figure 44), now comprising the critical realist research perspective.

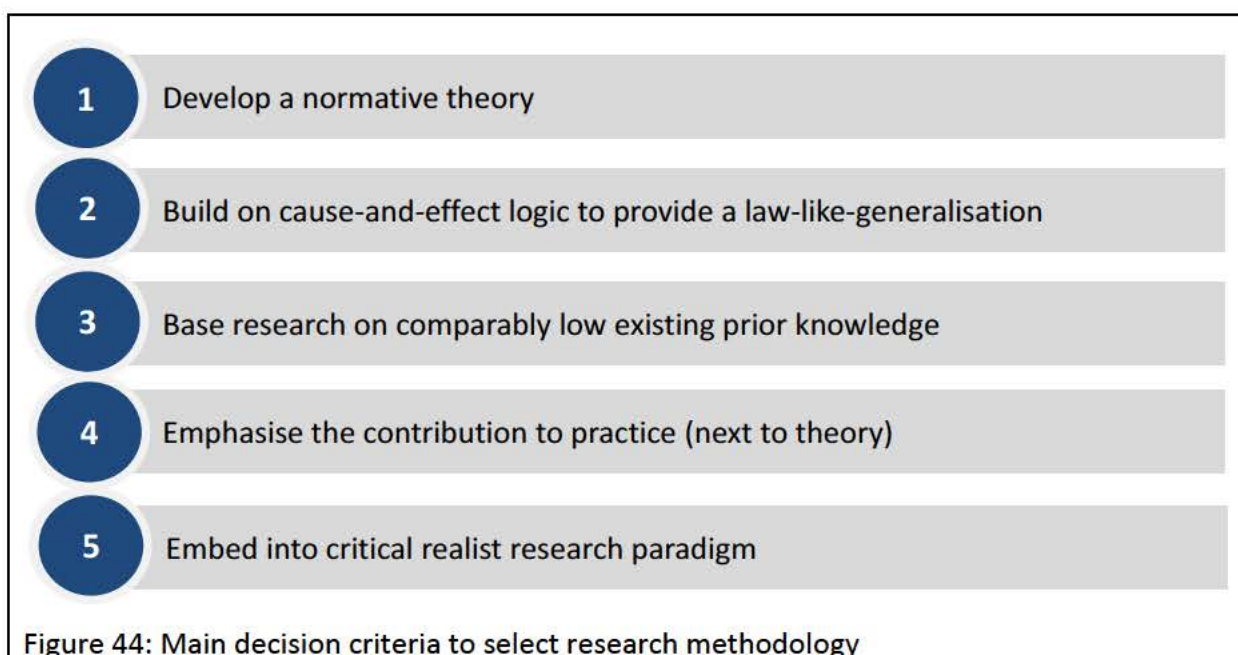


Figure 44: Main decision criteria to select research methodology

A principle aspect to consider when entering the debate about selecting the proper research methodology is the division between qualitative and quantitative research. Various authors explicitly highlight the differences between both approaches (Bryman & Bell, 2015; Easterby-Smith et al., 2018) or deliberately outline the characteristics of one or both streams separately (Cassell, Cunliffe, & Grandy, 2018; Denzin & Lincoln, 2018; Goertzen, 2017; Nardi, 2018).²³

A hint towards which approach the thesis' study should preferably reach for is given by their overarching main purpose. Quantitative approaches are mostly allocated to "testing a theory consisting of variables which are measured with numbers and analysed with statistics in order to determine if the theory explains or predicts phenomena" (Yilmaz, 2013, p. 311) by various authors (Blaxter et al., 2010, p. 66; Bryman & Bell, 2015, pp. 37-38). Qualitative research styles are more often attributed to theory generation than quantitative methodologies (Blaxter et al., 2010, pp. 66; Creswell & Creswell, 2018, p. 20).

Therefore, more-often-than-not in this thesis, the research process was characterised by qualitative elements to develop normative theory. Consequently, the research methodology is selected out of a pool of methodologies which are labelled as being qualitative.²⁴

3.3.1.2 Overview of alternative qualitative research approaches in question

Creswell and Poth (2018, pp. 9/10) list more than 80 qualitative research approaches and Tesch (2013) outlines more than 40 qualitative research types. Similarly, Guercini provides an overview leading to 26 strategies of inquiry (Guercini, 2014, p. 665), which clearly demonstrates the diversity in qualitative research designs (Bansal & Corely, 2011).

²³However, a clear separation between the two approaches is not as easy to make for two reasons. Firstly, next to the two opposing poles, there is a third classification, mixed method research, which combines elements of both (Creswell & Clark, 2018; Johnson, Onwuegbuzie, & Turner, 2007; Morgan, 2007), making a clear differentiation difficult. Secondly, the aspects selected to define either/or quantitative/qualitative research vary between a part of the research process only, or a specific research method or a comprehensive research philosophy (Allwood, 2012, p. 1421) and give room for potential confusion in the debate.

²⁴Stating this does not limit a methodology in question to qualitative data only but gives a general direction. Some methodologies can cover both, qualitative and quantitative elements (Holton, 2009, p. 37).

Narrowing down those compilations to single, individual classifications/typologies the range of qualitative research approaches varies from eight (e.g. Willig, 2013, pp. 57-161) to ten (e.g. Eriksson & Kovalainen, 2016, pp. 131-288) to twelve (e.g. Ormston et al., 2014, p. 18), mainly with a descriptive character of how to distinguish the stated methodologies from each other.

In terms of concrete comparison/selection of a qualitative methodology, publications often range from two to five research styles which are then outlined with universal recommendations of which methodology to apply under which circumstances (Creswell & Poth, 2018, pp. 65-110; Gehman et al., 2018; Mfinanga, Mrosso, & Bishibura, 2019; Myers, 2020; Suryani, 2013; Wertz et al., 2011). The criteria for pre-selection by the authors varies, however two arguments seem plausible: potential correspondence/matching with the research goal as well as a certain acceptance and reception by scholars (in a research area) indicated by the consistent appearance over years in publications (Creswell & Poth, 2018, pp. 8/66).

For the study undertaken with the research goal of (in its most generalised form) theory development, the pre-selection to outline a more target-oriented variety refers to the following research methodologies. This considers a screening of the stated essays in terms of a contribution to theory-building associated with them by the cited authors and research characteristics specified so far:

- Case study research (e.g. George, 2019; Gummesson, 2017; Ridder, 2020)
Chosen for its potential normative character and wide application in business and management research.
- Ethnography (e.g. Nader, 2011; Salazar, 2019; Woodside, Ko, & Huan, 2012)
Chosen for its potential realist character to explicate structured patterns of action.
- Phenomenology (e.g. Hemme, Morais, Bowers, & Todd, 2017; Swanson, 2012)
Chosen for its contribution to theory based on an understanding of complex constructs not easy to access.
- Grounded Theory (e.g. Egan, 2002; González-Teruel & Abad-García, 2012)
Chosen for its explicitly claimed research goal to develop theory.

Those qualitative research methodologies which rejoice in a certain popularity in science (a statement justified by the number of publications and citations) are briefly described and

evaluated to select the most promising approach for the doctoral thesis. The outlined distinct features of the mentioned methodologies are summarised in table 3 serving as the basis for the selection of the thesis' further progress.

	Phenomenology	Ethnographic research	Case Study Research	Grounded Theory
Research goal	Understand -> Verstehen of a phenomenon (with or without prior knowledge)	Understand, interpret, represent and explain interaction / behavior of cultural or social groups	In-depth understanding of contemporary, specific, bounded case/s	Explanation to develop theory to overcome a problem
Research output	Thick thematic description and close analysis of lived experience as essence of shared meaning	Complex, complete theoretical portrait (description and interpretation)	(Thick) Description about a comprehensive and holistic analysis of a unique case / few specific cases	Explanatory theory grounded in empirical data, often illustrated in a figure
Main (alternative) ontology	Dual Cartesian nature; refusal of subject-object dichotomy	Anti-philosophical strand (Realism/Relativism)	Subjectivism (Objectivism)	'Open and flexible'
Main (alternative) epistemology	Interpretism	Naturalism (Interpretivism)	Interpretism (Positivism)	'Open and flexible'
Contribution to theory	Understanding constructs, concepts or ideas Uncovering meanings Theory "based around lived experiences"	Application of theoretical concepts to explain, make meaning and give relevance Adds to discussion/ advancement of existing theories Understand rather than judge Particularistic/ contextualizing rather than generalizing.	Understanding of specific cases with sense-making incl. theoretical propositions. Ability to add to theory advancement (challenging/ testing/ reconstruction/ falsification/ extension) incl. potential normative character.	Substantive theory 'grounded in empirical data'. Rather novel with explanatory power.
Contribution to practice	Explicitating lived experience and successive fostering of practical meaning	Not intended to be very immediate or specific. Matter of general-purpose knowledge; modifying assumptions about forms of practical activity	Potential ambition for normative indication "how to / how to avoid" based on comparative analysis Potential challenge regarding replicability of highly contextualised research	Theory about problem-solving, potential normative character "There is nothing more practical than a good theory" (Lewin, 1952, p. 169)
Application in management research	Yes, also	Yes, also	Yes, intensively	Yes, also

Table 3: Overview of alternative research approaches coming into question

3.3.1.3 Evaluation of research methodologies and selection of Grounded Theory

Entering the justification of the methodology selected for the research project, a pragmatic 'fit-for-purpose'-approach was founded mainly on the research goal and consequently the successive paradigmatic decision (Jones, 2009; Sogunro, 2002).

As stated in chapter 3.2.2.4.3 on page 93, the research aimed to develop a normative theory. In doing so, the research was embedded in a critical realist research paradigm. Sketching the main features of the methodological alternatives coming into question informed the selection of the proper methodology by matching them with the research's cornerstones.

Case study research (CSR) does have a long tradition in management and business and shows similarities with action research, especially for intensive case studies (Bartlett & Vavrus, 2017). Nonetheless, three main reasons lead to the rejection of CSR for the thesis project:

- Generalisation potential for CSR, especially single CSR
- Contribution to novel theory development
- Questionable replicability and contribution to practice

CSR primarily strives for understanding, is highly contextualised as well as highly unique and particular, is principally founded on a subjective ontological worldview, and is challenged for their generalisation power and potential (Simons, 2014, 2015; Stake, 2006, p. 8), valuing generalisation as positive contributor to theorising in opposition to particularisation (Simons, 2015). On top of this, the challenging replicability of case study outcomes (Yin, 2013) suggest questionable impacts on other idiosyncratic cases and, subsequently, questionable contribution to practice. Intensive case study research therefore needed to be rejected as feasible methodology for the thesis.

For extensive, comparative CSR, which allows and enables a better paradigmatic fit with the research's intended objectivist ontology and positivist epistemology, the line of reasoning to not select it for the study is more differentiated and detailed.

Although the potentially shared realist's views of comparative CSR and the thesis' approach supports a normative character, with patterns to be identified and cause-and-effect logic being applied, questions about generalisation and coverage of the contribution of theory-building remain (Yin, 2013).

Comparative CSR is still highly contextualised with ambition for and favour of comprehensiveness and wholeness of the cases on the one hand and intense investigation of the particularities of solitary cases rather than wide-ranging law-like generalisations with limited generalisation power (Gomm, Hammersley, & Foster 2000; Ruddin, 2006). Nevertheless, it has been shown that generalisations are effortful, yet possible in the form of initial conceptualisations and theoretical propositions or hypotheses (Flyvbjerg, 2006; Yin, 2013, p. 325), labelled 'analytical generalisation' compared to 'statistical generalisation' (Curtis, Gesler, Smith, & Washburn, 2000, p. 1002; Tsang, 2014; Yin, 2013) but, per definition, this is not the main or ultimate goal of CSR (Baxter & Jack, 2008, p. 544; Eisenhardt, 1991, p. 620; Yin, 2018) as it was for the thesis.

Comparative CSR has the potential to add to theory development overall by advancement of prior extant theory, e.g. in terms of challenging, testing, reconstructing/refining, falsifying or extending theory (Lijphart, 1971, p. 691; Ridder, Hoon, & McCandless Baluch, 2014; Volmar & Eisenhardt, 2020, p. 3) by using 'extreme' or 'critical' cases and taking prior theory to the edge of their assumptions and descriptions (Flyvbjerg, 2006; Tellis, 1997). The development of highly aggregated and abstracted novel theory on the base of no or comparably low prior knowledge does not fall into the major potential power of CSR as it is, to repeat the quote, "not by itself a theory-building methodology" (Dooley, 2002, p. 346). Therefore, CSR has not been selected as the thesis' methodology.

Ethnographical research offers, despite its potential realist character, to elucidate hidden structures of action (Hammersley, 2002), rather unfavourable arguments as a methodology for the thesis:

- Focus on understanding of people and thick description
- Mainly interested in the particular instead of the general
- Limited intention to contribute to practice

As outlined in the section before, the focal point of ethnographic research is “understanding the social world of people being studied through immersion in their community” (Ormston et al., 2014, p. 18). It aims to “explain the ways that culture constructs and is constructed by the behaviours and experiences of its members” (Goulding, 2005, p. 299) but is more often than not “not developed beyond the level of ‘thick description’ ” (Goulding, 2005, p. 300) of the very particular area investigated in the study. Neither is this mainly descriptive characteristic of ethnography sufficient for the targeted research goal of the thesis, as normative and recommendable indications based on judgements and generalisations to develop novel theory are absent. In an ethnographical study one could investigate decision makers in companies and study their behaviours to then portray the complex findings as a thick description.

On top of that, the contribution to practice, which was an important ambition of the DBA thesis, plays a subordinate role only as it is “not intended to be very immediate or specific” but more a “matter of general-purpose knowledge or of modifying assumptions about [...] forms of practical activity” (Hammersley, 2005, p. 146).

Phenomenology as further potential methodology was also rejected in this thesis regardless of its potential for investigations with/without prior knowledge and the ambition “to develop an understanding of complex issues (e.g. constructs, concepts or ideas, the author) that may not be immediately implicit in surface responses” (Goulding, 2005, p. 301).

The primary counter-arguments not to select Phenomenology as a suitable methodology for the thesis’ research objectives were:

- Ontological and epistemological position
- Focus on understanding of lived experiences

With the dual-Cartesian nature of phenomenology, as subjects and objects appear on consciousness so that they are inextricably connected (Creswell & Poth, 2018, p. 76), phenomenologists refuse the ontological subjective-objective dichotomy and, with that, a core pillar of the thesis’ research. The critical realist approach with its objective view on the

research topic views the PCMS as being independent from the social actors and their individual experiences in a company.

With that, Phenomenology is not in search of the 'truth' about PCMS and its relation to a contingency factor but of understanding different interpretations of experiences to construct the essence out of it (Creswell & Poth, 2018, pp. 76-77), which, again, is not in line with the thesis' research goal. This hinders law-like findings as aimed for in the thesis to generate theory based on normative cause-and-effect logic.

Grounded Theory, finally, offers a number of strong arguments in favour of the thesis' research related to the thesis' objectives and general approach (as collected from various authors mentioned below):

- Explicit goal to develop theory
- Theory potentially comprising causal explanation and generalisations
- No prior knowledge of phenomenon needed
- Contribution to practice supported by strong reference to empirical data and focus on practical problem
- Potential critical realist approach

First of all, GT is the only methodology explicitly claiming the research's primary goal to develop theory (Punch, 2014, p. 133; Urquhart, 2019). 'Understanding' is not an end in itself, it serves as input into theorising. 'Generalising' (as an often-claimed prerequisite for theory) is not challenged in GT (Hays & McKibben, 2021, pp. 181-182) but part of the "recognition of the need for a methodology that could track and validate the process of theory-building" (Goulding, 2005, p. 295) and therefore it is 'built-in' to the formal procedures given by GTM (Finch, 2002, pp. 214/230; Ribes, 2019).

Secondly, the lack of existing/prior knowledge or theory about PCMS does not challenge the GTM at all, it is, in contrary, a defining characteristic not to investigate too extensively into it prior to the research, at least to justify and explicate an informed approach to avoid research bias and to enhance the self-imposed ambition to ground the theory in the empirical data (Suddaby, 2006, pp. 634-635; Thornberg, 2012).

Thirdly, GT is open to different ontological and epistemological positions, potentially also towards a critical realist version with its realist and relativist stance (Hoddy, 2019; Lee, 2012; Kempster & Perry, 2014; Timonen et al., 2018). This enables and supports the causal and normative character of the theory to be developed to provide law-like generalisations. In addition, middle-range impact of grounded theory developed with GT is claimed to be an explicit goal and matching with the thesis’ research goals (Charmaz, 2008, p. 397; Glaser & Strauss, 2006, p. 32; Hood, 2010, p. 156; Pidgeon & Henwood, 2009; p. 695; Wuest, 2012, p. 225).

	Main arguments supporting the thesis' research goals	Main arguments harming the thesis' research goals
Phenomenology	<ul style="list-style-type: none"> + No prior knowledge of phenomenon needed + Ambition to understand complex constructs, not easily accessible 	<ul style="list-style-type: none"> - Ontological and epistemological position - Focus on understanding of lived experiences rather than normative theory with law-like generalisations
Ethnography	<ul style="list-style-type: none"> + Potential (critical) realist character to explicate structured patterns of action. 	<ul style="list-style-type: none"> - Focus on understanding and description rather than developing normative theory - Focus on particular instead of generalizing to theory - Contribution to practice not intended to be very immediate or specific
Case Study Research (CSR)	<ul style="list-style-type: none"> + Intensive application of CSR in management and business research + Potential normative character in extensive, comparative studies based on shared paradigmatic views + Potential critical realist approach 	<ul style="list-style-type: none"> - Questionable generalisation potential for CSR, especially single CSR - Contribution to theory development focussed mainly on conceptualisations, theoretical propositions or hypotheses and theory advancement (not novel theory building) - Contribution to practice challenged by questionable replicability of CSR's contextualized approach
Grounded Theory (GT)	<ul style="list-style-type: none"> + Explicit goal to develop theory + Theory potentially comprising causal explanation and generalisations + No prior knowledge of phenomenon needed + Contribution to practice supported by strong reference to empirical data and focus on practical problem + Potential critical realist research approach 	

Table 4: Main arguments about thesis’ research methodology

Table 4 summarises the main arguments informing the decision about the thesis' research methodology. It suggests that despite shared arguments among all methodologies such as qualitative research approach or proven record of research applications in management research²⁵, there are also specific methodological arguments which could justify the use of any of these.

Having said this, there are important arguments against all of the methodologies which are in opposition of the thesis' approach, except GT. It was shown that especially paradigmatic concerns on the research's critical realist ontology and epistemology, raised questionable contribution to novel theory generation (based on rigorous generalisation) and the extent of focus on understanding and description (instead of causality/normative claims as research goals) were principle methodological refutations for the thesis' research ambitions. GT on the other hand "is unambiguously defined by its exclusive endeavour to discover an underlying theory" (Kenny & Fourie, 2014, p. 2), being one of the "most influential and widely used modes of carrying out qualitative research when generating theory is the researcher's principal aim" (Strauss & Corbin, 1997, p. vii).

In doing so, it combines several defining characteristics matching the preceding line of reasoning and, in summary, is the only methodology explicitly addressing the generation of novel middle-range theory bracketing prior knowledge and potentially supporting a normative character based on a critical realist's cause-and-effect-logic with law-like generalisations. To support this milestone decision at this stage, exemplary-yet-explicit reference to authors are highlighted by not only referencing their source but quoting essential longer passages underlining GT's essential characters (table 5). As already hinted above, there is yet a variety of distinct GT forms (Bryant, 2019; Dey, 1999) which differ considerably from each other in terms of philosophical backgrounds and research practices. So, to choose, again, the most appropriate one for the thesis, it is clear that this was a best fit for the research's ambition. In the style of Eriksson and Kovalainen "This is why [...] you will need to specify what kind [...] you wish to perform" (2016, p. 151). This specification and selection are explained and justified in the next section.

²⁵See Makri and Neely (2021) or Maupa and Abidin (2020) for GT.

Author and comment	Quote
Kruth (2015) underlines the rather more theorising than descriptive character of GT based on interview data no matter whether from participants first hand or co-researchers:	"Grounded theory research attempts to create a theory of an event, phenomenon [...] from an exploration of interviews with participants and co-researchers. The problem being addressed focuses on the creation of the theory rather than a description [...]. The focus is the development of a grounded theory, which is derived from the data that are gathered in the field" (p. 225)
Tarozzi (in Glaser & Tarozzi, 2007) values the practicability and normative potential of theories based on GT methodology, stating:	"[GT] is particularly suitable in those fields where people demand research practices with concrete guidelines and directions for action and change. Some practical disciplines [...] can find affinity with a methodology that starts from the main concern of participants and ends with a theory that works, fit, is relevant and useful. Research offering as a result a theory, rather than a detailed description, allows practitioners to transform the explored contexts" (p. 24)
Creswell and Guetterman (2021) emphasise the novelty of theories generated by GT as well as the coverage of a situation's complexity and the suitability for a contribution to practice:	"You use grounded theory when you need a broad theory or explanation of a process. Grounded theory generates a theory when existing theories do not address your problem or the participants that you plan to study. Because a theory is "grounded" in the data, it provides a better explanation than a theory borrowed "off the shelf," because it fits the situation, actually works in practice, is sensitive to individuals in a setting, and may represent all of the complexities actually found in the process" (p. 478)
Chong and Yeo (2015) highlight the novelty and explanatory power of studies using GT:	"Grounded theory is applicable to generate a new theory or adjust an existing theory, giving a more explicit explanation to a studied process, and to discover a general perception [...] Goulding (1999) viewed that grounded theory is also suitable to elicit a theory that receives only a little attention in previous studies, or has been overlooked in the literature" (p. 262)
Bryant and Charmaz (2010a) stress the mid-range ambition of GT and the contribution to practice:	"Given some of the key ideas about GTM, that it should produce mid-range theories grounded in the data, 'fit' the context, and generate applicable and useful analytic explanations, it is important to note that even from the outset a significant strand of practice-oriented research was manifest" (p. 6)
Lo (2016) summarises Morse's portrayal of GT while stressing its contribution to understanding, link to real life and relevance:	"[A] well-constructed GT has the following merits. First, it is elegant in its parsimonious theoretical presentation [...] and contributes to our understandings of social problems. Second, while abstract, a GT links directly to data and thus is embedded in the context [...]. Third, it has a high degree of relevance since grounded theorists focus on answering the concerns and questions that are important to a discipline" (p. 178). See also Morse (2001).
Walsh, Holton and Mourmant (2020) shed light on the conceptual power and suitability regarding business and management topics:	"GT's particular value is in this ability to provide a conceptual overview of [...] what is actually going on [and is] particular appropriate for studies of emerging organizational phenomena and complex environments" (p. 6)
Locke (2003) specifically addresses management research and the potency to overcome the research-practice gap:	"This form of theorizing then, with its insistence on pragmatic usefulness as a criterion of good theory, is particularly adept at bridging theory and practice, providing employees and managers a way to identify and institute changes that might improve their situations"(p. 96)

Table 5: Quotes on GT's essential characteristics

3.3.2 Identifying Critical Realist Grounded Theory to develop normative theory

Despite the widely shared appreciation of Glaser and Strauss jointly being credited for GTM in and after 1967 (and its wide acceptance and adoption as a research methodology in numerous scientific disciplines) there is an alleged²⁶ noteworthy range of different forms of GT approaches (Amsteus, 2014; Breuer, Muckel, & Dieris, 2019, pp. 24-31; Müller, 2021, p. 12). This multitudinous number of variants, provoked Dey to claim that there exist “as many versions of grounded theories as there are grounded theorists” (1999, p. 29).

However, there is the recognition that in research projects there is often ignorance towards that range with too few explications about the methodology’s procedure (Stol, Ralph, & Fitzgerald, 2016, pp. 125-126). Over and above, there is the problem of ‘wanna-be’ or “pseudo GT” studies (Lowe & Tossy, 2017, p. 102), which are, in many cases, wrongly-labelled or a misuse of the positively connoted label of ‘Grounded Theory’ hereby abusing the inherent flexibility of GT in an “anything goes” manner (Jones & Noble, 2007, p. 84; Stevens & Van Praag, 2022). This further increases the need for explanation and justification of the selection of the adequate GT variant that informs the research design (Ahmed & Haag, 2016).

Due to this, a brief description/differentiation is needed as “researchers should make explicit what school of grounded theory they apply, and should consistently adhere to that school’s procedures in order to preserve the integrity of grounded theory and avoid inconsistencies and contradictions” (Seidel & Urquhart, 2016, p. 170). This should avoid confusion about the wording/language used and ensure a transparent portrayal of the research methodology informed by the research goal and informing the research design afterwards to make full use of GT’s theory developmental power (Fendt & Sachs, 2008; Goldkuhl & Cronholm, 2019, p. 5; Ratnapalan, 2019, p. 668) in order to ensure “methodological congruence” (Birks & Mills, 2023, p. 47).

Simply stating/selecting ‘any’ Grounded Theory and then labelling the approach as ‘critical realist’ would therefore be dubious and not trustworthy, specifically for a doctoral thesis in

²⁶In contrast, Glaser claims that there is only one form of GT (Simmons, 2022, p. 22).

which a critical view on major decision points is rightly demanded (Barrett, Rodriguez, & Smith, 2021; Wallace & Wray, 2021; Weatherall, 2019). Owing to this crucial significance, as well as a practitioner's often limited access to those methodological nuances, comparably more room is spent on the justification of the selection of Critical Realist GT in this thesis. Special attention is drawn on the ontological and epistemological premises of the specific variant (Ash, 2022).

The greatest understanding of the commonalities and distinctions is gained when a historical account is added to the description as the initial triggers for any kind of diverging developments within GT to inform the distinctive features of current GT's pluralism (Bryant, 2017, pp. 63-82; Scholes, 2020, p. 71).

3.3.2.1 Brief historical account and overview of Grounded Theory variants

Despite the growing GT variety, the development of GT from its origins to the currently established differing forms has received little attention amongst scholars in the past (Kenny & Fourie, 2014, p. 1).

A typical account portrays Glaser and Strauss as originators of GT with their seminal book in 1967 as a revolutionary response to the then-dominant domain of deductive theory verification and hypotheses testing to advocate methodological consensus in social science, which called into question the establishment of the social science's mainstream scholars and structure (Breuer et al., 2019, pp. 16-17; Charmaz, 2014, pp. 1075-1076). Such accounts stereotypically also include how Glaser and Strauss developed apart from each other into two schools of GT (figure 45): the Glaserian and the Straussian GT (e.g. Alammar, Intezari, Cardow, & Pauleen, 2019; Kelle, 2007; Howard-Payne, 2016; Stern, 2016a, p. 25, Urquhart, 2023, pp. 15-18; Van Niekerk & Roode, 2009).

Most often, a third way of GT is added to the basic description, constructivist GT, credited to Charmaz (and therefore also labelled Charmazian GT) who was a follower of both Glaser and Strauss (Niasse, 2022; Rakhmawati, 2019; Sebastian, 2019; Weed, 2017; Zhuang & Song,

2019). Less often, approaches from Corbin, Schatzman or Clarke (as members of a ‘second generation’ of grounded theorists) are briefly described.²⁷

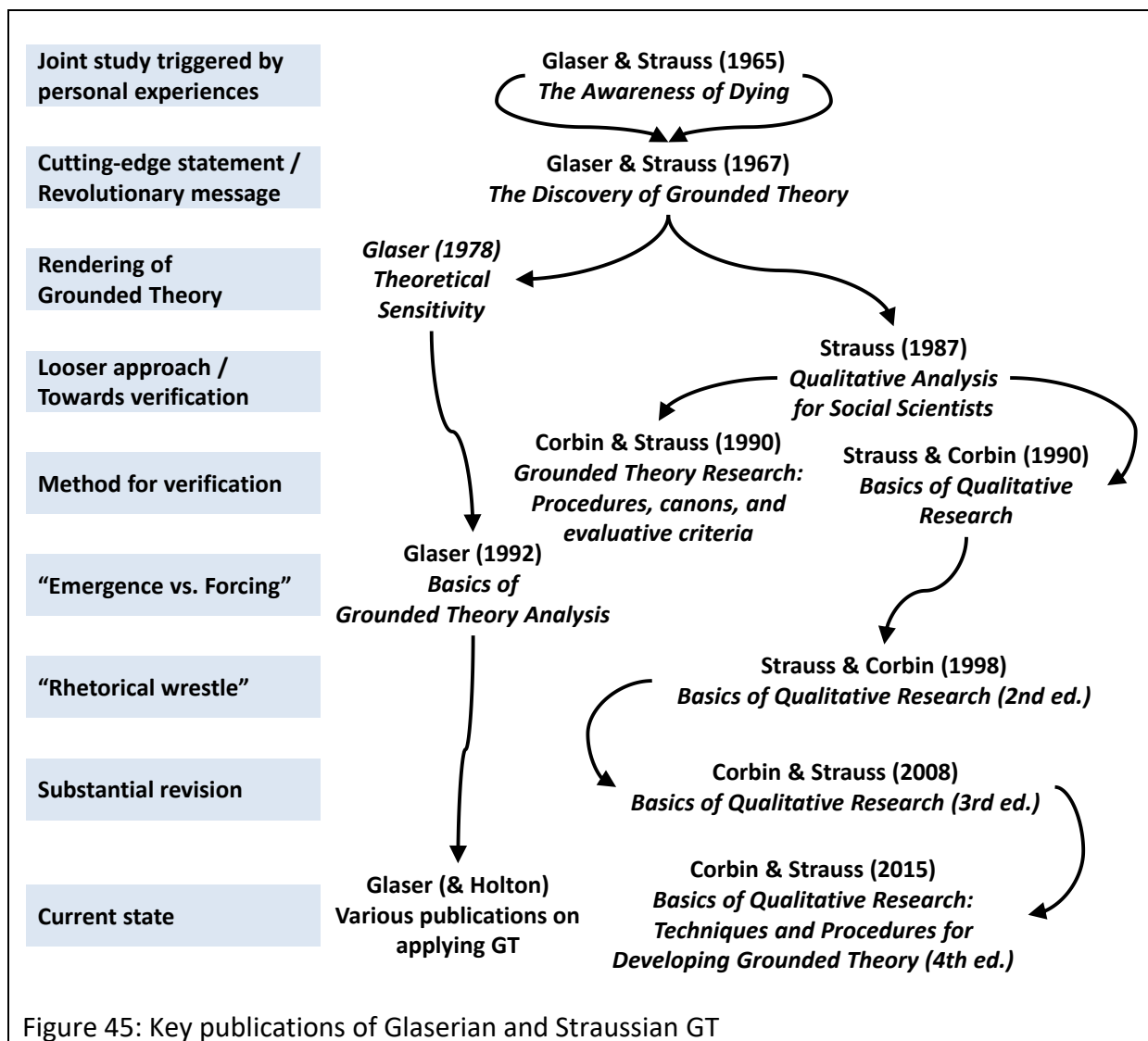


Figure 45: Key publications of Glaserian and Straussian GT

Taking this last sketch as the mainstream’s view on GT history it can be presented as a simplified genealogy of the GT’s development as outlined, e.g. by Clarke (2019, p. 18) or Morse (2016, pp. 16-17), yet limited to the most popular and known advocates of GT, to provide a brief introduction to GT, for the novice researchers and practitioners.

²⁷Corbin took over the heritage from Strauss after having co-authored several GT books and then went on to develop the Straussian GT approach after Strauss’ death in 1996 (e.g. Packer-Muti, 2009; Rieger, 2018). Schatzman, likewise a companion from Strauss, developed the dimensional analysis and Clarke advanced the Straussian GT view by developing the situational analysis (e.g. Equit & Hohage, 2016, pp. 35-40; Rupšienė & Pranskūnienė, 2010, p. 12) labelled as Clarkeian GT (Apramian, Cristancho, Watling, & Lingard, 2017, p. 359).

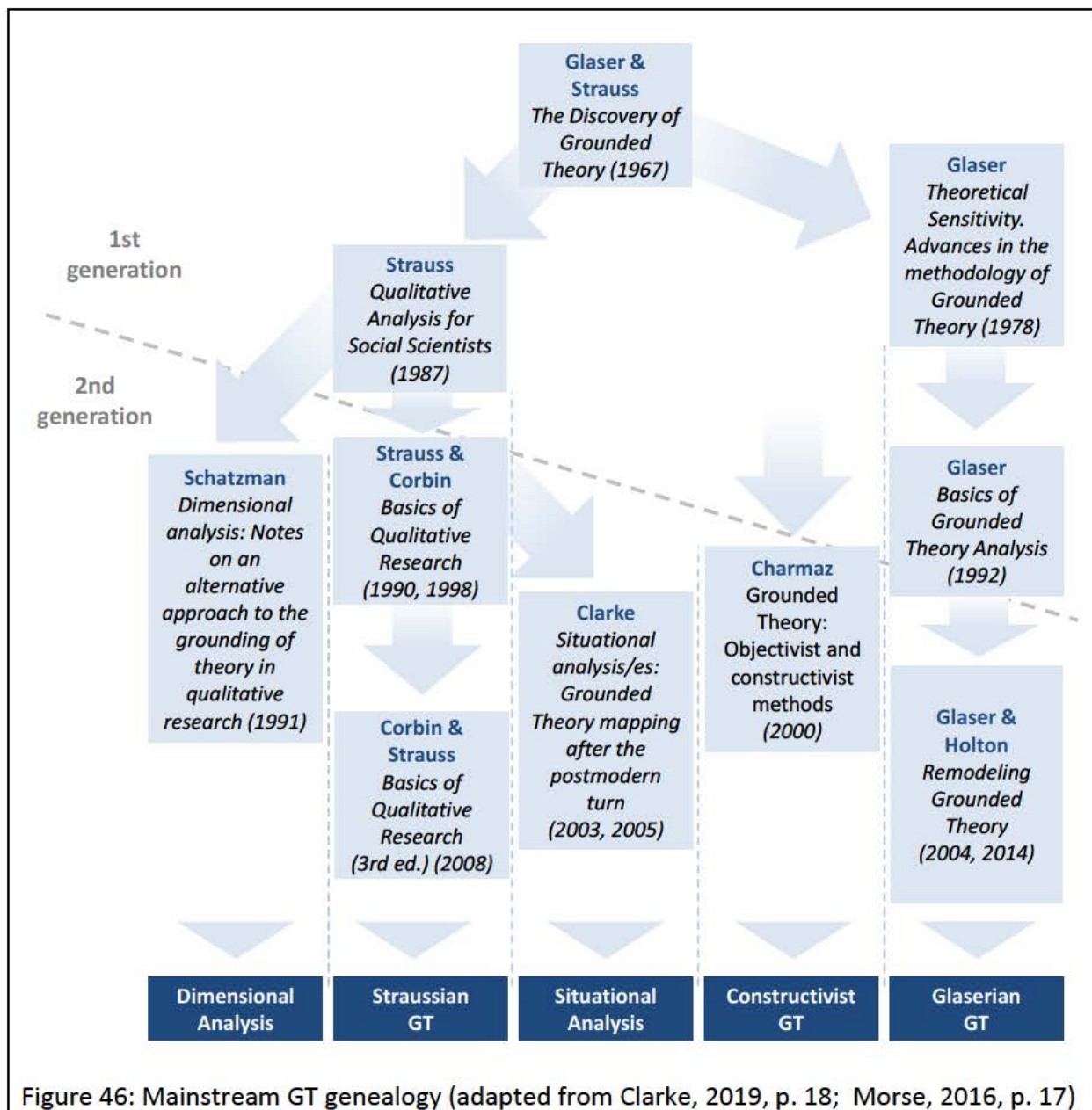


Figure 46: Mainstream GT genealogy (adapted from Clarke, 2019, p. 18; Morse, 2016, p. 17)

Those introductory/simplified overviews do have their value, especially in terms of choosing GT versus other methodologies, but when it comes to the researcher’s decision regarding which type of GT to choose, the line of reasoning is less obvious and therefore needs careful and thorough investigation to find the best match with the research’s intention. This need is indicated by the growing number of publications portraying the different types of GT (Bryant, 2019; 2021a; Muhaiyuddin, Bakar, & Hussin, 2016; Rieger, 2018).

Summarising the several sources relating to what are labelled as variants or different types of GT²⁸, they can be structured into GT variants branded according to their:

- claimed originators
- historical appearance and development
- general advancement based on a previous version
- 'unique' and central differentiating dimension
- philosophical underpinning dimension

Table 6 below lists the main variants of GT mentioned in this chapter, without claiming to be exhaustive but instead used to illustrate the "Maze of Grounded Theory" (Evans, 2013, p. 37). It partially draws on and combines previous overviews or lists, such as those from Clarke (2019, p. 18), Denzin (2010, p. 454) or Reichertz (2019, p. 260).

The 'GT maze' is due to the complexity of the variants with its partially overlapping character, as the differentiating dimensions are neither mutually exclusive nor commonly accepted but subject to individual (mis-)usage. It is, furthermore, a trigger for the "continual permutations of misunderstanding" (Bryant, 2021b, p. 397), leading "to the continuing antagonism emanating from outside the method" (Bryant, 2021b, p. 397). A clear and transparent selection and description of the GT underlying the research is therefore essential and outlined next.

²⁸Reasons triggering the variety of variants as a GT 'family of methods' (Babchuk, 2011; Bryant, 2019, pp. 5-29), are the comparably open/vague formulation in the original Discovery book to inspire further advancement (e.g. Gibson & Hartman, 2014, pp. 27-29), the differences in personal backgrounds of Glaser and Strauss triggering the split into the their two main GT schools (Hernandez, 2008) and the fast adoption by second and third generation GT scholars (Clarke, 2019, p. 18; Morse, Stern, Corbin, Bowers, Charmaz, & Clarke, 2016).

Dimension	Main Grounded Theory variants (exemplary sources)
Claimed originators / advocates	<ul style="list-style-type: none"> * Charmazian GT (Hohage, 2016) * Clarkeian GT (Apramian, Cristancho, Watling, & Lingard, 2017) * Glaserian GT (Artinian, Giske, & Cone, 2009) * (Sternian GT) (Stern, 2016a) * Straussian GT (Devadas, 2017; Thai, Chong, & Agrawal, 2012)
Historical appearance and development	<ul style="list-style-type: none"> * Authentic GT (Lowe & Tossy, 2017) * Classic GT (Aldiabat & Le Navenec, 2011a; Christiansen, 2008) * Contemporary GT (Licqurish & Seibold, 2011) * Current GT (Hernandez, 2008) * Original GT (Hernandez, 2008) * Orthodox GT (Goldkuhl & Cronholm, 2010, p. 198) * Traditional GT (Burvill, 2019)
Philosophical underpinning	<ul style="list-style-type: none"> * Constructionist GT (Malungahu, Huggard, & Buetow, 2017) * Critical Realist GT (Oliver, 2012) * Interactionist GT (Spooner, 2006) * Interpretist GT (Sebastian, 2019) * Objectivist GT (Taghipour, 2014) * (Post-)Positivist GT (Charmaz, 2005, p. 510; Matteucci & Gnoth, 2017) * Pragmatist GT (Babchuk, 2015) * Realist GT (Lo, 2014)
'Unique' and central differentiating dimension	<ul style="list-style-type: none"> * Code-oriented GT (Reichertz, 2019) * Computational/Computer assisted GT (Nelson, 2020; Denzin, 2010) * Discursive GT (McCreaddie & Payne, 2010) * Extended GT (Milani & Hashemi, 2020) * Feminist GT (Wuest & Merrit-Gray, 2001) * GT Ethnography (Charmaz, 2006, pp. 22-25) * Inductively oriented GT (Reichertz, 2019) * Informed GT (Thornberg, 2012) * Multi-Grounded Theory (Goldkuhl & Cronholm, 2010) * Networked GT (Brailas, 2014) * Qualitative GT (Soklaridis, 2009) * Quantitative GT (Glaser, 2008) * Reflexive GT (Breuer, Muckel, & Dieris, 2019) * Situational GT (Shaw, 2013) * Transformational GT (Redman-MacLaren & Mills, 2015) * Visual GT (Konecki, 2011)
General advancement based on a previous version	<ul style="list-style-type: none"> * Evolved GT (Mills, Bonner, & Francis, 2006) * 'Re-discovered' GT (Gibson & Hartman, 2014) * 'Re-grounded' GT (Bryant, 2002) * 'Re-invented' GT (Thomas & James, 2006) * 'Re-modeled' GT (Glaser & Holton, 2014)

Table 6: Overview of 41 GT variants²⁹

²⁹Adding to this list are also variants, published after the thesis' study such as 'Collaborative GT' (Díaz, Pérez, Gallardo, & González-Prieto, 2023), 'Postmodern GT' (Ahmady & Khani, 2022), 'Relational GT' (Glennon, Watson, Fisher, & Gracey, 2022), 'Qualitative GT' (Moeyersons et al., 2022).

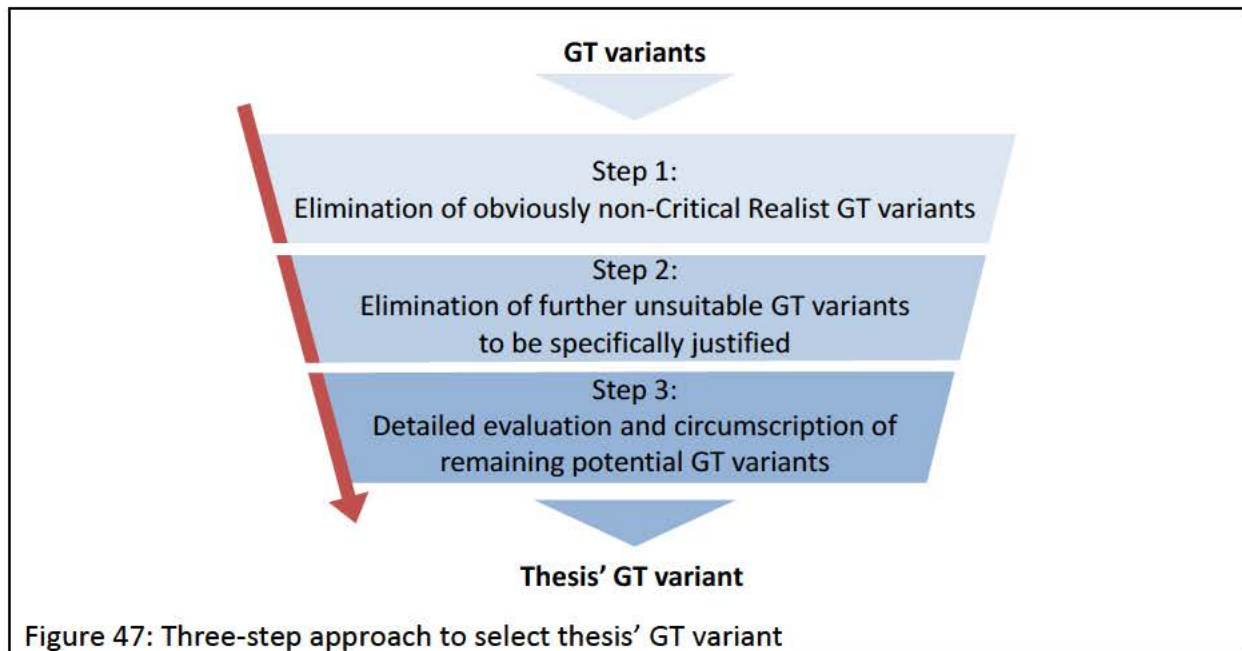
3.3.2.2 Evaluation of Grounded Theory variants and selection of critical realist variant

In the previous chapter, the variety and complexity of GT variants with the underlying reasons were portrayed, culminating in an overview of the various different main, and alleged, GT types. The following evaluation of the different forms is completed not via a comprehensive description and evaluation of all characteristics of these variants but by concentrating on the potential absence of any key characteristics required by the research goal with the selected critical realist research paradigm. This will shorten the evaluation by not being overwhelmingly descriptive in this section of the thesis.

Consequently, the next most important criterion to proceed is the applicability of the critical realist research paradigm because “[r]eferring to philosophical ideas without really using them is pointless, bewildering and means a waste of [...] time [...]. Interplay [on the contrary] between philosophical ideas and empirical work marks high-quality social research” (Alvesson & Sköldbberg, 2018, p. 12).

From GT’s perspective, Lo (2014) or Birks, Hoare and Mills (2019) confirm the necessity of early paradigmatical alignment for the selection of the proper GT variant (see also Van Niekerk & Roode, 2009, p. 102). They state that “ontological and epistemological clarification is imperative in a GT study” (Lo, 2014, p. 72) because “when considering versions of GT, it is clear to see how this philosophical positioning influence[s] each grounded theorists’ approach to the research process” (Birks, Hoare, & Mills, 2019, p. 2). Agreeing to this position, a pragmatic three-step approach is followed (figure 47 below).

Following the aforementioned selection rationale, any type of GT not incorporating a critical realist perspective consequently did not qualify to be considered as a choice in this thesis. A challenge for evaluation is embedded in GT’s general ‘openness towards philosophical positions’ as claimed by some scholars (Annells, 1996; Levers, 2013) or ‘anti-philosophical stance’ as promoted by others (Glaser & Tarozzi, 2007, p. 27) which are two sides of the same coin.



As mentioned in chapter 3.3.1.3, GT shows flexibility towards potentially underlying philosophical stances. More specifically, there are opposing directions formulated by scholars. They are either neglecting the relevance of paradigmatic aspects, in favour of pure trust of the methodology's inherent power, as it will do the job 'on its own' (e.g. Artinian, Giske, & Cone, 2009), or promoting the prevalence and usability of a philosophical standpoint, either for GT overall or for a specific variant of it (e.g. Denzin, 2010, pp. 454-455; Gibson & Hartman, 2014, p. 19).³⁰ Consequently, the majority of GT variants do not shed particular light on their philosophical stance, the most notable exception being constructivist GT credited to Charmaz in her seminal opposition to objectivist GT (Charmaz, 2000). Nevertheless, despite the challenging character, it is possible to connect GT variants with a philosophical viewpoint, by means of implicit hints, if not explicitly stated.

Table 7 lists those GT variants which were expelled from further investigation already in step 1 as they are obviously not incorporating a critical realist stance.

³⁰As demonstrated in chapter 3.3.2.1, this undefined position of GT towards philosophy is, firstly, due to the vague and unspecific formulation of the first introductory GT version of Glaser and Strauss in 1967 and in publications in the last century, in which no explicit reference to paradigmatic, ontological or epistemological statement was given (Wuest, 2012, pp. 227, 248-252). Secondly, literally "an almost complete silence about any [...] epistemology and philosophy of science" (Bryant, 2002, p. 30) can be stated.

Eliminated Grounded Theory variants	Elimination reasons (source)
<ul style="list-style-type: none"> * Straussian GT * Charmazian GT * Clarkeian GT * Sternian GT 	<ul style="list-style-type: none"> * Attributed to pure/classic pragmatism, interactionism or interpretivism (Morgan, 2020, p. 64; Rakhmawati, 2019, p. 112; Strübing, 2010, 2019a) * Attributed to constructivism (Charmaz, 2014b; Flick, 2018, p. 6) * Shows constructivist characteristic (Licqurish & Seibold, 2011, pp. 12-14) * More an ironic comment whilst portraying Glaserian GT (Stern, 2016b, p. 56) Subsequent statements about GT do not qualify for a distinct variant of GT.
<ul style="list-style-type: none"> * Authentic GT 	<ul style="list-style-type: none"> * Used as synonym for classic GT (Lowe & Tossy, 2017, p. 105).
<ul style="list-style-type: none"> * Constructionist GT * Interactionist GT * Interpretivist GT * Pragmatist GT 	<ul style="list-style-type: none"> * Explicitly stated 'unsuitable' philosophical position
<ul style="list-style-type: none"> * Code-oriented GT * Computational GT * Discursive GT * Feminist GT * Networked GT * Reflexive GT * Transformational GT * Visual GT 	<ul style="list-style-type: none"> * Attributed to Corbin advocating and advancing Straussian GT with a pragmatist interpretive orientation (Reichertz, 2019, p. 260) * Interpretive characteristics (Nelson, 2020, p. 3) or the pure focus on the non-relevant criterion of a methodological tool * Constructivist worldview (McCreaddie & Payne, 2010, p. 792) * Interpretive constructionist (Plummer & Young, 2010, p. 307) and critical orientation (Kushner & Morrow, 2003) * Epistemological position near the Charmazian constructivist GT (Brailas, 2014, p. 2) * Follows a constructivist path (Breuer, Muckel, & Dieris, 2019, p. 10) * Critical realist, yet based on a situational stance (Redman-MacLaren & Mills, 2015) * Constructivist set-up towards the distinct consideration and interpretation of visual data (Konecki, 2011)
<ul style="list-style-type: none"> * Evolved GT * 'Re-discovered' GT * 'Re-grounded' GT * 'Re-invented' GT * 'Re-modeled' GT <p>See comment 2</p>	<ul style="list-style-type: none"> * Associated with Straussian GT (Chun Tie, Birks, & Francis, 2019, p. 2; McCreaddie & Payne, 2010, p. 787; Mills, Bonner, & Francis, 2006, p. 27) * No separate GT variant, but refreshment with focus on a distinction between original GT and constructivist GT (Gibson & Hartman, 2014, pp. 3-5) * Advocates a grounding of the methodology in constructivist thinking (Bryant, 2002) and does not qualify for a distinct GT variant on its own * No separate GT variant, but an attack towards general GT principles with a restrained, timid-yet-hopeful outlook to constructivist variants, emerging at that time (Thomas & James, 2006) * No separate GT variant, but distinction between original GT and qualitative data analysis focussing on blocking points against GT (Glaser & Holton, 2014)

Comment 1: For Straussian GT: Corbin and Strauss themselves dissociate from the alleged realist worldview associated with original GT stating "there is no one "reality" out there waiting to be discovered" (Corbin & Strauss, 2008, p. 10).

Comment 2: The listed 'variants' do not offer distinct alternatives qualifying for a 'real' GT variant. Even if this was not intended by the authors, they have to put up with the accusation that their publication titles add to the bewildering complexity in GT terminology.

Table 7: Overview of eliminated GT variants during first step

Obviously, this applies to those GT variants for which an ‘unsuitable’ philosophical position made reference to it within the GT typology of philosophical underpinning. However, evaluation/elimination are not limited to that philosophically driven classification only, as indications for other GT types about their paradigmatic stance can be found as well.

‘Glaserian GT’, for example, potentially suggests a positivist or objectivist approach (e.g. Mills, Chapman, Bonner, & Francis, 2007, pp. 73-74; Stol et al., 2016, p. 123), fitting to the formulated research goals, therefore it can be considered for further evaluation. This also applies to the GT variants, related to their historical appearance or development. Although there is low conformity regarding what to call different versions of GT and whom to credit for it, there is no clear argument to exclude those variants/terms from further evaluation in the first instance. Hence, ‘classic GT’, ‘traditional GT’, ‘original GT’, ‘orthodox GT’, ‘contemporary GT’ and ‘current GT’ are assumed to potentially offer critical realist approaches and are taken over to the next phase of critical analysis.

Dimension	Main Grounded Theory variants (exemplary sources)
Claimed originators / advocates	* Glaserian GT (Artinian, Giske, & Cone, 2009)
Historical appearance and development	* Classic GT (Aldiabat & Le Navenec, 2011a; Christiansen, 2008) * Contemporary GT (Licqurish & Seibold, 2011) * Current GT (Hernandez, 2008) * Original GT (Hernandez, 2008) * Orthodox GT (Goldkuhl & Cronholm, 2010, p. 198) * Traditional GT (Burvill, 2019)
Philosophical underpinning	* Critical Realist GT (Oliver, 2012) * Objectivist GT (Taghipour, 2014) * (Post-)Positivist GT (Charmaz, 2005, p. 510; Matteucci & Gnoth, 2017) * Realist GT (Lo, 2014)
‘Unique’ and central differentiating dimension	* Extended GT (Milani & Hashemi, 2020) * GT Ethnography (Charmaz, 2006, pp. 22-25) * Inductively oriented GT (Reichertz, 2019) * Informed GT (Thornberg, 2012) * Multi-Grounded Theory (Goldkuhl & Cronholm, 2010) * Quantitative GT (Glaser, 2008)

Table 8: Remaining potential GT variants after elimination step 1

The remaining GT variants possibly exhibited features of critical realism so did have the potential to serve as the thesis methodology. After the elimination of GT variants that were clearly not showing critical realist worldviews, seventeen alternatives remained for further evaluation as listed in table 8.

Step 2 of the elimination process continued looking at those variants with a claimed **unique differentiating dimension**. The result was to reject all of them but for different individual reasons, wherefore justifying comments are provided.

The main distinguishing element of '**extended GT**' is that it "can operate over multiple disciplines and extract their corresponding combined concepts" (Milani & Hashemi, 2020, p. 1). The reason given is that for multidisciplinary phenomenon "GT is inefficient, mostly because of its lack of details" (Milani & Hashemi, 2020, p. 2).

Even though the authors do not explicitly state their philosophical stance on GT there are reasons not to follow their proposed variant. Firstly, their critique targets the efficiency and not the impossibility to execute GT over multiple disciplines. They propose to add two coding steps to GT (as the reason to label it 'extended') to overcome the claimed inefficiency. This already suggests an inconsistency, as the effort for their extended GT is, related to the number of procedural steps, higher. Furthermore, Milani and Hashemi do not provide evidence for the inefficiency, therefore the start of their line of reasoning is at least debatable. Secondly, they highlight the 'lack of details' they see in GT as the reason but this leaves the reader without any explanatory statement regarding which details they specifically miss in GT. Thirdly, despite presenting two examples for extended GT the article is silent about the question of what distinguishes one discipline from another, making it difficult to identify whether a phenomenon under investigation is truly multidisciplinary or not. Lastly, one might challenge the label they give to their proposed extended GT version and not simply accept the 'multidisciplinary' attribute as the core aspect of it.

In taking up the three firstly mentioned objections, the 'extended GT' variant was omitted for the thesis' research project as the research questions were anchored in the discipline of

management research 'only'. A need to separate any concept into sub-disciplines in which only the rich data can be collected and coded was not foreseen.

'GT Ethnography's characterising feature is its expressed blend of two methodologies: GT and ethnography (Babchuk & Hitchcock, 2013). Although initially this can be seen as a "happy marriage" (Pettigrew, 2000, p. 256) and a meaningful combination (Bamkin, Maynard, & Goulding, 2016), there are doubts to accept it as a GT variant.³¹ Rather it is an ethnography variant displaying GT elements as the terminology "Grounded Theory Ethnography" (Charmaz, 2006, p. 22) or "grounded Ethnography" (Battersby, 1981, p. 93) suggest.³² As Ethnography was rejected as a principle research methodology in chapter 3.3.1.3 (pp. 111-112), the inclusion of GT procedures did not eliminate the principle concerns about the ethnographic focus on cultural dimensions which were absent in the thesis' research goals.

'Inductive-oriented GT' as labelled by Reichertz (2019), emphasises the dominant research approach of those GT studies in opposition to deductive and abductive/retroductive approaches. As GT is often defined as an approach where inductive methodology is a key characteristic (Randall & Mello, 2012; Corley, 2015) it is problematic to define this feature as the dominant argument for a GT variant, though it remains one important feature. Moreover, to complete the typology, other GT variants then should be labelled deductive or abductive/retroductive, which is missing in Reichertz' overview. Consequently, this GT variant was also expelled.

Thornberg's **'informed GT'** (2012), originally addressed towards constructionist GT versions (Themelis, Sime, & Thornberg, 2022, pp. 3-4), advocates the use of extant knowledge prior to a GT study to inform the research. Although formerly rejected by pure inductivist GT

³¹Following this logic, GT Ethnography belongs to the category of mixed methods. Matavire and Brown (2013, p. 124) for example claim to label also mixed methods as GT variants, however allow the absence of typical GT characteristics and, moreover, include methodologies which only claim to be a GT in this category. This line of reasoning is not agreed to, therefore mixed methods are not further followed up.

³²Publication titles "Grounded Theory in Ethnography" (Charmaz & Mitchell, 2001), "Two cases of Ethnography: Grounded Theory and the Extended Case method" (Tavory & Timmermans, 2009) and "Advancing ethnographic research through Grounded Theory practice" (Timmermans & Tavory, 2010) support this view.

scholars who claimed that the theory will emerge anyhow from the data instead of being forced into preconceived and biased hypotheses (El Hussein et al., 2017, p. 1199), there is a growing number of scholars questioning, or at least challenging, this position (Martin, 2019, p. 227). By doing so, informed GT is opening up more potential applications in all paradigmatic versions, including CR. Yet, it is questionable whether with this criterion a distinct GT variant should be claimed. It then would be a dichotomous characteristic (informed/non-informed) or a continuous attribute somehow indicating a 'degree of prior information', which seems unrealistic in terms of effectively introducing this as an operation. Given those concerns, informed GT was excluded from further evaluation. However, the attribute of entering a study in an informed or non-informed manner is relevant as it demands a distinct justification and evidence of not applying preconceptions due to its current state of the debate, as done in chapter 1.1.2.2 (and 4.2.1, pp. 175-176).

A closer reading of '**quantitative GT**' (Glaser, 2008) reveals that it is more of a promotion to make use of quantitative data in GT next to qualitative data as well. Glaser aimed to demonstrate that "GT is not a qualitative method research method. It is a general research methodology that uses any and all kinds of data, both quantitative and qualitative" (Holton & Walsh, 2017, p. 12). Therefore, it should be seen as reinforcement of his well-known dictum that "all is data" (Glaser, 2001, p. 145) and not as an individual GT variant.

Goldkuhl and Cronholm are advocates for their '**multi-GT**' (MGT) (Cronholm, 2005; Goldkuhl, 1999). They add "to grounding in empirical data (as it is made in GT) also grounding in theoretical and internal sources" (Goldkuhl & Cronholm, 2018, p. 1), explaining it by means of explicitly using existing theory for theoretical grounding and "creating a conceptual cohesion of the emergent theory" (Goldkuhl & Cronholm, 2019, p. 2) for internal grounding.

As a distinct input into the development of MGT came from normative design theory (Goldkuhl, 2004), the area in which the thesis' research goal is located, and a positive connotation of any supposed additional grounding elements to increase the groundedness of a theory could be appreciated, MGT could have been a candidate for the thesis at first

glance. However, MGT is more of a candidate for a potential misconception and is expelled from the list of potential candidates.

Firstly, GT claims as a central element of the end product, the theory, its grounding in empirical data (Glaser, 1992). As outlined above, it was a crucial aspect of the original rebellious formulations in opposition to the dominant deductive research of theory verification at that time. It has become one of the great myths that GT is not interested in the inclusion of existing theories and rather neglects extant knowledge (Urquhart, 2023, pp. 31-32; Urquhart & Fernández, 2013). The point GT makes is to avoid preconceptions from an exhaustive prior investigation of available theories and to avoid researcher bias during the coding and analytical procedures. At later stages during the research process, emerging theory is compared with existing theory (Holton & Walsh, 2017, pp. 47-50). Therefore, an additional grounding is not necessary.

Secondly, for GT studies, there are distinct quality dimensions and criteria defined, which differ from other methodologies (Birks & Mills, 2023, pp. 41-60; Glaser, 2014b). They already aim for ensuring generality of the GT's end product, the theory. This, again, grounds the theory not only in the empirical data from the field but also means that it is methodologically 'internal', as it was originally postulated to strive for a scientific, theorised, explicated or accessibly codified approach. Therefore, an additional grounding was not needed.

Coming to the GT typology that is related to the **historical appearance** or development of the potential variant, no variant can explicitly be eliminated. The complexity can be simplified by reducing the number of labels used with the same meaning. One can distinguish two groups of GT versions: early versions, which are named classic, traditional, original, and orthodox and versions referring to a somehow newer stage: current and contemporary.

Checking the connection with any indicators associated with the 'early' types it is common understanding to relate '**original GT**' to the 1967 version as introduced in 'The Discovery of

Grounded Theory' by Glaser and Strauss (e.g. Bluff, 2005; Hernandez, 2008; Van Niekerk & Roode, 2009).

There is less consensus about '**classic and traditional GT**'. Similarly, classic GT (Aldiabat & Le Navenec, 2011a; Evans, 2013; O'Connor, Carpenter, & Coughlan, 2018) and traditional GT (Aldiabat & Le Navenec, 2011b) are related to Glaser and Strauss' 1967 version. However, in addition there are certain spins towards the notion that rather they connect those versions more with Glaser than with Strauss (Giske & Artinian, 2007, p. 64; Mills, Bonner, & Francis, 2006, p. 27; Ratnapalan, 2019, p. 664; Van Niekerk & Roode, 2009) or the opposite, more with Strauss rather than Glaser (Pauleen & Yoong, 2004, p. 143; Reichertz & Wilz, 2016, pp. 52-55, Strübing, 2014, p. V). Both terms are often used synonymously or to complement each other (O'Connor et al., 2008, p. 44).

However, informed users or authors tend to underpin their opinion and relate those classic or traditional terms more-often-than-not to Glaser - referring to Glaser's standpoint that claimed to be closer to the original version compared to Strauss' move away from the initial joint publication (Bello, 2015, pp. 41-42; Decrop & Masset, 2018, p. 138; Mills et al., 2006, p. 27; Stol et al., 2016). Proponents associating it with Strauss mainly argue that his GT version is the more widely applied and acknowledged version and therefore more representative, thereby qualifying equally for the traditional or the classical approach (e.g. Wiesche, Jurisch, Yetton, & Krcmar, 2017, p. 691). Agreeing with the first arguments, in this thesis traditional and CGT are related to those GT versions which adhere basically to the original version from 1967, appreciating incremental advancement in the sense of Glaser to further detail, explicate or complete GT. Moreover, the terms traditional and classic are used without distinction.

Likewise, the term '**orthodox GT**' is also mainly used to relate a GT variant to the original version from 1967 and the subsequent sophistication by Glaser (De Korte & Van der Pijl, 2009, p. 9; Decrop & Masset, 2018, p. 138; Goldkuhl & Cronholm, 2010, p. 188; Noble, 2002, p. 3) to seek for casual relationships (Bartlett, 2018, p. 48). Thus, it is added as a further synonym to traditional and classic GT.

'Current GT' is used in the literature either to indicate a unique GT study which is published in a specific report (e.g. Osadchyy & Webber, 2016, p. 7; Stincelli & Baghurst, 2014, p. 6), or as a summary state of any GT variant at a certain point in time (Charmaz, 2016, p. 135; Radulescu & Vessey, 2011).³³ As both usages do not provide a claim towards a particular GT variant they were expelled.

'Contemporary GT' finally, is most commonly used to differentiate it from the original or classic GT versions (e.g. Hoddy, 2019, p. 114) but then connected more specifically to either a constructionist GT of Charmaz (Baines & Edwards, 2018, p. 2; James, 2018, p. 369) or Clarke or both (e.g. Licqurish & Seibold, 2011, p. 11), or the Straussian version of GT (Gardner, McCutcheon, & Fedoruk, 2012, p. 68).

However, there are authors, labelling the latest Glaserian versions as contemporary as well (Gentles, Jack, Nicholas, & McKibbon, 2014, p. 4), putting back the sense of its contemporaneity to a pure time-bound attribute. Taking this argument, contemporary GT was expelled from further analysis due to its unspecific nature. It is, however, an indicator to differentiate against versus the original and earlier versions.

After this second elimination step seven alternatives remained for final selection of the thesis' GT variant as listed in table 9. However, the study then arrived at a point in which the alleged ambiguity/abstruseness of GT's philosophical underpinning or flexibility and its complexity/contradiction of various variations (Equit & Hohage, 2016; Urquhart, 2023, p. 34) fully impacted the decision, justification, and the labelling of the thesis' GT version. Although focussing on paradigmatic aspects to select a Critical Realist GT, the "Maze of Grounded Theory" (Evans, 2013, p. 37) does also include linguistic and methodological aspects (O'Connor et al., 2008, p. 36).

In the previous section, differing positions concerning aspects of what constitutes a GT variant or how a paradigmatic, linguistic, or methodological attribute is evaluated from different scholars were shortly portrayed. This was mainly done for one potential GT variant

³³Hernandez (2008) uses „current GT“ as the latest version of GT when comparing three different evolutionary stages of GT, yet limited to variants which show Glaser's involvement.

after another, handled individually. Having managed to shrink down the number of potentially suitable GT variants, an additional aspect increased the difficulty: the overlapping character of dimensions.

Dimension	Main Grounded Theory variants
Claimed originators / advocates	* Glaserian GT
Historical appearance and development	* Classic GT = Traditional GT = Orthodox GT * Original GT
Philosophical underpinning dimension	* Critical Realist GT * Objectivist GT * (Post-)Positivist GT * Realist GT

Table 9: Remaining potential GT variants after elimination step 2

Synthesising the various, sometimes conflicting, lines of reasoning, the following view on GT variants builds the foundation of the thesis (see appendix 3, p. 417, for samples of the diverse GT evaluation). It was not intended to have a clear-cut statement about all paradigmatical aspects of the remaining GT variants but to qualify for a critical realist variant of GT which was matching with the thesis' research project and to serve as linguistic base for the further thesis.³⁴

Based on the first individual works (Glaser, 1964; Strauss, Schatzman, Bucher, Ehrlich, & Sabshin, 1964) and the subsequent joint research project on the 'Awareness of Dying' (Glaser & Strauss, 1965), Glaser and Strauss published the introductory book about the discovery of GT in 1967, upon request of readers of their 'Awareness study' (Holton & Walsh, 2017, p. 1), which is labelled as the original GT.³⁵

³⁴Surely, a more comprehensive analysis and discussion of the philosophical underpinning of GT is needed to enable a clearer view on the diversity of GT as to reduce the confusion within the scientific community.

³⁵Elements of it were already apparent in Glaser's 1964 publication (Fernández, Martin, Gregor, Stern, & Vitale, 2007, p. 232) and Strauss' 1964 co-authored work as well (Reichertz, 2019, p. 277), especially in Glaser's article about the constant comparison method (Glaser, 1965) as a key element of GT, later included as a distinct chapter in the 1967 publication.

Congruent with (critical) realist approaches³⁶, original GT was outlined to seek for causal explanations (Bartlett, 2018, p. 48) and to identify hidden and “latent patterns of behaviour in the data” (Breckenridge, Jones, Elliott, & Nicol, 2012, p. 69). This is well in-line with the CR’s position about a stratified reality distinguishing observable and non-observable layers (Buch-Hansen & Nielsen, 2020, pp. 27-34). Although Glaser and Strauss never explicitly stated a paradigmatic stance of GT (Nathanial, 2011, p. 187), the methodological approach implicitly suggests the possibility of “an objective, external reality, a neutral observer who discovers data, reductionist inquiry of manageable research problems, and objectivist rendering of data” (Charmaz, 2000, p. 510).

Furthermore, objectivist jargon, writing style and wording suggest an objectivist spin like for (critical) realists. Bryant and Charmaz state: “The title of Glaser and Strauss’s methods manual, *The Discovery of Grounded Theory*, attests to a clear epistemological orientation that assumes that reality can be discovered, explored, and understood ... reality is unitary, knowable, and waiting to be discovered” (Bryant & Charmaz, 2010b, p. 34). Likewise, not limited to the title, “the prominent use of the word ‘discovery’ in the original description of the grounded theory method [implies] that truth is waiting to be ‘discovered’ by the researcher” (Watling & Lingard, 2012, p. 851) which indicates a positivist or relativist epistemology (Groenland & Dana, 2020, p. 23). Further (critical) realist jargon can be found throughout numerous publications, e.g. the mindset of ‘variables’ and their ‘dependencies’. Glaser and Tarozzi state: “That’s why GT focuses on dependent variables. It deals with these dependent variables and their relevance and work and fit” (2007, p. 24).

Knowing that the 1967 publication was a provocative attack against the then-dominant theory verification-oriented positivist establishment (e.g. Breuer et al., 2019, pp. 16-17; Moore, 2009, pp. 8-9) the objectivist rhetoric/language aimed also towards a better reception of their book by the then-predominant realist scientific community (Stern, 2016b, pp. 58-59). It was, however, never an attack against objectivist philosophy but against the mainstream’s positivist hypothetic-deductive and confirmatory methodology of theory verification (Walsh, Holton, & Mourmant, 2020, pp. 2-7). Glaser himself ‘admitted’ that GT

³⁶For a, compared to original GT text passages, remarkably similar outline of realist research see Wong, Greenhalgh, Westhorp, and Pawson (2012, p. 93).

can be put to the epistemological level (Glaser & Tarozzi, 2007, p. 36) and therefore is by no means anti-philosophical.

As neither attacking any philosophical views nor advocating other ones, but to simply view GT as a methodology “to suit the purpose of inquiry, the characteristics of the substantive area under investigation, and the worldview of the researcher” (Plummer & Young, 2010, p. 317) the putative actual underpinning view of the original GT comes to the surface: Pragmatism. Nathaniel (2011) displays the pragmatic triggers of Glaser’s and Strauss’ backgrounds and their mentors such as Blumer and Merton (Glaser & Strauss, 1967, p. vii), going back to Peirce’s pragmatism and its indirect but far reaching influence.³⁷

Following Glaser’s and Strauss’ invitation to make use of GT and to apply it to diverse research fields, thereby developing individual specific research designs (Allen, 2010, p. 1607; Glaser & Strauss, 1967, p. viii), and to consider their admittance that starting with the methodological development is a means of staying open to further advancement (Glaser & Strauss, 1967, p. 1), it is therefore justified to see 1967s original GT as being intended to be paradigmatically neutral and open. However, the book’s objectivist rhetoric, the rigorous methodological set up, until then only known from a positivist perspective, or at least in relativist research, and research quality criteria reflecting the objectivist’s or relativist’s attitude (e.g. ‘validity, ‘modifiability’) underpin the suitability of original GT for objectivist and, consequently, (critical) realist philosophical research approaches (Belgrave & Seide, 2018, pp. 2-4; 6).

Staying closer to this original GT, Glaser further advanced, explicated and specified GT beginning in 1978 until his death in 2022, this is why this branch of GT not only is called Glaserian GT but also traditional or classic GT (Hallberg, 2006, p. 144; Holton, 2011; Simmons, 2022, p. xvi), or, as a lesser used term, orthodox (Gregory & Jones, 2009, pp. 773-774). It still incorporates and even stresses the openness and flexibility towards various

³⁷Nathaniel is rightly amongst the few to clearly and explicitly demonstrate the pragmatic orientation of GT, although it is debatable whether that orientation was intentional or unintentional (but read Gibson & Hartman, 2014, pp. 18-19 for a critique). Similarly, Strübing refers to Peirce’s and Dewey’s lines of influence (2014, p. 2) which did impact upon, although in different ways and to different extent, both, Glaser and Strauss (Riemann, 2011, p. 408).

philosophical stances claimed by Glaser himself (Glaser, 1992, p. 18; Walsh et al., 2015, p. 594) or related followers (e.g. Holton, 2009, p. 38; Holton & Walsh, 2017, p. xii; Simmons, 2014, pp. 294-299; Urquhart, 2023, pp. 84-94). In doing so, it must be recognised that the differences between original and classic GT are still minor.

But Glaser's comparably strong rejection of constructivist and interpretivist GT (Glaser, 2002b; 2014c), represented mainly by Charmaz and the late Strauss with Corbin, indicates, next to his continuing writing style and the absence of a personal rejection of the critical realist claim, the possibility for a critical realist approach. Charmaz let herself be carried away to state that "Grounded Theory became known as the most realist [...] of the modernist qualitative methods" (Charmaz, 2008, p. 400). Glaser himself gives arguments for a (critical) realist position detaching the researcher's role from the theory, becoming an outside observer but demanding trust in the methodology (Hallberg, 2006, p. 144). Additionally, Glaser promotes 'modifiability' as a key quality criterion of classic GT (Glaser, 1992, p. 116; Lomborg & Kirkevold, 2003) which is a strong indicator for a relativist epistemology, as modifiability goes hand-in-hand with an uncertain, fallible, and momentary view on the nature of theories/knowledge.

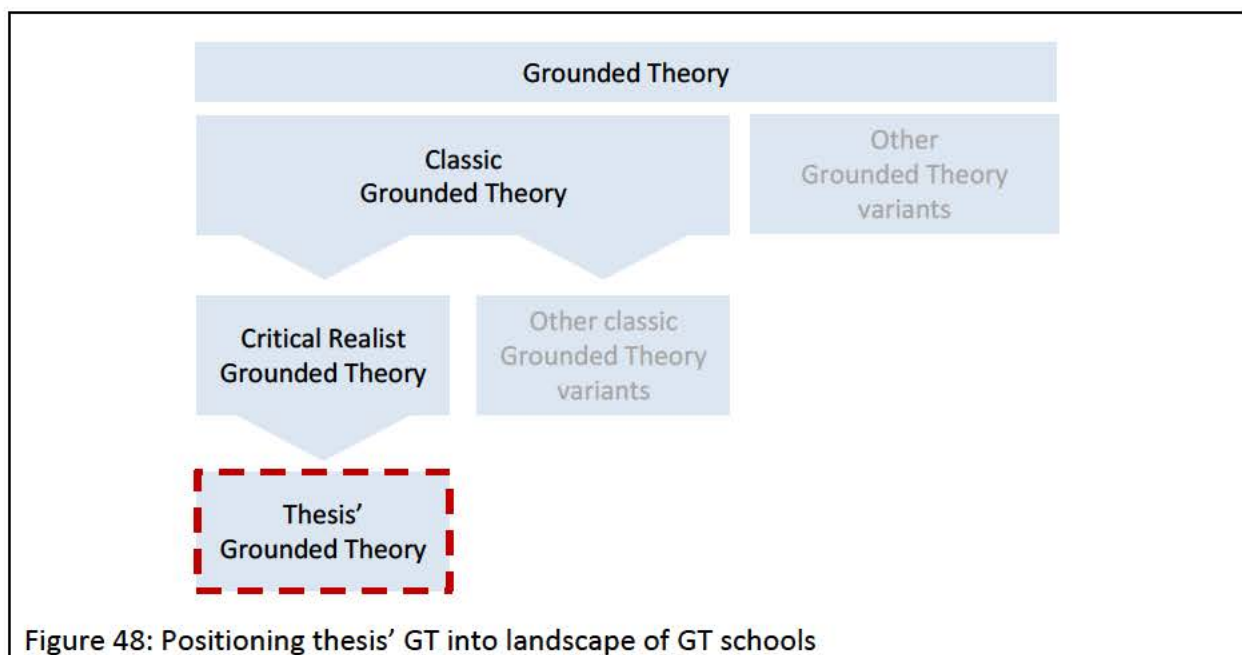
In the search for a GT variant that is open and suitable to follow a critical realist view with its objectivist and relativist worldviews, classic GT (CGT) was the first route to pursue (see also Looker, 2022; Nikbakht, 2020). However, it is not labelled Glaserian GT (as Glaser would not explicitly agree on a philosophical tag), as not every CGT study is a Critical Realist GT.

'Classic' GT was preferred over 'original' GT for a simple reason: to take advantage of the achieved advancement and specification from 1978 to date (e.g. Corley, 2015, p. 601), specifically in terms of improved directions whilst conducting the research which were left to the novice researcher alone in the 1967 version (Moore, 2009, p. 13).

In following Glaser's statement of classic GT's flexibility not only towards philosophical underpinning but also towards the specific research design outside of an obligatory set of methods and steps, the following summary of the thesis' selected CRGT can be drawn.

The study applied a classic GT informed by CR building on its flexible philosophical stance (figure 48). In doing so, it was first and foremost qualitative (anticipating that CRGT incorporates retroductive elements (Conlon, 2020; Hoddy, 2019) and that the study, a priori, was not limited to qualitative data only).

Furthermore, it was informed to a certain degree so as to increase the researcher's conceptual and theoretical sensitivity (and acknowledging that every conscious perception is based on any kind of prior information as will be outlined in the conclusion chapter). The CRGT study was computer-assisted to an extent that research efficiency was enhanced, yet efficacy was not impacted. Lastly, it was a contemporary approach to incorporate any possible advancement within CGT to that date to achieve the best research result following this approach.



3.4 Designing the principle research procedure

Despite the postulated openness and flexibility of GT's general approach, the selected Critical Realist Grounded Theory (CRGT) aimed at adhering to a strict and rigorous procedure. Unfortunately, next to "what Gibson calls an epistemological anarchy" (Thuleisius as quoted in Glaser, 2005, p. 43), the way forward in many (also non-classic) GT studies fuel critique by not demonstrating a transparent audit trail, tapping into common methodological pitfalls or simply by an inadequate application, regular mix-ups of or cherry-

picked inherent GT methodological steps (Adolph, Hall, & Kruchten, 2008, pp. 174-175; Stol et al., 2016, pp. 125-127; Van Niekerk & Roode, 2009, p. 96).

In terms of adding to “methodological congruence” of the research also “procedural precision” (Birks & Mills, 2023, pp. 47-50), it is therefore obligatory to state the principle way forward and the associated elements during the GT study, although details are subject to unplanned and iterative emerging steps during the research.

This is why ‘only’ GT principles are outlined prior to the research, which will foster the understanding of the theory emergence in chapter 4. The specificities then can be mirrored against this earlier presented ambition to conduct a well-executed study which strives to fulfil the CRGT’s inherent requirements (see table 18, p. 292), as “researchers should formally decide whether theory development is the primary goal. If so, we recommend that the maximum number of GTM procedures should be deployed” (Wiesche et al., 2017, p. 698).³⁸

As Birks and Mills rightly state, to maintain methodological congruence, those conscious decisions dictate “the relationship between the researcher and the data, how it is collected or generated, what it consists of and how it is analysed” (2015, p. 52). Adding to that, there is the widely shared notion that once the GT methodology is chosen, one should strictly adhere to its defined essential procedures, so as not to mix up, confuse or poison the well-intended approach (Jones & Noble, 2007, p. 100).³⁹

Therefore, the essential procedures and elements will be explained in the next chapter first to increase the mutual understanding about them before the research phase itself will be sketched in chapter 3.4.2, thereby integrating, and linking them all together.

³⁸However, this imperative is not limited to GT studies but is of concern in all research disciplines, specifically the management and business research in this instance (Aguinis, Ramani, & Alabduljader, 2018).

³⁹A further advantage of having chosen the CGT approach from Glaser comes to light, namely the indication that the mix-ups or confusions in applying GT procedures happen to occur more often in the non-classical version of Strauss and Corbin (Bello, 2015, p. 43), rather than within the realist spin of CGT which “emphasizes the importance of maintaining strict, systematic adherence to the methodological process embedded within the GT approach, regardless of context” (Groen, Simmons, & McNair, 2017, p. 4).

3.4.1 Methodological pillars of the thesis' Grounded Theory study

In further alignment with the thesis' rationale of progressively narrowing (chapter 1.2.1, p. 3), a clear focus on design strategies and references from CRGT can be put forward. The basis of the precise research design thus can be found in the classic Glaserian school of GT (serving as an umbrella under which the specific CRGT is situated) with the corresponding advocates, such as Glaser himself as primary source or followers of the second or third generation such as Gibson, Gynnild, Hartmann, Holton, Martin, Porr, Simmons, Stern or Walsh (e.g. Clarke, 2019, p. 18).⁴⁰

A considerable consensus about the essential relevant procedures in and requirements of C(R)GT is apparent amongst those scholars (e.g. Bryant, 2021a, pp. 11-22; Flick, 2018, p. 18; Gibson & Hartman, 2014, pp. 32-42; Glaser & Holton, 2014; Ng & Hase, 2008, p. 155; Thornberg & Keane, 2022).⁴¹ Merging the variety of individual enumerations, a 'long list' can be created of those key elements, which do appear most often in CGT's literature.

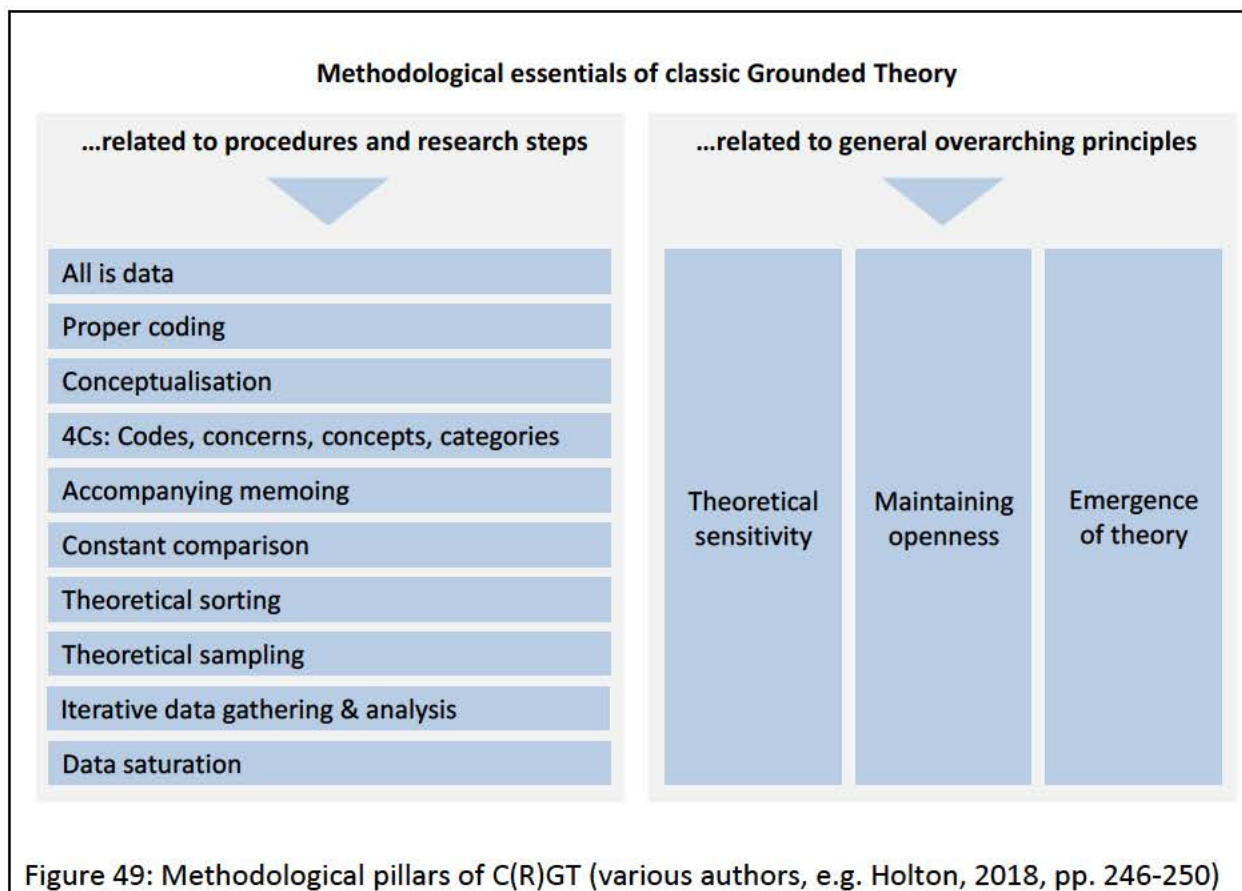
For the purpose of clarification, it is appropriate to group them into aspects which are either related to specific methodological research steps or to overarching principles which surround and guide the research study in general (figure 49 on the next page).

To start with, by taking up the GT dictum that "**all is data**" (Glaser, 1998, p. 8, 2002b, p. 1), a first hint towards methodology is given as principle for data collection. It is part of the general openness of CGT, meaning that any data can be used, encouraging multiple data collection methods (e.g. Martin, 2019). This then also promotes the potential to collect not only primary data but also to make use of available secondary data (Andrews, Higgins, Andrews, & Lalor, 2012). The selected CR perspective comes into play for this principle, as with the relativist epistemology, a detached data collection is possible, e.g. with

⁴⁰On top of this, to remain critically reflective, also scholars taking an 'outsider position' in the GT methodology debates are considered as they add to understanding and clarity through comparisons with other GT variants such as Bello, Edwina and McDonald, Flick, Kenny and Fourie or Strübing.

⁴¹The authors label them as "key components" (Flick, 2018, p. 18), "basic components" (Walsh et al., 2020, p. 23), "key characteristics" (Urquhart, 2023, p. 18), "core aspects" / "main tenets" (Gibson & Hartman, 2014, pp. 32-42), "essential methods" (Birks & Mill, 2015, p. 10), "basic principles" (Willig, 2013, p. 70), "guiding principles" (Ng & Hase, 2008, p. 155), or "main characteristics" (Charmaz, 2020, p. 195).

interviewing field participants or co-researchers. It is therefore not necessary to enter the field directly.



'Coding' as an analytical core is a second constitutive element of CGT (Chametzky, 2016; Glaser, 2005; Holton, 2010). Moreover, its arrangement and way forward in a more or less prescriptive framing are one of the central elements of discussion between different versions of GT and is described below referring to various authors (e.g. Kenny & Fourie, 2015, pp. 1272-1280; Urquhart, 2023, pp. 24-30; Willig, 2013, p. 77), so it has to be ensured that the procedure strictly follows the CGT approach.

Coding in CGT drives the conceptualisation from data to the final theory (Holton, 2010, p. 265) by enabling us to discover the patterns in the data, to abstract them to concepts or categories, their attributes and their relations within concepts/categories and towards other concepts/categories. It is via the coding procedure that the theory emerges. Figure 50

illustrates the three coding steps which must be applied to fully conduct a CGT study (Holton & Walsh, 2017, pp. 81-89).

‘Open coding’ is the first stage of coding, targeting primarily the identification and labelling of incidents in the data collected. These first codes are then either used to indicate what is actually going on in the area under investigation (‘in vivo codes’, being closer bound to the original words (Simmons, 2022, p. xix)) or, when emphasising to explain what is going on by abstracting to a higher conceptual level (‘analytic codes’).

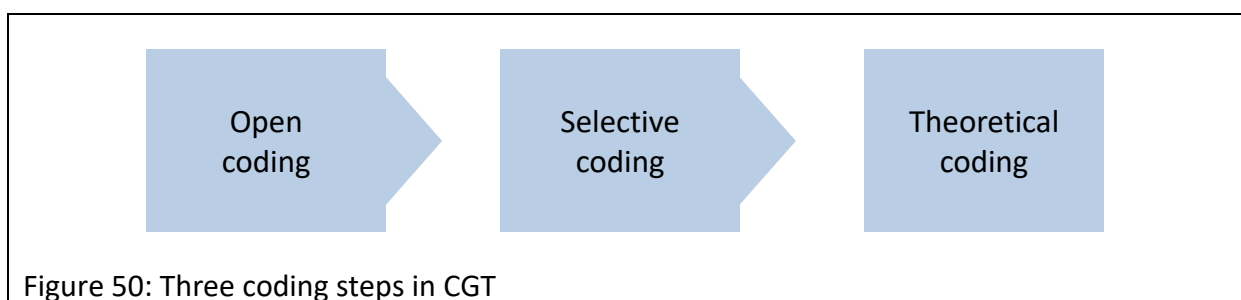


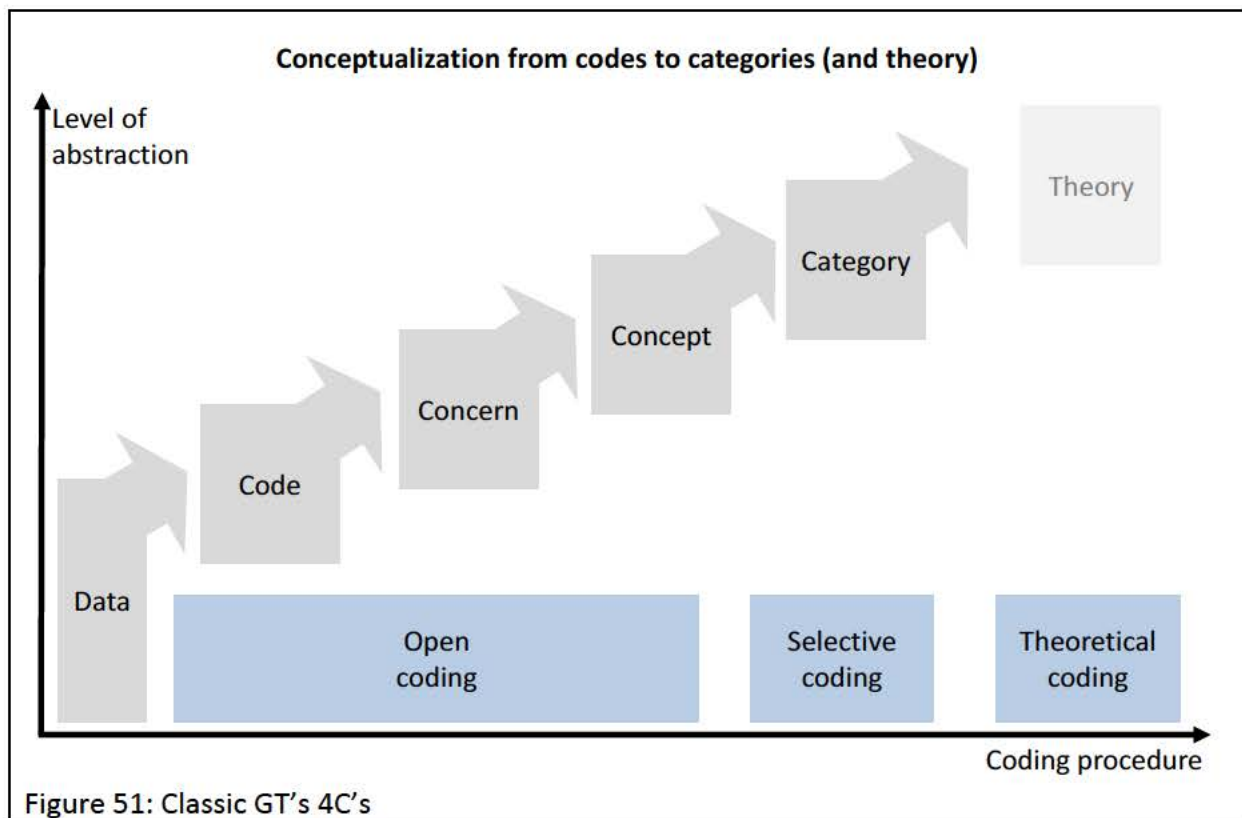
Figure 50: Three coding steps in CGT

‘Selective coding’ starts later in the process, as soon as the researcher has discovered the main concern (research problem), the main concepts and the core category, so the research is then more directed towards these initial and intermediate findings (Chametzky, 2016). Its selective character for that purpose is to focus on the relevant aspects of the research and to delimit it from disturbing data until dimensions and properties for the core category and related main concepts have emerged.

‘Theoretical coding’ finally focuses on exploring the relationship between and among the previously identified core categories and the main related concepts so as to establish the last step of conceptualisation and, with that, to shape the emerging theory (Glaser, 2005). Glaser states that “theoretical codes give integrative scope, broad pictures and a new perspective” (Glaser, 1978, p. 72) and therefore directly informs the grounded theory.

Coding does not have a purpose in itself but it does have a goal and this is adding to ‘**conceptualisation**’ (Glaser, 2002a, 2011b). The important aspect within conceptualisation is its placement in opposition to ‘description’ (Glaser, 2001, 2016) to arrive at theory.

C(R)GT goes beyond a descriptive account and gives conceptual explanations offering general implications which reach further than its empirical roots (Holton & Walsh, 2017, p. 51). This necessitates a higher level of abstraction by conceptualisation of the context-bound data to free them from 'time, place and people'. As a consequence, this is important to note, C(R)GT is not after a descriptive accuracy but after conceptual explanatory power (Gynnild, 2016).⁴²



Conceptualisation happens during coding (Urquhart, 2013, pp. 78-129) and materialises in what can be called the **four C's of GT's terminology**: 'codes, concerns, concepts and categories'. Their relationship regarding the level of abstraction is drafted in figure 51.

Codes, initially generated by open coding in the early research phase, are, as mentioned earlier, the first step of conceptualisation by allowing for the labelling of incidents. In the early research phase, similar or related codes should be identified which together indicate

⁴²GT is, moreover, also the way out of the generalisation challenge of qualitative data analysis (as mentioned during the selection of the proper methodology in chapter 3.3.1). Other methodologies with their focus on (thick) descriptions struggle to generalise, but CGT has an inherent philosophy, conceptualisation, dedicatedly fostering generalisation to transcend from context (Glaser, 2014d).

the concerns of the research area. By going through the data and the codes, the researcher constantly has to wonder 'what is the main concern?'. This can be discovered in the data, in the codes. The concern with highest weight (e.g. frequency, urgency and impact) serves as the research problem that the remaining process is directed towards.

In parallel, as not all data will indicate concerns, other groups of codes will form abstracted concepts, which are "the building blocks of theory" (Neuman, 2014, p. 62). Those concepts should be internally homogenous and externally heterogenous. This is achieved by the multi-indicators concept philosophy in CGT (Glaser, 1978, p. 65) pointing out the strength of a concept when multiple codes which are 'interchangeable' are used to form it. Single- or one-indicator concepts on the other hand should be avoided and, respectively, are diminished later due to lower relevance. CGT jargon also indicates that a concept has to "earn its way" (Simmons, 2022, p. xvii) into CGT by a high interchangeability and a variety of its codes, which jointly demonstrate a relevant pattern forming the concept.

The next level of abstraction is achieved when several concepts emerge to a category. A category typically consists of various concepts, which themselves consist out of numerous codes based on the initial incidents found in the data. Consequently, a category already has a high level of abstraction, which is not bound to a specific context.

One of the emerging categories with its included concepts will form the 'core category'. This core category has the central function in CGT to account for the explanation and solution of the main concern identified earlier in the research phase and serves as the dominant theme in the emerging theory. It is then, when the selective coding starts replacing the open coding, drawing on the identification of the core category.

Intermediate outcomes of this iterative process in CGT must be noted down in '**accompanying memos**' throughout the study (Holton & Walsh, 2017, pp. 89-94). It is widely acknowledged that "memoing is the core ideational processing of theoretical ideas as they emerge through coding and constant comparative analysis" (Holton & Walsh, 2017, p. 89). In that sense, memo-writing stimulates and encourages conceptualisation and abstraction to transcend from descriptive analysis by adding to the analytical steps in GT also the

opportunity to engage with creative elements. In similar fashion, conscious and preconscious (or systematic and serendipitous) levels are captured in memos. This interplay can be documented to provide supporting explanation and reasoning of the emerging patterns and theory. This is why memos do play a central role in the generation of theory as skipping memoing is tantamount to not doing CGT (Chametzky, 2023; Glaser, 1978, pp. 62-65, 83; Glaser, 2014e).⁴³

During coding and conceptualisation across the study, another key tenet, which is probably the methodological heart of CGT, '**constant comparison**', must be applied (see also chapter 3.4.3.3, p. 165, for validation). It was a major input into GT's original Discovery book, drawn from Glaser's earlier publication (Glaser, 1965).

Interchangeability of codes and the identification of patterns can only be achieved when codes are compared with other codes to identify whether they are 'really' interchangeable or possibly indicating towards another concept which then emerges (Glaser, 1978). However, the constant comparison of codes is not the only type of comparison. Kenny and Fourie (2015, p. 1271) and Kolb (2012, p. 83) summarise the different comparison levels in CGT which are stated (e.g. by Glaser and Holton (2014)) by encompassing the four following stages:

- Codes are compared with codes
(to apply them to concepts/categories)
- Codes are compared with emerging concepts/categories
(to integrate and define properties)
- Concepts/categories are compared with one another
(to delimit the theory)
- Emerging theory is compared with the literature
(to assess contribution)

This steady CGT principle is the fundamental methodological cornerstone of CGT, inherent since the very beginning to "blur and intertwine continually, from the beginning of an investigation to its end" (Glaser & Strauss, 1967, p. 43). Without constant comparison no

⁴³Edwina and McDonald (2019, p. 1025) summarise the four basic requirements of theoretical memos. They should foster the development of codes, concepts, and ideas, be free from any formal restrictions and follow free emergence, be stored centrally and be sortable.

similarities or varieties can be discovered and neither concepts nor categories can meaningfully emerge.

'Sorting' in particular is the next key method, yet a special kind of comparison directed towards memos (Glaser & Holton, 2014, pp. 398-400). As memos do incorporate the ideas, explanations and the reasoning for several concepts and categories with their dimensions and attributes, those ideas have to be integrated and aligned amongst each other as well. Therefore, "the goal is to find the emergent fit of all ideas so that everything fits somewhere with parsimony and scope and with no relevant concepts omitted" (Holton & Walsh, 2017, p. 109) and to "put [...] the fractured data back together" (Glaser & Holton, 2014, pp. 399).

Constant comparison unfolds its power only when using **'theoretical sampling'** as soon as there is the need and chance to explore emerging concepts within the core category in greater detail (Walsh et al., 2020, p. 9). Unlike other research approaches, sampling in CGT is not defined upfront before entering the research phase but rather developed iteratively within the study depending on the emergence of patterns and the theory. The criteria from which the subsequent sample is chosen will come to light only during the study as concepts or categories emerge. High relevance and proper contrasting then have to be ensured to fuel the saturation of dimensions and attributes within and between concepts and categories (Strübing, 2019b, pp. 533-534). In early stages, "the researcher samples both for theoretical similarity and difference in order to expound the properties of each category, attempting to saturate all categories until the emergence of a core category" (Breckenridge & Jones, 2009, pp. 115-116). In later stages it is "focused on data that is sufficiently and significantly relevant to the core category and its related properties" (Breckenridge & Jones, 2009, p. 116).

In doing so, the main advantages, stated by Urquhart (2013, p. 8) and Walsh et al. (2020, pp. 28-29) are that:

- it supports justification of concepts and categories in the theory, e.g. via identification of multi-indicator concepts
- it enables the storylining of the write up suggested by the data and therefore underlines the groundedness of the theory
- it prevents the collection of too much data focussed on relevance and coverage
- it directs the emergence as wrong sampling will not advance the emerging theory and the research can adapt with the next sample.

Conducting theoretical sampling then has to follow the issue on what data to collect next, how to collect the next set of data and for what theoretical purpose (that's why it is called theoretical sampling) (Glaser & Strauss, 1967 p. 45). Finally, it fosters the delimitation of CGT's concepts, categories and the theory itself leading to less additional data being needed and rarer adjustments of the concepts/categories or the theory (Holton, 2018, p. 248).

Theoretical sampling to collect data based on emerging patterns and theory and the growing delimitation consequently are intertwined with '**iterative data gathering and analysis**' (Holton & Walsh, 2017, pp. 94-95). Stages of data collection and data analysis have to alternate with each other in order to proceed with the study.⁴⁴ Every new data set will be analysed to then inform the next theoretical sample and data collection.

The iterative procedure of CGT ends when sufficient '**theoretical saturation**' is achieved, so one "has continued sampling and analysing data until [...] all concepts in the theory are well-developed [...] no additional data are needed [...] no aspects of the theory remain hypothetical [and] linkages to other concepts [are] clearly described" (Morse, 2004, p. 1122). As the decision relating to when saturation is satisfactory is a study-specific one (and furthermore still in debate (Low, 2019)), the reasoning for the different decisions (e.g. concepts or on categories) will be outlined later in chapter 4.

⁴⁴Therefore, 'iterative' or 'alternating' are correct terms rather than 'parallel' or 'concurrent'.

Thus, it can already be stated that theoretical sampling and constant comparison will foster theoretical saturation as the identification of similarities and differences in data, concepts and categories is a built-in approach in CGT (Aldiabat & Navenec, 2018, pp. 253-254).

Even though saturation is related to a specific research step, the decision to end with the study (or an intermediate step, such as definition of a category) has a challenging factor/ key requirement (Glaser & Holton, 2005, p. 7), which is less specific and which is one of the more overarching CGT philosophies: **'maintaining openness'**. It is less specific due to the fact that there are only vague explanations in the literature on how the researcher can stay open during the research as it "means being open to the fullest possible array of TC [theoretical codes]" (Glaser & Holton, 2005, p. 3). Yet, "staying open to emergent patterns in data offers surprising and exciting theoretical discoveries [...] [which is] the Eureka moment" (Holton, 2017, p. 46). The decision point then is to balance out when the researcher considers a concept, a category or theory as being saturated (to then close the step) versus how long to remain open to further continue data collection and analysis.⁴⁵

Closely connected, yet taking an even more prominent position in the discussion about C(R)GT's essential elements, is the concept of **'emergence'**. It gained particular attention after Glaser's reaction to Strauss and Corbin's move away from the original GT version in which he specifically accused the new coding process of forcing data into preconceived structures (Glaser, 1992, 2014f).

But the philosophy of emergence is not limited to coding only, but surrounds the complete CGT with the research starting based on "general wonderment" (Jones & Alony, 2011, p. 99) and continuing at all levels, from the generation of research questions, data collection, theoretical sampling or the coding procedures, or conceptualisation (Holton & Walsh, 2017, pp. 30-33; Kenny & Fourie, 2015, pp. 1270-1271).

⁴⁵With this approach, to 'expect the unexpected', negative definitions of maintaining openness can be added, which is, first, the demand to avoid any preconceptions (Glaser, 2014g). Those preconceptions would potentially block the novelty, the theory's groundedness and the emergence from data (Holton & Walsh, 2017, p. 30) and contradict GT's ambition. Secondly, the request to evade investigating extant literature and knowledge in the earlier research phase (Christiansen, 2011) can be subsumed under the staying open philosophy as the fear is find bias, spoiled with prior theory, which would again, block the discovery and emergent character of GT (Holton, 2018, p. 237).

Pursuing these elements, one can distinguish ‘theoretical emergence’ on the one hand, related to all content-related aspects of the research during the conceptualisation, and ‘procedural emergence’ on the other hand, related to the specific methods (figure 52).

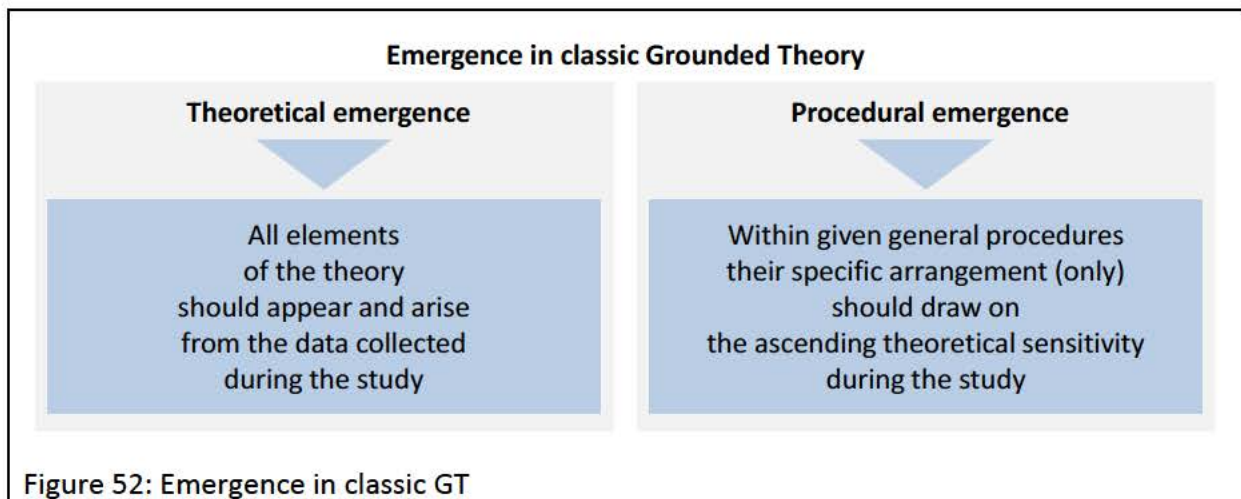


Figure 52: Emergence in classic GT

Yet, with the key pillars outlined, CGT encompasses some challenging, allegedly incongruous elements, all under the umbrella of emergence. Conceptualisation out of empirical data via coding is the ‘be-all-and-end-all’ of the methodology. This necessitates the researcher to bring in (or develop) a fairly high ‘**theoretical sensitivity**’ (Glaser, 1978), which is the glue connecting the single pillars applied by the researcher.

It is “the ability [...] to generate concepts from data and [to] relate them according to normal models of theory” (Holton, 2018, p. 246). It therefore impacts all major steps during the study (Hoare, Mills, & Francis, 2012) and demands analytical distance and theoretical insight (Holton, 2018, p. 246) to discover the latent patterns and to be able to raise the level of abstraction.⁴⁶

Together, those pillars build the foundation of a CGT study, the way forward with this aspect is the next aspect to be scrutinised.

⁴⁶Interestingly enough, Glaser deliberately encourages the researcher to expose with knowledge and literature as long as it does not touch the substantive research field (Glaser, 1978, 1998, 2005) in order to acquire or get acquainted with alternative analytical approaches.

3.4.2 The critical realist approach from Walsh, Holton and Mourmant as research phase design

Although there is little controversy about the essential aspects of C(R)GT, there is, next to few notable exceptions (Bello, 2015, p. 44; Wagner, Lukassen, & Mahlendorf, 2010, p. 3; Tossy, 2015, p. 753; Walsh et al., 2020, p. 46), a surprising silence surrounding questions regarding the concrete research design/process for conducting a specific C(R)GT study (or also how 'not' to do it, e.g. Niasse, 2023). The astonishing element in it is the conviction that, especially within GT, it has been "demonstrate[d] that the credibility of a theory cannot be dissociated from the process by which it has been generated" (Breckenridge & Jones, 2009, p. 113), so procedural aspects ought to gain higher relevance in GT as well.

One major cause for this procedural silence is, according to Flick⁴⁷, GT's inherent flexibility, emergent character and openness which should make it difficult to sketch an ideal procedural design (Flick, 2018, pp. 111-112). Although the research process in CGT "is far from linear" (Walsh et al., 2020, p. 10) but instead "subsequent, sequential, simultaneous, [and] serendipitous" (Glaser, 1998, p. 15) at the same time, Flick's claim is not plausible when possessing the knowledge that iterative, spiral or flexible research designs also do exist (Robson & McCartan, 2016, pp. 145-173). Also, reference to 'theory-building research designs', suggesting the need for and value of a priori planning, can be made (Urquhart, 2023, pp. 95-97).

In order to proceed with an initial and guiding procedure, two main sources have been used to design the thesis' research phase.⁴⁸ The visualisation from Wagner et al. (2010, p. 3) was incorporated to demonstrate the high coverage of CGT's essential elements which they portray in an eye-catching and accessible way by outlining the relationships between major CGT pillars.

⁴⁷Next to the non-appearance in the original GT book from Glaser and Strauss and the fact that GT, in its early phase, was taught mainly in university seminars by both founders instead of a textbook (Stern, 2016a) which was only published more than a decade later.

⁴⁸In order to arrive at a useable methodological guideline, several CRGT associated publications directing towards procedural recommendations have been investigated, amongst them (in chronological order): Lee, 2012; Oliver, 2012; Harris, 2014; Kempster & Parry, 2014; Walsh, 2014a; Bygstad et al., 2016; Belfrage & Hauf, 2017; Holton & Walsh, 2017; Mingers & Standing, 2017; Bunt, 2018; McAvoy & Butler, 2018; Parker, 2018; Hoddy, 2019; Walsh et al., 2020. Published and reviewed after the thesis' study: Lavoie, 2021; Looker, Vickers, & Kington, 2021; Simmons, 2022; Sims-Schouten & Thapa, 2023.

As a second source, out of the various CR publications in footnote 37, the principle way forward from Walsh et al. (2020, p. 46) was selected for several additional reasons. A main argument is that the authors undoubtedly stand as representatives of Glaser's classic GT as well as CRGT as "the three authors of this book happen to be critical realists" (Walsh et al. (2020, p. 18). Konecki, e.g. recognises:

"Judith Holton and Isabelle Walsh studied grounded theory with Barney Glaser. Their work is heavily influenced, as they acknowledge, by his books. They want their text-book ... to be consistent with Glaser's approach. However, they also try to put it in a new package, one that would be more acceptable in the scientific world in the twenty-first century" (Konecki, 2018, p. 547)

Furthermore, Holton and Walsh explicitly state and explain their paradigmatic position as grounded theorists being critical realists in their textbook:

"we believe that no methodological book can be fully epistemological and ontological neutral [...] it is essential to state from the outset that both authors of this text are critical realists [...] reality is multifaceted and may be perceived differently by different individuals in different contexts [...] in the ontological domain, critical realism holds a realist view and, in the epistemological domain, it accepts the 'relativism of knowledge'" (Holton & Walsh, 2017, p. xii)

This explicit position is important so as to not mix up elements of different GT variants as it could spoil the methodology and cause the loss of integrity (Jones & Noble, 2007). Furthermore, although being part of the CGT school (part of the above-mentioned '2nd and 3rd generation' of grounded theorists⁴⁹), the authors clearly demonstrate their autonomous and critical-reflective position towards GT avoiding any dogmatic obedience and taking-it-for-granted attitude (e.g. Flick, 2018, pp. 73-74).

The process from Walsh et al. covers a 'full package' of GT and not an "abbreviated version" (Willig, 2013, p. 73). This explains also the rejection of most other publications, as they are either too generic/condensed to be specifically applied in the thesis or too unique (e.g. mainly recaptured from one single study). Moreover, the authors do have a proven record and a highly recognised expertise in the field of management and business research with numerous GT studies undertaken or supervised (e.g. Holton, 2007; Holton & Walsh, 2017, pp. xvii-xxi; Mourmant & Voutsina, 2017; Walsh, 2014a). Lastly, their most up-to-date

⁴⁹See also Linden (2022) having published an article highlighting the 'family character' of Glaser's GT school.

version, published in the latest text book in 2020, incorporates the latest development in GT methodology to take full advantage of the changing dynamics of the last few years. This justifies calling it a most contemporary application of CRGT at the time of commencing with the thesis' study.

To start with, the sketch from Wagner et al. has the value to give indications about links between the different methodological pillars, it is a visualisation of the interrelated GT elements (figure 53) following the logic that while progressing with the research process (to the right) the level of abstraction (to the top) increases. At the end of the research process the transcended theory has emerged.

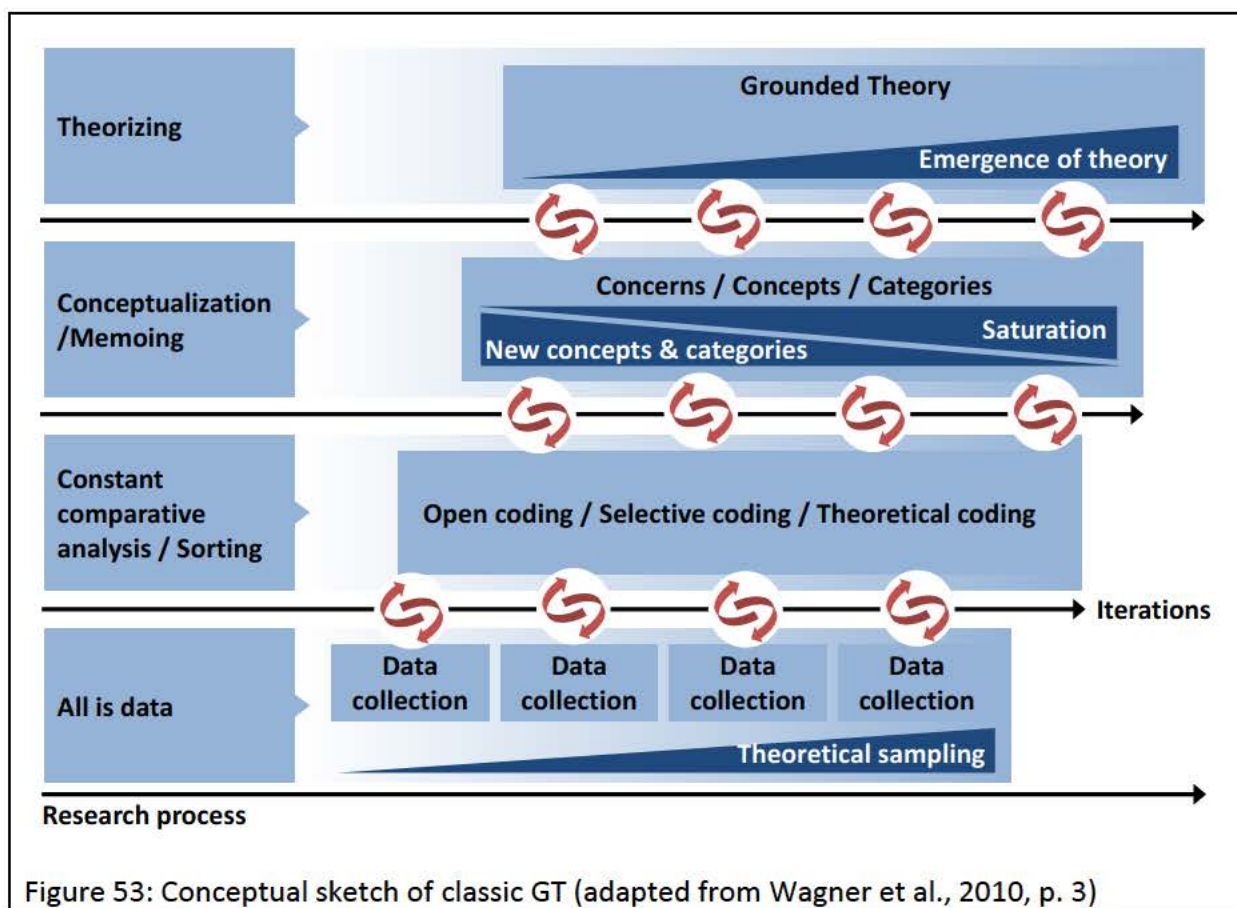


Figure 53: Conceptual sketch of classic GT (adapted from Wagner et al., 2010, p. 3)

It can, however, also function as an intermediate step towards a specific research design if it were possible to 'slice' the sketch into distinct research steps, which could guide the research study in terms of specific intermediate outcomes and findings or main directions to work towards in explicit research phases. This then would inform a target-oriented

procedure, whilst remaining open and flexible. This ‘slicing’ is the value of Walsh et al.⁵⁰ to define a specific seven-step-approach composing a ‘full-package’ design, starting with first data collection and ending with a GT (figure 54).

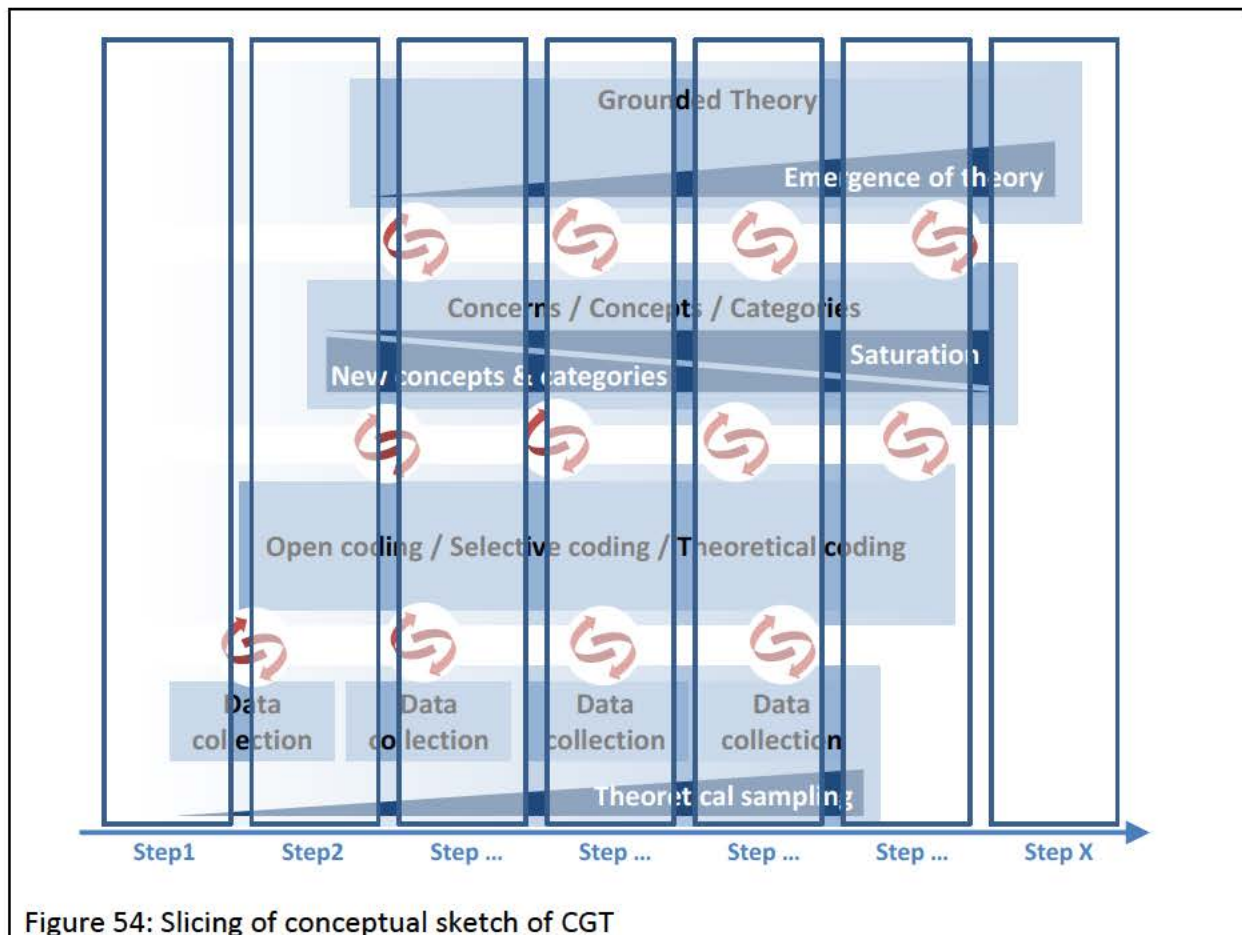


Figure 54: Slicing of conceptual sketch of CGT

When following all seven steps, research will arrive at the ultimate goal of a grounded theory, having considered all of the essential pillars (Walsh et al., 2020, pp. 44-45). As the authors state to hold a critical realist research perspective (Walsh et al., 2020, p. 18) their procedure is supposed to be in-line with a general critical realist approach to conduct a research study (see, e.g. Shi, 2019). The logical approach in terms of the visual therefore is to go from bottom-left to top-right (figure 55).

⁵⁰Taken up, based on the earlier work of Nandram, Mourmant, Norlyk Smith, Heaton and Bindlish (2018) as well as their own work (e.g. Holton & Walsh, 2017).

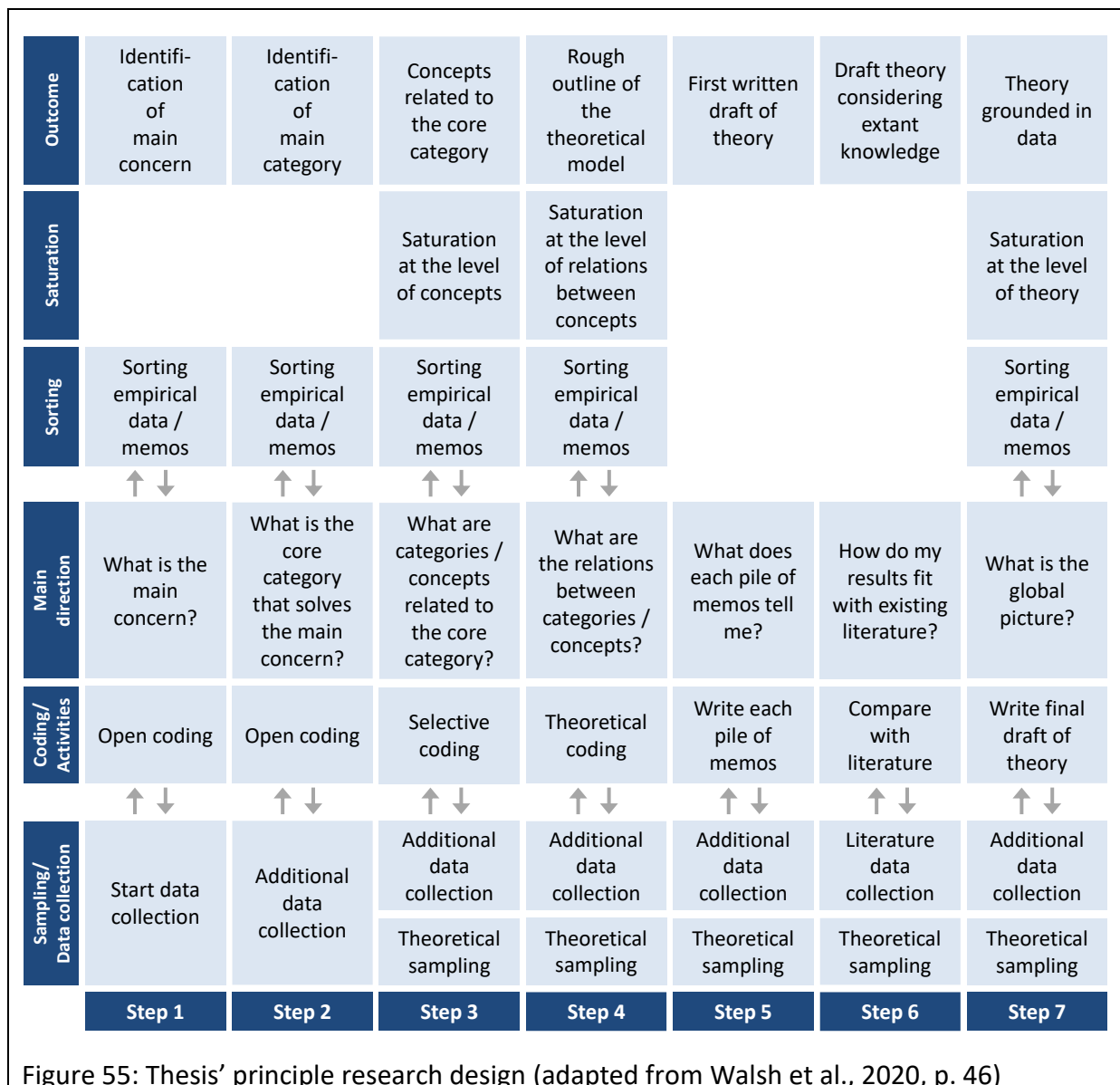


Figure 55: Thesis’ principle research design (adapted from Walsh et al., 2020, p. 46)

The value of this approach is that besides still being open and iterative by nature, the researcher/reader can use this as a guideline through the process for concrete intermediate results. It gives the CRGT’s pillars not only a conceptual relation but an actionable reference with clear hints about ‘what to do’. This provides a sound base for undertaking, understanding, and examining the research. The differentiating factor of the seven steps is always the main direction to work towards and its corresponding outcome assigned to the relevant methodological steps, therefore it was used as the guiding dimension. As the following description is more of a replication of the original it is kept comparably short and focuses on the main aspects of the process. For more details refer to Walsh et al. (2020, pp. 44-56) as reference for the next paragraphs.

'Step 1' in the approach from Walsh et al. is the **identification of the main concern**. It is based on the first data collection and the open coding process. Data, data sources and data collection methods are and remain open and flexible during the whole process and saturation does not play a role yet. Referring to preconceptions and prior knowledge as the ever-present debate, the authors recommend to build up a 'mental wall' in those cases where prior knowledge is unavoidable.

'Step 2' then aims to **identify the core category which resolves the main concern**, still applying open coding without theoretical sampling, yet continuing with memoing. The core category ought to appear often in the data and account for a high degree of problem-solving. This then will increase the integrational power of the core category, which is its main role during the theory discovery. With these first two steps the overall direction of the research is set by having both, a researchable problem and its potential solution discovered as part of the preliminary process.⁵¹

'Step 3' therefore incorporates some changes, mainly related to beginning with theoretical sampling as well as switching to selective coding with both directed towards the now contoured research area. The target of this step consequently is not only to **discover and conceptualise the core category more in detail but furthermore also the related concepts**. This might also necessitate the recoding of old data. A first level of theoretical saturation is targeted in relation to concepts and categories to enable the next step. Ideally, multiple data sets support the saturation, that's why theoretical sampling for new data is essential.

'Step 4' sheds particular light on the **relationships between the previously discovered categories and concepts**. Consequently, coding switches from selective coding to theoretical coding whilst maintaining theoretical sampling for the continuing data collection. This then has two effects. First, the next level of saturation, now on the level of those relationships between concepts, should be achieved. This then fosters, secondly, the first rough outline of

⁵¹It is worth noting, under a critical realist lens, that these two first steps, in which open coding is applied, reflect the layered reality view of empirical, actual and real. "Empirical: Participant recalls experiences or phenomena which they witnessed or were a part of. There is no analysis, solely recall ... Actual: The participant suggests reasons or analyses to explain the phenomena ... Real: Will not be coded during open coding." (Looker, Vickers, & Kington, 2021, p. 150).

the overall theoretical model. Typically, a visual aid such as a diagram, will help to conceptualise and outline transparently the theoretical model.

In '**step 5**', the theoretical model should be explicated in the **first written draft of the emergent theory** by making use of an intensive comparison of the memos created so far. At this stage, it is key to go beyond the descriptive level and to raise the level of abstraction substantially as it builds the foundation of the final product, the grounded theory. On the contrary, what is not important according to Glaser, is the need for any formal requirement, such as presentation to an external audience. However, Walsh et al. allow feedback from informed externals if need be.

In '**step 6**', after the first written draft of the theory emerged from the collected field data, the time has come to finally **consider existing knowledge** as additional data. It is the goal to analyse how the draft theory fits into the current knowledge landscape, so a focussed literature review on the main concern and the core category, if possible, will aid in this. This should lead to the enrichment or modification of the draft theory.

These amendments will then impact upon the **final writing** of the proposed theory in '**step 7**'. Potentially, this will lead to some final additional data collection and memo sorting, but, with a clear focus on the holistic perspective, transcended from the data itself, it should provide close conceptualisation and theorisation to a substantive theory. This theory then is theoretically saturated first, yet fulfilling the GT's target of modifiability (next to concept validity, workability, and relevance). The theory-writing then accentuates the narrative of what was discovered, how it can be explained and what the study's contribution is.

3.4.3 The study's general research methods and research ethics

Research methods possess the potential to either bolster or undermine the credibility and trustworthiness of the research project's outcomes (Bell, Bryman, & Harley, 2022, pp. xxxv-xxxviii; Liamputtong, 2020; O'Gorman & MacIntosh, 2015; Pozzebon & Bido, 2019). In that, the research methods jointly form the concrete research practice of a study (Lee & Cassell,

2013) and are demanded to be “purposive [...], inquisitive [...], informed [...], methodical [...], and communicable” (Evans, 2010, p. 2).

With GTM being, on an abstracted methodological level, the “process of collecting data, analyzing the data, and repeating the process, which is the format called constant comparative method” (Williams, 2007, p. 69), a brief outline of overarching comments on the methods as they occurred during the study, is provided.

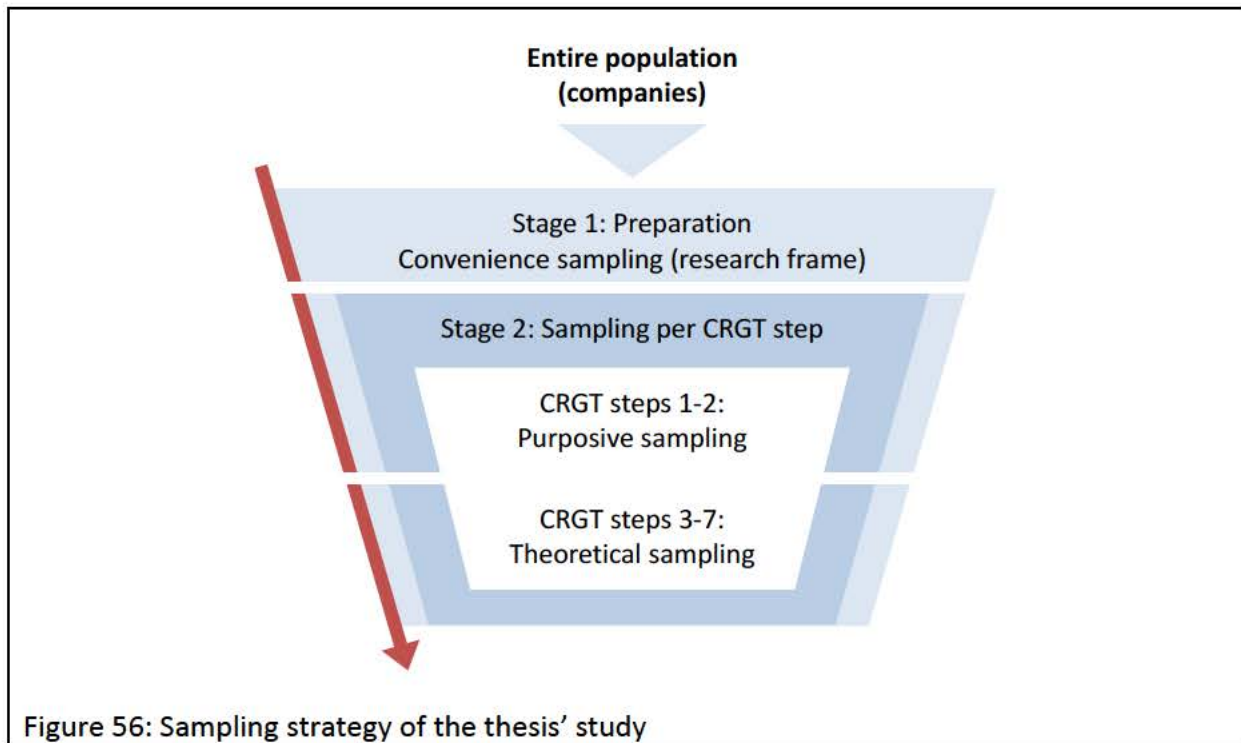
In summation, a total of 51 interviews were conducted primarily online. These interviews were mainly unstructured, allowing for flexibility in the responses. The selection of interview participants was based on convenience sampling at the first stage and purposive or theoretical sampling at the second stage. During the early steps of the study, iterative data analysis was conducted via strict coding procedures. During later stages, conceptualisation techniques have been applied and guided, as for coding, by the overarching idea of constant comparison. To ensure the validity of the findings, nine main explicit validation methods were employed.

3.4.3.1 Defining the sampling strategy

If there was one single decision point of the study which was most impacted by the researcher’s background (see chapter 1, p. 6) it was the way in which data was collected, as for the thesis it was unrealistic, impractical and simply not needed to collect data from the entire relevant population (Saunders, Lewis, & Thornhill, 2023, p. 291). In order to ensure the validity and effectiveness of the research findings, it was therefore imperative to establish and access a meaningful sample to serve as crucial evidence that supported the conclusions and aided in achieving the research goals (Easterby-Smith et al., 2021, p. 114).

In principle, sampling during the study followed a dual-stage approach (figure 56) which is commonly accepted in management research (Saunders, Lewis, & Thornhill, 2023, pp. 315-328) as well as in GT studies (Birks & Mills, 2023, pp. 140-144; Flick, 2018, pp. 24-25; Rooddehghan, ParsaYekta, & Nasrabadi, 2019; Walsh, Holton and Mourmant, 2020, p. 46).

In this study, the researcher made use of his extensive professional network, which included approximately 100 cost management consultants and numerous line managers. The data collection process was designed with the intention of leveraging this accessible pool of individuals, with the expectation of a high potential participation rate. It was assumed that these individuals would possess the necessary openness, willingness, and ability to provide authentic, relevant, and detailed data for the study.



The **first stage** was to “draw up a sampling frame, a list of all who are eligible to be included in the study” (Easterby-Smith et al., 2021, p. 114) representing a ‘convenient sample’ as a data pool out of which, in a second sampling stage, the specific participants could be selected (Robinson, 2014, pp. 25-28). Focussing the participant selection on “practical criteria, such as easy accessibility [...] or the willingness to participate” (Etikan et al., 2016, p. 2) was considered to be relevant for the study. Furthermore, the participants’ characteristics (appendix 4, p. 418) provided certain advantages compared to a random selection (for the mandatory justification (Etikan et al., 2016, p. 2) see appendix 5, p. 421):

- Problem-centric perspective of participants and ability to provide information to the problem-solving approach of study (De Caluwé & Reitsma, 2010; Silacheva, 2019).
- Potentially increased opportunity for data slicing within the sample due to multiplier effect of consultants (Urquhart, 2023, pp. 158-160).
- Chance for subsequent purposive/theoretical sampling based on participants characteristics (Coyne, 1997, p. 625; McCrae & Purssell, 2016, p. 2285).
- Potentially increased data authenticity (see chapter 3.4.3.3, p. 166) based on participants characteristics

As **stage 2** of the sampling strategy, with respect to the research steps 1 and 2, a '**purposive sampling**' was conducted, as for classic GT it is "suggest[ed] that the first round of interviews and/or observations should be undertaken according to an organisational hierarchy, or on a group of a people that are particularly relevant to the subject of research" (Von Alberti-Alhtaybat & Al-Htaybat, 2010, p. 213). This is why it was decided to approach a group of known line managers who were associated with product cost management as well as with product managers themselves from C-level over functional/department heads within the initially created research pool. Additionally, and to a greater extent in step 2, some management consultants in the field of PCM were approached to benefit from their knowledge of a larger number of companies. Together, these were "organizational informants or experts in the subject matter" (Makri & Neely, 2021, p. 4).

Full advantage of the research pool was taken starting with step 3 when '**theoretical sampling**' was required by the GT procedure (Conlon, Timonen, Elliott-O'Dare, O'Keeffe, & Foley, 2020; Easterby-Smith et al., 2021, p. 114), as it forms a core element within the methodology (see chapter 3.4.1, p. 145; Strübing, 2019b, pp. 533-534). Theoretical sampling in GT has to consider the issues relating to what data could serve its theoretical purpose dependent on the emerging concepts per distinct step (Conlon et al., 2020, p. 948; Glaser & Strauss, 1967 p. 45). With respect to the theoretical purpose (see Qureshi, 2018b, p. 20221 for their importance) four different theoretical sampling strategies can be distinguished, namely "maximising or minimising the differences between either groups or concepts in the data" (Urquhart, 2013, p. 64) as shown in figure 57.⁵² The initial research frame then

⁵²Yet, theoretical sampling is not intensively debated in the area of the CGT (Dimbath, Ernst-Heidenreich, & Roche, 2018; Draucker, Martsolf, Ross, & Rusk, 2007, p. 1137; Qureshi, 2018a).

unfolded its full power during the theoretical sampling as it was possible to cover all four quadrants (see, e.g. page 198) based on the members' characteristics.⁵³

	Similar concepts in the data	Diverse concepts in the data
Minimised group differences	Generating basic properties Challenging usefulness of category	Identifying fundamental differences of category variation
Maximised group differences	Identifying fundamental uniformities of greatest scope	Identifying and integrating categories and concepts Delimiting scope of theory

Figure 57: Strategies in GT's theoretical sampling (adapted from Urquhart, 2023, p. 161)

3.4.3.2 Interviewing as the main way to obtain data

Having created the participant pool drawn upon the aforementioned characteristics constituting the sources for data collection, this was rather intertwined with the decision to make use of the technique of interviewing for data gathering. With that, an interviewee "is seen as a passive possessor of knowledge, while the researcher's role is to objectively stand back from the process and ensure that the data [sets] are not influenced or contaminated" (Hand, 2003, p. 17). In relation to the research goal, qualitative interviews were seen as the appropriate way to obtain data compared to other mainly qualitative data collection methods such as observations, surveys or focus groups in response to the following arguments (Bell et al., 2022, pp. 402-471; Eriksson & Kovalainen, 2016, pp. 181-196; Moser & Korstjens, 2018, pp. 12-15; Saunders et al., 2023, pp. 390-570):

⁵³Differences were related to industry allocation (e.g. automotive, rail, packaging) as well as professional focus areas (e.g. purchasing, development, cost calculation). Sampling was based on the familiarity of the participants with the emerging concepts (e.g. organisation, alignment, KSF). Knowledge of the participants was beneficial as to sample "for additional participants with a particular set of theoretical considerations in mind [...] steering questions in the direction of emergent theorizing" (Conlon et al., 2020, p. 949).

- Potential for obtaining rich data/detailed information (compared to surveys/questionnaires)
- Opportunity for immediate clarifications with follow up questions (compared to surveys/questionnaires)
- No need for numerous pre-formulated questions (compared to surveys/questionnaires)
- No risk of uncontrollable/non-auditable group dynamics⁵⁴ (compared to focus groups)
- Multiplier effect of interviewees based on their numerous experiences (compared to pure/singular observations)

Following these arguments, the impact of the research's paradigmatical position materialised as "[c]ritical realists favour qualitative forms of interviewing for data collection for their ability to mine rich, detailed insights" (Brönnimann, 2022, p. 16).

The conducted interviews themselves can be categorized as being face-to-face, mainly online (Archibald, Ambagtsheer, Casey, & Lawless, 2019; Khan & MacEachen, 2022; Mirick & Wladkowski, 2019) and being increasingly structured (Saunders et al., 2023, pp. 442-448) as the study progressed towards its conclusion while showing an increasing level of being theory-driven (Smith & Elger, 2014, pp. 116-118) as shown in figure 58.

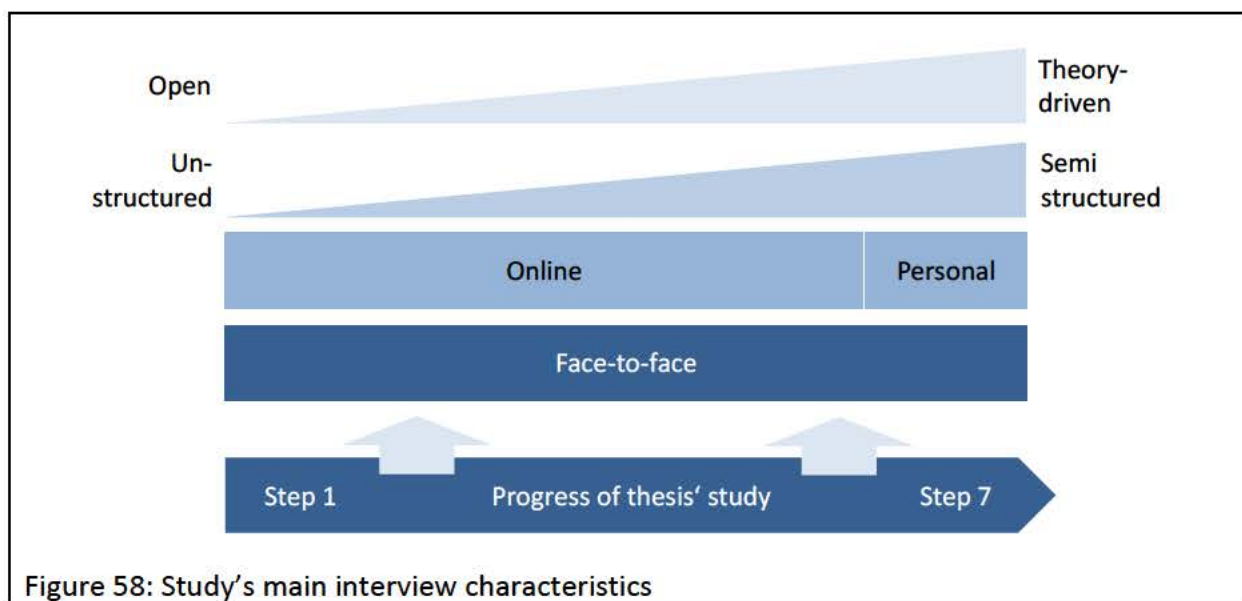


Figure 58: Study's main interview characteristics

⁵⁴The same reason applied to the conduction of workshops to jointly 'produce' or 'construct' a theory (which would have been a 'consultant's approach' compared to an alleged 'scientific approach') or focus groups or world cafés (Löhr, Weinhardt, & Sieber, 2020).

Specifically, except for step 7, the interviews were held online via Skype or MS Teams, as Covid-19-pandemic-restrictions had been implemented by German authorities at that time (BMG, 2022; Freuding & Wohlrabe, 2021). Therefore, online interviews, still being face-to-face, were asserted to be the next best choice to gather as much verbal, visual and acoustic data from the interviewees while maintaining the opportunity to empathetically react to any interviewee's personal expressions (Johnson, Scheitle, & Ecklund, 2021; Lobe, Morgan, & Hoffman, 2020; Moises Jr, 2020).

During the preparation stage of the interviews (Saunders et al., 2023, pp. 459-465) and to let the above-mentioned openness-claim in GT materialise, it was decided, following Walsh et al. (2020, p. 33) or Makri and Neely (2021, p. 4-6), to ask only open-ended questions in the unstructured interviews (especially in step 1 and 2). So called 'grand tour' questions (e.g. chapter 4.2.1, p. 176) were prepared and asked to let the interviewees talk about their work and the area of PCM in general, in order to limit influence or any directions relating to the research so as to let them speak openly and in a comfortable setting according to what they found relevant and interesting (Simmons, 2022, p. xviii).⁵⁵ Progressing with the study, the questions were more structured towards semi-structured interviewing to some extent, with the emerging theory (e.g., concepts or categories during step 3 or even the theoretical model in step 7) driving the content and the questions during the interviews. At all times, the (follow-up) questions remained open (as explicated for each step in chapter 4).

To let the above-mentioned openness-claim in GT materialise, during step 1, with the allowance of the participants, the interviews were voice recorded and at the same time automatically transcribed (Nascimento & Steinbruch, 2019) with a speech-to-text-transcription support of the 'Temi app' (www.temi.com). This counters Glaser's arguments not to do so (to let the interviewees speak freely to avoid 'properlining' input) as he rather advocates to take notes during interviews (Glaser, 1998, pp. 110-112).⁵⁶

⁵⁵At no point in time, also in the invitation letter (see appendix 6, p. 422), were the interviewees informed about a research goal. Only the research area, PCM, was stated and the interest to develop a theory within.

⁵⁶However, the initial automated speech-to-text-transcription had some limitations (but it was deemed to be "good enough" (Bokhove & Downey, 2018)) and needed manual corrections afterwards. Yet, working through the transcript immediately after the interviews helped to strengthen memory and deepen understanding about the interviewee's statements. Ultimately, the interviews took 20-45 minutes followed by another 40-90 minutes of reworking the initial transcripts.

Voice recording, though, was done mainly for three reasons (Azevedo et al., 2017; Point & Baruch, 2023). First, it should provide evidence to not have interviewees being influenced or directed towards the formulated research goal. Secondly, it provides the opportunity to return to the records at a later stage so that it is possible to re-code data should it be required. Thirdly, being unfamiliar with research interviews at the beginning, an opportunity should be provided to capture full original data by listening to the interview records again in case there was a risk that some content would be forgotten. Finally, the collected data (as well as the analysed-/processed data) were filed and stored in an electronic archive, where audio-records of the interviews, transcriptions and coded data were related to each other to ease future orientation and handling (see appendix 7, p. 423).

3.4.3.3 Validating the emerging theory

As a final overarching methodological aspect presented prior to the process of emergent theory building, the trustworthiness of the findings needs to be demonstrated (Berthelsen, Grimshaw-Aagaard, & Hansen, 2018; Saunders et al., 2023, p. 214).⁵⁷ For the thesis' qualitative study, characterised by the CR's objectivist ontology and the epistemological relativism (see table 41, p. 99) informing the classic GT approach, it was therefore decided to refer to those criteria and their definitions as established by those advocating CGT and the approach taken by the thesis, such as: Glaser, Walsh et al. and other related scholars. They do share the conviction, as do critical realists, that "[b]ecause of the existence of an external referent, knowledge claims may be challenged and their merits assessed logically and empirically" (Miller & Tsang, 2011, p. 144). Therefore, Glaser (2014b) and "[v]arious researchers have discussed the importance of implementing verification strategies throughout a study" (Humble, 2009, p. 37).⁵⁸

⁵⁷Originating from the natural sciences, 'validity' and 'reliability' are the main criteria for predominantly quantitative research, characterised by objectivist/positivist designs (Saunders et al., 2023, pp. 215-216). For qualitative inquiries with their rather subjectivist/constructionist designs, the view on those criteria is not that clear-cut (Bell et al., 2022, pp. 368-371; Daniel, 2019; Tong, Sainsbury, & Craig, 2007).

⁵⁸The important notion is that the traditional dichotomy between theory development, theory testing and their succession are regarded as obsolete. These are replaced by the CGT approach to build-in validation steps during the emergence and discovery of the grounded theory as the GT's end product (Flynn & Korcuska, 2018, p. 108; Glaser, 2014b, p. 319).

More specifically, an overview of the CRGT's relevant claimed quality criteria include validity (fit), relevance, workability, and modifiability (Walsh et al., 2020, p. 57). Among these, '**validity**'⁵⁹, as the marker for trustworthiness, specifies the need that the emerging theory is "indicated by the data" (Walsh et al., 2020, p. 57) and to achieve a "closeness between a theoretical account and social reality [...] suggested by the "groundedness" of a study" (Lo, 2014, p. 61). Furthermore, validity is the criterion which is more connected with the GT's study procedure than with its end product (as are the other criteria), which is why "validity can also be reformulated as 'procedural validity' " (Günther, 2019, p. 60); see also Lo (2014, p. 61) and Tian, Peng, Dong, Li, & Zhu (2022, p. 4).

The following nine elements have been built-in or taken care of during the thesis' in order to ensure the validity of the study (for more details see appendix 8, pp. 424-427):

- Methodological congruence
- Theoretical sampling
- Member checks
- Procedural precision
- Data triangulation
- Confirmability audit
- Audit trail
- Constant comparison
- Data authenticity

A basic requirement to enable the research's procedural validity is to achieve the highest possible **methodological congruence** by sticking as closely as possible to the requirements of the selected CGT variant and the paradigmatical frame in which it is embedded (Groen, Simmons, & McNair, 2017, p. 4; Seidel & Urquhart, 2016, p. 170).⁶⁰ Consequently, the self-claimed ambition (see chapter 3.4, p. 137) to strive for a highest possible congruence and application of CGT characteristics/methods constitutes an initial-yet-insufficient base for the thesis' validity (Wiesche et al., 2017, p. 698).

Closely connected to that is the aspect of **procedural precision**. This refers to the ambition to not only follow and apply the given methods within the study but also to execute them in a meaningful way to stay as close to the data as possible. The researcher should allow for differentiated and justified iterations, present the decisions providing sufficient evidence and explore them to the most detailed and meaningful level (Birks & Mills, 2023, pp. 48-50).

⁵⁹Glaser uses "fit" as the GT's term for validity (Glaser, 1998, p. 18).

⁶⁰As outlined in chapter 3.3.2 (pp. 117-118), the main reason lies in the confusing amount of GT variants which are often mutually exclusive and spoil the overall approach, when blended. Also, wrongly labelled studies fuel the critique to not have achieved a sufficient methodological correspondence in GT studies.

Both criteria constitute only empty phrases as long as no sufficient **audit trail** is provided to demonstrate them to the reader (Birks & Mills, 2023, pp. 50-52; Bowen, 2009; Nair & Gibbert, 2016). Therefore, in this thesis emphasis is placed on explicating the research design (stringent development in chapter 3) and the actual research practice (interwoven approach in chapter 4). This carries on the argument of GT's close bond between research process and research output (see chapter 1.2.2.3, pp. 17-18; Breckenridge & Jones, 2009, p. 113; Glaser, 2002a, p. 23).⁶¹

Next to these three enablers, five specific methods fostered the study's validity, with **theoretical sampling** as the entry point into data collection. Schwandt states (2015, p. 63):

"The testing of the emergent theory is guided by theoretical sampling. Theoretical sampling means that the sampling of additional incidents, events, activities, populations, and so on are directed by the evolving theoretical constructs. Comparisons between the explanatory adequacy of the theoretical constructs and these additional empirical indicators go on continuously until theoretical saturation is reached (i.e., additional analysis no longer contributes to anything new about a concept). In this way, the resulting theory is considered conceptually dense and grounded in the data"

In other words, achieving theoretical saturation by means of theoretical sampling, which was a major focus point after step 2 of the CRGT study, indicates the study's validity which is targeted by conscious decisions, either striving for similarity or variety of data and concepts (see above, pp. 158-159 and for specific execution, e.g. chapter 4.4.1, p. 197).

The utilization of theoretical sampling facilitated the acquisition of a diverse array of data, referred to as "slices of data" in the literature (Glaser & Strauss, 1967, p. 65; Urquhart, 2023, pp. 158-160; Walsh, 2015). This approach serves to validate the study from two distinct perspectives. Firstly, it aligns with the CR perspective on epistemological relativism, as it affords us with "different views or vantage points from which to understand a category and develop its properties" (Glaser & Strauss, 1967, p. 65). This notion is reminiscent of the

⁶¹Numerous references, hints and points of evidence are provided throughout the thesis comparing the methodical requirements with the executed research steps, e.g. the stepwise and repetitive report of the research's progress, the description of the specific execution of the methods per research step, the display of intermediate findings and occurred iterations grounded in data (see chapters 4.2 to 4.8) or summary tables such as table 18 and 19, pp. 292-293).

belief that a singular reality can be examined/comprehended from various perspectives, enabling the generation of a theoretical account that closely approximates reality.

Secondly, Flick (2019, p. 125) points out the resemblance between the concept of data slices employed by CGT and the validation technique of **data triangulation** (a widely recognized method in the realm of scientific inquiry (Easterby-Smith et al., 2021, pp. 253-254; Thurmond, 2001)). Data triangulation serves to enhance the validity of the research findings and is accomplished when “[t]wo or more independent sources of data and methods of collection are used within one study to ensure that the data are telling you what you think they are telling you” (Saunders et al., 2023, pp. 218-219).⁶²

Consequently, the methodological core of CGT, which ensures the validity of the study, lies in the practice of **constant comparison** (Andrews, Mariano, Santos, Koerber-Timmons, & Silva, 2017, p. 3; Glaser, 1998, p. 18). Lianto supports this notion, stating that “[t]he validity of the theory is an active part of the research process. For example, when performing a constant comparison in the open coding stage, the researcher cross checks the validity of the relationship between the data and the categories that arise” (2019, p. 5). The overview of the study’s actual comparison is presented in table 19, p. 293.

As another commonly employed pervasive method to warrant the validity of a qualitative study like CGT (or in critical realist studies in general), **member checks** have been implemented during step 4 and 7 of the study. This method, as discussed by Coleman (2019), Flynn and Korcuska (2018), Henry (2015) or Korstjens and Moser (2018)⁶³ serves as a means of “respondent validation” (Barbour, 2001, p. 1117; Busetto, Wick, & Gumbinger, 2020, p. 7; Tong et al., 2007, p. 349) or “communicative validation” (Günther, 2019, p. 60).

During the penultimate stage of the study, step 7, a conclusive validation attempt was conducted in the form of a **confirmability audit**. It was conducted with utmost care and

⁶²Various slices of data were obtained from a diverse group of interviewees who had experienced different roles in different companies. The richness of the data was further enhanced by the inclusion of data from existing literature, which was intentionally incorporated into the CGT procedure as a mandatory element during step 6 of the study (Urquhart & Fernández, 2013, p. 3; chapter 1.2.2.2, p. 16).

⁶³See Candela (2019) for a further discussion or Thomas (2017) for a critique.

attention to detail, adhering to the rigorous standards set forth by Haven and Van Grootel (2019) as well as Lincoln and Guba (1985). This audit was designed to serve as a platform for open discussion regarding the theoretical framework prior to the final composition of the theory. The audit involved the four highest knowledgeable PCM consultants from the initial sampling pool. The primary focus was to scrutinize the content of the theory itself, rather than the process of theory generation. The purpose of this close check-up was to ensure the accuracy and reliability of the theoretical account. The involvement of these esteemed consultants further bolstered the credibility and robustness of the findings.

Especially, but not limited to, during this confirmatory, content-focused audit, a key principle was to ensure the **authenticity of the data** (answers, comments, or information provided by the interviewees) obtained (Kjelvik & Schultheis, 2019; Schultheis & Kjelvik, 2020) so that it “[c]ounts as good data” (Decock & Jacobs, 2021, p. 1).⁶⁴ In this context, it was imperative to avoid any form of deliberate misrepresentation or properlining by the interviewees. This includes refraining from tendencies towards impression-making or any form of deception/fabrication of knowledge claims that were not grounded in/derived from the actual participants’ experiences (Ma, Seidl, & McNulty, 2021).

And this was the stage, in which the sampling of the initial research pool (see p. 157) had finally achieved full effectiveness. This effectiveness is attributed to the ability to consider the personal characteristics of potential participants. The initial sampling process was primarily guided by the accessibility of research participants, while also taking into account the criterion of credibility in order to obtain authentic data based on the fact that the participants were personally known (see chapter 3.4.3.1, p. 156).⁶⁵

⁶⁴Authenticity (Lincoln & Guba, 1986) comes in many facets which makes it necessary to outline the specific type of authenticity a study places emphasis on (Amin et al., 2020; Newman & Smith, 2016; Johnson & Rasulova, 2016). The aspect under scrutiny in the thesis is the authenticity of interview data, specifically, whether-or-not the data provided by the interviewees accurately represent the empirical field. For a critical realist, this refers to the interviewees’ genuine viewpoint, their perspective, and their personal experience of reality (Messner, Moll, & Strömsten, 2017, pp. 437-438; Whitaker & Atkinson, 2019, pp. 630-631). It then can be called “ ‘authentic’ because it is thought to be true to the essence of something, to a revealed truth, a deeply felt sentiment, or the way these are worded or otherwise expressed” (Van Leuween, 2001, p. 393).

⁶⁵It is worth noting that all potential participants shared fundamental values pertaining to interactions, communication, togetherness, problem-solving or scientific endeavour. These shared values serve as prima facie indicators of authentic behavior.

Having created the general conditions for the validity of the study and the collection of authentic data from the research participants, particular consideration was given to the ensuring of proper research ethics during the study. This forms the basis of the content of the next section.

3.4.3.4 Ensuring research ethics

Research ethics is a mandatory hygienic aspect in doctoral research, let alone every type of research (Holbrook, Dally, Avery, Lovat, & Fairbairn, 2017). Taking this as a matter of course, the study was “governed by the need to minimise the risk of harm, embarrassment, pain or any other [...] disadvantage to those involved in the research” (Saunders et al., 2023, pp. 213-124). For instance, the voluntary participation of the interviewees or the creation of a safe environment and an atmosphere of well-being before, during and after the interactions in the thesis research project were of utmost importance. Given that most interviewees were consultants who had signed confidentiality agreements with their clients, it was ensured that the researcher did not have any possibility to trace back any content to any company. It was agreed beforehand that company names should not be mentioned. Neither should the interviewees’ clear names be issued as data processing and data storage, as well as publication of results, was guaranteed to happen anonymously.

In sum, the researcher followed the principles and procedures of research ethics that were approved by the University of Gloucestershire University Research Degrees Committee (University Research Degrees Committee, 2020). An invitation letter was sent to the potential interviewees (see appendix 6, p. 422) including the link to the University’s ‘Research Participants Privacy Notice’. Prior to the interviews the potential participants were informed about the principle overarching research purpose, the intended method, an approximated duration and further implications for the interviewees such as guaranteed confidentiality of their own person and their client companies.

All participants were also informed about their right to refuse participation at any time, including withdrawal from the research project at any stage. Privacy and personal data were fully valued, as all questions referred entirely to any business setting only and no influence was brought in to answer broad open-ended or general questions. Overall, the university’s

Research Ethics Sub Committee can be referred to in terms of any questions relating to privacy. Mutual respect and trust were maintained during the entire study.

3.5 Summarising reflections on shaping the research design

Having completed the description of the '7-steps-full-package'-approach including the main methods and the ethical aspects, the research design can be considered as being fully portrayed and can be brought to life as the subject of chapter 4. Therein, the explication of "the tailoring [...] to the particular circumstances" (Amsteus, 2014, p. 71) will be equally emphasised as the emergent content. A reflective stage on the complete research design, however, should end chapter 3 prior to the demonstration of the GT study itself.

The definition of the research design had mainly five decisive and consecutive steps, the selection of:

- research paradigm (Critical realism)
- principle research methodology (Grounded Theory)
- specific GT variant (Critical Realist Grounded Theory)
- specific, yet principle research design ('7-steps-procedure' from Walsh et al.)
- appropriate, yet overarching research methods (sampling, interviewing, validating)

Overall, it was the ambition to outline the decisive stages in the research design definition as 'fit-for-purpose' during decision making. In doing so, full awareness of some points has been gained. They are:

- GT originated outside management research
- CGT as a pragmatic methodology
- CRGT study started on an informed base
- Foreshadowed research problem

A **first aspect** to mention is that although (classic) GT did also find its way into management and organisational research (e.g. Easterby-Smith et al. 2018, pp. 119-122; Ebrahimi, 2022; Eriksson & Kovalainen, 2016, pp. 197-214; Hafer, 2022; Sato, 2019), its roots and main advocates (and with that the meta-methodological debates) are mainly allocated in

sociology. Leaving the ‘beaten path’ of a research area has the potential to be challenging to attempt.

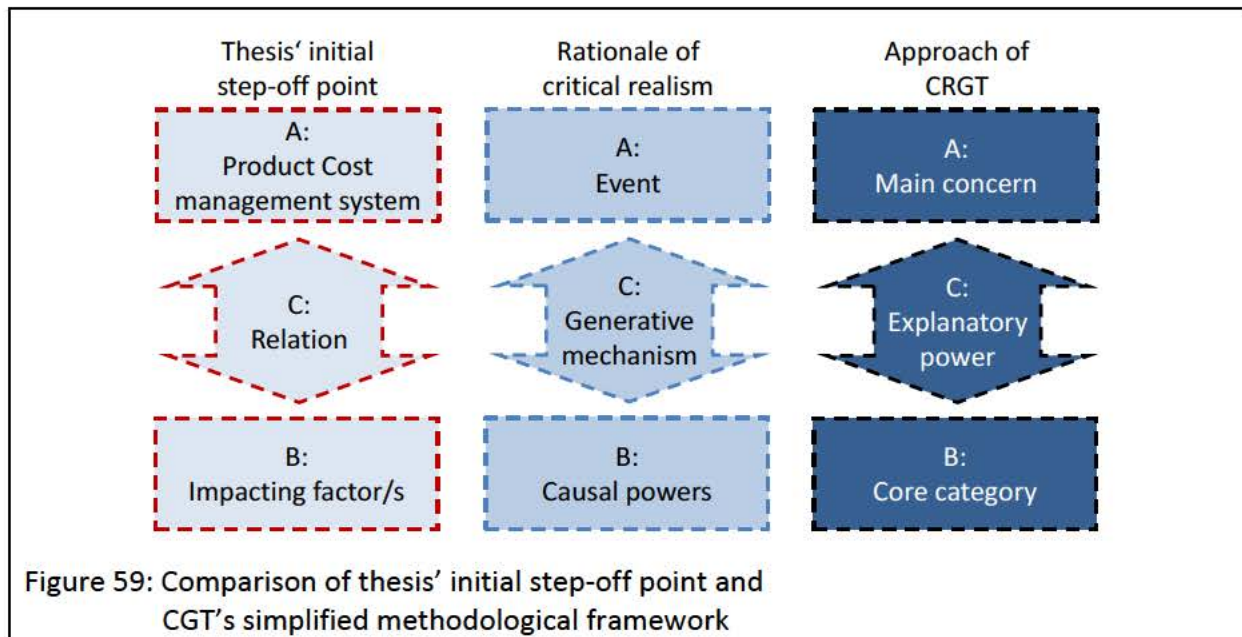
A **second aspect** to underline is that in opposition to some GT scholars (e.g. Bryant, 2017, p. xi; Charmaz, 2020, p. 198) CGT is viewed, per se, as a pragmatic methodology for various reasons which have already been. Neither the original GT nor the classic branch show an explicit claim for any paradigm but openness and flexibility.⁶⁶ Also, the term ‘Discovery’ is subject to misinterpretation. Actually, Glaser and Strauss ‘accidentally’ discovered how they did work during the study then described and published their approach only after request. They did not invent it but rather put together principles and methods they used and applied⁶⁷ which were also taken up by other researchers.

A **third aspect** to consider is the conscious decision to undertake a GT study, although debates keep continuing about being ‘informed’ by extant knowledge or a researcher’s inherent expertise. As mentioned in several stages already, to ban prior knowledge is not intended by either original or CGT.⁶⁸ The opposite is the case, the contribution to the “collaborative and cumulative endeavour” (Tractenberg, 2013, p. 105) is a dedicated step within the GT research. Reading the original book brings to surface that “[t]he core categories can emerge in the sociologist’s mind from his reading, life experiences, research and scholarship [...] no sociologist can possibly erase from his mind all the theory he knows before he begins his research” (Glaser & Strauss, 1967, pp. 90/253). For the thesis, however, the challenge was to balance out the avoidance of preconceptions, i.e. staying open to emergence, versus the use of prior knowledge enhancing theoretical sensitivity.

⁶⁶It can also be shown that both, Glaser and Strauss, have been impacted by American pragmatists. Furthermore, the historical context and the situating into the research landscape suggest that the objectivist terminology of original and classic GT publications are directed towards a better reception by those academics who have been provoked with GT as a new systematic and scientific methodology.

⁶⁷For example, Bryant (2017, pp. 383-388) demonstrates striking resemblance between works of Darwin with GT. On top, Glaser and Strauss’ first try was written in an admittedly immature way with many aspects still unclear, vague and unconscious between both (that’s why the development into two GT streams was built-in already in 1967) suggesting a rather short-notice publication than a well-thought-through attempt.

⁶⁸It is, however, a clear exhortation to be cautious in order not to fall into the trap of preconceptions, which would spoil the emergence out of data and the targeted groundedness. Although Bryant (2017, p. 383), as well as Kelle (2007, p. 135) stress the link of GT to early Empiricism of Francis Bacon or John Locke with empirical and inductive approaches advocating theory building with ‘free minds’, this early naïve view was superseded by a more pragmatic contemporary approach of empiricists.



In order to not to come under suspicion, this reflective step therefore dedicatedly explicates its own step-off point derived while scoping the research topic to mirror it with CR's rationale as well as the methodological CRGT framework (figure 59).

The identified thesis' management problem, how to design product cost management systems, corresponds to the main concern (or an event in CR jargon). The thesis' target is the identification of an impacting factor, which is just another term for CGT's term core category (or a causal power in CR jargon). The resolving potency with GT's explanatory power (through CR's generative mechanisms, as Urquhart (2023, p. 93) states)) is also just a different jargonised term compared to any kind of relation which the thesis' aimed to discover.

So, the thesis' point of departure shows a match with CR's paradigmatical rationale and C(R)GT's inherent methodological approach and clearly does not include any critical preconceptions as neither the dimensions and attributes of PCMS, nor the impacting factor, core category or the relation between impacting factor, core category and concern are in any way preconceived. Furthermore, there is a notable congruence/matching of all three perspectives, which was one of the goals regarding the research design (see 3.1).⁶⁹

⁶⁹Yet, it has to be stated that this highly simplified visual sketch is only a rough approximation for the sake of getting confidence into the research design.

Regardless of this unsuspecting openness towards the research outcome, there is, however, as a **fourth reflective aspect**, one single point of challenge, which could serve as an argument to challenge the emergent nature of the study and, with that, the GT character overall: the discovery of the research problem (= the main concern). The research problem was clearly identified after the scoping literature review and not via step 1 of the ideal CRGT process. But there are three arguments against potential interventions negating the overall GT character of the thesis' study.

Firstly, the scoping of the research topic pro-actively included 'problematisation techniques' on top of conventional 'gap-spotting', which explicitly aimed to challenge prior knowledge instead of keeping a 'taking-for-granted'-attitude of cumulative knowledge. Secondly, as the substantive research area was 'PCM' it was demonstrated that there are actually hardly any preconceptions available but rather ideas from the related (in this case broader) research area of cost management, organisational theory etc. which increase theoretical sensitivity. Thirdly, Step 1 of C(R)GT procedure, identification of the main concern, was conducted and then compared with the initial management problem regardless. Therefore, one should see the initial research problem out of the scoping literature review as a "foreshadowed problem" (Hammersley & Atkinson, 2019, p. 22) and as one slice of data to start the study.⁷⁰

Concluding chapter 3 it has been shown that there was a stringent way forward which has been applied to identify the research design and which is matching with the research goal. Those points which demanded a higher degree of justification have been outlined in greater detail. Amongst these, the high number of variants of GT which are not sufficiently systemised and segregated in current literature have come to occupy considerable room in the thesis to demonstrate the conscious decision about the GT variants.

⁷⁰A last reflective aspect is, whether this foreshadowed research goal was in any way undermined by the defined research design. Aiming at the development of a normative theory on how to develop PCMS, the key characteristics of this goal, and only those, have served as decision criteria. Moreover, it was demonstrated by referencing longer passages from GT scholars, that the thesis' research is well situated within GT. Lastly, critical elements have also been taken up and challenged such as the philosophical underpinning or the challenge of preconceptions so that one can conclude and agree with Van der Meer-Kooistra and Vosselman that the research design is suitable in the research field of cost management as to generate "conditional positive and normative statements for a broad category of organizations" (2012, p. 251). Over and above, for management research the selected GT approach is expected to support theory generation and avoid mis-conductions (Gligor, Esmark, & Gölgeci, 2016; Walsh, 2014b) with a variety of GT studies undertaken already.

4 Presenting the findings: Emerging ‘Alignment-Theory of Product Cost Management’

4.1 Outlining a brief overview of chapter 4

Having completed chapter 3, with the principle research design defined, the nature of the study changed. No longer is the focus on ‘progressive narrowing’ as it was in the upper part of the Martini glass but ‘emergence’ in the lower part characterises the way forward (figure 60). The goal of this research phase was to develop the normative theory about product cost management using the classic Grounded Theory methodology informed by critical realism.

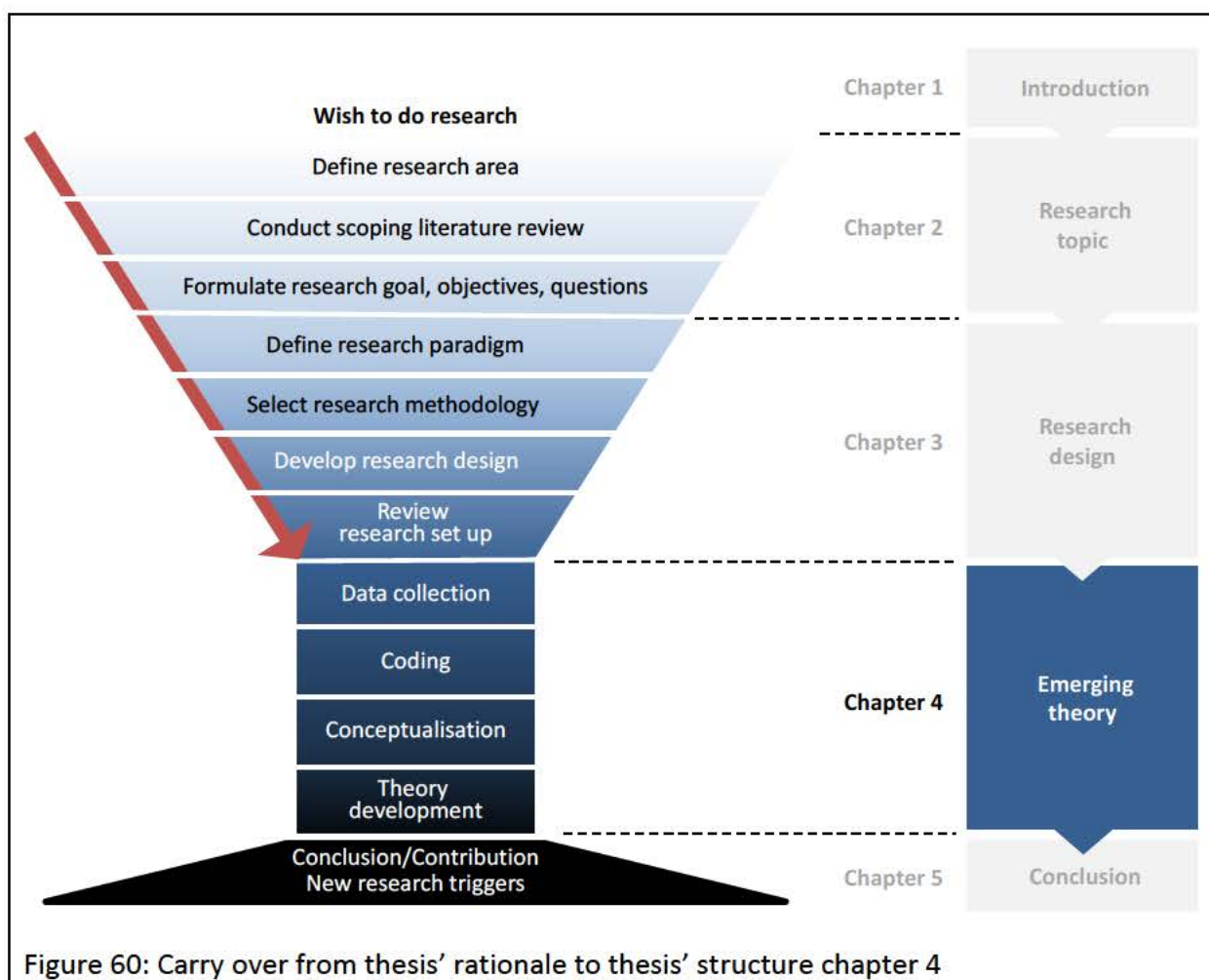
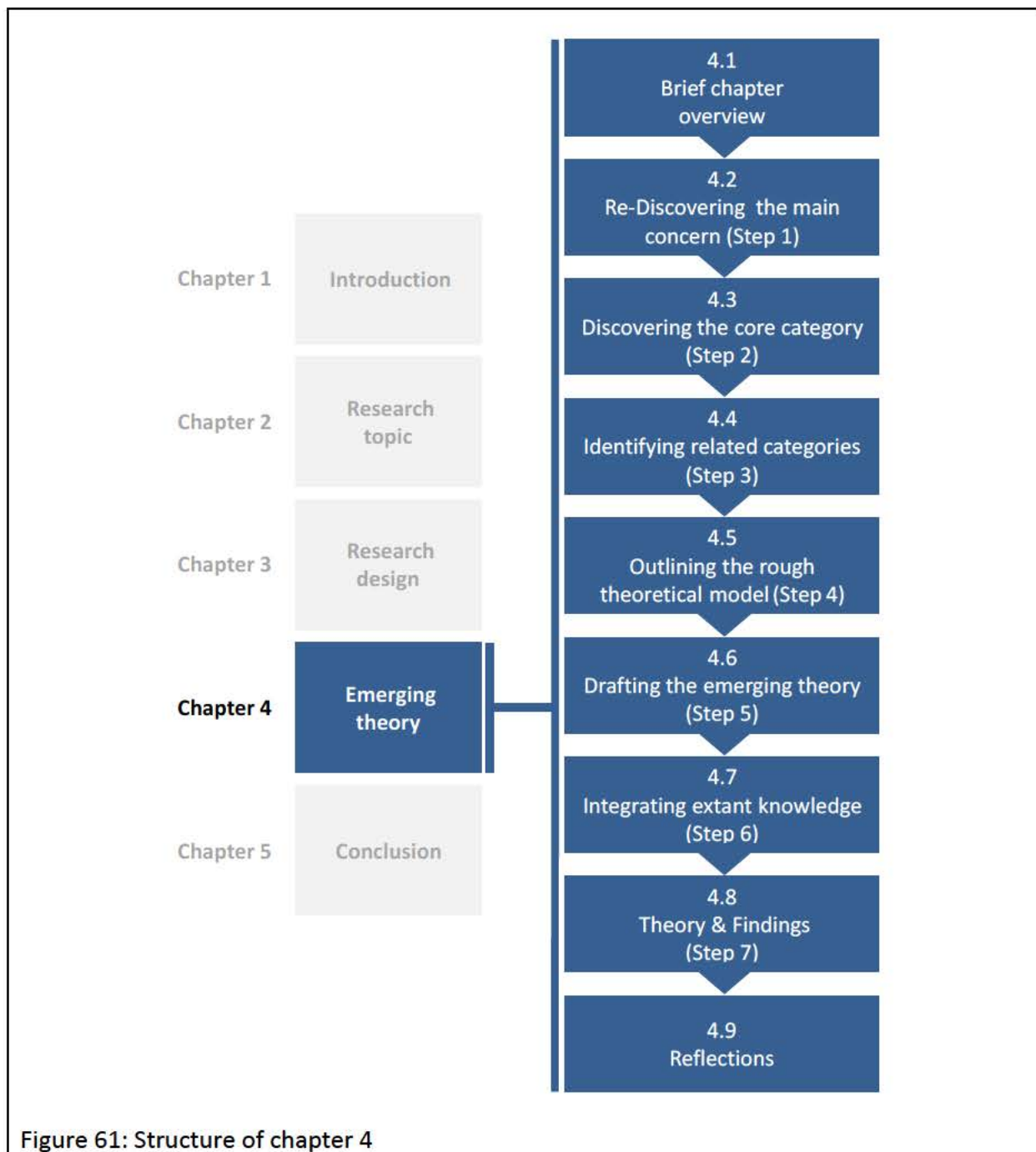


Figure 60: Carry over from thesis’ rationale to thesis’ structure chapter 4

This is why chapter 4 of the thesis straightforwardly puts the to-be-outlined ‘7-steps-full-package’ research design at the centre (figure 61).



However, although the reading naturally follows a sequential flow, the study was characterised by its iterative/spiral nature which makes it obligatory to highlight the iterations, no matter whether within certain research steps or across them (chapter 1.2.2.3, pp. 17-18). Furthermore, two additional features typify the presentation of chapter 4. Each section will outline the procedural emergence for the research step undertaken:⁷¹ first, to portray the 'how' of the step; second, the theoretical emergence of each step will be

⁷¹Also using CGT's jargon to adhere to the methodological traits (Glaser, 2009).

elucidated to portray the ‘what’ of the study according to the seven steps of the research design. Both outcomes together inform/ed the subsequent step which is the justification to repeat this approach in each section.

Due to the relative number of details in all steps during the emergence of theory, the focus will be on the presentation of the main intermediate findings to allow the reader to comprehend ‘the big picture’ of the theory. Its emergence will be exemplified, with the most illustrative content demonstrating the rationales of the findings, and further examples being outlined in the appendix (pp. 428-437).

4.2 Findings of step 1: Re-Discovering the main concern

Commencing with the primary research, the aim was to identify the main concern (research problem) of the research area in focus, namely product cost management, as highlighted within the overall approach in figure 62.

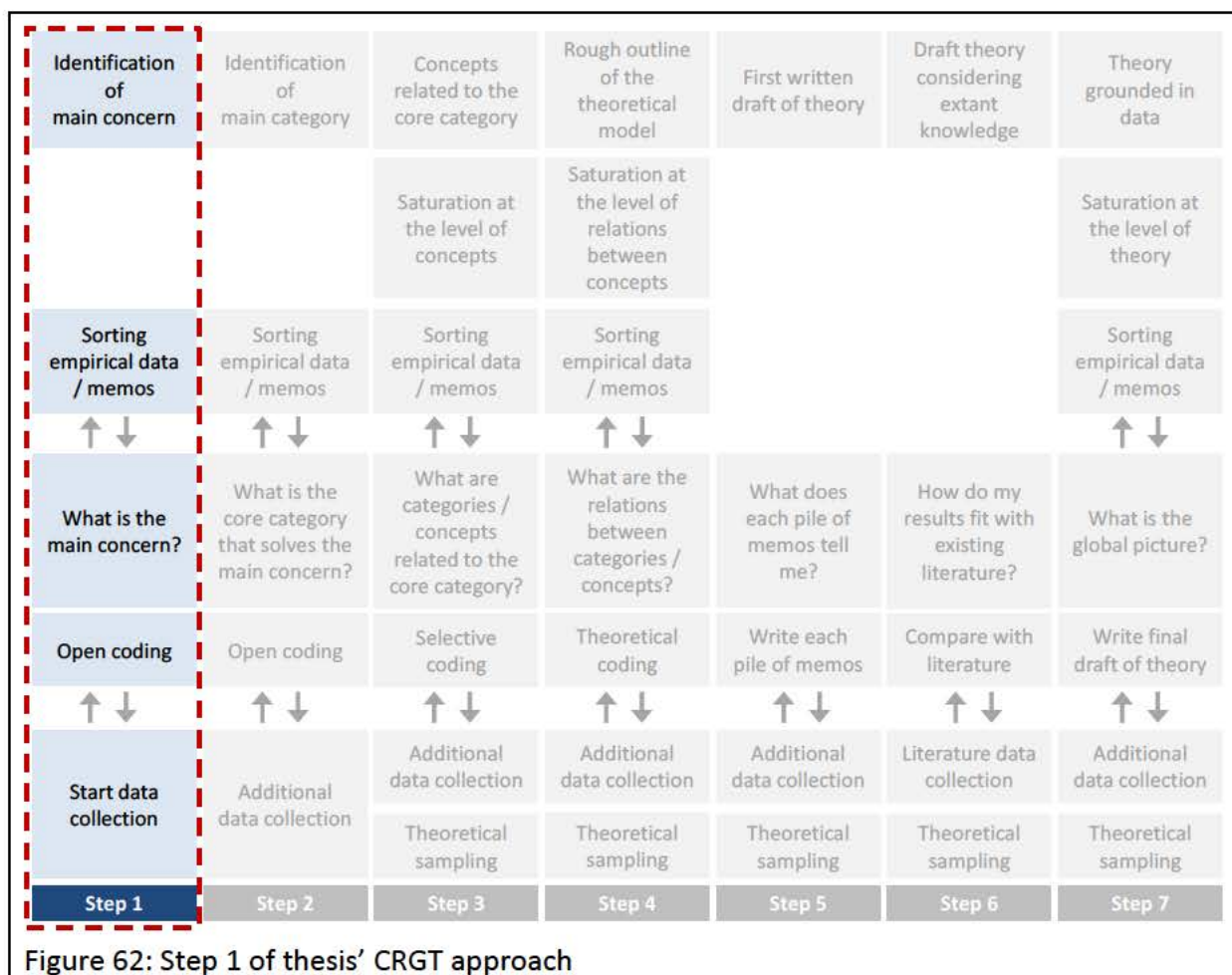


Figure 62: Step 1 of thesis’ CRGT approach

4.2.1 Methodological remarks on step 1:

Foreshadowed problem, data collection and coding

Three methodological aspects shall be indicated for step 1 as they are essential for the understanding of the thesis' specific approach:

- Identification of the main concern in relation to the foreshadowed problem
- Data collection in terms of data sources and data collection method
- Specification of coding procedure to stay open and enable constant comparison

With respect to the **identification of the main concern** in the area of PCM the aspect of 'preconceptions' has to be taken up (Glaser, 2014g).

It was determined that prior knowledge cannot be avoided, in fact it even might enhance theoretical sensitivity as long as the researcher remains open to the emergence of findings out of the data. Yet, "there is a need for the grounded theory researcher to acknowledge his/her prior knowledge and tacit knowledge, to bring such knowledge into the open, to discuss how it has affected the theory development" (Cutcliffe, 2000, p. 1479).

After the scoping literature review (chapter 2.4), an initial concern in product cost management was identified, namely the issue of how to design a PCMS (chapter 2.5.3, p. 68). Although the concern was identified not only by literature 'gap spotting' but also by making use of 'problematization' techniques, it still did not emerge from empirical data as demanded by CRGT.⁷² Hence, the question arises of how to handle this predefined goal even though it is the only supposed preconceived aspect to be challenged. This challenge has its roots in the traditional approach to enter the research with a guiding research problem and goal upon which the research design then subsequently is developed (chapter 1.2.1, p. 4).

The answer is provided in chapter 3.4.1 on page 147, referring to the GT's pillar of 'staying open' during the research process as long as saturation (of the defined different levers) has not yet been achieved. This has two distinct implications for the thesis' first step: first, to

⁷²For other GT variants this can differ as Willig states: "Grounded theory researchers need an initial research question to focus their attention upon the particular phenomenon they wish to investigate ... The initial research question should serve to identify, but not make assumptions about, the phenomenon of interest. This is difficult, if not impossible, to achieve" (2013, p. 72).

not skip over but instead to thoroughly execute step 1 so as to not take-for-granted that the initial research problem is the ultimate one. Second, to actively code for any emerging concern appearing in the empirical data, no matter whether in-line with the knowledge so far or in contradiction and then taking the subsequent CRGT steps from there. This is what is meant by the idea of taking a “step back” and the proposal to build a “mental wall” (Walsh et al., 2020, pp. 21/47) to any prior thoughts in order not to spoil or violate the overall inductive approach. It is also in accordance with Glaser as he “accepts researchers’ previous knowledge and being informed by their know-how, but does not support a priori theoretical settings” (Von Alberti-Alhtaybat & Al-Htaybat, 2010, p. 211).

In addition, this practice is in line with the 7-step-approach from Walsh et al., as they give one CRGT example facing the same issue about the handling of prior gained knowledge and to treat the informed part of the study as additional data (2020, pp. 56-59).

In terms of **data collection**, as ‘all is data’, the question about how to collect data, from which source and subsequently how to determine the sample needs to be elaborated upon especially at the beginning (with potential changes only then to be explained if occurring later) as “[t]he most difficult decision to make with regard to data collection is who to start with” (Von Alberti-Alhtaybat & Al-Htaybat, 2010, p. 213).

As described in chapter 3.4.3.1 (pp. 158-159), purposive sampling out of the defined research frame was applied to include a diversity of perspectives and to cover organisational hierarchies and functions which are relevant for and affected by PCM and a variety of sun branches within the manufacturing industry (which excludes sectors such as financial industry, services industry, or trade).

Therefore, the questions prepared and applied with regard to the communication flow were: ‘Would you please be so kind and...

- ...tell me a bit about how you manage product cost in your company?’
- ...explain to me how your PCM works?’
- ...describe the ways you do PCM?’

Follow up questions were asked only to deepen understanding if aspects were not clear, when there was an expectation that the interviewee would be able to explain reasons or background of any aspect, or simply to stimulate further elaboration by the interviewee after he/she seemed to be unsure whether to continue or not after periods of silence. This meant that from the researcher's position the role was simply to let them talk as much as possible, alone, without directing or dominating the conversation.

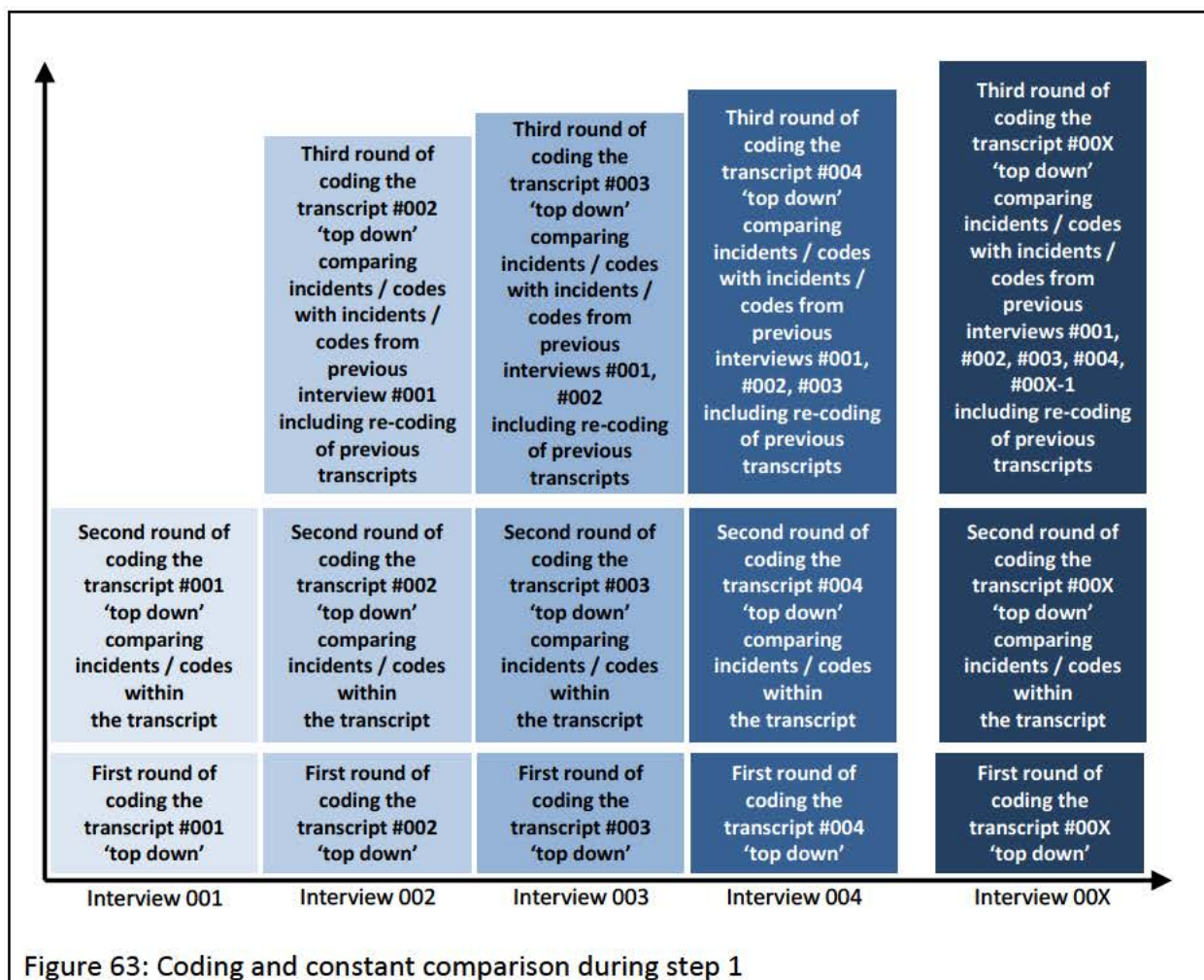
Regarding **coding**, it was decided not to make use of coding software. Although the literature states the advantages of analysis software tool support (e.g. Hutchison, Johnston, & Breckon, 2010; Niedbalski & Ślęzak, 2017; Weber & Zimmermann, 2016), the shortcomings and risks of following an overly mechanistic path, potentially distracting from content, limiting creativity or conceptualisation ability (Breckenridge, 2014, pp. 8-9; Chametzky, 2016, p. 167; Glaser, 2005, p. 47) outweighed the potential efficiency gains. Instead, a simple coding sheet was created in 'Microsoft Excel' in which transcribed data was put into a left column and codes to the right column, following Glaser (1978) to "code in the margin right next to the indicator" (p. 71). The open coding was done 'line-by-line', meaning one extracted part of the transcript per code which together created one Excel line each.

Doing so, a coding data base was developed with more than 1000 individual codes after ten interviews. They showed a comparably high share of descriptive in vivo codes at the beginning which progressed to more conceptualised codes when progressing with the study. Therefore, a column was added to indicate the type of code either being a descriptive 'in vivo' or an 'analytic' code.

Aiming to identify the main concern, the first interviews were coded one after the other in alternation with interviewing a next participant. Although being audio-recorded and transcribed, notes were put down when it seemed that the interviewee addressed important aspects which should be captured, hinting towards 'main' concerns or categories as well as non-verbal data or hard-to-audio-record data, e.g. body language, tonality etc.. These served as additional indicators and were added to the coding sheet, as were the first short memos, written whenever an idea or a flash of thought appeared.

To remain open, each interview was coded first, 'isolated' from previous coding attempts, in order not to enlarge the risk to only apply former codes mechanistically. To ensure constant comparison, a second round of recursive coding was conducted for each interview, comparing the incidents and codes within the coded interview to identify similarities and differences after the sorting of codes led to initial grouping.

This led to a clean-up in wording and terminology and gave the first hints towards the definition of concepts, which incidents to allocate to a concept, how to name the concept and how to name its properties.



However, after coding an interview it was then finally also compared with the previous interviews, again in order to identify similarities or differences in incidents and codes between different interviews.

This further directed the clean-up in wording and terminology and provided further hints towards the definition of concepts and its properties, or as Gibbs says “[t]his recursive approach ensures that theoretical properties of categories are fleshed out as analysis proceeds” (Gibbs, 2012, p. 338). Out of the total amount of initial individual ‘line-by-line’-codes, less than 50% of the individual codes remained during the early phase of the study after 25 iterations (one within each interview one for each new interview addressing the previous interviews).

The described practice is sketched in figure 63. The spreadsheet-software helped in doing so as it supported searching for (key) terms, along with the filtering and the sorting of incidents, codes, or categories. Without these software functionalities the increasing data volume would have been much more difficult to compare in this constantly ongoing comparison process.

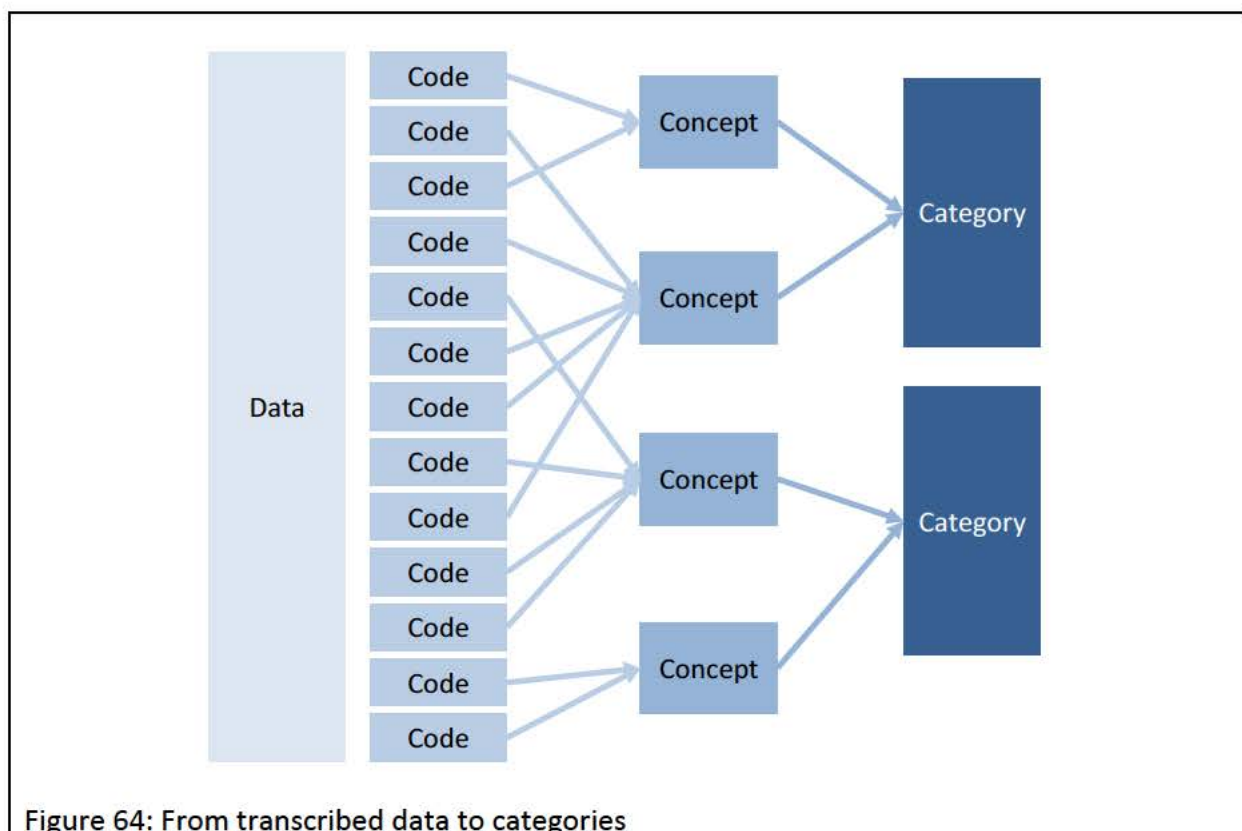


Figure 64: From transcribed data to categories

Applying this technique, it soon became obvious what Glaser meant, stating that in the beginning, “codes come very fast, and it is important to realize that these codes need

correction by trimming and fitting” (1978, pp. 60-61). It was the constant comparison which lifted the codes to a higher maturity level after the understanding of the emerging concepts was increasing. So, codes and their allocation to concepts or categories changed quite significantly in the early stages and turned out to be more stable, progressing with more and more interviews and coding/comparison sessions.

In summation, the procedure lifted the transcribed data to codes, similar codes formed a concept and similar concepts formed a category (figure 64 above).

Although this illustration of the outcome pretends a linear approach, it was, in actuality, iterative and spiral. The constant comparison of new codes with already existing codes triggered adaption of codes, similarly this happened to concepts and categories.⁷³ Whilst progressing, those iterations became fewer and fewer so that the confidence into stable concepts and categories increased.

It is consequently essential to understand the way from data to codes to concepts and categories, especially as in step 1, focus is on one of the categories, namely the main concern, leaving other categories to the subsequent steps, mainly step 2 and 3. Table 10 below summarises the cornerstones of the methodological elements of the study’s step 1.

⁷³That’s why often illustrations are used showing arrows going from left to right and from right to left.

Step 1 (main concern)	
Number of interviews and iterations	13 Interviews 12 "iterations", i.e. always alternating conducting an interview and coding an interview
Sampling of interviewees	Purposive sampling to cover organisational hierarchies and functions which are relevant for PCM and to cover a variety of branches within manufacturing industry
Background of interviewees	Group of 10 line managers from C-level over functional/department heads, either in product management or associated with product cost management. 3 management consultants in the field of product cost management have also been approached to benefit from their knowledge about a larger number of companies.
Main themes covered in the interviews	Towards interviewees: Management of product cost Latent: Identify the main concern/research problem
Change of themes / questions between iterations	No change: within a GT step, themes (= main directions of a step) are not changed, only from step to step
Questions asked during the interviews	Open-ended / grand-tour questions <u>Initial questions:</u> Would you please be so kind and... <ul style="list-style-type: none"> • tell me a bit about how you manage PC in your company • explain to me how your PCM works • describe the ways you do PCM <u>Follow-up questions:</u> <ul style="list-style-type: none"> • Could you please explain in more detail 'XYZ' ? • What are the reasons for 'XYZ'? • Is there something else to say about your PCM besides 'XYZ'? • Are there any problems you suffer in the way you manage your PC?
Length of interviews	20-45 minutes
Recording / documentation of interviews	Interviews per MS Teams / Skype, voice recorded and transcribed with speech to text transcription support of "Temi app". Attention: This is against what CGT recommends. It was anyhow done due to the unfamiliarity with research interviews.
Analysis of collected qualitative data	Open coding (manually, line-by-line) 25 recursive coding iterations (always 1 iteration within an interview and 1 iteration with all previous interviews) Comparing and sorting codes to aggregate to concepts and categories (focus: "concerns/researchable problems")

Table 10: Methodological summary of step 1

4.2.2 'Organising activities' as main concern in product cost management

Even though participants have been initially asked only to explain how product costs were managed in their company, their explanations followed a certain pattern. After firstly stating some 'neutral' aspects, the share of 'problematic aspects' grew over time in the interviews. As the question in step 1 was to identify the main concern, the indicators and codes defined in this early phase were marked as 'concern' in the coding sheet if a problem or concern was addressed. Focus then at this stage was to further investigate those marked indicators to find similarities and differences within interviews and between interviewees.

A variety of different specific concerns have been claimed by the interviewees. However, only two abstracted concerns showed both a high frequency (namely in all interviews) and the multi-indicator-concept-characteristic with their interchangeability of indicators:

- Achieving cost related targets
- Organising product cost management activities

Other concerns with lower frequency and only single/double-indicator-concept characteristic were:

- Receiving trustworthy benchmarks
- Contracting with customers and suppliers
- Forecasting product cost development
- Fundraising for optimum financing cost

Elaborating on the most frequently stated concerns, the concern of '**achieving product cost related targets**' was informed by interchangeable indicators such as 'achieving product cost transparency' or 'comprehensively covering all relevant product costs', both being an enabler for the achievement of ultimate targets also contributing to the concern. Those ultimate targets are to 'reduce product costs or the fixed cost share' and to 'increase product cost flexibility' which are partially overlapping targets.

Although one might expect a few more cost related targets, this concern was saturated quickly with repetitions in all interviews but did not add to further differentiation. Also, the

distinction between ultimate targets and enabling upstream targets was not thematised by any interviewee and only mentioned due to the researcher’s theoretical sensitivity. That’s why it was decided to define this concern as ‘achieving product cost targets’, only while still remaining open during the continuing study. Additional targets could have populated this concern to further enhance the multiplicity of its indicators. Alternatively, the concern could have been divided, if needed, to the expense of the multiplicity.

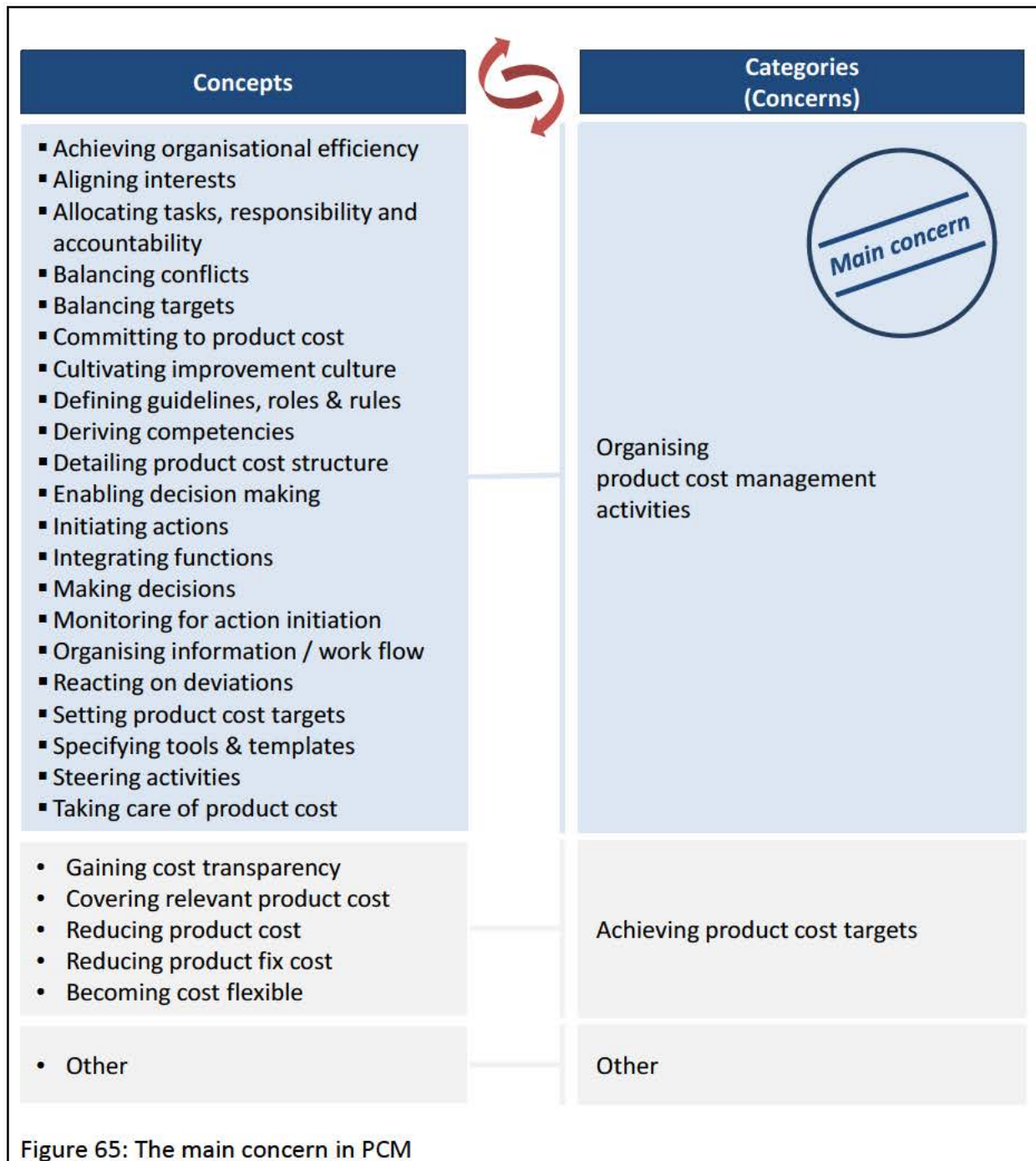
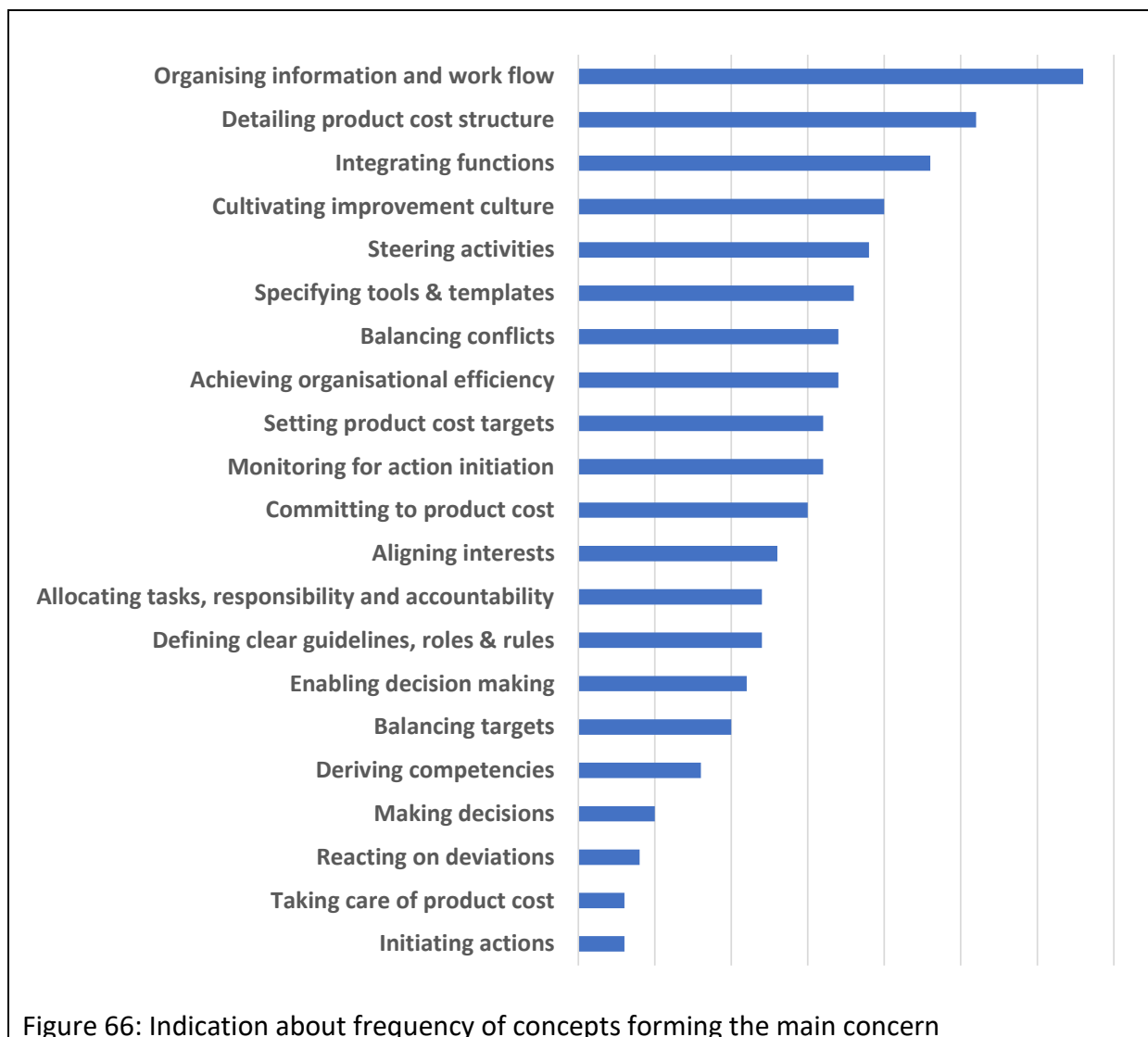


Figure 65: The main concern in PCM

The concern of **'how to organise PCM-activities'** demonstrated the highest frequency (318 out of 386 codes which have been considered as showing a concern) and also a larger complexity with an apparently higher number of indicators and concepts which are related, partially overlapping, yet distinct (figure 65 above). This is the reason why saturation took longer here than with the concern of 'achievement of targets'. Even though in every interview a couple of organisational aspects have been addressed, only after 16 interviews, then in step 2 of the study, this concern tended towards theoretical saturation with only minor, if any, add-ons or modifications. It also should be mentioned that, at this stage, not all concepts did contribute equally to the forming of the main concern as the concepts showed a varying number of appearances (figure 66).



This is part of the evolving nature and is kept in mind throughout the remaining research as some concepts might be deleted or reorganised later, prior to the 'final-provisional' theory. The lower indicated concepts should be subject to re-investigation during theory development.

In appendix 9 (p. 428), a more detailed overview of the main concern and its defining codes and incidents is presented to enable the thesis' audit trail being continued.

A few quotes (as raw data) from the interviews, however, illustrate the direction of the main concern of how to organise activities in PCM without aiming for a thick description:

"Everybody knows a little bit about how to approach or bring up the information but we don't have a streamlined, well organised way of working. We even don't know how to organise it properly. And that would be fundamental" (Interviewee 002)

"It should be in balance. To bring people into that balance... it's quite hard because everybody tries to say "Hey, but I need it" but me as the other guy asks "why" or "what does it do to our liquidity", "is it required for product quality" etc. But they then say it will be for the future because it's innovation and it will be earned in the future... and this is like to bring it together, that's why it's a balance" (Interviewee 004)

"And I know from other companies that they are far more structured, they have processes, they have clarity, and really transparent targets. They have joint tools. Here it's much more fragmented. It's more muddling through. And we all suffer from that" (Interviewee 004)

"So, from all the management issues that's impacting the most: those not aligned joint or prioritised targets in order to get all the different departments working together, that's really the hard one, this hinders effective meetings or the streamlining of our IT system, this hinders mutual cooperation" (Interviewee 006)

"Are we doing the right things? I don't know. I asked at the beginning here, whether somebody can tell me whether we are doing it right or whether we need to change something. I saw empty eyes. Nobody had a clue how to think about it, how to judge. 'We do it since years, it works' ... that was the answer. Now, I doubt it" (Interviewee 009)

The last criterion to define the organisation of PCM-activities as a main concern popped out of the notes taken during the interviews. It was the emotional component of the interviews, often being shown during the interview when those aspects have been raised, either by using emotional wording or by raising voice or changing tonality indicating, e.g. frustration or anger.

- Quote: *“And this drives people mad. So much effort into controlling and figures, but no transparent guideline of how to decide”* (Interviewee 003)
- Note/Quote: Interviewee expressing frustration by shaking his head and twisting eyes when saying *“Controlling is like in an ivory tower, I would say. They always say our costs are too high and everywhere. Every time... there's no exception. I don't see any different ... I don't see a differentiation”* (Interviewee 005)
- Quote: *“they... give a shit about the product cost or material costs and so on”* (Interviewee 011)
- Quote: *“what drives me mad is that they are not working together ... as if they would compete against each other and striving for self-optimisation instead of cost optimum”* (Interviewee 007)

This then demonstrated a common concern which earned its way into serving as a main concern by showing high frequency, high relevance, high complexity, high saturation and a highly ‘grabbing’ character (Simmons, 2022, p. xviii). It is abstracted and free from time, place and context and with that can be seen as fulfilling all CGT requirements as it emerged completely out of the collected data.

Last but not least, an evaluation of the main concern with respect to the foreshadowed problem can be undertaken. It was ‘the’ methodological question mark when entering the CRGT study, challenging whether a part of the research was preconceived or not. With the result and how it was identified, this doubt can be dispelled.

First of all, the identified main concern differs from the original research problem, even though it is no more than a slight modification (no matter to what extent). This shows the openness during this early phase having successfully built and maintained a mental wall. It is very similar in terms of general direction of the concern (organisational aspect) but more specific in terms of the affected organisational dimensions. In both aspects there is a value of GT’s first step: Broadening the view for the main concern and becoming more specific

regarding the complexity and specificity. And as there is no conflict between the initial research problem and identified main concern, it is justified to label it as being ‘re-discovered’.

Secondly, the main concern emerged completely out of collected data, with no forcing into pre-defined concepts but making use of constant comparison of incidents, indicators and codes as well as increasing the level of abstraction through frequent conceptualisation where needed and where possible. Thirdly, the provision of raw data along with coding results show evidence of the emergent nature of the main concern. Finally, a member check⁷⁴ confirmed the highest relevance and frequency of the organisational aspect versus other concerns further supporting the empirical and grounded nature of the main concern.

4.3 Findings of step 2: Discovering the core category

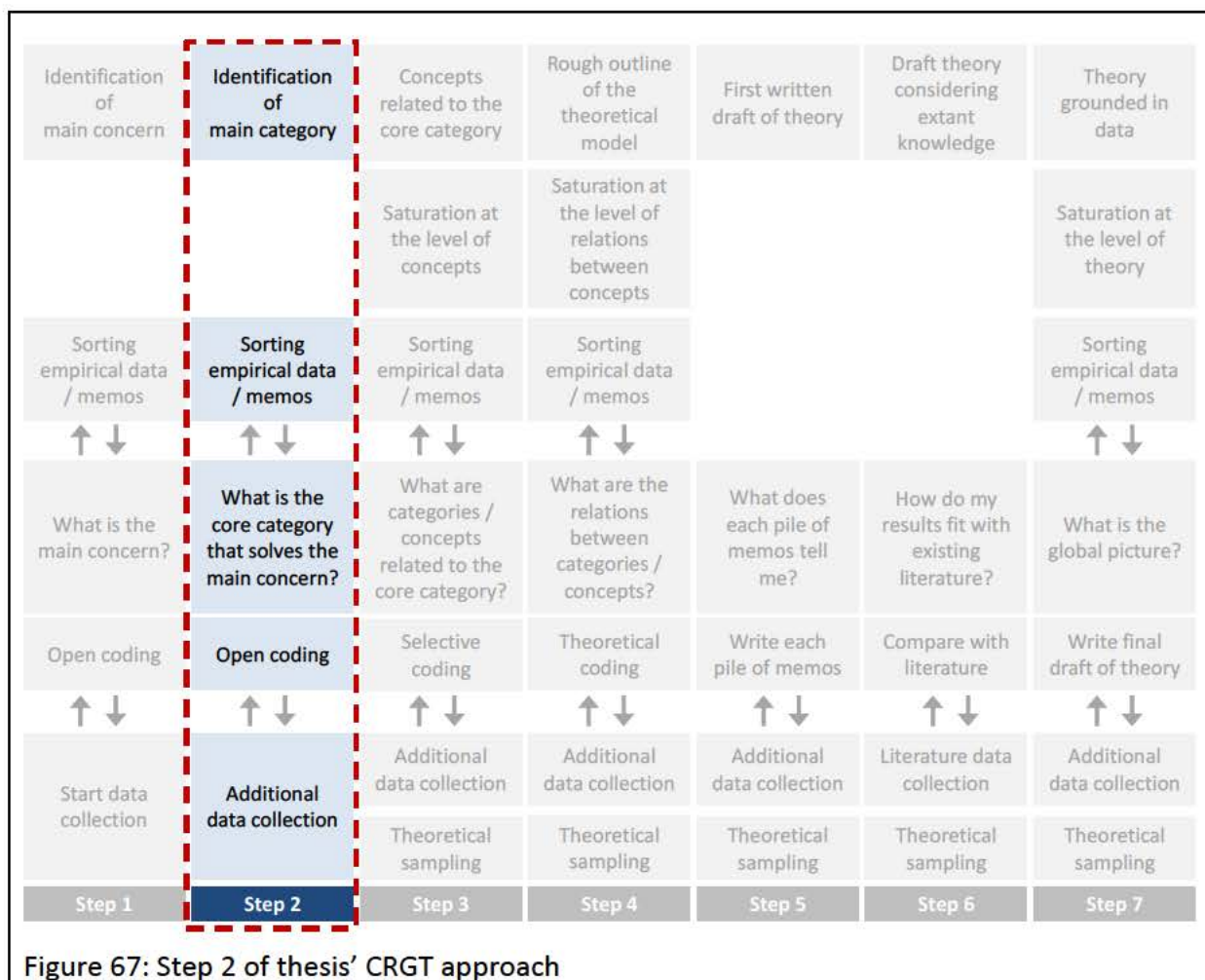


Figure 67: Step 2 of thesis’ CRGT approach

⁷⁴The identified concerns in alphabetical order were sent to the interviewees asking to prioritise and rank them with 1,2 or 3. All responding interviewees ranked the organisational concern number 1.

Continuing with step 2 of the primary research, the next aim was to identify the core category of the research area in focus which should resolve the main concern from step 1 (figure 67 on the previous page). Together, step 1 and 2 direct the subsequent research, as theoretical sampling and selective coding are then enabled to focus data collection after considering the main concern and the core category. The preliminary character corresponds to the iterative philosophy of GT. Therefore, also in this step, the findings and discoveries are provisionally presented with the aim of taking the reader through the research process prior to portraying the thesis' final findings in chapter 4.8.

4.3.1 Methodological remarks on step 2:

Data collection, coding, memoing and saturation

In step 2 most of the methodological features of step 1 have been continued as both steps are closely interwoven with each other. Primarily five changes have been undertaken, however they were not as distinct as the separation of the two steps suggest:

- Purposive sampling now focussing on problem-solution driven consultants
- Additional follow-up questions during data collection
- Focus away from concerns towards main category during open coding
- Increased writing and usage of memos
- Absence of ambition to wait for theoretical saturation

The selection of the interviewees continued out of the pool of accessible and known managers and consultants (initial convenient sample, see chapter 3.4.3.1, pp. 156-159). Yet, the **purposive sampling** strategy within the overall sample then focussed on management consultants within the field of PCM, driven by a 'problem-solution mind-set' so as to foster the discovery of the core category, overcoming the main concern identified in step 1.

With respect to **data collection** three further follow up questions were added when there was the impression that the interviewee would be able to answer it. These prompts were:

- 'How did you or how would you overcome this problem 'XYZ'?'
- 'What are the differences between your former and your current company?'
- 'Can you explain the situation before and after you changed it?'

They aimed at focussing on the targeted outcome and made use of learnings from the first interviews during which it became evident that participants are quite comfortable and competent to compare two situations by themselves. In addition, five more product cost management consultants were used for interviews (next to one more line manager in product management, now bringing it up to a total of 19 interviewees) so it was expected that they would be able to explain differences or similarities between different companies or differences prior to and after their project assignment. However, the initial open grand-tour question of how product costs are managed in a company was still the starting point.

As for the interview questions, the **open coding** shifted towards focussing on the core category, whilst maintaining coding for the main concern as well. In doing so, it was possible to sort incidents related to the main concern as well as related to other categories to allocate which concepts and categories would resolve the main concern. An incident or code was labelled as being a concern, being a solution or being neutral. This was to aid the identification of the problem-solving core category which was intended to pop out of the codes labelled 'solution'.

Thirdly, **memo-writing** increased slightly but continuously during step 2 compared to the low frequency before. In step 1 there was no real need for memoing as the data volume was manageable at the beginning and the coding was more straightforward. In addition, the first memos in step 1 were more descriptive, a repetition of incidents or codes which seemed important for the study and did not contribute much to the conceptualisation of data.

During step 2, this technique continued at an increased rate and was executed after coding sessions in order to catch ideas or already combined codes so as to inform and label concepts. Still, the memos were more descriptive and less of an additional source of data but were more used as a way of summarising what was coded. As the codes remained still more on in vivo level on purpose, so as to not lose the participant's voice in order to stay open towards new codes and concepts, the memos focussed mainly on addressing content towards the concepts as mediators between the codes and the categories. Mohajan and Mohajan label these memos as "research diary [...] and [...] analytical memo[s]" (2022, p. 9).

Step 2 (core category)	
Number of interviews and iterations	13 (from step 1) + 6 = 19 5 "iterations" , i.e. always alternating conducting an interview and coding an interview
Sampling of interviewees	Purposive sampling to move towards problem-solution driven management consultants, still covering a variety of functions and branches within manufacturing industry and making use of consultants multiplier effect
Background of interviewees	1 more line manager (product management) 5 more management consultants (product cost consultants with varying functional and industry focus)
Main themes covered in the interviews	Identify what solves the main concern/research problem
Change of themes / questions between iterations	Changes to step 1: Move from focus on the main concern to the problem-solving core category. Reason: Given procedure by Classic GT. Within step 2: no changes
Questions asked during the interviews	Open-ended / grand-tour questions <u>Initial questions:</u> Would you please be so kind and... <ul style="list-style-type: none"> • tell me a bit about how you manage PC in your company • explain to me how your PCM works • describe the ways you do PCM <u>New Follow-up questions:</u> <ul style="list-style-type: none"> • How did you or how would you overcome this problem 'XYZ'? • What are the differences between your former and current company? • Can you explain the situation before and after you changed it?
Length of interviews	20-45 minutes
Recording / documentation of interviews	No more voice recording. Reason: Now in line with CGT recommendation to focus on selected key content - see also selective coding. Instead: taken interview notes during the sessions.
Analysis of collected qualitative data	Open coding (manually, line-by-line) 5 recursive coding iterations (always 1 iteration within an interview and 1 iteration with all previous interviews) Comparing and sorting codes to aggregate to concepts and categories (focus: "solving the research problem")

Table 11: Methodological summary of step 2

Finally, although aiming for a definition of the core category to proceed with the study, in step 2 there was no particular ambition to reach **theoretical saturation** already. It goes without saying that this is due to the iterative character and the need to stay open as long

as possible prior to any 'final' decisions to avoid missing any new data which could potentially drive the research in a new direction. Therefore, while still in the early phase of the primary research the core category was defined only as a preliminary working status, being fully aware of the potential low saturation level at this stage. Table 11 above summarises the cornerstones of the methodological elements of the study's step 2.

4.3.2 'Deriving from strategy' as preliminary core category to organise activities

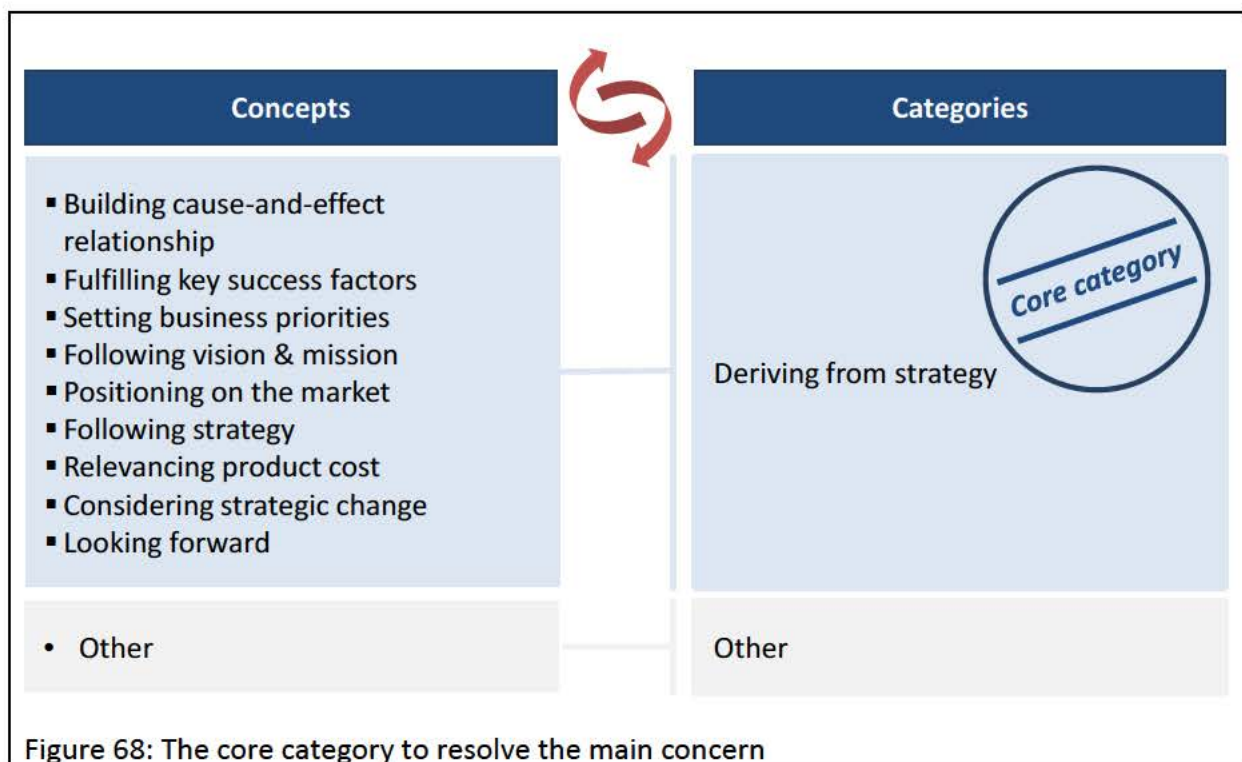
Although closely connected and similar in terms of methodology, step 2 (the identification of the core category) differed fundamentally from step 1 (the identification of the main concern). The difference between the two lies in the specificity of the data provided by the interviewees. Whereas the data of step 1 was comparably specific towards the concerns raised by the interviewees (incidents which have been coded), the idea of the data suggesting 'a way out' to solve the concern was comparably unclear or equivocal. Furthermore, the hints given towards solving problems appeared less frequently than hints raising concerns.

Returning to chapter 3.4.3.3 (p. 166) this demonstrates the behaviour of giving vague responses, potentially based on proper-lining the answers. Why proper-lining? Even though, interviewees have been informed about the general research area only and have been asked the 'grand-tour-question' only so as to not influence them, this might have led to the tendency to state problems more often than solutions and to be more precise in doing so. It could well be that interviewees felt that they should 'feed' the research with problems and leave the solutions to the research itself.

However, an alternative explanation can be provided: the ability of the early interviewees to articulate a solution for a problem/concern. It might be in the nature of things that when stating concerns or problems people are often less able to also give information on the solution as otherwise the problem would no longer exist. That's also a reason why the identification of the core category was not as straightforward as with the main concern.

Still, both arguments for the less detailed and less specific data gained in this research phase with respect to the core category was not problematic as only a provisional direction of the research had to be decided upon. The details could be discovered in the subsequent steps, having been informed by this preliminary decision. Further steps encouraged theoretical sampling which was based on the step 2 decision.

As a result, the decision of what to define as the core category to proceed further was an easy one due to the almost complete absence of alternatives. Only one category presenting a problem-solving character showed both a high frequency (named again in all interviews) and the multi-indicator-concept-characteristic with their inherent interchangeability of indicators: 'Deriving (the way product costs are managed) from strategy'.



Looking at the concepts which form this core category (figure 68) it also becomes clear that the name of the so-far-defined core category was preliminary. It simply put together and integrated the still somehow-varying-yet-similar concepts in strategic management which have been found in the interview data. And this theoretical integration is the main purpose of a core category in CGT (Glaser, 1998, p. 26; Walsh et al., 2020, p. 48).

In this case, interviewees gave indications that the way the PCM-activities are organised can be built on a cause-and-effect relationship with strategic aspects such as strategies, KSF, market positioning, business priorities etc.. They all had some more long-term oriented guidance in common and allow also for change in the general company direction, thereby also affecting the PCM (a more complete overview about the codes and concepts of the core category can be seen in appendix 10, p. 431). Furthermore, the criterion that the defined core category should account for the major share of the solving of the main concern can be regarded as being fulfilled. Even though not being specific enough at that stage of the study, it turned out that if the core category would be defined in more detail then the expectation was that it would resolve the question of how to organise PCM-activities overall.

A few quotes from the interviews, as for step 1, illustrate the direction of the core category of how to derive the organisation of PCM-activities from strategy without aiming for a thick description (codes and concepts are also mentioned):

"I would really appreciate a holistic approach [in PCM] in order to steer all the other areas: like that's a hint, that is something important for our strategy"
(Interviewee 007)

Code: Steering through strategy. Concept: Following strategy

"So, we have no joint vision, no joint mission, target or whatsoever, which could guide our activities" (Interviewee 009)

Code / Concept: Following vision & mission

"I would like to change that, so that we all know into which direction to go. What do we need, cost-wise? What is our strategy... for the company overall, of course, but also for our product portfolio and in my area of responsibility?"
(Interviewee 010)

Code: Following product portfolio strategy. Concept: Following strategy

"We are now not still the innovator in the market, but we are striving for cost efficiency, maybe moving towards cost leadership in some point in time. And this strategy-change also changed the way we manage our product cost."
(Interviewee 010)

Code: Defining strategic turning points. Concept: Considering strategic change

"So, that's the normal process here, I would say. So, it's completely different to my last company. The overall priorities were different." (Interviewee 013)

Code: Differing priorities. Concept: Setting priorities

“They require information for decisions, based on a company strategy and a product strategy. At least they should” (Interviewee 015)

Code: Aligning-strategy and information needs. Concept: Following strategy

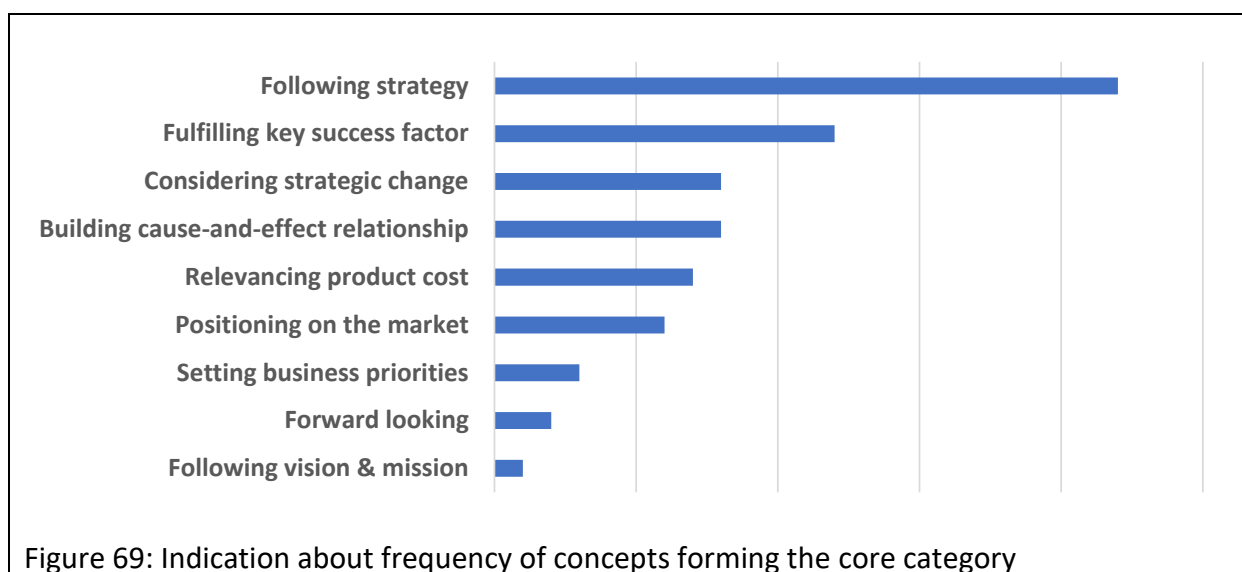
“The product cost should be in line with the product strategy” (Interviewee 017)

Code: Aligning product cost with strategy. Concept: Following strategy

“On the other hand, we are not the cost leaders and we don't want to compete with the cost leaders from Asia, no way. Therefore, are we doing the right things?” (Interviewee 018)

Code: Following cost strategy. Concept: Following strategy

With these illustrative quotes it also becomes obvious that the core category to resolve the main concern was not always formulated in a prescriptive way (as was the intention during the initial coding), but also somehow hidden in neutral or even concerning remarks, which made it harder for them to be identified (next to the comparably unspecific articulation). In particular, the recursive comparison with other interviews helped to establish the core category after searching for related terms in other interviews such as ‘strateg’, ‘priorit’ or ‘success’ with subsequent filtering and alignment.



Doing so, almost 70 individual and distinct codes were abstracted to the 9 exposed concepts which then formed the core category together (figure 69). As in step 1, this time not all concepts showed similar ‘power’ at that stage. The concepts were backed at this stage by a range from one code only up to twenty-two codes for the top concept. Therefore, those concepts with only little support were candidates to be removed during the next stages

whereas the concept with highest multi-indicator character was partially eponymous for the core category: 'following strategy'.

Those 'strategic aspects' needed to be investigated in more detail to identify how it informs the organisation of product cost management. That's why it was selected to serve as entry into step 3.

As it will be shown later, the labelling of the core category then received two main iterations in later phases. The first iteration reflecting the core category's direction of how to solve the main concern changing from one-way ('deriving from strategy') to two-way ('aligning with strategy', see 4.4.2.2, p. 204) and the second iteration widening the alignment scope from the initial strategy focus only ('aligning', see 4.7.2.1, p. 240).

4.4 Findings of step 3: Identifying the related concepts and categories

Further progressing with the study, step 3 was to identify the concepts and categories that are related to the core category derived during step 2. It was this step which then aimed for saturation at the level of concepts (also for the core category) to further inform the theory building in the subsequent steps. Specifically, it was mainly about the identification of the dimensions and properties of all (related) concepts to define the components and variables of the GT (Walsh et al., 2020, p. 48).

As these saturated concepts together form the basis for the overall theoretical model, after having defined the relationships between the concepts in step 4, step 3 was essential for the grounding of the theory in data. With this, the study gained a new character having major methodological implications which are already visible in figure 70 below such as theoretical sampling, selective coding, and theoretical saturation. Therefore, these methodological implications are portrayed in the next section.

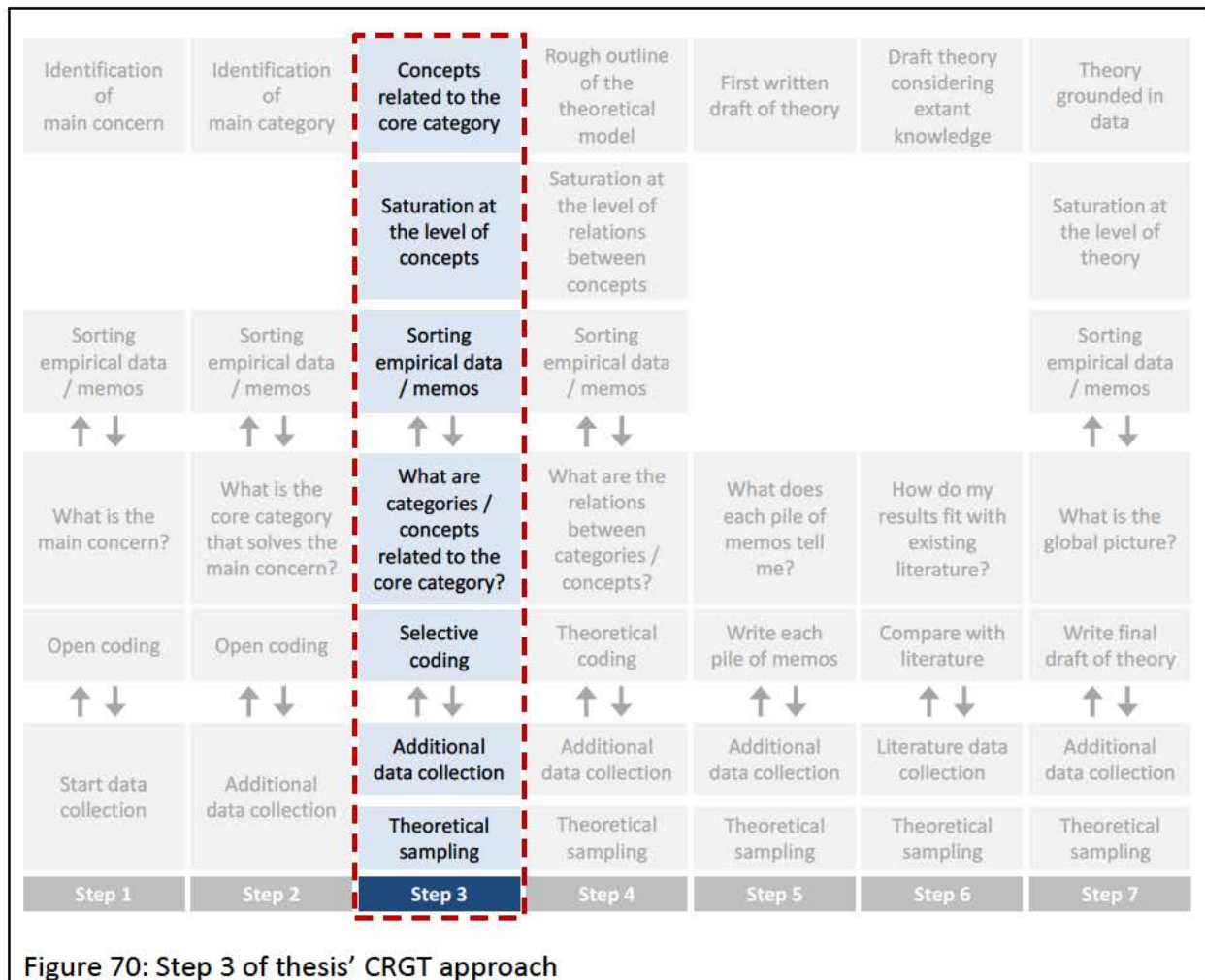


Figure 70: Step 3 of thesis' CRGT approach

4.4.1 Methodological remarks on step 3:

Theoretical sampling, data collection, selective coding and saturation

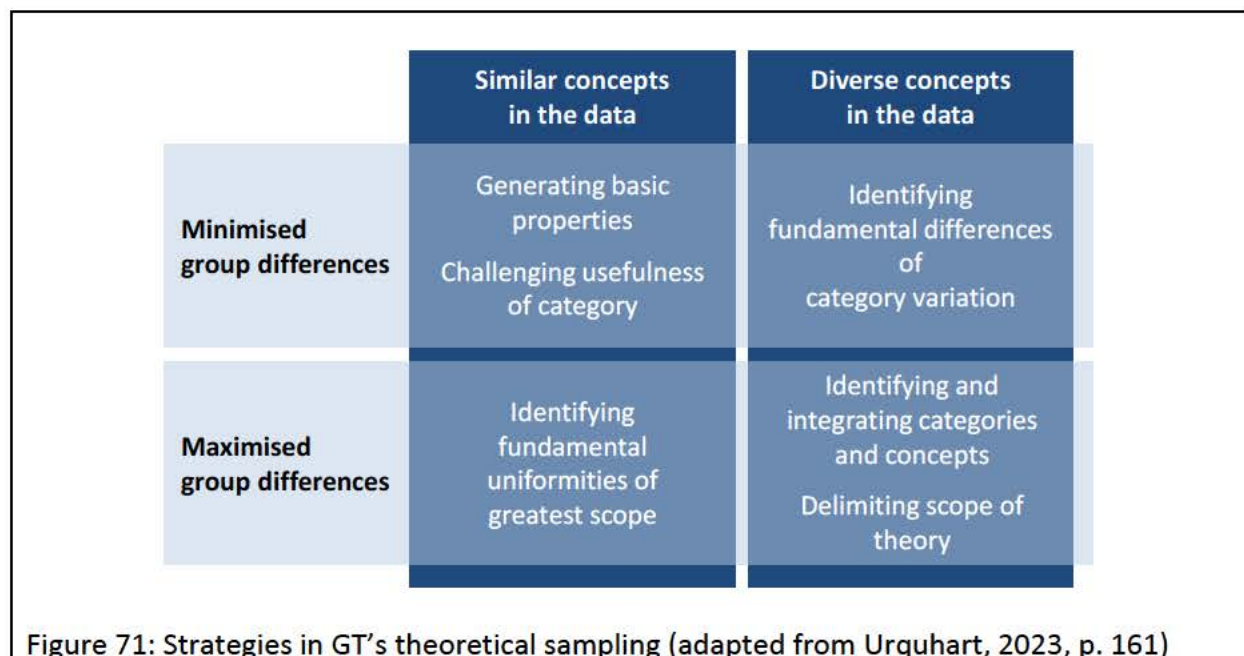
Three major methodological changes in the CRGT approach occurred in the third step of Walsh et al. (2020, p. 46):

- The start of theoretical sampling to maximise diversity in groups and concepts
- The step of selective coding explicitly needed during this step
- Saturation starting to be a goal on concept level

As mentioned in chapter 3.4.1 (p. 145), **theoretical sampling** has to consider the issues relating to what data should be its theoretical purpose and how it should be collected (Conlon, Timonen, Elliott-O’Dare, O’Keeffe, & Foley, 2020, p. 948; Glaser & Strauss, 1967 p. 45). With respect to the first two aspects (see Qureshi, 2018b, p. 20221 for their importance) four different sampling strategies can be distinguished, “maximising or

minimising the differences between either groups or concepts in the data" (Urquhart, 2013, p. 64).

Out of the previous step 2, the preliminary core category was identified, being formed of a variety of quite similar concepts in strategic management ('deriving from strategy'). These concepts needed to be further elaborated to achieve higher clarity of the categories and concepts that are tied to the core category, with means to identify, differentiate and integrate them accordingly. Consequently, a maximum diversity in groups and concepts in data was aimed for (quadrant on the right bottom in figure 71). Only after step 2, the choice about this part of the research design was one sign of 'emergence'.



Therefore, step 3 opened up to all strategic aspects of PCM on the one side, whilst on the other side also staying completely open towards new data input or recoding of old data (potentially leading to changes in the core category's concepts). Furthermore, group variety was maximised by adding on new groups/units of analysis, companies in this study, to allow the broad scope of the emerging theory. These new groups/units of analysis were represented by management consultants with extensive experience in product cost management projects (more than 10 years of consulting experiences and a minimum of 10 consulting projects in the PCM area).

A final advantage was aimed for after reflecting upon the first two steps: data and information was often especially valuable in those cases when a comparison (e.g. between two companies or within a company in case of changing settings) was made during the interviews. Comparing a situation X with a situation Y led to distinctive data that was more ready-to-code compared to other data.

The second main change in the CRGT procedure during step 3 was the **shift from open coding to selective coding**. This allowed the researcher not only to select data from the interviews which were directing towards the identification and definition of the concepts and categories related to the core category but also to change the interview style from asking 'one grand tour question' towards asking specific questions about those concepts and categories. Consequently, questions during the interviews were:

- 'Could you please describe the factors which should inform the way, product cost should be managed?'
- 'What are the characterising dimensions of PCM?'
- 'If you have experienced a transition phase in the organisation of PCM in your projects, what caused this change?'

The aim was not to influence the new interviewees with the intermediate findings so far, but to stay open towards new triggers of how to organise PCM-activities. After this first step of identification, the task was then to define it in more detail. Apparently, a special value was decided in the potential comparison of two settings within a consulting project: one situation prior to change with the explicit reference to an unfavourable status and an improved situation afterwards with a more appropriate status. This then could serve as the normative line of reasoning in the later developed overall theory.

Sorting continued similarly to the previous steps and helped to conceptualise the data into the dimensions and properties of the categories enabling them to become more distinct without the overlapping and vague delimitation as experienced before.

Memoing helped to identify the concepts and categories. However, the aim at this stage was more about summarising the data and codes gained through the interviews to define

the categories. Again, this was due to the interviewees' capability to describe their experiences in an aggregated way with less need to lift their data on a conceptual level. This was different for the identification of the relationships between the categories and the theory itself (see step 4).

Step 3 (related concepts/categories)	
Number of interviews and iterations	19 (from step 1&2) + 17 = 36 16 "iterations" , i.e. always alternating conducting an interview and coding an interview
Sampling of interviewees	Theoretical sampling to maximise diversity in groups and concepts Goal: get higher clarity of the categories and concepts
Background of interviewees	17 Management consultants with extensive experience in product cost management consulting projects. More than 10 years of consulting experiences and a minimum of 10 consulting projects in the product cost management area.
Main themes covered in the interviews	Identify related concepts and categories
Change of themes / questions between iterations	Changes to step 2: Move from focus on the problem-solving core category to (potentially all) related concepts and categories. Reason: Given procedure by CGT. Within step 3: no changes
Questions asked during the interviews	Changed the interview style from 'one grand tour question' towards asking specific questions about those concepts and categories. Initial questions: <ul style="list-style-type: none"> • Could you please describe the factors which should inform the way, PC should be managed? • What are the characterising dimensions of PCM? • If you have experienced a transition phase in the organisation of PCM, what caused this change? <u>Depending on the answer the follow-up question then was:</u> <ul style="list-style-type: none"> • Could you elaborate on XYZ in more detail?
Length of interviews	20-60 minutes
Recording / documentation of interviews	No more voice recording. Reason: Now in line with CGT recommendation to focus on selected key content - see also selective coding. Instead: taken interview notes during the sessions.
Analysis of collected qualitative data	Selective coding (manually, line-by-line) of all interviews so far conducted plus the new interviews. Comparing and sorting codes to aggregate to concepts and categories (focus: "solving the research problem")

Table 12: Methodological summary of step 3

Saturation, to end the procedural characteristics of this step, was an explicit goal, meaning to only proceed with the study when new data did not contribute to further extension or modification of the concepts and categories. Regarding this step, prior to entering the phase to investigate the relationships between the identified concepts and categories it needed 36 interviews overall, counting for an additional 17 after having started with step 3. Table 12 above summarises the cornerstones of the methodological elements of step 3.

4.4.2 '2 + 5' categories related to the strategic alignment

Continuing with the coding of interview data from the extended group of interviewees, covering multiple units of analysis (companies) and applying selective coding mainly brought clarity into the question of which categories and concepts would earn their way into the theoretical model.

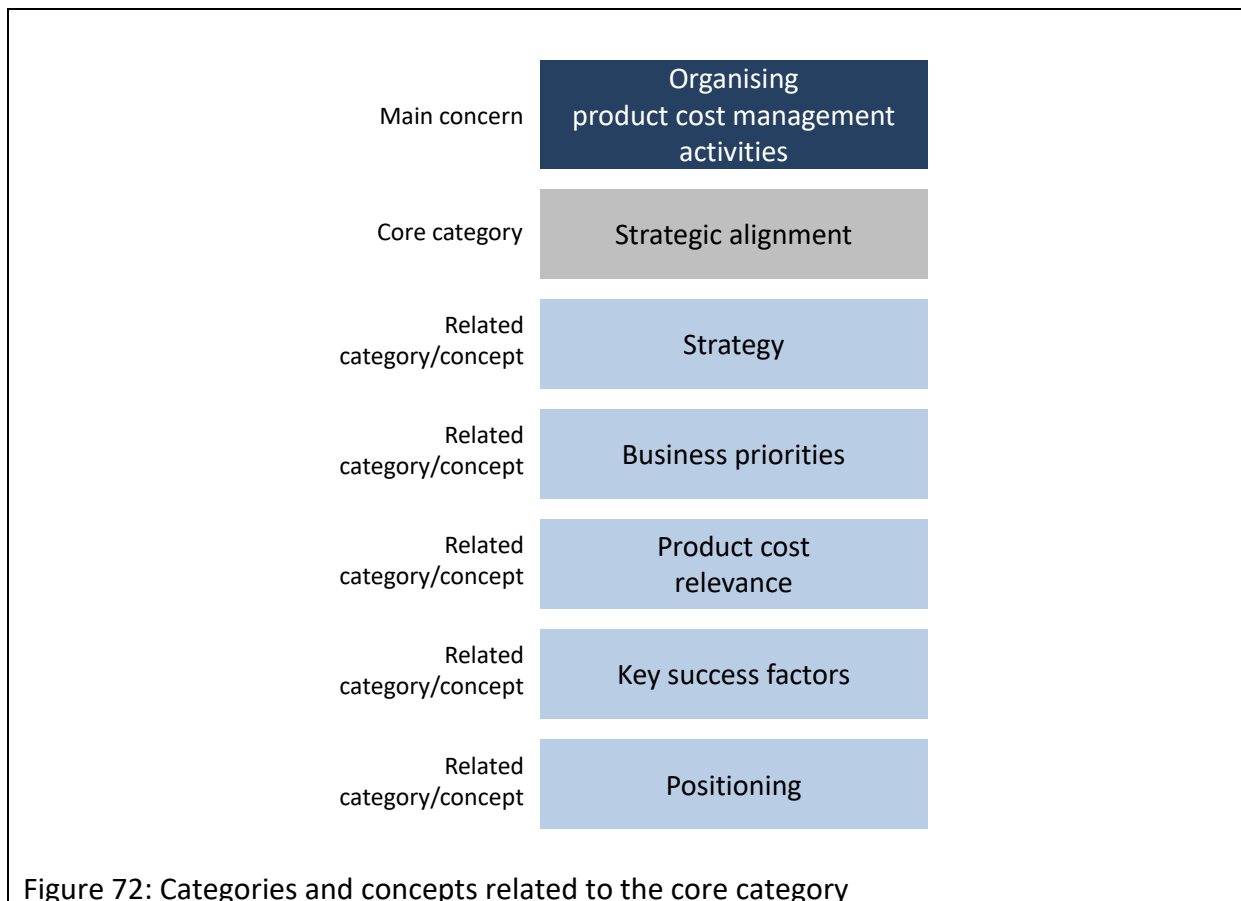
The increased clarity compared to the first two steps was due to the selective coding itself, based on more focussed questions as part of the theoretical sampling. Also, the interviewees were able to articulate their data in a clearer way compared to the initial set of interviewees, enabled by more focused questions, and not leaving them alone when answering the grand-tour-questions. This change in the research design lifted the research findings to the next level.

However, as it turned out that quite a few concepts and categories are somehow related to the core category of 'deriving from strategy', preliminary saturation was achieved only after 36 interviews. This resulted in a total of seven categories related to the core category (figure 72).

The first category, being the core category itself, was slightly reworded to '**strategic alignment**'. The second category now was more precisely defined in terms of its concept being the initial main concern '**organising PCM-activities**'. Five additional categories did emerge, mainly discarding some former aspects of step 2 in favour of more distinct, clearer categories showing less overlaps amongst each other: '**Strategy**', '**Business priorities**',

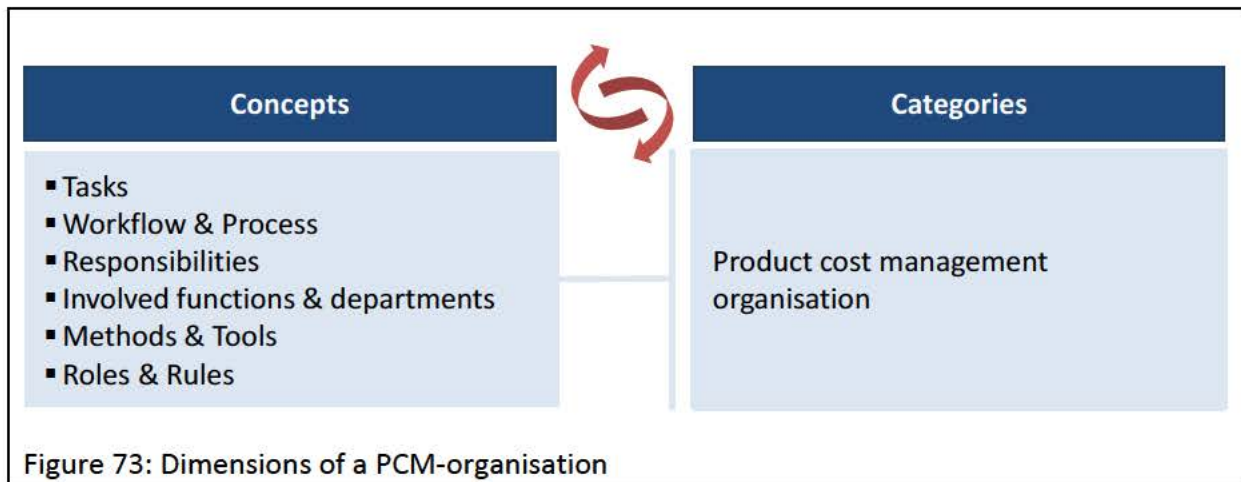
'Product cost relevance', 'Key success factors', and 'Positioning'. For extracts of the 'code-to-category' results of each category see appendix 11 (p. 432).

Without aiming for prejudging the outcomes of step 4, these five categories, to provide a rationale for step 3, are supposed to be in-line with the way product costs are managed in order to be regarded as in a desirable state.



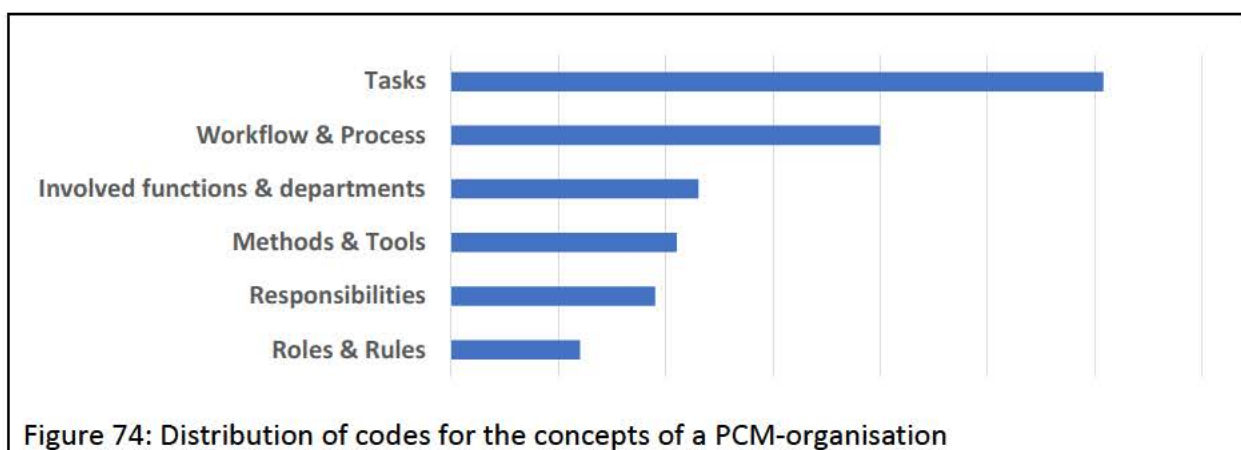
4.4.2.1 Category 1: 'Organisation of product cost management activities'

The first category identified is the '**organisation of PCM-activities**'. During step 1 it was down to a collector to synthesise the main problem of managers incorporating various aspects of why and how they suffer from ill-defined or inappropriate ways of product cost management. During step 3, it became apparent what dimensions and properties are to be considered when discussing the organisation of PCM, namely: tasks, workflow & process, responsibilities, involved functions & departments, methods & tools as well as roles & rules (figure 73).



As this category was an evolution of the main concern from step 1, being in the centre of the question of ‘how to organise’, the value of the selective coding step was then that a saturated status of what a PCM-organisation is all about was achieved.

Comparing it with the initial step, however, two major refinements popped out of the coding. First, a split between tasks and their responsibilities occurred, with them now forming separate and distinct dimensions. Second, the PCM-tasks now incorporate codes which were formerly separated, such as ‘detailing product cost structure’, ‘steering’ or ‘integrating and aligning functions’. Consequently, the concept of ‘tasks’ was indicated most frequently, thereby displacing the concept of ‘workflow and processes’ from rank 1.



Those six concepts (and their related attributes, which will be shown in section 4.8.2.2.2, pp. 255-262), jointly define a PCM-organisation as derived by the study. However, this is subject to further iteration and comparison with additional data.

4.4.2.2 Category 2: 'Strategic alignment'

The second category of the emerging theoretical model is a further adjustment of the formerly identified core category 'deriving from strategy' from step 2. The major iteration-step on this category is that it became clear that there has to be a split between the category as a moderating category/variable itself and the influencing categories previously included in the equation.

Saturation was achieved in a sense that it is clear that a kind of strategic alignment is a desired state for PCM-organisations. Saturation on the dimensions was delayed to the next step on purpose, when observing that the dimension(s) would most likely describe the relation between the categories/variables. The highlighted quotes indicate the variance in the direction between the categories, leaving the relationship to be investigated in the next step open for the time being:

"The functions contributing to the product cost organisation must be defined considering the overall strategy" (Interviewee 21)

"It is better, if the activities [in PCM] are aligned with the KSF of the company and of the market" (Interviewee 23)

"The tasks should be developed out of the company's priorities. Just imagine you have to take over key tasks which are in opposition to your priorities. You either don't execute them or you execute them badly" (Interviewee 24)

"In the best case, the PCM and the strategy match, otherwise it becomes difficult to guide the staff's behaviour." (Interviewee 27)

"long-term aspects in the business determine a company's product cost actions" (Interviewee 27)

"How you do it? It depends on the importance the product costs have in the company even in the market" (Interviewee 33)

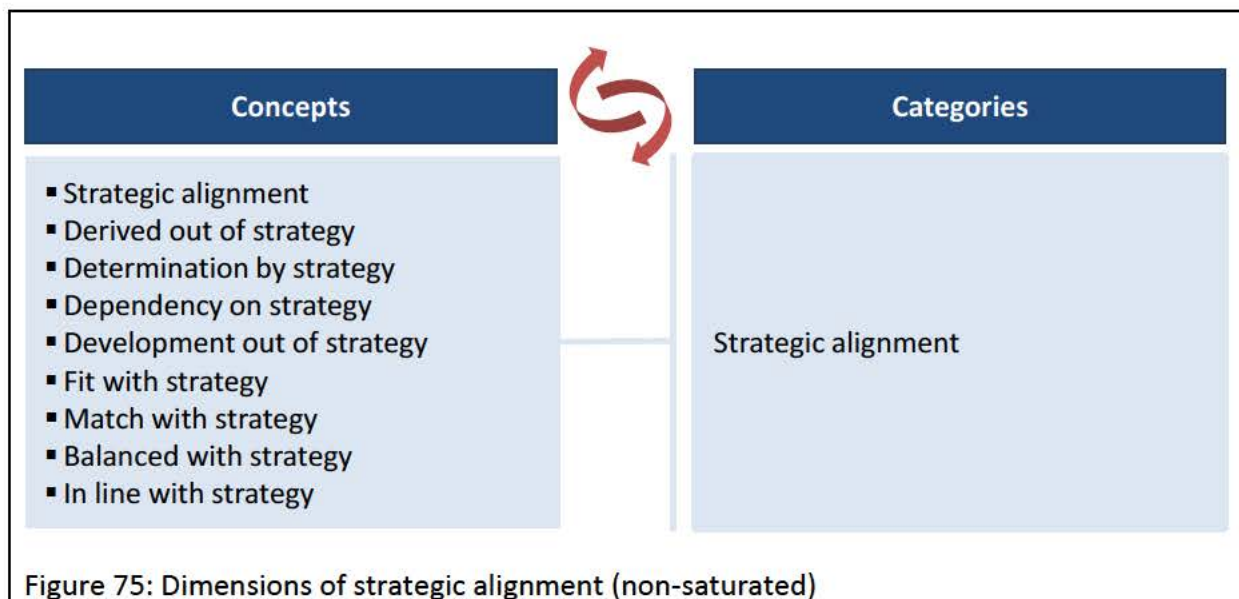
In this case, a memo triggered the understanding of the principle nature of the category, which was noted after a coding session with intense recursive coding not adding to new codes or concepts followed by an interview in which no more varying data was obtained:

"Interviewees continue to state and emphasis the recommendation to link PCM-organisation with strategic aspects by using a number of different expressions for this similar or related phenomena -> e.g. 'in line with' / 'to align with' etc. BUT:

Lacking direction: what triggers, what informs, which concept/category influences which concept/category in which direction. Does the strategic aspect define the PCM-organisation? Or the other way round? -> Not clear” (Memo 03-017)

This is why it was decided to delay the identification of the nature of the category to step 4, making use of theoretical coding after obtaining additional data.

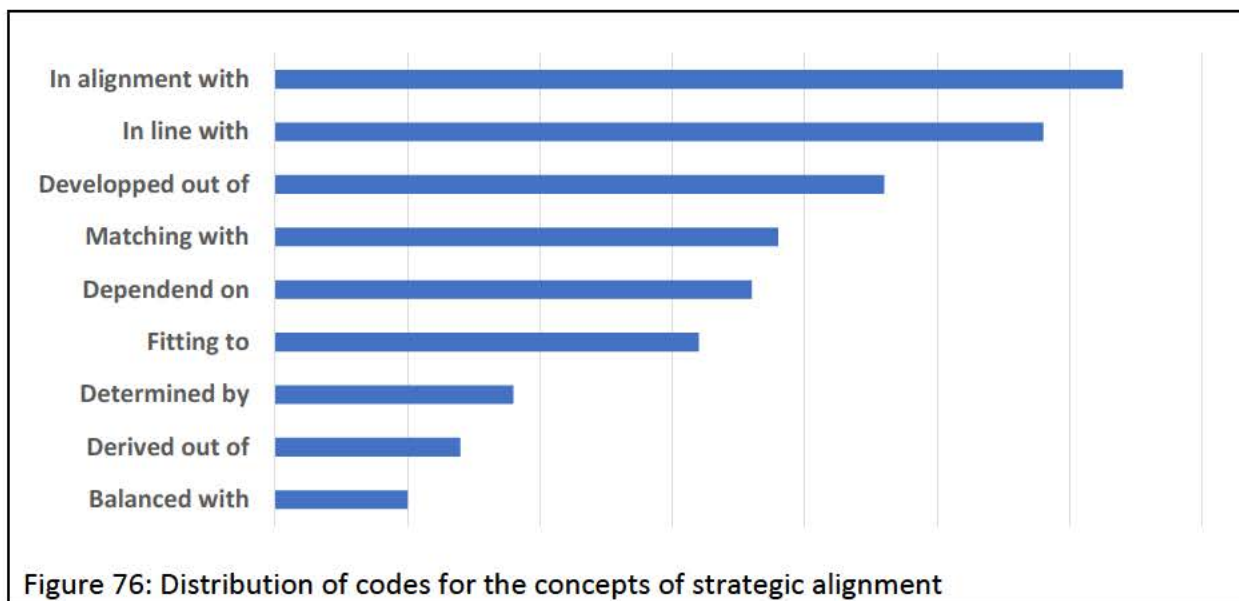
Adding to this, the decision was made to further define the category of ‘strategic alignment’ due to the observation about terminology and wording used by the interviewees. Most frequently used was the term or variations of ‘to align with’ or ‘to be in line with’. At this stage of the research process interviewees were not consciously and precisely expressing this link between strategic aspects and the PCM-organisation but simply using a term with which they are very familiar with, ‘alignment’, as a consultant or as part of their corporate management jargon (Authenticity Consulting, 2013; Wink, 2012).



To reflect the unfiltered data gathered during the interviews, the core category was renamed from ‘deriving from strategy’ into ‘strategic alignment’ for two reasons: first, to echo the interviewee voice data, contributing to theory development out of data. Any variations of ‘alignment’ was most frequently used (figure 76) during the interviews. Second, before really entering the discovery of this category a step back to a ‘not-yet-defined’ direction of the category should underline the GT’s pillar to stay open (see section

3.4.1, p. 147). ‘Deriving from strategy’ would have implied a preconceived direction from strategic aspects towards PCM-organisation, which was not supported from the data at this stage.

Although not statistically proven, the distribution of the codes towards strategic alignment suggested no specific direction of the alignment but left it open. The direction therefore is investigated in section 4.5.



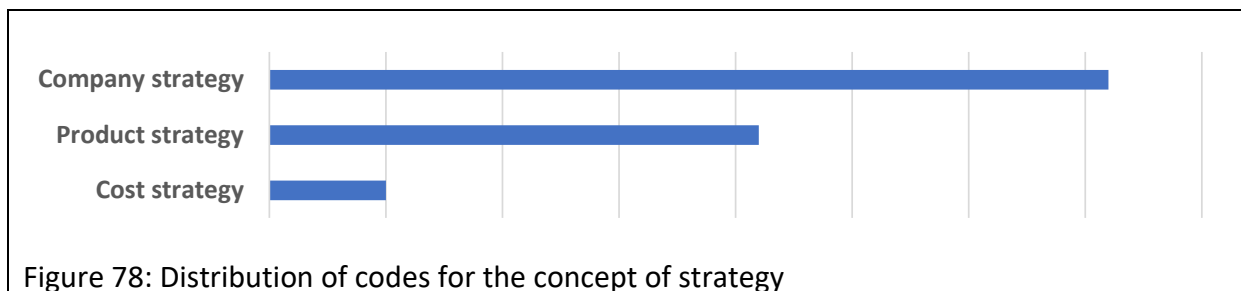
4.4.2.3 Category 3: ‘Strategy’

The third category is the first out of five categories regarded as triggering the strategic alignment of the organisation of product cost management. It turned out that only three strategic concepts earned their way into the strategy dimensions of the emerging theory: company strategy, product strategy and cost strategy (figure 77).



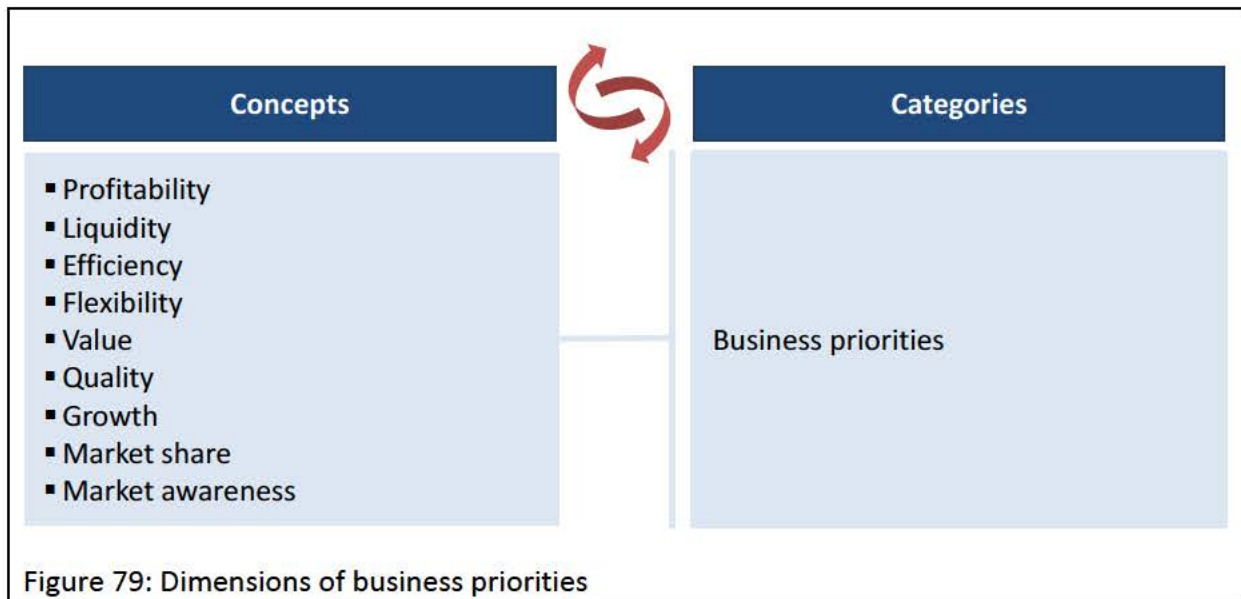
They differ mainly in the object they are addressing: company, product or cost, which, in this case, makes it notable that none of the interviewees mentioned any functional strategies such as marketing strategy, manufacturing industry or financial strategy. This in particular is a conclusion which was discovered about something which is not a code (as there was no data to code) and this was referred to in two memos (M03-012, M03-019) expressing the researcher's surprise about the absence of other strategies besides the three mentioned.

Equally interesting at this stage is the distribution of codes across the three different strategic concepts. Company strategy was mentioned most frequently with a remarkable gap to product and cost strategy. This suggests that an overarching company-wide strategy is a more important trigger for how to organise the product cost management than the more specific and closer tight strategies about product or cost. However, these relations are part of step 4 only.



4.4.2.4 Category 4: 'Business priorities'

The fourth category emerged in a similarly straightforward manner as the previous mentioned category. The reason for this rather obvious category was the ability of interviewees to directly state the dimensions shown in figure 79. Profitability, for example, was stated most often as profitability or rentability. Liquidity, as a second example, was said as liquidity or short-cash flow. Flexibility, as another concept, derived out of statements on flexibility or the ability to react fast.



The finding which was more interesting was that it was discovered that it was not the concepts stated that have been considered as being central for the interviewees' message but the differing importance companies give those concepts. So, it turned out that all these concepts could be and are used to formulate targets individually and often in parallel. Yet, the priorities indicating the importance of those targets in case of conflicts during decision-making should have an impact on the PCM-organisation.

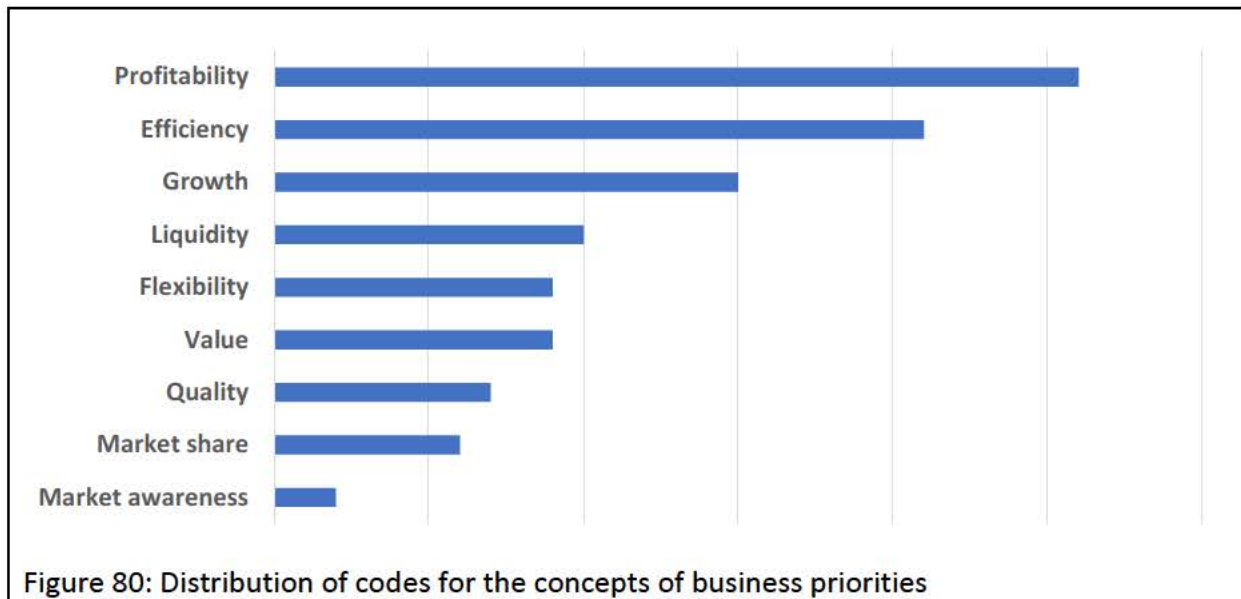
The following (recaptured) quotes illustrate this focus on priorities.

"Even though in this project it was obvious that the client aimed for maximising the company net present value [to sell it to another private equity company] they were hiring us with the clear message to optimise the cash-flow already within the project duration. This sprint led to an overall sub-optimum and delayed the transformation of the organisation by one year" (Interview 22)

"You know, companies do have all the same targets. Profitability, flexibility, growth... you name it. Often, they don't have a hierarchy, so which target influence other targets etc. But the best... or the good companies give directions what to aim for first, second, third... etc.. The product management can then take this up and set up their organisation accordingly" (Interview 28)

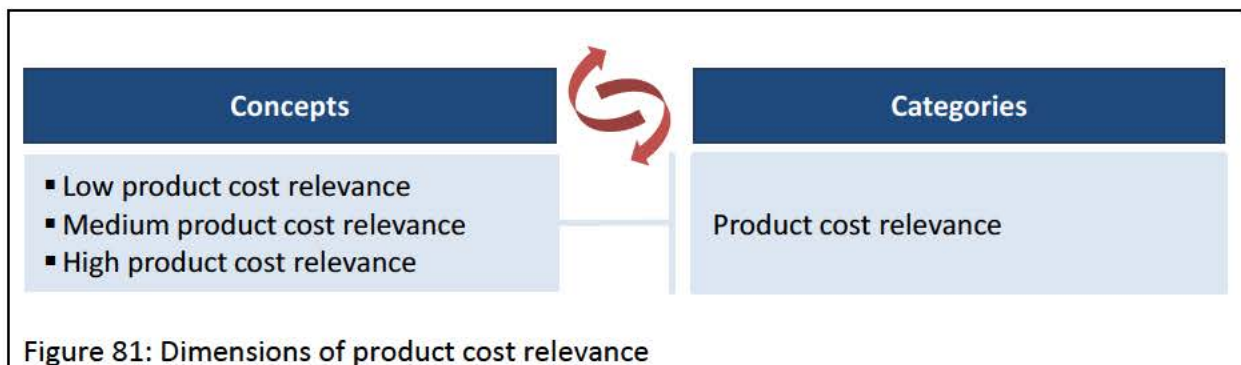
In terms of quantitative indications about the number of codes related to the concepts there were, despite a clear ranking of the top 4 most frequently mentioned codes (figure 80 below), no pattern was effortlessly emerging related to the organisation of PCM-activities. Therefore, it was left to step 4, and the theoretical coding to make sense of it. The concepts,

however, seemed saturated as no further concepts were mentioned to add on the existing ones during the last five interviews at that stage.



4.4.2.5 Category 5: ‘Product cost relevance’

A distinct category was emerging during this phase of interviews, showing a different characteristic: product cost relevance (PC-relevance / PCR). The difference compared to other categories was the absence of content-wise defining qualitative concepts but the stress of different relevance levels, as if it would be a numerically measurable criterion: low, medium or high relevance.



It was discovered that a theoretical differentiation between ‘importance’ and ‘relevance’ (being the words/codes most often used in the interviews which were summarised using the term ‘relevance’) is not contributing to the emerging model with the distinction that

companies do put different weights on the relevance of product cost. A quote from an interview as well as a memo demonstrate the discovery of this notion.

“Before our project was assigned to us, they [the company as a consulting project’s client] did not really pay attention to the importance of their product cost ... we had to change this soon to achieve better results” (Interviewee 11).

“Relevance or importance. Is it different? -> In “Denglish” words no -> Interviewees are “Deutsch” speaking “English”. These codes are no separate categories but interchangeable indicators synonymously used. Rather different levels of importance/relevance are stated. Used words: “rarely”, “barely”, “not really”, “quite important”, “less important”, “high relevance”, “growing relevance” (Memo 03-016)

Consequently, the category of product cost relevance suggests a quantitative perspective on PCMS, which the other categories so far did not signpost. Once discovered, this category saturated quickly, with no additional dimensions popping up in additional interviews. This was due to its simplicity and mono-dimensional character.

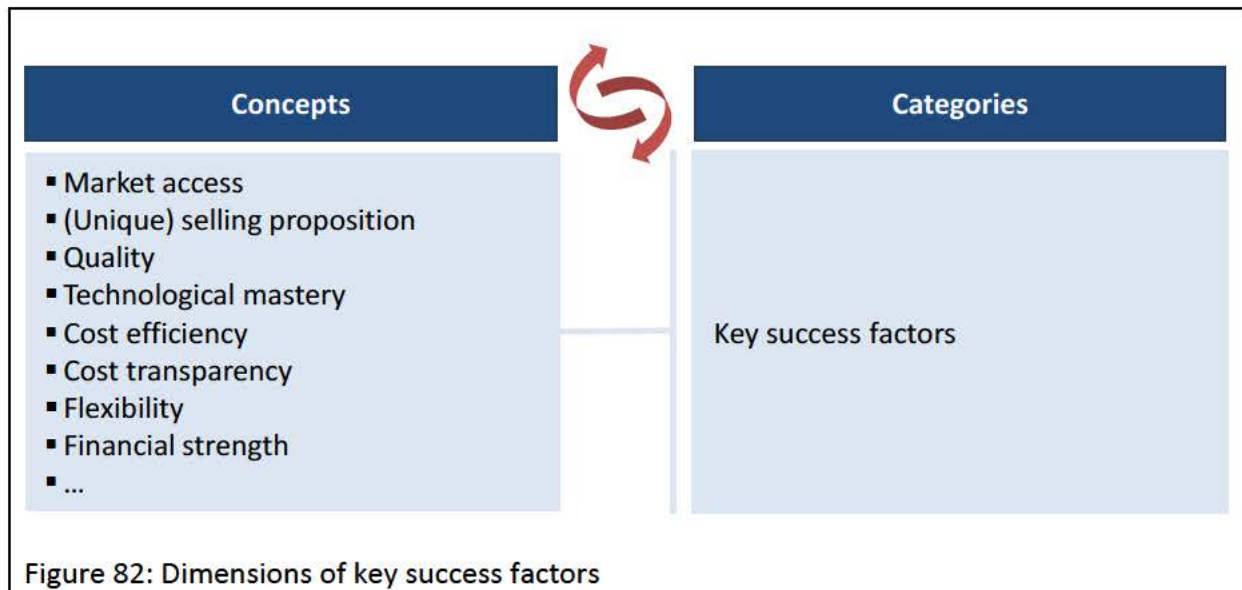
4.4.2.6 Category 6: ‘Key success factors’

The sixth emerging category related to the organisation of PCM-activities is a good showcase for the overarching pillars of GT to ‘stay open’ and maintain ‘theoretical sensitivity’ during the complete theory discovery.

As shown in figure 82 on the next page, the concepts discovered that form the category of key success factors do show similarities with the concepts of business priorities (category 4). That is why this category was discovered quite late in that phase, as many codes until that point in time were related to the concept of business priorities.

It was a coding session which triggered the discovery of this ‘new’ category. In this session it turned out that some of the concepts were directing towards a company’s internal decision making with regards to which priorities to set and other concepts that may be impacting a company from ‘outside’ without the opportunity to influence them. The recaptured sentence initiating the wondering about the similarity or difference of a code and then another round of recursive coding was:

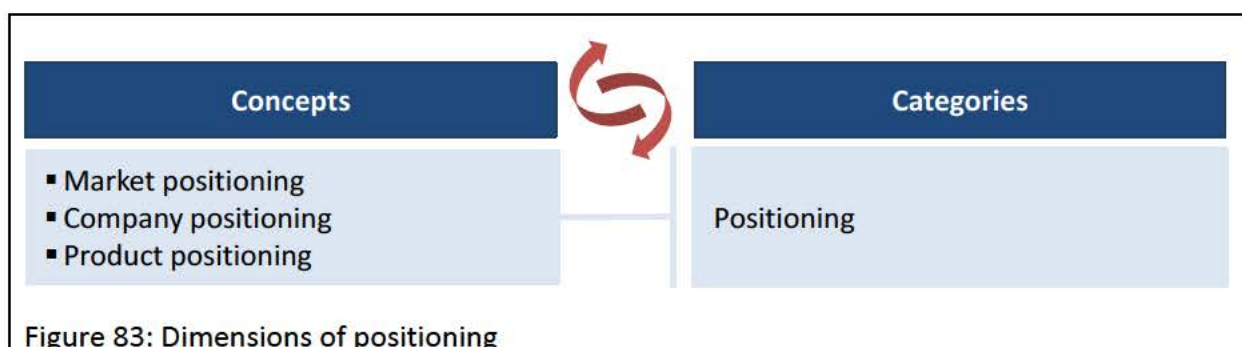
“The company can be as cost efficient as it can get. If they don’t meet the key market requirements it’s for no use” (Interview 34)



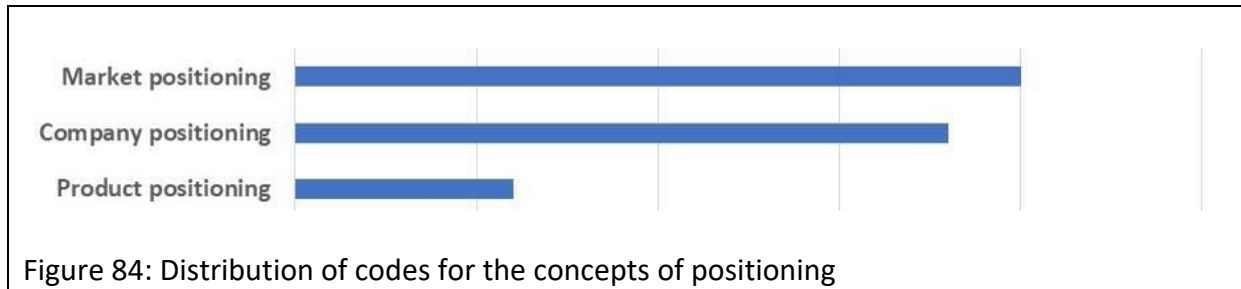
It became apparent that so far, the direction of the concepts was not recognised as the codes developed were too narrow and did not fully cover the complete data gained during a passage of an interview. Having been sensitised by that, a recursive coding session was conducted evoking the new category 'key success factors' distinct from 'business priorities'. The recursive coding activities have led to the fact that the category 'key success factors' did saturate as the latest category of this stage of the GT approach.

4.4.2.7 Category 7: 'Positioning'

The final category related to the core category was identified and labelled as 'positioning'. Although being quickly saturated, the three concepts of positioning: market-, company- and product positioning (figure 83) remained vague in terms of their relationship with each other. In addition, sometimes they seemed to be randomly and interchangeably used as soon as interviewees aimed to describe any impact of the concepts of positioning. This justified to subsume them in the category 'positioning'.



However, for this category the quantitative element of its codes related to the concepts is worth mentioning as it shows a characteristic which only later could be explained after theoretical coding: Product positioning did appear comparably seldom in the data in contrast to market or company positioning (figure 84).

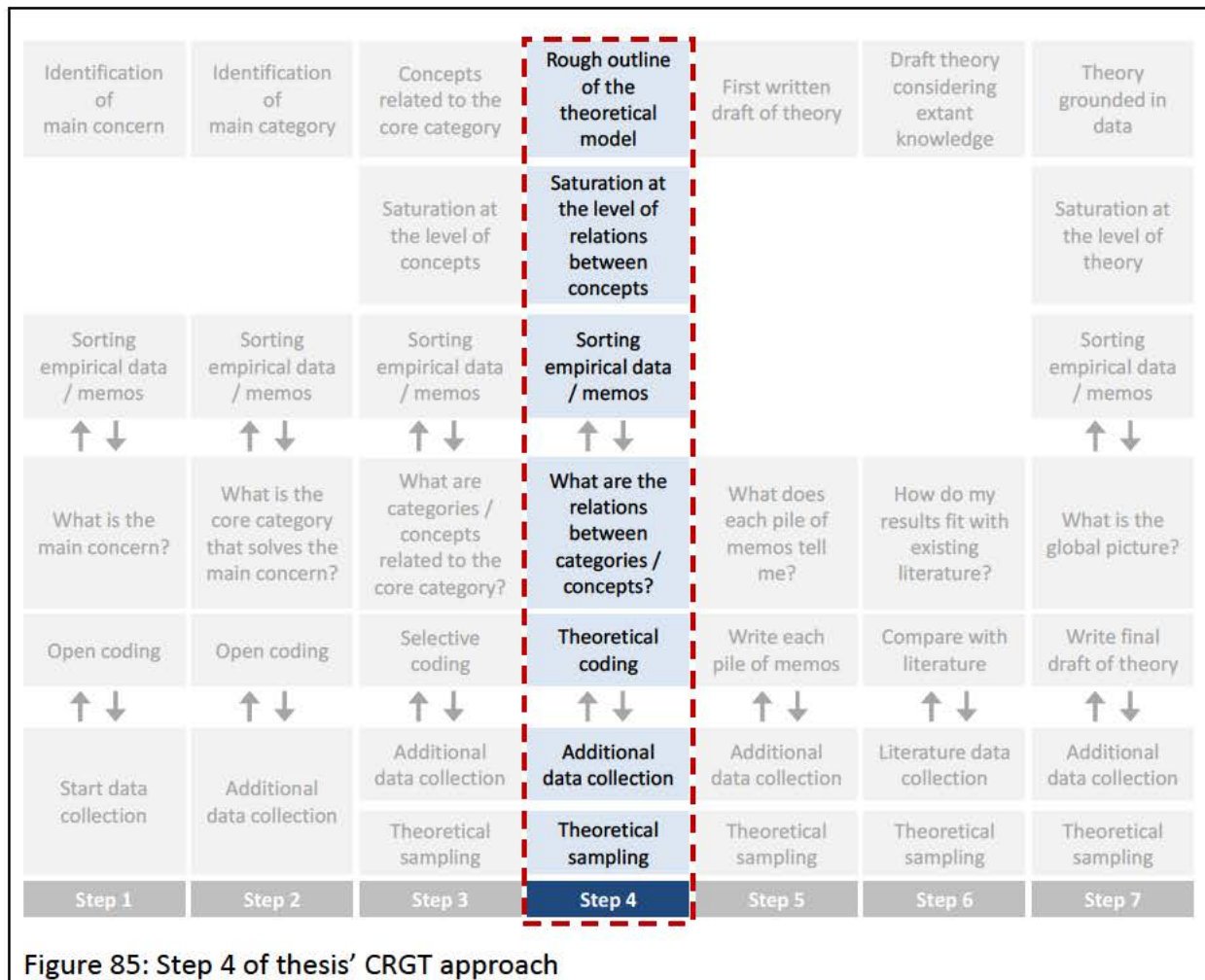


It has to be stated that this category is represented by the smallest number of codes amongst all categories (44 codes). Nevertheless, it sufficiently earned its way into the set of categories to be considered for further theory building as it was often closely connected to the question of how to organise product cost management activities.

4.5 Findings of step 4: Outlining the rough theoretical model

This step 4 of Walsh et al.'s GT procedure is claimed to sketch out the relations and relationships between the categories and concepts discovered during step 3 (figure 85 below). This means finding out how the categories, their concepts, even their properties are related towards each other and the core category, as well as the main concern, and to discover the type of relationship between them (Walsh et al., 2020, p. 49).

Following their idea, as well as from Buckley and Waring (2013), a diagram was aimed for, directly informing the first draft of the theory then following in the successive step 5.



4.5.1 Methodological remarks on step 4:

Theoretical codes, memoing, sorting and theoretical sampling and member check

Mainly three methodological elements of this step need dedicated explanation compared to the previous steps:

- Theoretical codes differing from substantive codes
- The rise of effort for memoing/sorting
- Theoretical sampling to minimise group differences

Theoretical codes necessitate explanation for three reasons. Firstly, as it is now (as mentioned in 3.4.1, p. 141) the first time that they come into play within the CRGT approach (after having applied open and selective coding before). Furthermore, theoretical codes differ fundamentally from substantive codes as they “implicitly conceptualize how the substantive codes [categories and concepts] will relate to each other as a modelled, interrelated, multivariate set of hypotheses in accounting for resolving the main concern”

(Glaser, 2005, p. 11). With this, a move away from the initial 'line-by-line' coding to more abstracting, cohesive 'theory-building' coding is connected (Hernandez, 2009, p. 52). And thirdly, there is Glaser's claim that they "are frequently left out of otherwise quite good GT papers, monographs, and dissertations" (Glaser & Holton, 2005, p. 2) which should be proved wrong in this dissertation.

It is often stressed that theoretical codes do have an integrative function as the codes before are more-often-than-not fragmented and only loosely, if at all, connected (Glaser, 2005, pp. 69-71; Glaser & Holton, 2005, p. 3). Therefore, this step 4 with its theoretical codes is a crucial phase of the theory building as now a major move towards the theory is to be expected. In other words: Whilst the prior steps aimed to discover the elements of the theory 'only', now the theory itself takes shape, connecting those elements (categories) with the means of theoretical codes.

Relatively, staying open during this phase to discover the theoretical codes is vital in order to 'walk the talk' about emergence of the CRGT (Glaser & Holton, 2005, pp. 1ff) provoking a contradiction in Glaser's continuing promotion of GT. Whilst he is rightly and stringently advocating 'emergence' and 'staying open', he is not, at the same time, similarly stringent in stopping researchers who make use of already existing theoretical codes or code families. Instead, he refers to coding schemes, often self-developed as illustrations to aid (novice) grounded theorists (Glaser, 1978; Glaser 1998, pp. 170-175; Glaser, 2005, pp. 21-30; Hernandez, 2009, pp. 62-66). Recognising their potential influence, they were put aside and were only looked at again in step 6 when working in extant knowledge, as they are otherwise considered prior knowledge.

Closely connected to theoretical codes are **memoing and sorting**. The reason for this is the more implicit nature of theoretical codes in the data and their higher level of conceptualisation compared to other codes (Hernandez, 2009). This was also recognised during the ongoing interviews. Whereas in the previous steps, the interviewees have been able to more or less explicitly express elements of the categories, it turned out that it was far less obvious during this step.

As a consequence, the number of memos, aiming to conceptualise towards theoretical codes, increased during this stage and were the main drivers of the theoretical codes. Due to the high number of memos, sorting was a major activity leading into numerous re-sorting sessions. At the beginning, no comprehensive picture of the different categories and concepts was derived. Re-sorting often started back from scratch in order to stay open and it took various attempts, eleven further interviews, data and memos until two main partially-opposing models did emerge.

It took another period of working on these two opposing models in parallel until the saturation of the 'final' theoretical model was achieved and the other model was no longer supported by additional data. It was one of the decisive stages in the research process of the study to make a choice between different and overlapping theoretical codes "grounded in one of many useful fits" (Glaser, 1978, p. 72). Due to this complexity and the high level of conceptualisation of data (which often was only possible to obtain implicitly) as well as the criticality of the step, this phase accounted for the most significant aspect of the research in terms of the time it took to complete.

A further reason for the complexity was the challenge of **theoretical sampling** and the related question of 'for what purpose' to sample, again referring to Urquhart's four strategies of theoretical sampling (see 3.4.3.1, pp. 158-159). The purpose of the first additional interviews in this stage was to challenge the usefulness of the discovered categories (quadrant top left in Urquhart's matrix). This was decided due to the criticality of this step 4 in order to increase the likelihood to continue with relevant categories and to review whether any category or any concept was missed so far. Therefore, **member checks** have been conducted by returning to eight past interviewees (minimising group differences) confronting them with the (same) list of categories/concepts, discovered previously.

Consequently, first questions during the interviews were:

- 'Looking back to any of your past consulting projects about product cost, does this list cover all categories and dimensions impacting upon the question how PCM-activities should be organised?'
- 'Are there, on the opposite, any categories and dimensions which are not useful when investigating how PCM-activities should be organised?'

Step 4 (relations/relationships)	
Number of interviews and iterations	36 (from step 1-3) + 11 (8 repeated participants) = 47 10 "iterations". Means: always alternating conducting an interview and coding an interview
Sampling of interviewees	Theoretical sampling to minimise diversity in groups and foster diversity of concepts Goal: challenge the usefulness of the identified categories in terms of their relations. 8 "Member checks" conducted by returning to past interviewees (minimising group differences) confronting them with the list of categories and concepts, discovered during the previous step.
Background of interviewees	11 Management consultants with extensive experience in product cost management consulting projects. More than 10 years of consulting experiences and a minimum of 10 consulting projects in the product cost management area. Familiarity with a selection of the different so-far-identified categories/concepts (=themes)
Main themes covered in the interviews	Identify relations and relationships between categories/concepts: PCM organisation, Strategic Alignment, Strategy, Business Priorities, Product Cost Relevance, Key success factors, Positioning
Change of themes / questions between iterations	Changes to step 3: Move from (potentially all) related concepts and categories to focus on their relations/relationships. Reason: Given procedure by CGT. Within step 4: no changes
Questions asked during the interviews	<u>New initial question:</u> • 'Looking back to any of your past consulting projects about product cost, does this list cover all categories and dimensions impacting upon the question how PCM activities should be organised?' <u>New Follow-up question:</u> • 'Are there, on the opposite, any categories/dimensions which are not useful when investigating how PCM activities should be organised?'
Length of interviews	10-45 minutes
Recording / documentation of interviews	No voice recording. Reason: In line with CGT recommendation to focus on selected key content - see also selective coding. Instead: taken interview notes during the sessions.
Analysis of collected qualitative data	Theoretical coding (manually). Comparing and sorting memos.

Table 13: Methodological summary of step 4

It was only after this member check that each of the interviewees was then asked to provide additional data about consulting projects referring to the most relevant, potentially diverse

categories (moving to the top right in Urquhart's matrix) to identify potential differences and variations. This allowed the study to discover how the theoretical model, meaning the relations between the categories (and therefore these underlying hypotheses), might differ (Urquhart, 2013, p. 65). These variations should demonstrate the still-existing openness during the GT approach which, in fact, lead to the two above-mentioned parallel thinking-models while continuing with interviews and the sorting of memos.

Table 13 above summarises the cornerstones of the methodological elements of step 4.

4.5.2 'Strategising', 'Relevancing' and 'Profiling' as theoretical codes of strategic alignment

Having outlined the time-consuming and iterative nature of working to discover the theoretical codes needed to inform the emergent theory in the previous section, by its very nature the complete process cannot be concisely recapped, neither is it meaningful to do so.

However, three main stages of the study's progress should be delineated to serve as an audit trail and to provide the reader with a point of reference to increase understanding of the later theory:

- General directions of the relationships between the categories
- 'Strategising', 'Relevancing' and 'Profiling' as theoretical codes of the emerging theory
- The SRP-Lock of strategic alignment as rough visualisation of the theoretical model

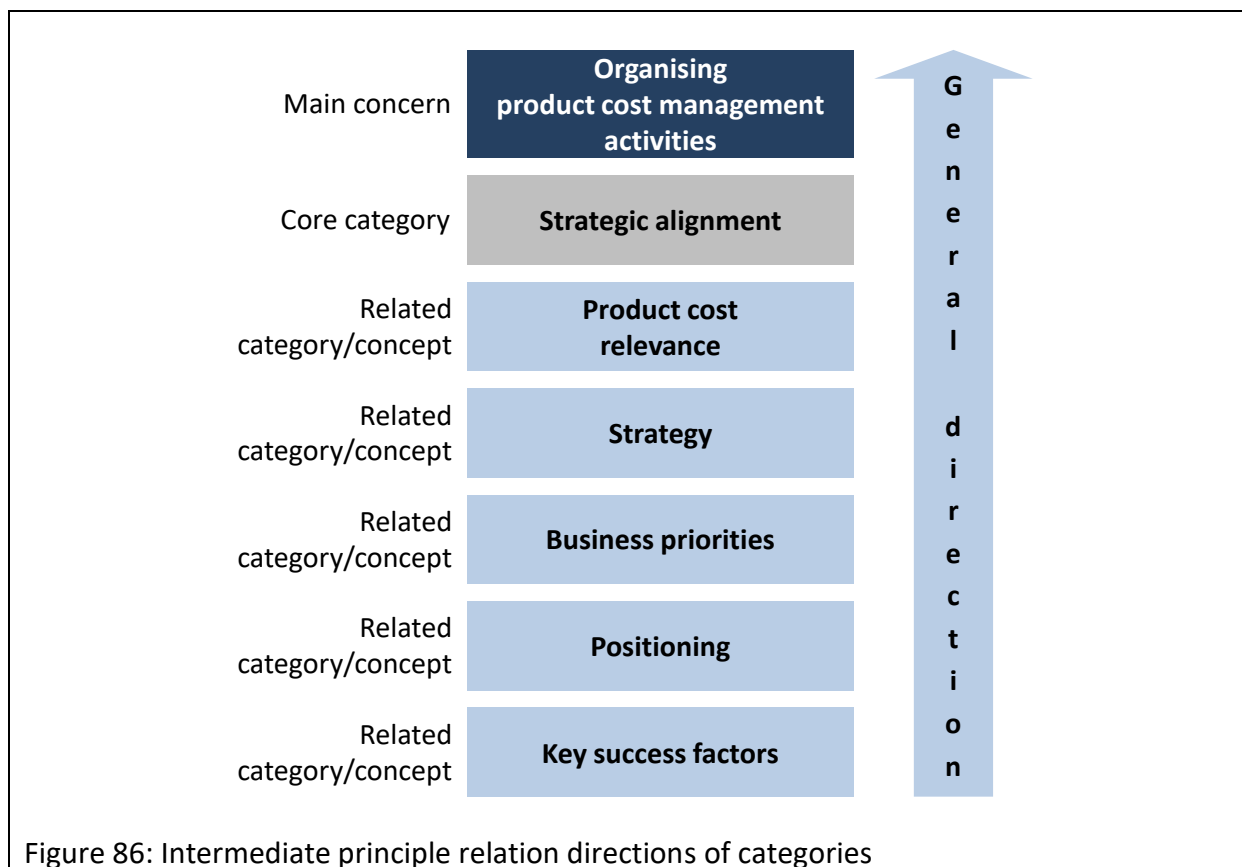
4.5.2.1 General direction of the relationships between the categories

In section 4.4.2 the main concern, the core category and the related main categories have been listed in figure 72 (page 201) with only one intention: to oppose the related main categories to the position of the main concern of how to organise product cost management systems with the strategic alignment as a mediating variable in between. This is due to the congruence with the principle GT's approach as a thinking model.

However, this status was challenged by starting from scratch to unfold their actual relations, demonstrating the openness in this phase of the research. By comparing and complementing different cases (consulting projects) stated by the interviewees in that

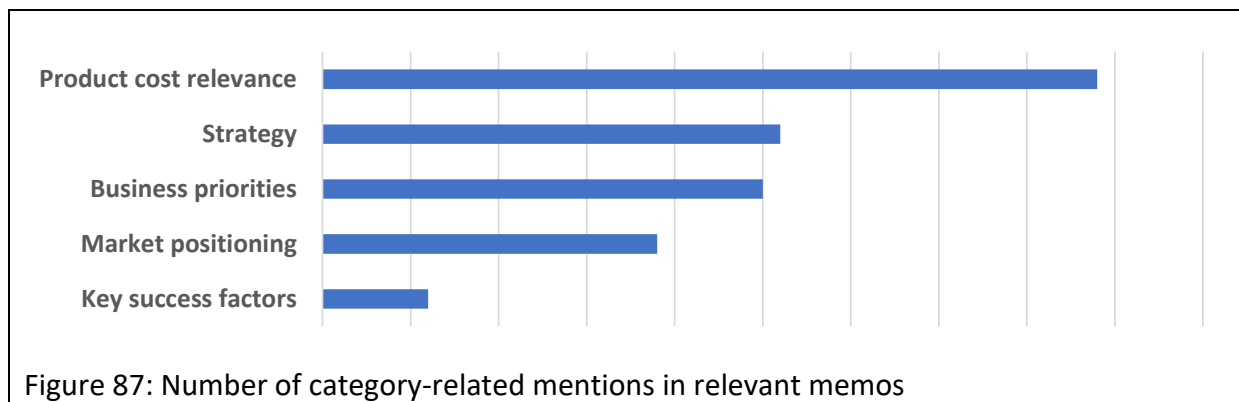
phase (as well as in former interviews) the general direction of the categories emerged (figure 86).

This general direction did emerge quite quickly once the categories were discussed with interviewees after the member check about the categories ended. ‘Product cost relevance’ turned out to be the most impacting category to influence the organisation of PCMS, which is impacted by the category ‘strategy’, which is impacted by the category ‘business priorities’, which itself is impacted by the category ‘positioning’, which, finally, is impacted by the category ‘key success factors’.



The reason for this principle direction lies in the following differentiation comparing the different categories with each other: KSF are basically ‘given’ by the market and cannot be influenced by a single company. Yet, they offer companies space to position themselves as a distinct decision on how to compete on the market. This general positioning should inform the company’s business priorities (and with that the targets) out of which the strategy is derived to reach the targets given to the different priorities. These elements together

inform the relevance of product cost directly impacting upon the organisation of PCMS, if strategically aligned.



On top, quantitative data drove the further process of theory building: the number of mentions in the memos related to the categories at that time (figure 87).

Having discovered this distribution (captured on a photo in appendix 12 (p. 434), showing a working status of sorting memos) another important memo arrested a guiding thought, directing the development of the theoretical codes.

4.5.2.2 The 'SRP-Lock' of strategic alignment as rough theoretical model

A, if not the, central memo to outline the theoretical model says:

"Three stages of strategic alignment: market related KSF, internal strategic decisions (equally important?) and resulting PC relevance impacting PCMS"
(Memo 04-016)

The centrality of this memo was due to the fact that it rang in the development of the 'real theoretical codes' which had been improper up to that time. Until then, the codes and the memos showed only little conceptualisation or a low level of abstraction but indicated a simple process model only. Now, it became evident to again start from scratch and challenge whether the original '2+5-structure' from the previous step was not misleading in a way to discover a pattern or theoretical codes, which were all on a same level.

The memo triggered the thought that the category 'strategic alignment' is potentially maybe not a category amongst others but could be an integrative function of the other categories,

potentially with three theoretical codes, covering the 'related categories'. Furthermore, it also shed light on something which is not stated in the memo: the organisation of PCMS. Accidentally, this 'category' being the main concern, was fairly neglected until then, contributing to the incomplete model up to this point. So, once again, the research returned to the data collected so far to search for patterns and the potential for building theoretical codes.

The subsequent theoretical codes found in the data jointly form a rough theoretical model consisting out of the following codes (see appendix 13, p. 435, for selected memos informing the theoretical codes):

- Strategising
- Relevancing
- Profiling
- Aligning

'Strategising' as the first theoretical code indicates a company's explicit effort to decide about the principle strategy based on the existing KSFs on the market served. The dimensions and attributes of those categories (Positioning, Business Priorities and Strategy) are qualitative by nature and subject to conscious decisions. Next to a variety of quotes, codes and memos, one memo catches main elements of 'Strategising':

Memo: "Strategic elements of PC should not 'just be there' but intentionally developed and decided on with full awareness of the impact on the organisational design of PC activities" (Memo 04-009)

It demonstrates three key elements of 'Strategising': strategic elements as (a) an influential dimension on how to organise product cost activities, (b) an active decision-making process deliberately gone through instead of an accidental occurrence, and (c) the normative character of both for the GT on how to organise PCM-activities leaving open that other alternatives, that are less recommendable, might occur.

'Relevancing' signposts on the other hand a quantitative theoretical code, condensing the strategic implications into a measurable variable, suggestion a scale, e.g. from low to high or similar. A memo coming closest to this theoretical code states:

“Recaptured quote from interviewee: “Then you look, what relevance your product costs have according to your product strategy or even company strategy; that’s most promising” (Interview 43) -> Strategy first, then product cost relevance derived from it -> active analysis of strategic decisions/directions” (Memo 04-034)

It contains three essential elements: as for ‘Strategising’ it indicates (a) a purposeful and calculated analysis step which is (b) prescriptive for the management of PCM-activities. Furthermore (c), the relation to ‘Strategising’ becomes also clear: ‘Relevancing’ comes second, after having ‘strategised’.

The fourth element of ‘Relevancing’ is not explicitly mentioned in the above stated memo but was obvious from the early beginning of its occurrence: its quantitative, one-dimensional nature, indicating its measurability on a scale, e.g. ranking from low to high. The following memo captures this discovery:

“Recaptured quotes from interviewees: “Product costs were not in focus”, “In this company, the product cost are very important”, “Compared to the other company, product cost were much more important”, “It was clear that we had to increase the management attention towards product cost as they had not seen these as relevant for the success until that date” -> Different kinds of importance / relevance: low – medium – high” (Memo 04-039)

‘**Profiling**’ then specifies the way and the nature of how product cost management systems ought to be designed in relation to the PCR. Again, as ‘Strategising’ and ‘Relevancing’, it ought to be an active and cognizant action. This activity should lead to the proper way of how to manage PCM-activities. Yet, in many ways, the nature of this action remained unclear for a long time during the research process. Terms such as ‘design’ or ‘select’ (which would have led to theoretical codes such as ‘designing’ or ‘selecting’) were predominant in the data captured during interviews as well as in the memos. Thus, both terms did not fit the remaining related data well.

The data to that point in time did not indicate an active ‘design-process’ such as developing from scratch any kind of PCM design, that could be open-ended with potentially surprising or innovative elements. Likewise, the data in this research phase did not support a pure selective action to choose a specific PCMS out of a well-defined set of alternatives.

Therefore, the uncovered process is neither as open as 'designing' nor as limited as 'selecting'. It was another recursive coding session in which the term 'job profile', which was formerly overseen or at least overlooked, was discovered, provoking a memo saying:

"Recaptured quote from an interviewee: "The job profile you have to have for the project lead in the project and then later for a product cost manager depends on the product cost targets" (Interview 33) -> Does "profile" cover all aspects of how to manage PCM-activities?" (Memo 04-025)

It was added to the pile of memos related to this newly emerging category or theoretical code and became the starting point of another recursive coding session, searching in the data for similar, comparable codes. It turned out that two potentially conflicting characteristics exist in parallel: the first indicating a more qualitative dimension of different ways of how to manage PCM-activities, represented by codes such as 'classification', 'systematics' or 'typology'. The second characteristic indicating a more quantitative trait of PCM-organisation, suggested by quotes and codes such as 'maturity level', 'grade of professionalism' or 'level of excellence'.

Both concepts were saturated quite fast, however neither outperformed the other when adding new data (interviews, memos) to the research. Consequently, the use of the term 'profile' was able to cover both dimensions, any qualitative and quantitative aspect in the way PCM-activities had to be organised. This question was initially left open at this stage, and investigated later (see section 4.6).

'**Aligning**' finally is the overarching theoretical code incorporating the three other theoretical codes (SRP: 'Strategising, Relevancing, Profiling') as necessary elements, and also not leaving open the direction of the alignment (e.g. sequential, parallel, reverse, etc.). In other words, this means that the theoretical code 'Aligning' consists out of the theoretical codes 'Strategising', 'Relevancing' and 'Profiling'. On top, a sequential relation clearly reflects the normative ambition emerging out of the data.

It quickly became clear, in parallel to the development of the theoretical codes themselves, that the sequential relation is the only alternative suggested by the codes and memos. Each sorting session ended up showing the order of SRP: 'Strategising, Relevancing, Profiling' as

the desired way forward. The clearest memos on this sequential relation between the theoretical codes were:

“Quote from interview: “There has to be strategy first with which you can align your PCM-activities”. Codes: Aligning, Dependency, Sequential approach” (Memo 04-044)

“Quote from interview: “Out of your strategic dimensions one has to check, how important the product costs really are.... and which aspects of it.” Codes: Active process, Sequential approach” (Memo 04-29)

“Quote from interview: How you organise your [PCM] activities then is dependent on what importance you give to your product cost upfront. Codes: Dependency, Sequential approach” (Memo 04-45)

“Recaptured quote from interview: “You cannot influence the KSF of the market, so your strategic decisions have to reflect them to then translate them into drivers how to organise your company. It’s an ‘outside-in’ approach.” -> Memo: Visualisation coming from outside, going to inside” (Memo 04-52)

The last-mentioned memo was also a trigger for the visualisation of the theoretical model. Continuing with the logic of a sequential SRP-approach as discovered and with placing the main concern (how to organise PCM-activities) into the centre of the visual, being ‘surrounded’ by the categories impacting upon it, a figure was developed, taking up elements of a lock.⁷⁵ This lock should be ‘unlocked’ by aligning the different elements of it in the right way, demonstrating the normative character of the theoretical model.

So, in aligning these elements of the lock by using the SRP-model of ‘Strategising, Relevancing and Profiling’ the main concern can be solved. Appendix 14 (p. 436) shows the outcome of a sorting session informing the idea of a circular model intermediate drafts of the model. Comparing and further developing them finally led to the visual in figure 88.

⁷⁵To label the visualisation as a ‘lock’ happened later in the research. Earlier thoughts about it, e.g. circled around its resemblance to a dartboard and its bull’s eye in the centre. Finally, a scene in a Star Wars movie inspired the ‘lock’-analogy: an android, R2-D2, unlocked a mechanism (built into a wall) that looked like a circular lock existing of different discs. One of its ‘fingers’ served as a key to be pushed into the mechanism’s centre and ‘align’ the different discs. It is noteworthy that this was an obvious part of CGT’s, at least to some extent, “serendipitous” (Glaser, 1998, p. 15) nature, also already addressed in chapter 3.4.1.

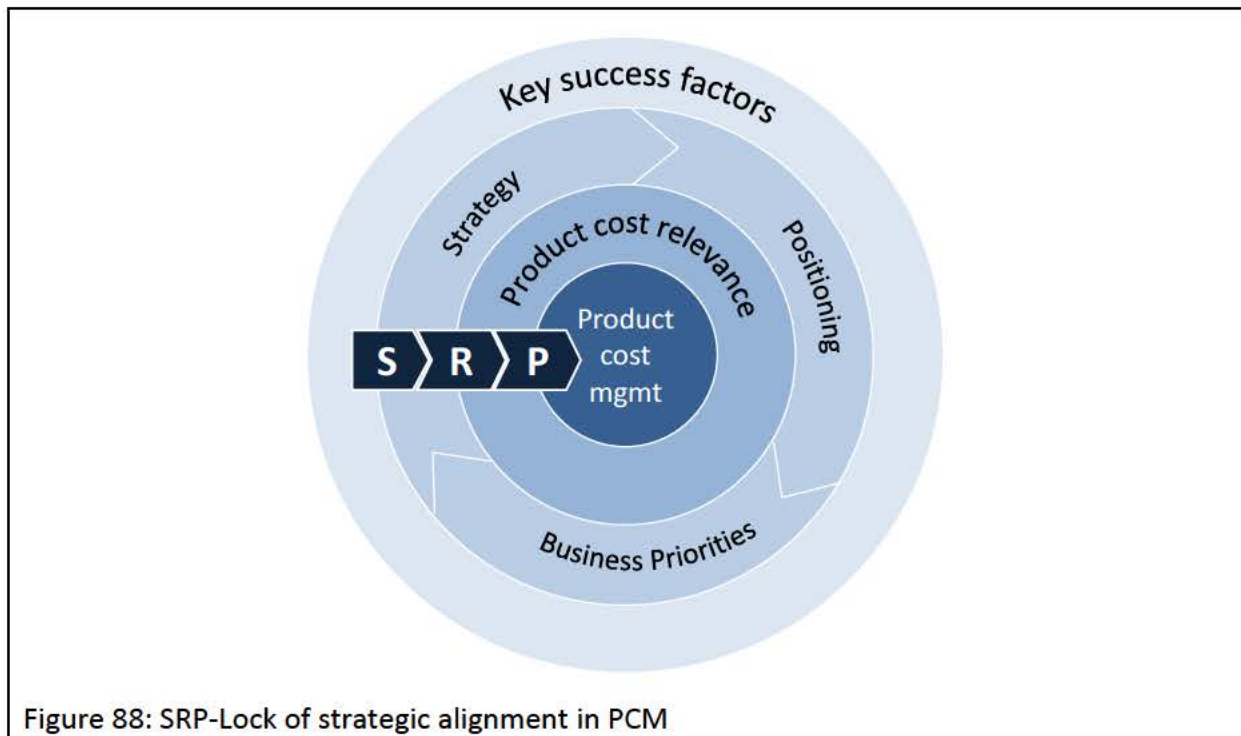


Figure 88: SRP-Lock of strategic alignment in PCM

The SRP-Lock is now, as the intended outcome of 'step 4', the first rough outline of the theoretical model serving as base for the normative theory which is discovered in a sense to be further detailed. A major step of this detailing is demonstrated in the next section.

4.6 Findings of step 5: Drafting the emerging theory

According to Walsh et al.'s 7-step approach of GT, step 5 ought to aim at writing the first draft of the theory (2020, pp. 49-50). It is an intermediate step, if not milestone, progressing forward and is in between the rough theoretical model and the final theory (figure 89 on the next page).

At the same time, examples of GT studies do not show or publish first drafts of theory (Walsh et al., 2020, pp. 63-88), as writing up this step would be redundant in the light of the later explication and summary of the theory. Therefore, only a brief illustration of the theory's cornerstones is displayed in this section.

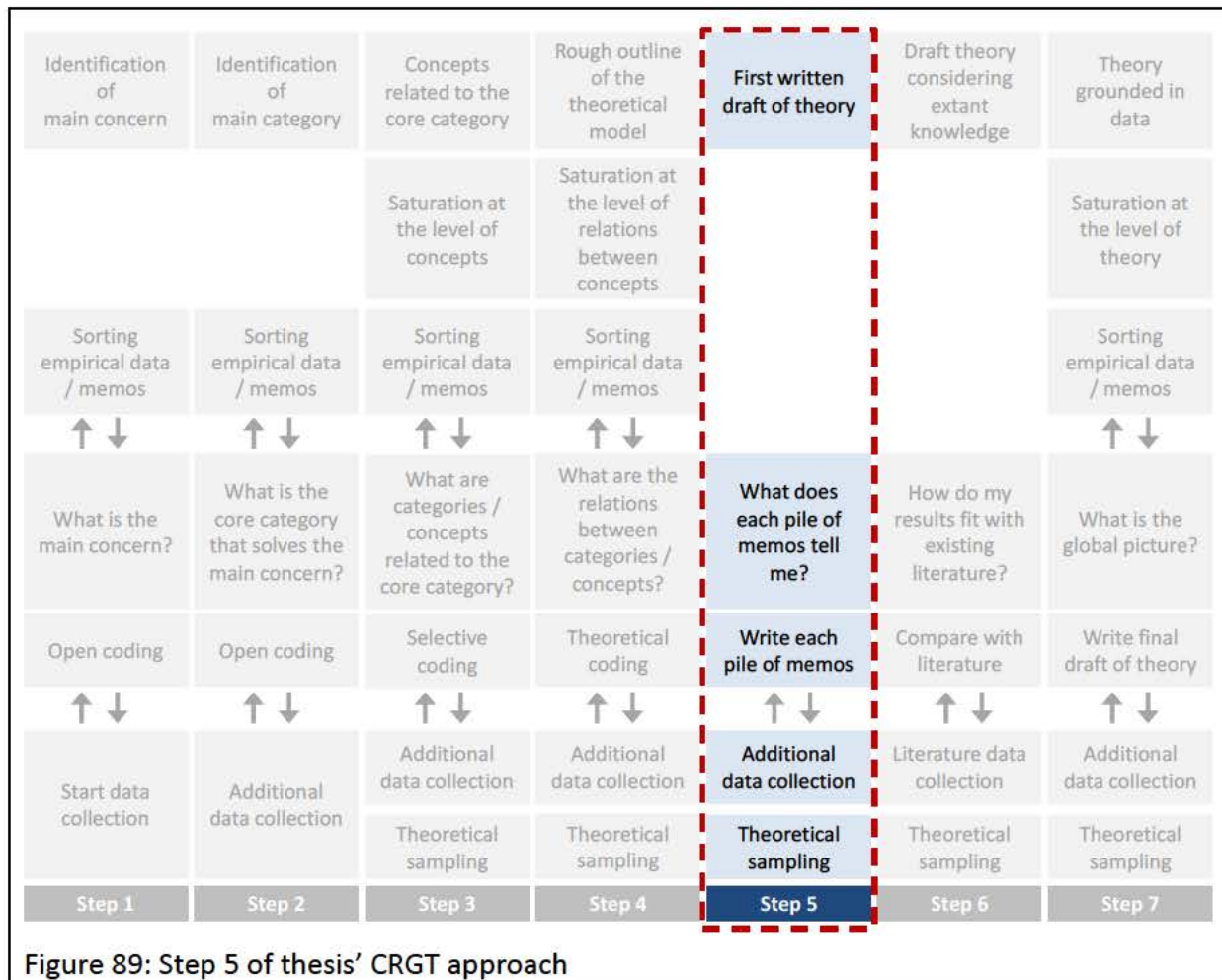


Figure 89: Step 5 of thesis' CRGT approach

To continue with offering a transparent opportunity to retrace findings about the emerging theory in this thesis, two more elements of that theory are illustrated compared to the rough theoretical model, presented in the previous section 4.5. The rough theoretical model gains depth of content and further emerges towards the final theory, which is the intent of step 5 overall, by comparing the different piles of memos and the data they provide.

- 'Profiling' (which profiles can be distinguished in product cost management)
- Relation between 'Relevancing' and 'Profiling'

4.6.1 Methodological remarks on step 5:

Data collection, sampling, sorting, comparing and descriptive accuracy

During this phase, three methodological particularities must be mentioned:

- Data collection and sampling showing absence of both, with
- Sorting and comparing memos being continued, although the selected step-wise approach does not indicate sorting and
- The level of descriptive accuracy.

The absence of further **data collection** during this step is due to the fact that at that point of time in the research the data volume already seemed sufficiently big, even tending to be too big to be manageable in simple Excel files or print outs. So, the active counting of interviews stopped after the 28th interview during step 3 and was only re-counted, ex-post, during this step totalling 47. With no need for further data collection, **sampling** consequently also was not necessary.

Secondly, even though **sorting** was no longer stated in the approach from Walsh et al., during this study's step 5 it still played a central role as the method of discovery. Its purpose was to generate the piles of memos in which the theory then should be grounded by comparing the memos. This generation of piles regarding the 'Profiling' of the activities in product cost management needed sorting and resorting taking different perspectives or starting points by **comparing** again and again.

Whilst the first sorting sessions started comparing similar terms in the data (still looking at codes from time to time in order to stay connected to more original data and to stay open compared to what was written in the memos) while looking for similarities, later sessions, including the final ones, clearly were more insightful as they were looking for dissimilarities and differences as the different profiles of PCM emerged. It turned out that five piles of memos were available, at the end labelled as:

- Pile 1: Strategising
- Pile 2: Relevancing
- Pile 3: Profiling
- Pile 4: Profiles
- Pile 5: Relevance/Profile-Relations

As the first three piles have been addressed in the previous section already (summarised as 'SRP-Lock'), focus for this section is on the last-mentioned piles, portraying PCM-profiles and their relation to PC-relevance going into the SRP-Lock.

Before commencing with theorising on the basis of the rough theoretical model, the reader has to be reminded and made aware of GT's claim and ambition of **conceptual explanatory**

power instead of **descriptive accuracy** as aimed for by many other research methodologies (Glaser, 2016; Gynnild, 2016) as mentioned in 3.4.1. Glaser states:

"Remember again, the product will be transcending abstraction, NOT accurate description. The product, a GT, [...] frees the researcher from the tyranny of normal distortion by humans trying to get an accurate description to solve the worrisome accuracy problem" (2002b, p. 1)

Step 5 (drafting the theoretical model)	
Number of interviews and iterations	No additional interviews but making use of formerly conducted interviews
Sampling of interviewees	n.a.
Background of interviewees	n.a.
Main themes covered in the interviews	n.a.
Change of themes / questions between iterations	Changes to step 4: Move from focus on relations/relationships of "related" concepts to completion of the theoretical model. Reason: Given procedure by CGT. Within step 5: no changes
Questions asked during the interviews	n.a.
Length of interviews	n.a.
Recording / documentation of interviews	n.a.
Analysis of collected qualitative data	Comparing and sorting/structuring memos and notes Layouting print outs of memos and notes

Table 14: Methodological summary of step 5

Following this default, the aim was not to strive for complete inclusion of all codes and memos to fully cover the data, neither is it the goal to describe in great detail the discovered pattern in the PCM-profile.

It is rather the intent to provide a powerful explanation of (dis)similarities of the profiles which are an abstraction of multiple dimensions and attributes discovered during the research. Table 14 summarises the cornerstones of the methodological elements of the study's step 5.

4.6.2 The four profiles of product cost management in relation to product cost relevance as the theory's central pillars

In the centre of the emerging theory and the last out of three SRP-stages, as indicated by the SRP-Lock, is the 'Profiling' of the PCM's activities. It is a focal point of the study with dedicated attention in this section, which is why it is marked in blue in figure 90. This step puts together the fragmented data from interviews, coding and memoing into the central part of the rough theoretical model as sketched in 4.5 and specifies the dimensions and attributes of it.

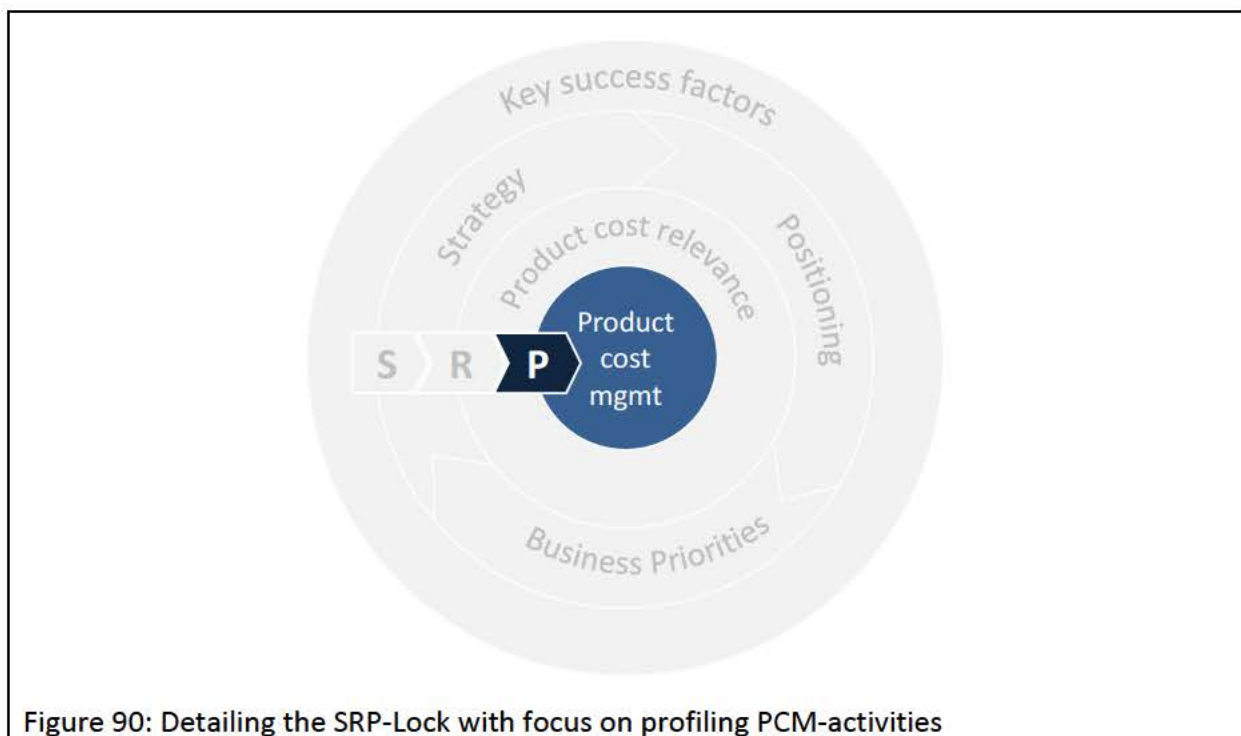


Figure 90: Detailing the SRP-Lock with focus on profiling PCM-activities

4.6.2.1 The four profiles of product cost management

In alignment with the main direction of the fifth research step, memos and codes have been piled up to recognise first similarities (with little progress on the abstraction level) and second dissimilarities (leading to the distinction of different profiles) in the data. Pile 4, labelled as 'Profiles', did emerge, leading to the finding that different profiles actually can be distinguished. It finally turned out that four different sub-piles appeared showing both, a share of similarities and distinct differences (figure 91 below).

Following the initial open coding (see 4.4.2.1, p. 202), differentiating dimensions of the four profiles have been recognised as being tasks, responsibilities, involved functions and departments, workflows and processes, methods and tools, as well as roles and rules.

Each profile represents a pile (see appendix 15, p. 437, for a status as photo-documentation) which covered a maximum number of codes/memos and a minimum number not being able to be allocated to one of the piles. Altogether, each pile tells a different story how to potentially organise PCM-activities and indicates an alternative form from which managers should derive and profile their own approach. As the profiles will be explained in detail in 4.8.2.2.2 (pp. 255-262), only a few cornerstones as illustrations are mentioned as follows.

The first profile, **profile 1**, is a minimalistic way to organise PCM-activities. It focuses on the reporting of product costs only to the extent of which the reports are needed, which is why financial and accounting functions are key players when it comes to responsibilities and involvement.

Profile 2, as an alternative, already shows an increased ambition to organise PCM-activities mainly by involving other functions next to financial departments and by introducing product cost targets, specifically achieving product cost reduction targets as a differentiating attribute.

Profile 3 further increases the effort taken to organise PCM-activities. Especially as it extends the product cost target dimensions to cost structure and cost flexibility targets next to the cost reduction targets which are already addressed in profile 2.

Finally, **profile 4** shows the highest level of sophistication in all dimensions and shows again a higher degree of dissimilarity compared to profile 3. The mind-set shift here is to not only treat product cost as a stand-alone indicator but to interrelate it with value indicators as well.

Dimensions of PCM profiles	Profile 1	Profile 2	Profile 3	Profile 4
Tasks	Generation of product cost transparency	Achieve cost reduction targets	Achieve cost reduction, structure, flexibility targets	Optimize product cost / product value relations
Responsibilities	Finance	Varying between Engineering, Purchasing, Manufacturing, Finance	Varying, partially shared between Product Management, Engineering, Purchasing, Manufacturing	Globally shared with product management in the lead
Main involved functions & departments	Accounting	Controlling Engineering Purchasing Manufacturing Supply Chain	Controlling Engineering Purchasing Manufacturing Supply Chain	Not limited, e.g. also Quality
Workflows & Processes	Few routines on local cost recording and 'glocal' reporting	Ad hoc, mainly discontinuous, functional, local project approach	Ad hoc, discontinuous project approach incl. elements of cross-site and cross-functional collaboration	Established, cross-functional & cross-site / globally-integrated process approach
Methods & Tools	Few book-keeping standards, supporting IT systems	Systematic product cost monitoring; mainly isolated and sporadic	Systematic product cost monitoring; partly isolated and episodic	Comprehensive range and variety, globally established
Roles & Rules	Focus on on-time reporting	Ad hoc setting of targets and decisions; workshop approach	Ad hoc setting of targets and decisions; partly workshop approach	Systematic definition and establishment of cost-/value-culture

Figure 91: The four profiles of PCM

However, these explanations (and those in 4.8.2.2) as summed up by the data of the different piles are surely not as discrete as the four profiles might suggest. Some data and memos were not that clear-cut but to some extent overlapping, thereby indicating floating borders and grey zones that signify more of a continuum instead of discrete profiles.

A pragmatic question constantly challenging the final sessions of the sorting practice was the thought of whether the message sent by the affected piles after re-allocating a code and memo was changing in a way that justified a new profile or not. Searching for methodological guidance in GT literature, soon the above-mentioned focus on conceptual

power instead of descriptive accuracy (Gynnild, 2016) helped to finalise at that moment the conceptualisation of the PCM-profiles as explained.

Finally, this resulted in the adaption of the SRP-Lock, making more explicit the inner centre by replacing 'PCM' by the four PCM-profiles identified through the (memo) piles (figure 92).

Having answered the research question of which different PCM-profiles can be differentiated, the next part of the theory is to identify how they are related to their main and directly impacting factor: the product cost relevance.

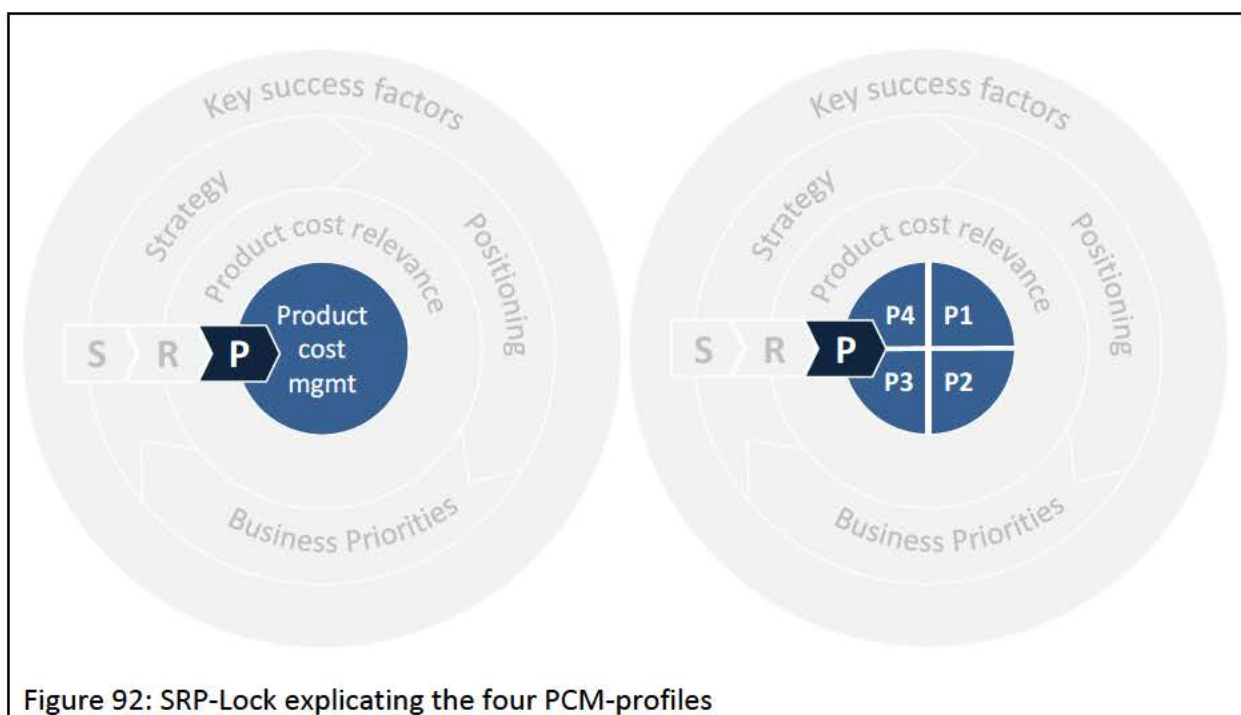


Figure 92: SRP-Lock explicating the four PCM-profiles

4.6.2.2 The relation between product cost management profiles and product cost relevance

Having discovered PC-relevance as the main and most direct factor impacting upon the question, how to organise PCM-activities in section 4.5.2.2 on the one hand, and having identified four main profiles of PCM to do so in section 4.6.2.1, the make-or-break question regarding the emerging theory was how these two categories are related to each other. All related memos have been subsumed in the memo pile 5.

To start with, the nature of 'product cost relevance' was already easily identified in section 4.4.2.5 (pp. 208-209), being a numerically measurable criterion such as low, medium or high relevance which was a unique characteristic at that stage of the research compared to all other categories. Any kind of relation to the PCM-profiles therefore had the potential to be a quantitative relation seen from a relevance point of view. From a profile point of view that was less easy to discover and continued until this step 6, indicating qualitative elements as well as quantitative elements.

Two reasons then contributed to reaching a decision towards determining the profile's nature. First of all, again, the claim for GT's ambition about explanatory power leading to focus on thoughts about 'what does make sense' or 'what does plausibly explain the data'? And secondly, another recursive investigation of the data obtained until that point of time.

These recursive sessions, going through old memos, old codes, even some old transcripts, and then writing further new memos was bringing to surface that during the early phase of the research some data was simply overlooked as it was deemed not to be not important. Under the light of discovering the PCM-profile's nature, indicators of a quantitative nature piled up much more clearly. Some examples:

*"Many indicators during initial interviews: Companies spend either more or less effort into PCM -> quantitative measurable
Quantitative dimensions of PCM mentioned in the interviews or covered by indicators: spend time & effort, pay attention, more or less dedication, being more mature, having a higher level, ... -> code: measurable nature"
(Memo 03-024)*

"Several dimensions of the PCM-profiles suggest an "add-on" of attributes -> more comprehensive approaches as you move from profile 1 to 4 -> more targets (transparency, reduction, structure, flexibility ...) / more involved functions (finance, production, purchasing, development, ...) / use of more methods & tools / more extensive use of tools & methods" (Memo 05-010)

*"Reaching a next level' of PCM can summarise the improvements achieved in consulting projects -> more competence, more skills, wider coverage, etc."
(Memo 05-016)*

Those memos along with the other memos from that pile gave a summative explanation about the nature of the PCM-profiles and the initial uncertainty about it. Although the

profiles can be described in a qualitative way, as done in 4.6.2.1, they also incorporate a quantitative element in that every profile from 1 to 4 increases/extends/enlarges the attributes from the previous one in a certain, defined way. Companies following profile 2 do have a set-up which is also including elements of profile 1 and so does profile 3 with profile 2 and so on. In other words: PCM-profile 2 builds on top the attributes of profile 1 with some more attributes, which is changing the overall intent and set up of this profile, and so does profile 4 with profile 3 etc. (figure 93).

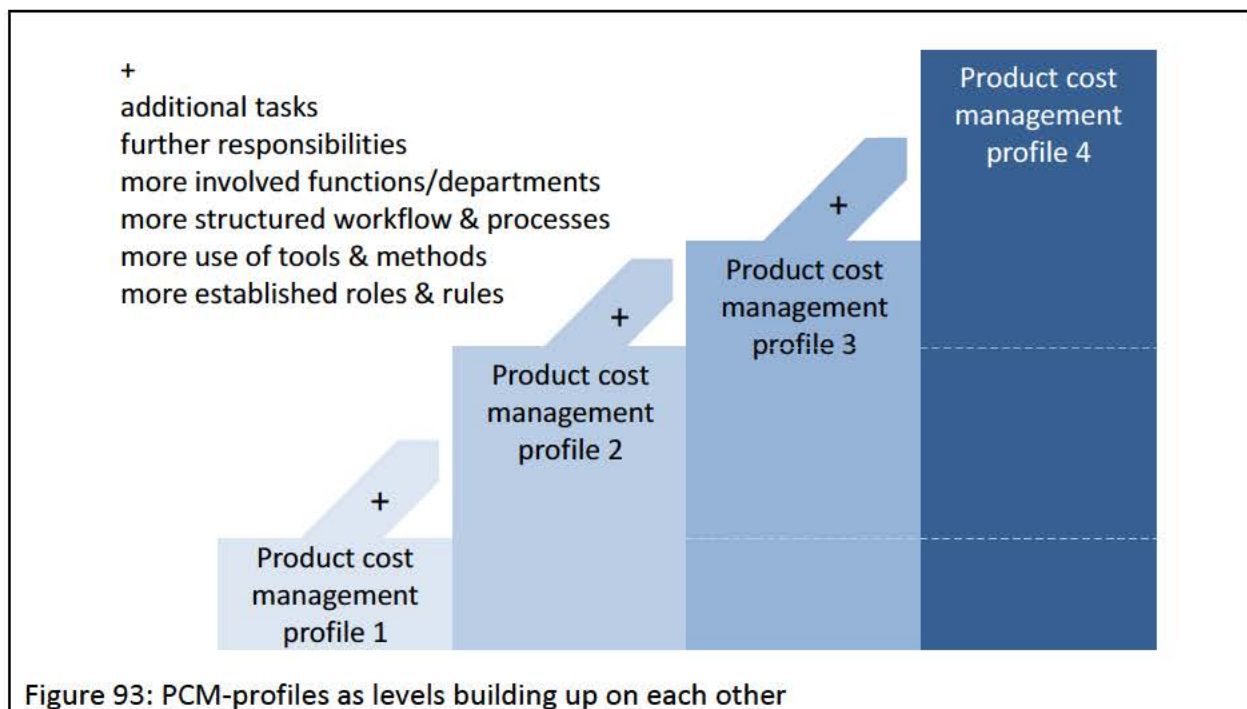


Figure 93: PCM-profiles as levels building up on each other

This gives a plausible explanation of why, in early stages of the research, this dichotomy of properties, qualitative and quantitative, was recognised, yet not understood. Only by searching for the relation of the profiles opposed to the PC-relevance was this alleged contradiction found to appear in meaningful co-existence. Synthesising the memos as well as related codes and (sub)categories, suggests four different types of PCM-profiles which are building on each other by adding a step-wise broader approach towards key dimensions such as general tasks of PCM, assigned responsibilities, involved functions/departments, structured workflow/processes, used tools/methods and established roles/rules.

However, another reason for the late discovery of the qualitative-quantitative co-existence is due to the finding that the four PCM-profiles as portrayed do not seem to be as discrete

as stated in reality, but show more incremental differences between each other as well as a certain potential for overlaps. The reason is simple: by changing only a few, or even one attribute of one profile, the principle profile does not change instantly but only after a certain amount of change does occur. Consequently, a profile might include some elements of the next level of product cost management already but does not yet reach it completely as major other attributes are missing. One memo did point this out quite clearly:

“Interviewee mentioned a positively felt effect in his consulting project only after a massive number of changes has been introduced and established in the company’s organisation -> Quote from interviewee: “changes on many fronts” + “there is no single aspect alone bringing success” (Memo 04-15)

In turn, that means that overlaps or profiles that are not that clear-cut should be accepted to exist whilst their meaningfulness can still be challenged as will be done in the final phase of theory building in step 7. Finally, identifying the relation between the different levels of the PCM-profiles and the PC relevance based on these discovered characteristics is straightforward (figure 94). The simplicity of this highly abstracted matrix indicates a close link between the relevance of product cost and the sketched stereotyped levels of the PCM-profiles: the higher the relevance of the product cost in a company, the higher the profiles’ level as well – from the normative perspective.

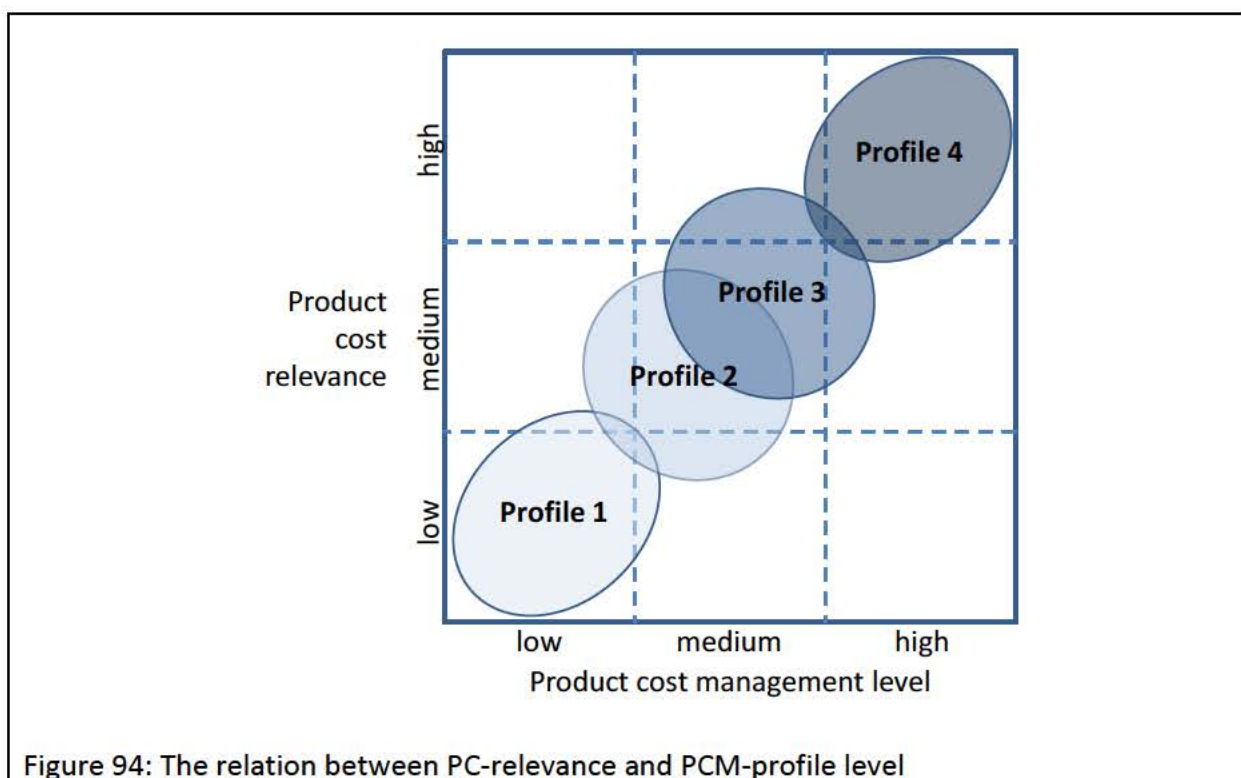


Figure 94: The relation between PC-relevance and PCM-profile level

This is what is meant in the category of 'Profiling' by reading from the respective pile of memos with lots of repetitive, or at least similar, quotes from interviews saturating this theoretical code:

"Strategy / PCR have to match with the way you manage product cost"
(Interviewee 38)

"The more important product costs are, the more sophisticated the PCM-system must be" (Interviewee 45)

"In the project, they increased the maturity level of the PCM-organisation to catch up with the priority the board gave to the product cost" (Interviewee 42)

"Approach: "less is more"? Interviewee mentioned a waste of resources as company staff was doing things, not being used or followed up in a systematic way" (Memo 04-07)

This consequently also suggests that if the PC relevance and the profile's level do not match but rather mismatch, an undesirable state does exist which needs to be changed by changing and adapting the PCM-profile level. As profile 2 and 3 are closer to each other compared to profile 1 and 4, they both represent alternative ways to organise PCM-activities in case there is a medium PC-relevance.

As only one interview note contained the word 'matrix', it has to be mentioned that the visual of a matrix arose from two basic and further advancement of memos, capturing ideas about a meaningful way to oppose two dimensions.

These memos essentially documented not only the researcher's expertise in presenting potentially related criteria but also took up common management techniques and methods which form the content of many text books (e.g. Madsen, 2017; Siddiqui, 2021).

The first draft of the theory, to summarise, consisted of the following elements: To mention first, the main concern in PCM, how to organise the respective activities. The answer to this, to state secondly, is to align the strategic directions of a company, cumulating in the relevance given to the product cost, with the levels of the four PCM-profiles which need to be implemented in a company, following a three-stage 'Strategising-Relevancing-Profiling'-Process. An alignment is achieved if the relevance level (e.g. low, respectively high) is in

congruence with the PCM-profile level (e.g. low, respectively high). Condensing these into major building blocks of the theory, four distinct areas are incorporated:

- Aligning, consisting out of
- Strategising, cumulating in
- Relevancing, informing
- Profiling, based on four PCM-profiles

These four areas, although saturated by data from the field, should potentially be challenged by already existing theory and knowledge prior to the final write up. In the next section, this comparison is outlined.

4.7 Findings of step 6: Comparing with extant knowledge

Approaching the end of the GT approach, step 6 finally comprises the ‘notorious’ handling of existing theory and extant knowledge so as to enrich/modify the discovered and still emerging theory. Although considering literature as additional data, it is a mind-shift in the method-logical approach which now could be challenged by established literature (figure 95 below).

Due to its prominent position not only in GT literature but also in the thesis, this second stage of literature review should receive some additional methodological remarks again, in the spotlight of a near-complete CRGT study.

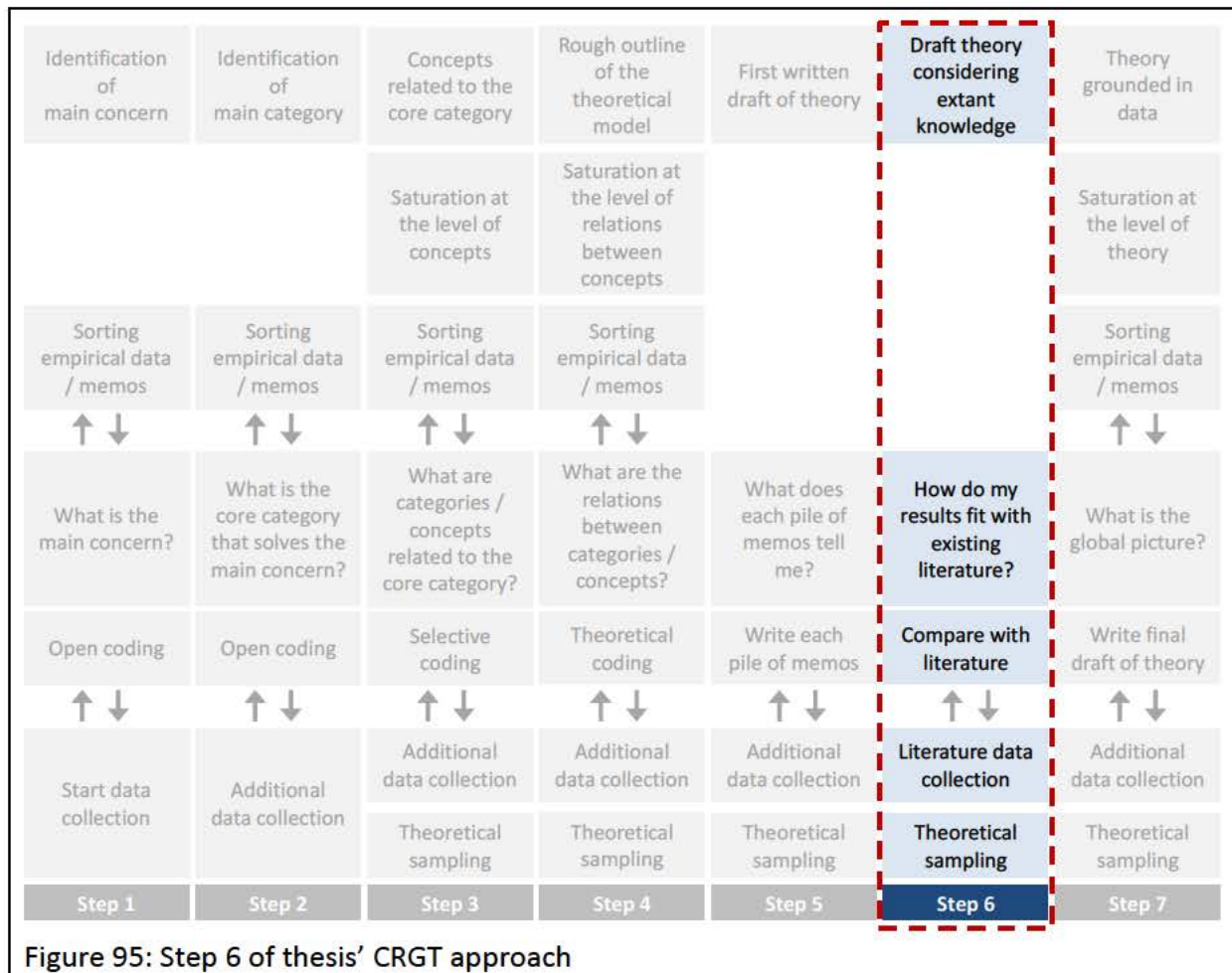


Figure 95: Step 6 of thesis' CRGT approach

4.7.1 Methodological remarks on step 6:

Dual-stage literature review, contribution, staying open and theoretical sampling

Analogous to all previous steps, this showed peculiarities in terms of methodology, filling the chosen framework with life, namely:

- The dual-stage literature review with its main direction
- Aspects of contribution of the thesis
- The ambition to stay open during the research and
- The sampling of literature at this stage.

As mentioned in chapter 1.2.2.2 (pp. 12-16), this section is now condensing the findings of the **second stage of the literature review**, with a different objective. Whereas the first literature review, as outlined in chapter 2, was meant to be a scoping literature review to, referring to Selvin and Stuart (1966), snoop around, now the directions of reviewing the literature were more specific, to let it “be accomplished and woven into the theory as more data for constant comparison” (Glaser, 1998, p. 67).

Most importantly therefore, the main direction of the literature review should be clarified upfront in more detail as it is, at first glance, opposed to the main outcome stated by Walsh et al.. Although one might expect to integrate content of already existing theory into the emergent theory, this is not the case. It was not the intention to fill in any blind spots or overseen areas by extant knowledge as an integral part of the GT. Rather, the integrational character of this step indicates the dedicated awareness about the status of theory, answering the question of how the findings fit into the existing landscape of, in this case, product cost management or management theory. In this light it is less of an enrichment or modification but more of a rounding-up in order to position the results against the available knowledge.

In doing so, one gets closer to questions of the thesis' **contribution** as the findings either confirm, contradict, modify or enrich existing theory. Therefore, this step serves also as an input into chapter 5 and the critical discussion about contribution to theory.

With respect to '**staying open**' during the study or to bring in preconceptions it can be stated that between the last reading of or writing about existing knowledge in the field of cost management and step 6 of the research, a minimum of 21 months of work could be recapped by going through notes, version-controlled thesis back-up files or the documented ramp-up of the word count during writing. This can be an indicator of the likelihood of any preconceptions by the author, recognising that an even longer period of time passed after the writing of the initial scoping literature review in chapter 2.

Taking up the theory's building blocks to **sample relevant literature**, mentioned when ending with the last section 4.6.2.2, the four key elements of the theoretical model so far could be worth reviewing in the literature:

- Aligning, consisting out of
- Strategising, cumulating in
- Relevancing, informing
- Profiling, based on four product cost management profiles

Step 6 (compare with literature)	
Number of interviews and iterations	No additional interviews but making use of related literature
Sampling of interviewees	n.a.
Background of interviewees	n.a.
Main themes covered in the interviews	n.a.
Change of themes / questions between iterations	Changes to step 5: Move from interview data to literature data. Reason: Given procedure by CGT. Focus themes: Strategic alignment, product cost management profiles Within step 6: no changes
Questions asked during the interviews	n.a.
Length of interviews	n.a.
Recording / documentation of interviews	n.a.
Analysis of collected qualitative data	Comparing literature on Strategic Alignment and Cost Management Profiles with the theoretical model

Table 15: Methodological summary of step 6

However, only two of them have been reviewed in more detail: ‘Aligning’ and ‘Profiling’. The reason for this focus was that ‘Strategising’ was more the outer area of the SRP-Lock and consequently not particularly interesting due to the assumed overwhelming volume of literature⁷⁶ when compared to the already reached sufficient accuracy and explanatory power of the data and conceptualisations done.

‘Relevancing’, on the other side, with its simplicity in letting strategic directions lead to an indication about PC-relevance was also not seen as being a focal point of interest in terms of research efficiency. Neither was there literature to review this concept besides ‘Relevancing’ as an adverb (Mäkitalo, 2006, p. 543). More integrational power was obtained for the ‘Aligning’ and ‘Profiling’ blocks of the theory.

⁷⁶E.g. a search on the term ‘strategic management process’ in Google Scholar shows more than 5.8m hits.

In addition, considering Stern's quote from section 3.4.1 to apply "a variety of analytic schemes to the data to enhance their abstraction" (1980, p. 23) especially to maintain openness, a review of the main coding families provided by Glaser in various publications (Hernandez, 2009, pp. 62-66) was conducted.

It was intentional that these coding families have been considered only at this stage, not earlier, as part of the process of avoiding preconceptions. Comparing those generic theoretical codes and coding families with those from the thesis should challenge further saturation towards closing the study. Table 15 above summarises the cornerstones of the methodological elements of the study's step 6.

4.7.2 Strategic fit, (product) cost management tasks and the profile's nature rounding up the emerging theory

After having specifically searched and reviewed literature about parts of the theory for which saturation was potentially not yet reached, three main findings appeared to support theory development towards its completion:

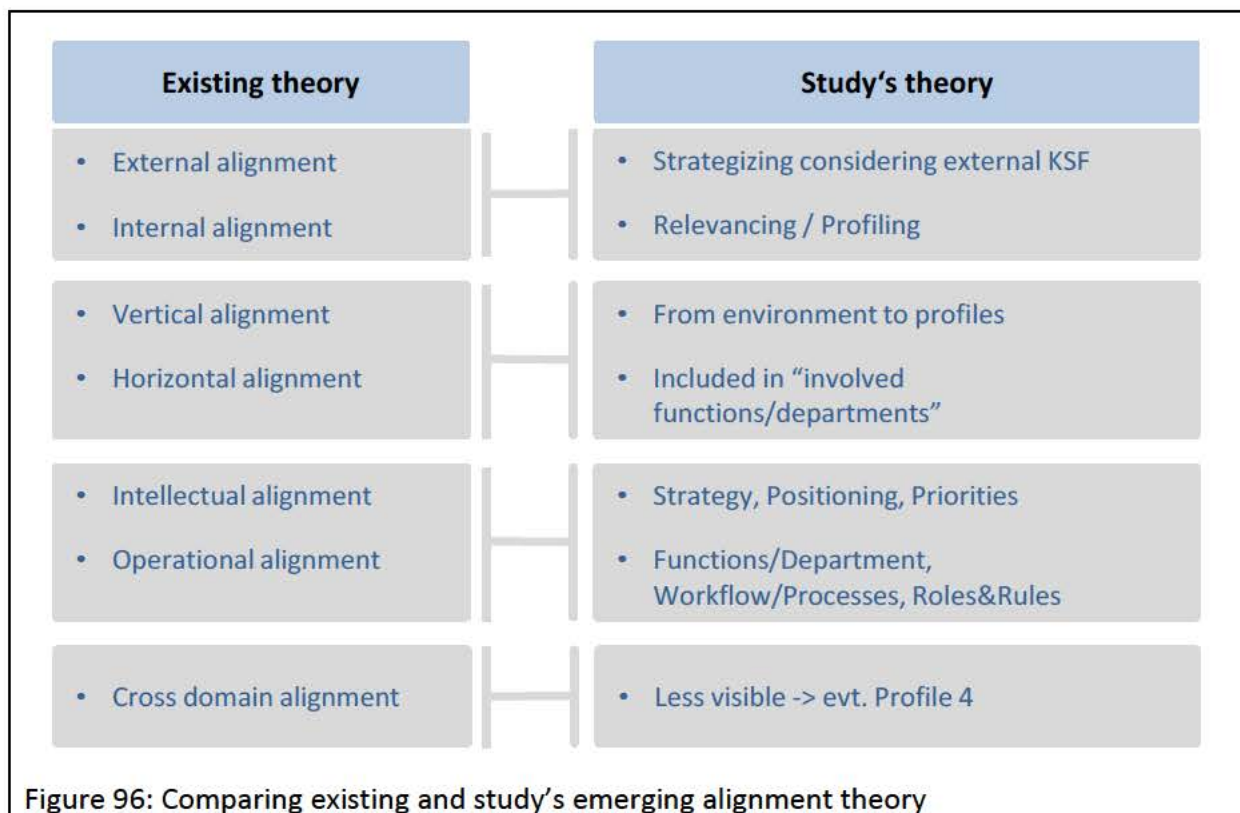
- 'Aligning' to be put in context of 'Strategic fit' as an additional theoretical concept
- Inclusion of additional tasks to further differentiate the four PCM-profiles
- Confidence into the perspective to view the PCM-profiles as being ordinally scaled

4.7.2.1 'Aligning' as the means to achieve strategic fit

Searching for and reading through literature about (strategic) alignment, a first discovery is that there is a fair amount of literature available (Morrison, Ghose, Dam, Hinge, & Hoesch-Klohe, 2012; Sabherwal, Sabherwal, Havakhor, & Steelman, 2019; Sardana, Terziovski, & Gupta, 2016). During the study (see section 4.4.2.2, pp. 203-205) it was doubted whether the terms 'alignment/aligning' would be more of a consultant's jargon from the interviewees, which, obviously, it is not. On the contrary, the guiding thoughts of the strategic alignment theory are rooting back to Chandler's seminal 'Strategy and Structure' book (Chandler, 1962; Soares, Guimarães, & Lara, 2019, p. 3).

In this literature, although referring to information technology (IT) aspects, “The Strategic Alignment Model (SAM) proposed by Henderson and Venkatraman is the most well-known and widely used of these models” (Renaud, Walsh, & Kalika, 2016, p. 75). Yet, it has to be mentioned that there is no single strategic alignment term or model covering the relevant dimensions accordingly but instead a variety of alignment types (e.g. Gerow, Thatcher, & Grover, 2015; Hiekkanen, Helenius, Korhonen, & Patricio, 2013) are distinguished, often based on Henderson and Venkatraman’s (1990) seminal version.

What they do have in common is that they advocate “the idea of achieving a degree of compatibility and harmony among a range of organizational elements” (Ghonim, Khashaba, Al-Najaar, & Khashan, 2020, p. 198) and the conviction that “organizations that manage to align their different components such as its people, systems, and structure, perform better in achieving their strategic goals than those that do not” (Ayoup, Omar, & Abdul Rahman, 2016, p. 88).



More specifically, as illustrated in more detail later in chapter 4.8.2.2.6 (pp. 274-276), it is about aligning the strategic level of an organisation and the operational/structural level in

and across the relevant functions and areas (Chi, Huang, & George, 2020; Verrollot, Tolonen, Harkonen, & Haapasalo, 2017). When comparing the main types of (strategic) alignment from the literature with the SRP alignment model discovered during the study major congruences become visible (figure 96).

With respect to the dimensions of external and internal alignment, there is clear accordance between existing alignment theory and the thesis' emerging theory. Whilst the external alignment happens through the first element of the SRP-Lock, 'Strategising', which explicitly considers the external KSFs in the company's environment, internal alignment happens through 'Relevancing' and 'Profiling' which are highly individual procedures aiming to align the internal structures.

Similarly apparent, vertical alignment takes place in the SRP-model 'going down' from external market environment to company aspects (e.g. company strategy, business priorities, product cost relevance) as well as functional aspects (e.g. processes, methods, roles) and so does horizontal alignment, 'looking left and right', which is particularly obvious in the PCM-profile's dimension of involved functions/departments (e.g. product management, sales, engineering, manufacturing, etc.)

When it comes to intellectual and operational alignment, again both aspects are covered in the thesis' SRP-model. Intellectual alignment in the SRP-Lock incorporates the strategic directions derived by 'Strategy, Positioning, Priorities' and, on top of these, the 'Relevancing'. These are highly abstract concept demanding intellectual competence prior to putting their implications into operation during the 'Profiling' as the operational part of alignment focussing on tasks, responsibilities, and workflow for example.

Finally, cross-domain alignment aspects are less visible in the SRP-Lock. This not only centres the SRP-Lock and the PCM-perspective (and consequently puts aside other areas) but the data also does not explicitly indicate effort on this. However, looking at PCM-profile 4 with its comprehensive and not-limited functional integration there could be something forming cross-domain aspects. In the same way, during 'Strategising' not only corporate or business

perspectives are taken but also functional perspectives, if critical to success, and thereby impacting on other functions also.

Concluding the comparison, the thesis' SRP-Alignment-Model shows (in absence of a specific PCM alignment theory) broad congruence with principle alignment theory, and shows the external and internal alignment characteristics in the SRP-approach next to a dominant vertical alignment dimension. Features of intellectual alignment are incorporated in the 'Strategising' stage; horizontal and operational alignment are mainly addressed in the 'Profiling' stage. It consequently adds to existing functional views on alignment such as IT (Coltman, Tallon, Sharma, & Queiroz, 2015), Production/Manufacturing (Soares, Guimarães, & Lara, 2019), Purchasing (Rodríguez-Escobar & González-Benito, 2017) or Product Development (Acur, Kandemir, & Boer, 2012) in view of Product Cost Management.

Further comparing and positioning the SRP-Model with and into existing theory, another concept should be considered, which is strongly linked to the alignment concept: 'Strategic fit' (Yarbrough, 2016, pp. 45-46). As "[e]ssentially, the principle of strategic "fit" considers the degree of alignment that exists between competitive situation, strategy, organisation culture and leadership style" (Chorn, 1991, p. 20) it can be regarded as the resulting outcome after having completed the alignment activities (Eva, Sendjaya, Prajogo, Cavanagh, & Robin, 2018).

The idea of strategic fit is widespread and relevant in theory and practice, having its origins in the 1980s with the merge of strategic management (Hacioglu, 2020; Roelens, Steenacker, & Poels, 2019; Scholz, 1987; Venkatraman & Camillus, 1984; Waterman, 1982). It explores the congruence or consistency of a company's organisation or competencies with the defined strategy in order to ensure proper strategy implementation and success (Abernethy & Guthrie, 1994; Ketokivi & Schroeder, 2004a). The implication is, as it is for alignment, that the better the fit, the more successful the company in terms of competitive advantage and sustainability (Fainshmidt, Wenger, Pezeshkan, & Mallon, 2019; Porter, 1996, p. 70).

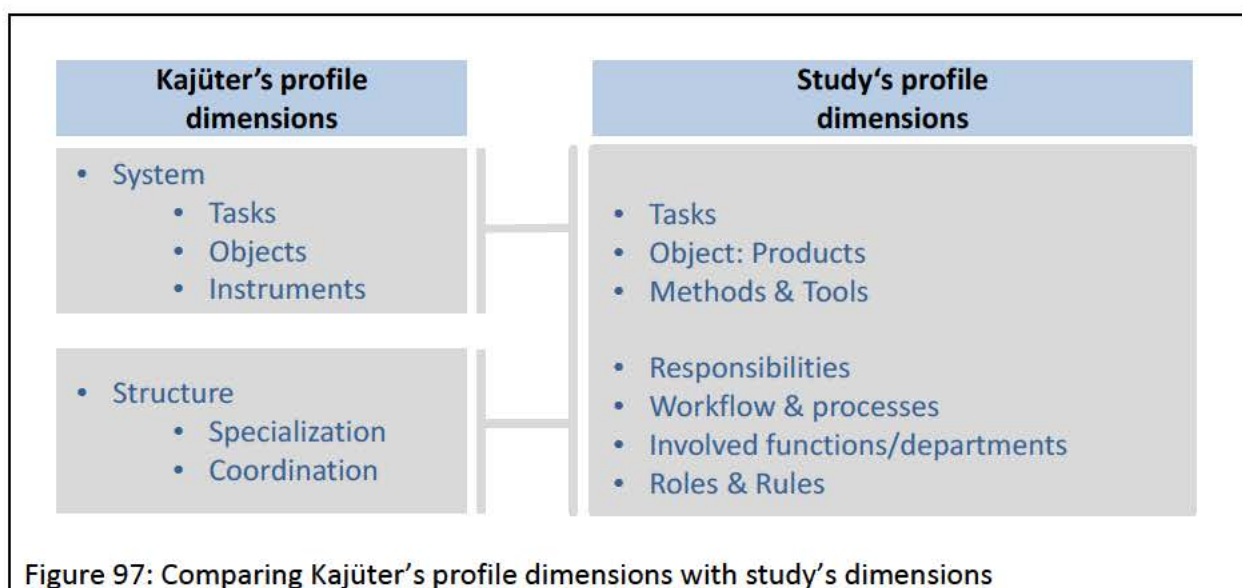
Being a measurable outcome of alignment efforts consequently suggests strategic fit as an even more conceptualised thought with a higher level of abstraction compared to

alignment, further aggregating the theoretical codes of alignment to an ultimate theoretical code for the thesis.

4.7.2.2 Additional PCM-tasks and the ordinal nature of PCM-profiles

Whereas in the previous chapter 4.7.2.1 literature focussing on the overall nature of the thesis' GT was mirrored, this section sheds light on the core of the theory (= core of the SRP-Lock), the PCM-profiles. The challenge to face is that to-date in the literature there are no alternative PCM-profiles visible, neither are any other classifications, typologies, models, or similar aspects addressing product cost. However, to keep up the ambition to compare the thesis' theory with extant knowledge, one can borrow ideas from the research showing most similarity, which is (overall) cost management.

In fact, there is one noteworthy contribution from Kajüter (2000) in his thesis about proactive cost management. In that, he develops a framework to describe actual cost management profiles by means of conceptualised dimensions and attributes. Especially on the level of dimensions there is a remarkable resemblance of Kajüter's and the thesis study's outcome with respect to what Kajüter summarises as the system perspective of cost management (figure 97) consisting of tasks, objects, and instruments (with instruments equalling methods).



Less obvious is the degree of similarity regarding what is subsumed under the structural perspective of Kajüter's model, going, to some extent, into similar directions as the thesis' model. 'Specialisation', addressing the split of tasks to different owners, and 'Coordination', focussing on how to direct and, again, align the divided sub-tasks towards a meaningful target, do show similarities with the dimensions of responsibilities, workflow & processes, involved functions/departments and roles & rules.

So, besides a different slicing and labelling of dimensions, there is a level of congruence which is not suggesting a contradiction to this, admittedly, older study.

A main differentiating factor, however, is the much greater level of detail aiming for descriptive accuracy of cost management profiles in Kajüter's thesis compared to the highly abstracted portray of the thesis' profiles. With more than 180 pages dedicated to describing and explaining the dimensions and attributes of cost management profiles, an enrichment of the PCM-profiles is certainly feasible, as long as it aids to enhance the explanatory power of the GT and is not in conflict with the data obtained during the study.

This is the case for Kajüter's tasks of cost planning, steering and controlling which have not been explicitly acknowledged in the four PCM-profiles so far. Profile 1 shows mainly absence of those tasks as it is limited mainly to reporting, but profile 2 does incorporate some elements of product cost controlling when aiming for cost reduction. Profile 3 adds some more features of cost planning as it also considers aspects of cost structure and flexibility, whereas profile 4 comprehensively steers product cost from different angles. Consequently, these tasks contribute to an even clearer explanation of the differences between the profiles and are integrated into the GT.

Interestingly, a further element in Kajüter's study is worthy to be included into the comparison of literature and the thesis' study. It is Kajüter's operationalisation of the attributes by means of an ordinal scale (indicating the level of intensity) suggesting the quantitative measurability of the profiles (Kajüter, 2000, p. 266).

In the same way, Balachandran and Balachandran (2005) suggest, on an overall cost management perspective, five levels of cost management maturity. With a cost management maturity concept, they find some proponents also advocating the logic of a building-up-on-each-other hypothesis (Cokins, 2013; ICAI, 2013; McKinsey, 2013; Meyer, 2008; Patil & Kshatriya, 2016).

Taking up their ideas, they encourage to finalise the GT with the ambiguity of the PCM-profile's qualitative and quantitative characteristics independent from what the label for the quantitative slant in conclusion should be. Earlier sections also indicated next to maturity terms such as excellence, sophistication, or professionalism. Therefore, this investigation of the literature raised the confidence level about the study to conclude the research in the next chapter 4.8, the portrayal of the thesis' theory.

4.7.2.3 Comparing the thesis' codes with GT's generic theoretical codes

Coming to the question of comparing the thesis' theoretical codes of 'Aligning, Strategising, Relevancing and Profiling' with already existing codes, it was reverted to the comprehensive list provided by Hernandez (2009, pp. 62-66), giving an overview of Glaser's proposals with more than 30 generic coding families and more than 200 codes.

Surely, it cannot be the intention to re-code the available data with those existing schemes in order to review whether there are other possible discoveries. It was considered whether the existing codes might enrich the theoretical model in the case of any observed similarities. In doing so, seven coding families showed to have any link or similarities with the thesis' theoretical codes, namely 6Cs, process family, degree family, type family, strategy family, consensus family, and the theoretical family (figure 98).

Selected generic TCs	Study's discoveries & comparison
<ul style="list-style-type: none"> • 6Cs <ul style="list-style-type: none"> • Contingencies • Consequences • Contexts... 	<ul style="list-style-type: none"> • 'Product Cost Relevance' as 'Contingency' and 'Consequence' • 'KSF in market environment' as 'Contexts'
<ul style="list-style-type: none"> • Process family <ul style="list-style-type: none"> • Stages, Staging • Phases, Phasing • Sequencing • Cycling... 	<ul style="list-style-type: none"> • The 'Three-Stage SRP-Approach' as 'sequential stages'
<ul style="list-style-type: none"> • Degree family <ul style="list-style-type: none"> • Levels • Intensity • Extent • Amount... 	<ul style="list-style-type: none"> • 'Intensity', 'Extent' and 'Amount' of attributes determining the 'PCM profile level'
<ul style="list-style-type: none"> • Type family <ul style="list-style-type: none"> • Type • Classes... 	<ul style="list-style-type: none"> • 'Profile' added to Type family including 'Profiling' as Gerund
<ul style="list-style-type: none"> • Strategy family <ul style="list-style-type: none"> • Strategies • Positioning... 	<ul style="list-style-type: none"> • 'Priorities' and 'Relevance' added as strategy codes incl. 'Strategizing' and 'Relevancing'
<ul style="list-style-type: none"> • Consensus family <ul style="list-style-type: none"> • Agreement... 	<ul style="list-style-type: none"> • 'Alignment' and 'Aligning' added to Consensus family
<ul style="list-style-type: none"> • Theoretical family <ul style="list-style-type: none"> • Relevance... 	<ul style="list-style-type: none"> • Reallocated 'Relevance' into the Strategy family

Figure 98: Comparison of generic TCs and study's discoveries

The 6Cs support the SRP logic by having 'Product Cost Relevance' identified as a contingency and consequence of 'Strategising' and the market environment as context.

Similarly, the **Process family** indicates the potential use of sequential stages in the three-stage SRP-approach as being different to phases or cycles. The **Degree family** raised confidence towards the discovery that certain PCM-levels might be differentiated by the intensity, the extent and the amount of certain attributes.

These have already been used during the explanation of the profiles, yet not explicated as codes, which is a round-up of the theory. However, other coding families stated by Glaser seemed to be incomplete.

The **Type family** does not include 'Profile' as a type, nor was a Gerund such as 'Profiling' listed. A similar gap was discovered in the **Strategy Family**, lacking 'Priorities' or 'Relevance' although 'Strategies' or 'Positioning', both discovered in the study were mentioned (and 'Relevance' put into the **Theoretical family**, again without a Gerund). The **Consensus Family**, finally, does not include 'Alignment' but 'Agreement'.

Summing up the findings of this comparison brings to light that with this new kind of data, no additional codes were found to add to the theoretical model but supported the existing codes. Explanatory saturation can be claimed having been achieved by making use of slightly adapted terminology and more prominent explication of codes such as 'Intensity' or 'Extent'.

In contrast, a few theoretical codes could be added to the generic lists such as 'Aligning' and 'Profiling' and the gerund 'Relevancing'. The latter particularly as it only occasionally appears as a concept in literature as well (Mhundwa, 2015).

4.8 Thesis' overall findings: 'Alignment-Theory of Product Cost Management'

The seventh (and final) step of Walsh et al.'s CRGT approach in the thesis puts together the different pieces of theory from the previous steps into one overall global perspective. It is with this step that one can display the theory grounded in data, with its full explanatory power having emerged during the study after constantly comparing data, memos, codes, concepts or categories.

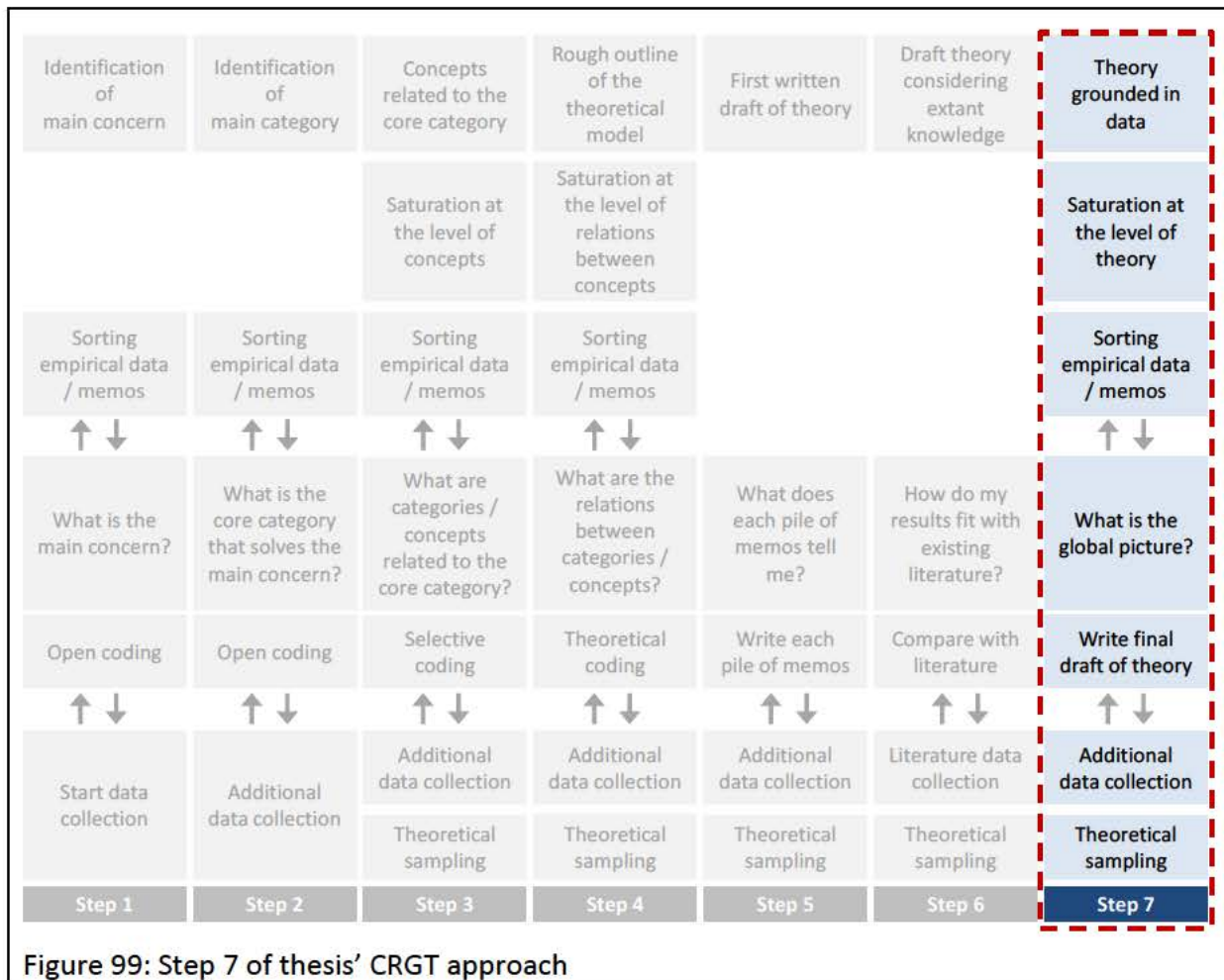


Figure 99: Step 7 of thesis' CRGT approach

4.8.1 Methodological remarks on final step 7:

Saturation, data collection, theoretical sampling and writing up

Approaching the end of the study, the methodological focus is more directed towards defining the exit point of the research and to conclude the research project. In particular, certain aspects stand in the foreground of this last phase, challenging the author's confidence to conclude, or not to conclude, the research at this stage:

- Deciding whether **saturation** has been reached or not
- How to **collect final data**
- How to **write up** the CRGT

Connected to this decision, the **concept of saturation** guided the final step pre-dominantly (as during steps 3/4). Saturation to a high level of theoretical abstraction is achieved, when new additional data does not add to the explanatory power of the theory nor to the conceptualised/abstracted categories or their relations (Aldiabat & Navenec, 2018, pp. 247-

248). After the second literature review in step 6, which was already based on the initial draft of the theory, the 'global picture' and how the different elements of the theory "fit together" (Walsh et al., 2020, pp. 46/51) was becoming quite clear.

However, further **data was collected** by 'speaking-up' (as an alternative to 'writing up') to senior management consultants with an extensively long track record of conducting individual and supervised projects in the field of product cost management (partially a member check, returning to a formerly interviewed person, partially new research participants).

In doing so, advice from Wolf and Rosenberg was followed, as "contacting practitioners for feedback on completed research projects" (2012, p. 193) was used to narrow the rigor-relevance gap.⁷⁷ They have been informed about the main concern/research problem and the drafted theory verbally, supported unintentionally (first) by three visuals: the SRP-Lock, the matrix of the relation between PC-relevance and PCM-profiles, and the PCM-profiles. The data collected was the feedback they gave or the questions that were raised during those sessions.

In sum, the data received was consistently supportive in terms of theory validity, workability and modifiability (Walsh et al., 2020, p. 57) and the relevance was highly appreciated. The questions asked by the participants challenged the descriptive depth regarding the PCM-profiles and the applicability (=workability) of the theory when comparing it with experienced or hypothetical situations or current assignments in consulting projects.

Finally, **writing-up** was informed to a great extent by the aforementioned 'speaking-up' sessions. Obviously, a step-wise approach, reflecting the GT procedure as it is conducted has the potential to explain the theory to practitioners as well as to academics. However, stating the main concern-/research problem first, immediately followed by the final solution on a highly conceptualised level which is then reversely explained step-by-step with more specific details has been shown to be the more engaging and comprehensible alternative.

⁷⁷Bouwmeester, Heusinkveld, & Tjemkes (2022, p. 51) use the term "Intermediaries" indicating a potential function of the participants.

Even though the outcomes of the '7-Steps-Procedure' are summarised, the study's findings and the discovered theory itself will be outlined below in section 4.8.2.2, starting with the final result and then referring back to the underlying details.

Step 7 (outline theory)	
Number of interviews and iterations	47 (from step 1-6) + 4 so called "speaking-up" sessions (partially a member check, returning to formerly interviewed persons (1), partially new research participants (3) presenting the theoretical model = 51 .)
Sampling of interviewees	Theoretical sampling to maximise diversity in groups and concepts Goal: delimit scope of the theory.
Background of interviewees	4 owners or board members of consulting companies with extensive experience in product cost management consulting projects (own and supervised) More than 15 years of consulting experiences and a minimum of 100 supervised (estimated) consulting projects in the area of product cost management. Familiarity with a broad range of organisational and product cost management related concepts and models. High overlap of generalistic and meticulous competence.
Main themes covered in the interviews	Global picture of the theoretical model: Strategic-Fit-Matrix, 3 stage aligning process, 4 PCM profiles
Change of themes / questions between iterations	Changes to step 6: Move from staying open to closing of study. Reason: Given procedure by CGT. Within step 7: no changes
Questions asked during the interviews	<u>New initial questions:</u> 'While I am outlining the theoretical model (or at the end) please... <ul style="list-style-type: none"> • ask questions if you have not understood a certain element of it. • feel free to comment on anything that comes into your mind. • reflect on any past or current project assignments during which the model could be applied.
Length of interviews	Up to 60 minutes
Recording / documentation of interviews	No. Reason: In line with CGT recommendation. Instead: taken interview notes during the sessions.
Analysis of collected qualitative data	Sorting interview notes and memos

Table 16: Methodological summary of step 7

4.8.2 The propositional ‘Alignment-Theory of Product Cost Management’

The historical account of GT with respect to its provocative methodological appearance (yet ongoing when it comes to Glaser and the CGT version) enforces the decision to demonstrate procedural emergence next to the theoretical emergence (see section 3.4.1, pp. 147-148).

This conviction was taken up for the thesis, as for GT “the credibility of a theory cannot be dissociated from the process by which it has been generated” (Breckenridge & Jones, 2009, p. 113). Consequently, the presentation of the GT has to reveal the discovery process as well. Due to the already provided audit trail on procedural and methodological emergence in the sections 4.2 to 4.7, a brief summary overview (see 4.8.2.1 below) is sufficient, thereby helping the readers to, firstly, refresh their minds and, secondly, to gain a quick overview without the need to read the aforementioned sub-chapters.

The thesis’ findings up to the overall ‘Alignment-Theory of Product Cost Management’ are finally portrayed in chapter 4.8.2.2 in a condensed manner, emphasising the content in a narrative way. It is followed by an explicit chapter directed towards the initial research questions as well as from a perspective under the lens of critical realism. In doing so, a formal aspect was undertaken to close the loop to the origins of the research and the selected research paradigm is provided, allowing the study’s results to be considered from a different angle. The match between research goal, paradigm, and methodology is herewith completed.

4.8.2.1 Brief summary of the step-wise approach’s outcomes and findings

As is characteristic of the CGT, the theory emerged during the execution of the study following the selected ‘7-step-approach’ from Walsh et al. whilst and after conducting 51 interviews. Due to the iterative nature of the approach and the sequential nature of a book, it is appropriate to briefly summarise the respective outcomes of each step (figure 100) and the thesis’ findings (figure 101) as the building blocks of the theory without methodological remarks at this stage. The key findings and theory will be comprehensively detailed in the next section.

<i>Outcome:</i> The main concern is	<i>Outcome:</i> The core category is	<i>Outcome:</i> The main concepts related to the core category are	<i>Outcome:</i> The rough outline of the theoretical model is summarized in	<i>Outcome:</i> The first written draft of the theory includes	<i>Outcome:</i> A review of related literature provides	<i>Outcome:</i> The saturated Grounded Theory is labelled as
<i>How to organize product cost management activities</i>	<i>Deriving from Strategy</i> <i>Iteration 1: Strategic Alignment</i> <i>Iteration 2: Alignment</i>	<i>Key Success Factors, Strategy, Positioning, Business Priorities, Product Cost Relevance</i>	<i>A Three-stage-procedure of Strategising, Relevancing, Profiling</i> <i>visualized in the SRP-Lock of PCM-Alignment</i>	<i>Four different Product Cost Management profiles and the relation between the profile's level and the product cost relevance</i>	<i>Context of Strategic Fit and additional PCM tasks further saturating profile differentiation</i>	<i>A normative Grounded Theory of Product Cost Management Alignment to reach Strategic Fit</i>
Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7

Figure 100: Outcomes of the CRGT's stepwise approach

The GT study started with the question of how product cost management activities should be organised. The research was then directed towards the core category suggesting a strong link to the strategic directions of a company. Those strategic directions were then specified in step 3 and organised into relationships with each other and condensed in the 'SRP'-Lock (Step 4). Continuing to develop the theory in step 5, the core of the theory (four PCM-profiles and their relation to the PC-relevance as dominant contingency factor), has been identified.

The focused literature review in step 6 on crucial aspects of the theory supported the proposal to put the theory into the context of strategic fit theory next to complementing the profiles' dimensions for better differentiation between them.

From the perspective of presenting research findings and structuring them in a meaningful and comprehensible way in order to tell a story (building on each aspect), this leads to fourteen distinct statements as shown on the right.



Collating these outcomes and findings and condensing them into one theory is the focus of the following section.

4.8.2.2 Advocating and discussing the 'Alignment-Theory of Product Cost Management'

As shown in chapter 2.5.3.1 (p. 65), product management has long been a dominant organisational aspect of the effective running of a company. However, product costs (and particularly the management of product costs) are a fairly neglected research area, resulting in ill-defined concepts relating to the organisation of PCM-activities. The conducted study has revealed fourteen distinct findings, which are outlined in this section (referencing the corresponding sections of previous steps).

4.8.2.2.1 Finding on the research problem

The question of how to organise activities in product cost management is a relevant managerial problem and constitutes the **first finding** (chapter 4.2.2, p. 182). As outlined before, the thesis research goal was initially derived and foreshadowed from a thematic literature review having used a problematisation approach to arrive at four key drivers, triggering the research goal, objectives and questions.

Classic GT, as methodology, demands a grounding of the research problem, labelled the 'main concern', in empirical data during step 1. Therefore, the first part of the research appeared as an iteration that 're-discovered' a very similar, if not identical, research goal. Comparing the initial research goal of 'how to design PCM-systems' with 'how to organise activities in PCM' the differences are more of a semantic nature than a remarkable thematic shift.

Furthermore, the unambiguous nature of the finding is supported by the overwhelming number of codes indicating any concern raised by the first thirteen interviewees. 318 out of 386 codes at that time contributed to the organisational problem, leaving the achievement of product cost reduction targets in second place and a variety of other difficulties far behind. The question of whether the researcher was biased became irrelevant as this alleged 'adapted' research goal is undoubtedly at least 'a' researchable problem, if not the most relevant. Furthermore, the research proceeded with the main problem as discovered in step 1 and not with the wording of the initial research questions, which shows the ongoing 'openness' during the research.

4.8.2.2 Findings on product cost management profiles

Finding 2 identifies **four different profiles of product cost management which can be described**. The discovery of the four different profiles occurred during step 5 (chapter 4.6.2.1, p. 227) during a sorting session of memos and interview notes after 47 interviews. More than 154 memos/notes had been allocated to a pile mainly addressing any alleged aspect of a PCM-profile (or system, or cluster, or type). It was only after a number of iterations that an attempt to identify four profiles, instead of the previously identified three, enabled the researcher to allocate the vast majority of memos/notes to the typology. As highlighted by **finding 3, the four novel PCM-profiles can be described with reference to six dimensions**: tasks, responsibilities, functions & departments, workflow & processes, methods & tools, roles & rules.

PCM-**tasks** address the question of the main motivation underlying the company's activities related to product cost and are primarily closely related to the extent of product cost targets and the steps outlined to reach these targets. **Responsibilities** point towards the degree of institutionalisation and spread of accountabilities, more-often-than-not linked to specific roles in the company. The list of the main **functions and departments** affected and incorporated into the PCM shows the degree of involvement and spread within the organisation. Aspects of **workflow and processes** indicate how well-established PCM-activities are in the company in terms of organisational spread, process-links and operational routines. The dimension of PCM's **tools and methods** show the variety, number, frequency and level of integration. **Roles and rules**, finally, give an indication of how well recognised and formalised PCM-activities are in the company, showing how exposed or protected they are.

Taking these dimensions and selected-yet-sufficient attributes, the four PCM-profiles can be portrayed as derived in chapter 4.6.2.1 (p. 229 and shown in figure 102). To some complementary extent, some attributes of the dimension 'tasks' originated from the integrated second literature review referring to Kajüter (2000). These add-ons, however, are more of a support of the profile characteristics than a challenge as they fit into the principle logic derived by the primary research.

Dimensions of PCM profiles	Profile 1	Profile 2	Profile 3	Profile 4
Tasks	Generation of product cost transparency	Cost controlling Achieve cost reduction targets	Cost planning Achieve cost reduction, structure, flexibility targets	Cost steering Optimize product cost / product value relations
Responsibilities	Finance	Varying between Engineering, Purchasing, Manufacturing, Finance	Varying, partially shared between Product Management, Engineering, Purchasing, Manufacturing	Globally shared with Product Management in the lead
Main involved functions & departments	Accounting	Controlling Engineering Purchasing Manufacturing Supply Chain	Controlling Engineering Purchasing Manufacturing Supply Chain	Not limited, e.g. also Quality
Workflows & Processes	Few routines on local cost recording and 'glocal' reporting	Ad hoc, mainly discontinuous, functional, local project approach	Ad hoc, discontinuous project approach incl. elements of cross-site and cross-functional collaboration	Established, cross-functional & cross-site / globally-integrated process approach
Methods & Tools	Few book-keeping standards, supporting IT systems	Systematic product cost monitoring; mainly isolated and sporadic	Systematic product cost monitoring; partly isolated and episodic	Comprehensive range and variety, globally established
Roles & Rules	Focus on on-time reporting	Ad hoc setting of targets and decisions; workshop approach	Ad hoc setting of targets and decisions; partly workshop approach	Systematic definition and establishment of cost-/value-culture

Figure 102: The four profiles of PCM

The first profile, **profile 1**, is a minimalistic way to organise product cost management activities, which can be labelled '**basic**'. It focuses on the recording and reporting of product costs to an extent only to which the reports are needed, which is why financial and accounting functions are key players when it comes to responsibilities and involvement.

These players interact in a basic and routine way following book-keeping standards, collecting product cost data via standard IT tools to then report them centrally to any stakeholders that need to be informed locally or globally (= 'glocally').

The main objective is to gain product cost transparency only up to a demanded level of detail, which can take many facets. These facets might be any of the distinguishing cost elements in a product, such as material cost or manufacturing cost or to differentiate the costs between two different products in a company or between two different manufacturing sites. Yet, whatever the cost transparency needs are, the inherent motivation for the PCM-activities is still comparably restricted, which is why this profile 1 is on the low-end of an (ambition) level of all profiles.

As an alternative, **Profile 2**, focussing on **cost reduction**, already shows an increased ambition to organise PCM-activities mainly by involving other functions next to financial departments and by introducing product cost targets, specifically directed towards achieving reduction targets as a differentiating attribute. The controlling of product costs shows an increasing importance.

In order to achieve those cost reduction targets, responsibilities should be assigned to those functions and departments which contribute most to the cost-down realisation. However, those responsibilities are variable depending on the working focus and, moreover, neither permanently nor systematically assigned. The ad hoc- and discontinuing character also applies to workflow and processes which are more-often-than-not only temporarily and locally established project-wise in parallel to the application of a limited number of tools and methods used only in a sporadic and isolated manner. Conversely, tools to monitor the product cost level, belong to the systematic part of this profile, build the foundation upon which to formulate and reach product cost reduction targets.

In summary, there is a major step forward in profile 2 regarding the intensity and coverage of PCM-activities compared to profile 1 which is focussing purely on the reporting function as the ultimate objective. The objective of profile 2, however, is to deliver short-term measurable and immediate impact to a company's results by reducing product cost in sporadic project management within the organisation involving those departments needed to reach the defined cost down targets.

Profile 3 further increases the effort taken to organise PCM-activities **comprehensively**. It extends the product cost target dimensions to cost structure and cost flexibility targets next to the cost reduction targets which are already addressed in profile 2. Cost planning gains more importance showing an increasingly pro-active character of the profiles towards profile 4. In general, this characteristic is also supported by the literature on overall cost management (Friedl, 2009, p. 99), indicating once more that the findings from the thesis' primary research do fit into a broader cost management research perspective.

In parallel, profile 3 also extends the responsibilities, as well as the workflow/processes overcoming the profile 2's 'silo characteristic' by at least partially sharing targets across functions and organising cross-functional collaboration as well as across a company's sites. Regardless of this extension of PCM scope and higher integration of functions and sites, other attributes remain on a similar level to profile 2.

Still, an ad hoc and discontinuous character of workflow/processes and roles/rules prevail equally, as in profile 2, and so does the sporadic character of the tools/methods' usage. Yet, the duration of usage is longer, moving towards episodic application, suggesting their usage only until the product cost targets have been reached and the cost monitoring systems continue to operate further.

In summary (as part of the constant comparison of GT), profile 3 is more similar to profile 2 than profile 2 is to profile 1, as there is not a complete mind-set shift to be seen. The mind-set shift from profile 1 to profile 2 was, starting with the target orientation, the wide-ranging new set-up of all dimensions, thereby characterising the profiles. The difference between profile 3 and 2 mainly can be summarised in the extension of the target dimensions, the affected participants, and the movement towards a more integrative and collaborative way of working amongst those participants in this PCMS.

Finally, the **profile 4**, which is **value-oriented**, shows the highest level of sophistication in all dimensions and again shows a higher degree of dissimilarity compared to profile 3. The mind-set shift here is to not only treat product cost as a stand-alone indicator but to interrelate it with value indicators as well. Equally, the involved functions following this

approach are not limited, neither are the joint or shared responsibilities, though product management is put into the lead to optimise the product value.

This necessitates a highly-integrated, cross-functional and globally-collaborating workflow, making use of a broad range of tools and methods which are systematically established. Furthermore, they should be interlinked with each other, supportive of a company-wide cost/value-culture and sensitive to the role of cost in delivering value to the customer and the company. Consequently, this thorough and pro-active approach suggests a high maturity level of the organisation, demanding the highest level of commitment and dedication on the motivational side as well as highly trained and skilled staff on the competence side. This is due to the comprehensiveness, coverage, and complexity inherent to all dimensions of the PCM-profile.

Having outlined the different PCM-profiles by means of supposed qualitative dimensions and attributes, the profiles' nature, however, is not only qualitative but also incorporates obvious quantitative elements as well. Those quantitative elements and attributes are indicated by formulations during interviews or in notes/memos such as 'degree of', 'level of', 'extent to', 'number of' etc. In addition, **the four PCM-profiles build upon each other, being able to be measured on an ordinal scale, e.g. from 1 to 4** in a way that each profile level includes the attributes of the previous profile level and adds new elements to it (**finding 4**).

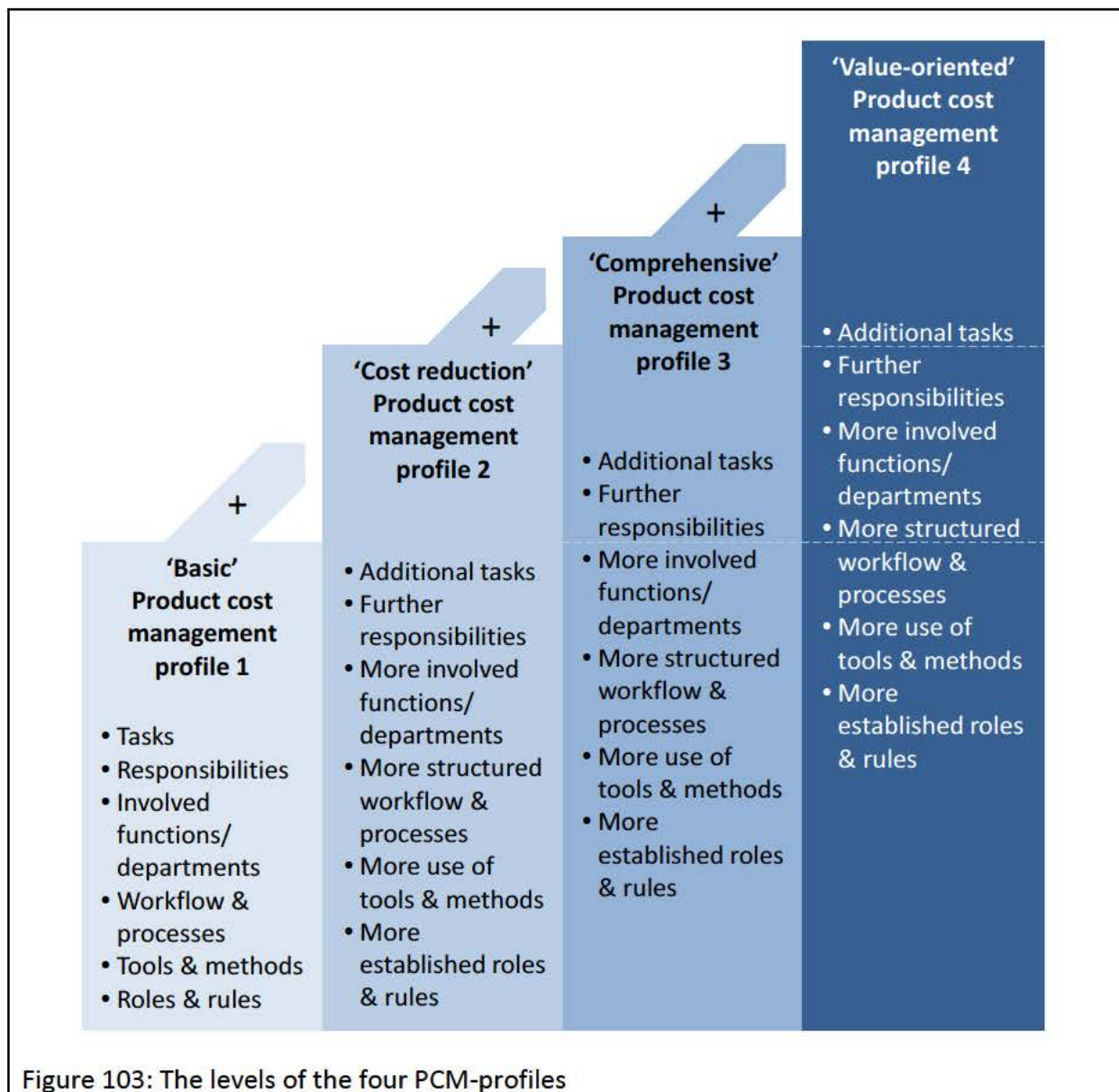
Three examples can serve as illustration: the dimensions of tasks, involved functions and methods & tools. With respect to the main relevant tasks, profile 1 concentrates on achieving product cost transparency only. Profile 3 incorporates product cost reduction tasks (to define the targets and monitor whether cost reduction targets are achieved, transparency is needed). Next to those product cost level related tasks, profile 3 adds tasks concerning cost structure and flexibility, which is another increase of the number of purposes. Additional comprehensive functions are included into profile 4, adding to all previous profiles the perspective of value-delivery (to the market) so to oppose the incurred product cost with the value the product delivers to the customer.

The relation between the profiles when it comes to questions about involved functions is similarly straightforward. Profile 1 focuses mainly on Accounting providing reports on product cost as needed by any relevant stakeholder. Profiles 2 and 3 add to this focus selected other functions such as Engineering, Purchasing or Manufacturing as those functions are, amongst others, main drivers of product cost level, structure and flexibility. Finally, profile 4 does not limit the amount of involved functions and departments to only a few, but views PCM as a global task integrated in a company-wide business culture with potential contributions from all over the organisation, e.g. Quality. Therefore, this dimension also shows the characteristic that the profiles are built-on to each other.

The number of methods & tools used, along with the frequency of their usage and their diffusion within the company is used as the third example to illustrate the quantitative dimension in the PCM-profile's nature. Profile 1 limits itself to a few bookkeeping methods only, whereas profile 2 extends those methods to systematic product cost monitoring methods and tools, however these are only sporadically used in isolated settings. This clearly shows a limitation regarding frequency and diffusion. In particular, the delimitations on frequency distinguish profile 3 from profile 2, as the tools and methods are applied more often and over a longer period (having an episodic touch). A company implementing profile 4 would go even further and establish a comprehensive tool set, which would be permanently used and shared by a variety of participants all over the company.

These characteristics, found in each dimension of the PCM-profiles' descriptions, indicate a quantitative element, that can be built on-top of each other and are measurable with an ordinal scale (figure 103).

Looking at available literature and common practices in (cost) management, there are quantitative maturity or excellence models available. Balachandran and Balachandran (2005) and Balachandran and Srinivasan (2012) suggest different levels of cost management maturity in a similar way. With a cost management maturity concept, they find some proponents also advocating the logic of a building-up-on-each-other thought (Cokins, 2013; ICAI, 2013; McKinsey, 2013; Meyer, 2008; Patil & Kshatriya, 2016). Considering general management research and practice, this finding therefore seems plausible.



The discovered quantitative dimension of the PCM-profiles does have two implications. Firstly, it offers the opportunity to confront the profile level with the PC-relevance in order to define a 'Strategic-Fit-Matrix' as described in chapter 4.8.2.2.4 (p. 264). Secondly, the differentiation between the different profiles cannot be as clear-cut and discrete as the description of the four profiles might suggest. This is due to the fact that not each and every 'add-on' within one or few of the dimensions justifies a jump to the next profile level but incrementally stretches a profile x towards the direction of profile $x+1$.

Therefore, sharing the responsibilities of product cost management across more functions than in the described profile 2 does not automatically lead to a profile 3 PCM-organisation. In a similar way, an exclusion of product cost flexibility targets of a profile 3 PCM-organisation only, would not necessarily suggest a drop of the PCM-profile level.

Consequently, there are grey areas of overlaps and foggy borders and the four profiles can be regarded as stereotypes for building the base for an active 'Profiling'-process on a more detail level. 'Profiling', therefore, is not a pure selection out of four profiles only but demands the definition and establishment of each and every dimension according to the strategic needs of a company, once the principle profile is selected as a starting point.

4.8.2.2.3 Findings on product cost relevance as decisive factor

PC-relevance appeared as a concept/category from the very beginning of the study as one of many other concepts/categories. However, in **finding 5**, it turned out that **product cost relevance is the decisive factor** when it comes to the question of what impacts the answer of how to organise the PCM-activities. It gained its dominance only during step 4 (chapter 4.5.2.1, p. 216), when discovering the relation between all categories in question. It is distinct and different in a way that it was the only concept showing a quantitative nature, easily being divided by interviewees into low, medium, and high. It is therefore measurable and shows simplicity and a mono-dimensional character.

The dominance is not a result of any 'higher load of codes' in its category but its relation to the other concepts under investigation. **Finding 6** indicates that **product cost relevance is mainly informed by the market's KSFs and the company's strategic directions**. More precisely, it is not a standalone criterion, but a result, outcome, or consequence generated by a company's strategic directions and its market's KSFs. Both categories differ in a way that the KSFs are externally determined whereas the strategic directions of a company are internal decisions.

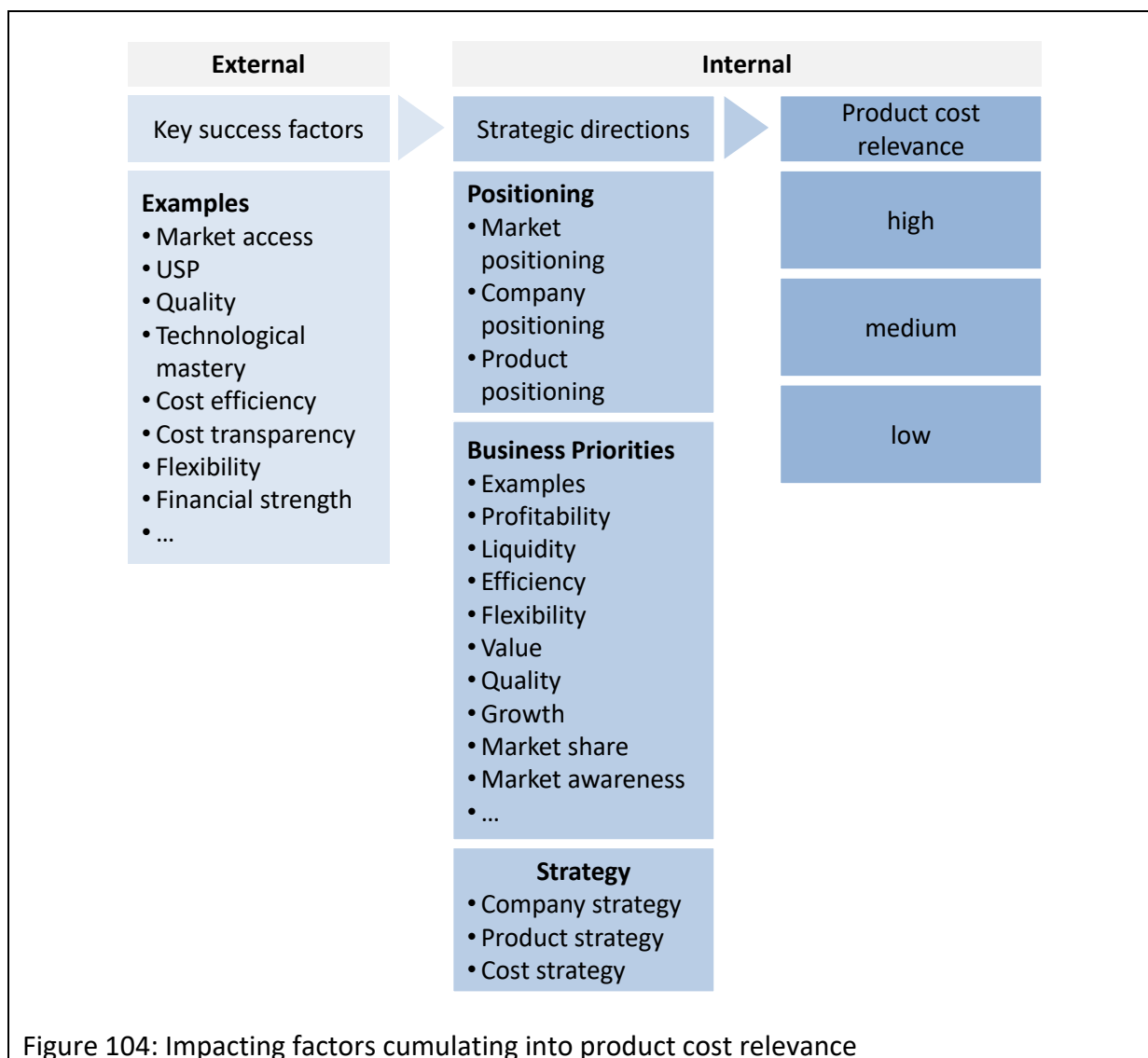
There are potentially numerous KSF on different markets (e.g. for current studies: Mihajlović, Marinković, & Rakićević, 2022; Pozzi, Rossi, & Secchi, 2023), but the study did

not reveal any particular factors as being especially relevant. Examples stated by interviewees (also in this case commonly known in management practice) were market access, USP, quality, technological mastery, cost efficiency/transparency, flexibility, or financial strength (chapter 4.4.2.6, p. 210).

The relevant **company's strategic directions include the positioning, the business priorities and the strategy (finding 7)**. Regarding the latter, **finding 8** shows that **the main strategies to consider are the company's overall strategy, the product strategy, and the cost strategy** (4.4.2.3, p. 205) and that **positioning comprises market, company and product positioning** (4.4.2.7, p. 210). Lastly, business priorities (BP) show similar characteristics as KSF and have not been limited to a specific set but were exemplarily mentioned during the interviews. These were profitability, liquidity, efficiency, flexibility, value, quality, growth or market share/awareness (4.4.2.4, p. 207).

Due to the similarity of codes and concepts, the distinction between KSF and BP was discovered quite late during the study (after interview 34, step 3, chapter 4.4.2.6, p. 209), which underlines the value and importance of constant comparison and 'staying open' for new discoveries during the research.

Figure 104 on the next page visualises these findings accordingly, showing how KSF inform and trigger strategic directions which themselves inform/trigger the PC-relevance and how each category can be broken down into more detail. At this point, it has to be mentioned that not only has the data prompted the principle relation between KSF and strategic directions but also the theoretical sensitivity resulting from the researcher's experience.



Literature as additional data was not needed to be reviewed as it is a reasonable assumption that external factors, such as KSF, are considered in strategic management as a major input.

4.8.2.2.4 Findings on the ‘Strategic-Fit-Matrix of Product Cost Management’

Having outlined the basic categories which have been discovered during the GT process, the remaining part portrays the findings addressing their relation, how they are linked and what mechanism to apply. These findings mainly developed during the final steps, when working was highly conceptualised (using memos, notes and sometimes coding data) and with high theoretical sensitivity gained from over twenty years of management and consulting practice.

Consequently, finding 9 is that opposing the profile's level to the product cost relevance can span a matrix of strategic fit with areas of match and areas of mismatch. The visual of a matrix arose from memos, capturing ideas about a meaningful way to oppose two dimensions. These memos essentially documented not only the researcher's expertise in presenting potentially-related criteria but also took up common management techniques and methods from the content of many text books (e.g. Lippold, 2020; Madsen, 2017; Siddiqui, 2021). Therefore, managers and decision makers are well aware of the rationale a matrix inhibits, which should ensure the reception and acceptance of the findings by managers in particular in this section.

In the matrix (4.6.2.2, p. 233), there are three zones (figure 105). The target zone is the zone of strategic fit. In that, the PC-relevance and the level of the PCM-profile match accordingly: low PCR is aligned with low level of PCM-profile, high PC-relevance is aligned with high level of PCM-profile etc.. Yet, there are two additional zones: the zones of strategic mis-fit.

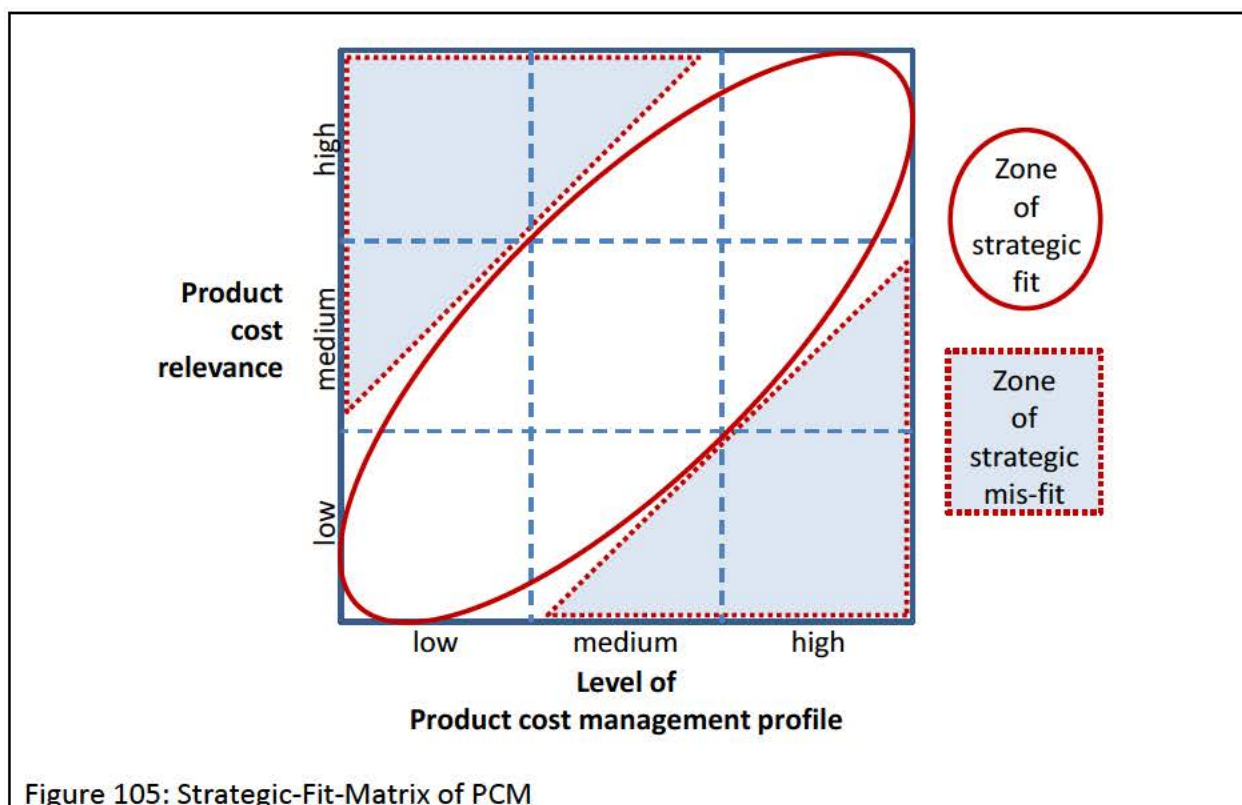
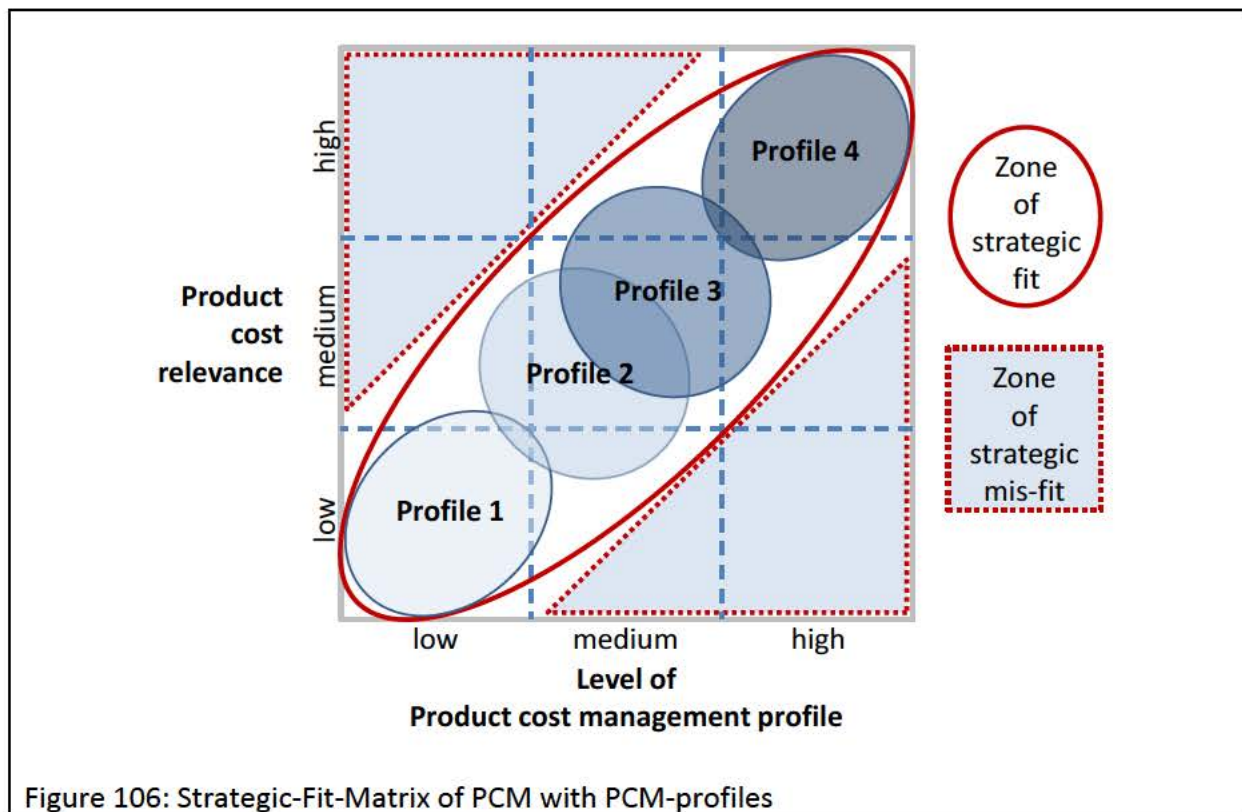


Figure 105: Strategic-Fit-Matrix of PCM

The rationale of this 'Strategic-Fit-Matrix of PCM' (chapter 4.7.2.1, p. 239) is that the product cost relevance in a company and the so-called level of the company's PCM-profile

should be in alignment (finding 10). This alignment, also labelled strategic fit in organisational theory (Chorn, 1991; Lindow, Stubner, & Wulf, 2010, p. 167), strongly suggests a positive impact on company performance (Prajogo, 2016). That is the reason why this finding has a normative character (for those companies striving for performance).

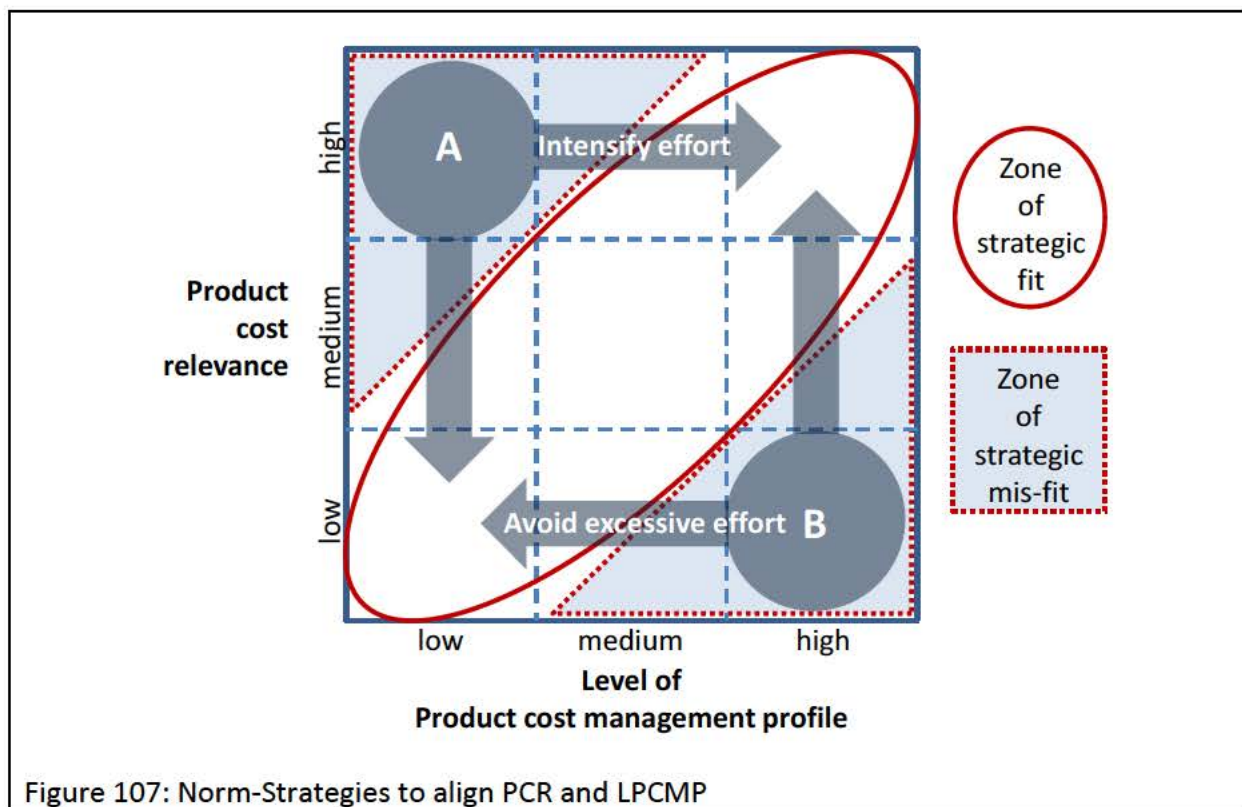
Preferably, the relation between PCR and LPCMP are aligned and the position within the matrix is in the zone of strategic fit (figure 106). A high number of codes and concepts, only differing in terms such as 'in line with', 'matching with', 'balanced with' or 'derived out of' (Figure 75, p. 204) were used to describe the same phenomenon, thereby developing trustworthiness into the aligning construct. A low PCR would trigger the company to establish a PCM-organisation as described in profile 1. A high PCR would trigger profile 4.



As the PCM-profiles are assumed to not be perfectly distinct from each other, overlaps may occur, which is also visualised in the figure. As explained in chapter 4.8.2.2.2 (p. 258), the overlap of profile 2 and 3 is bigger than the other two overlaps due to their higher similarity of attributes within the outlined dimensions.

Alignment is not achieved in all cases, but the relation can result in a position within the zone of strategic mis-fit. In those cases, normative recommendations can be formulated as follows (figure 107).

In Case A of mis-fit, a high PC-relevance indicates the need of a high profile level of PCM, however only a low-level profile is implemented, demonstrating that the company has to increase the profile level and has so far 'not done enough' to meet the required level. Case B of mis-fit turns this logic upside-down with a low PC-relevance suggesting a low-level profile, whereas a high-level profile is implemented leading to excessive effort, which is actually not needed, so the LPCMP should be decreased.



In both cases, however, alternative recommendations could be formulated. In Case A, the company could also lower their PC-relevance to arrive at an aligned position. In Case B, the PC-relevance could be increased to land at the top right position, also indicating an alignment. These alternatives challenge the question of how, in practice, the alignment should be executed, along with which mechanism to follow. The next section takes this question up and specifies on an actionable level how to arrive at alignment and strategic fit.

4.8.2.2.5 Findings on the '3-Stage-SRP-Alignment-Procedure'

So far, the findings outlined in the previous sections mainly addressed single or combined components about PCM-activities and their decisive factors as the 'what to look at' when approaching PCM-organisations. **Finding 12** postulates the recommendation to engage in a '3-Stage-Alignment-Procedure' of 'Strategising-Relevancing-Profiling' (SRP) that solves the managerial problem, representing the 'how' of the thesis' theory in an actionable way.

The discovery of this procedure stretched across step 2 to step 7, yet it started to take form during step 4 (chapter 4.5.2.2, p. 218) and also received input from general alignment theory when incorporating extant literature in step 6 (4.7.2.1, p. 239). Its rationale can be visualised by a circular 'lock' (figure 108) appearing as different 'discs' of KSF, SD, and PCR which would have to be aligned to arrive at a specific appropriate PCM-profile.

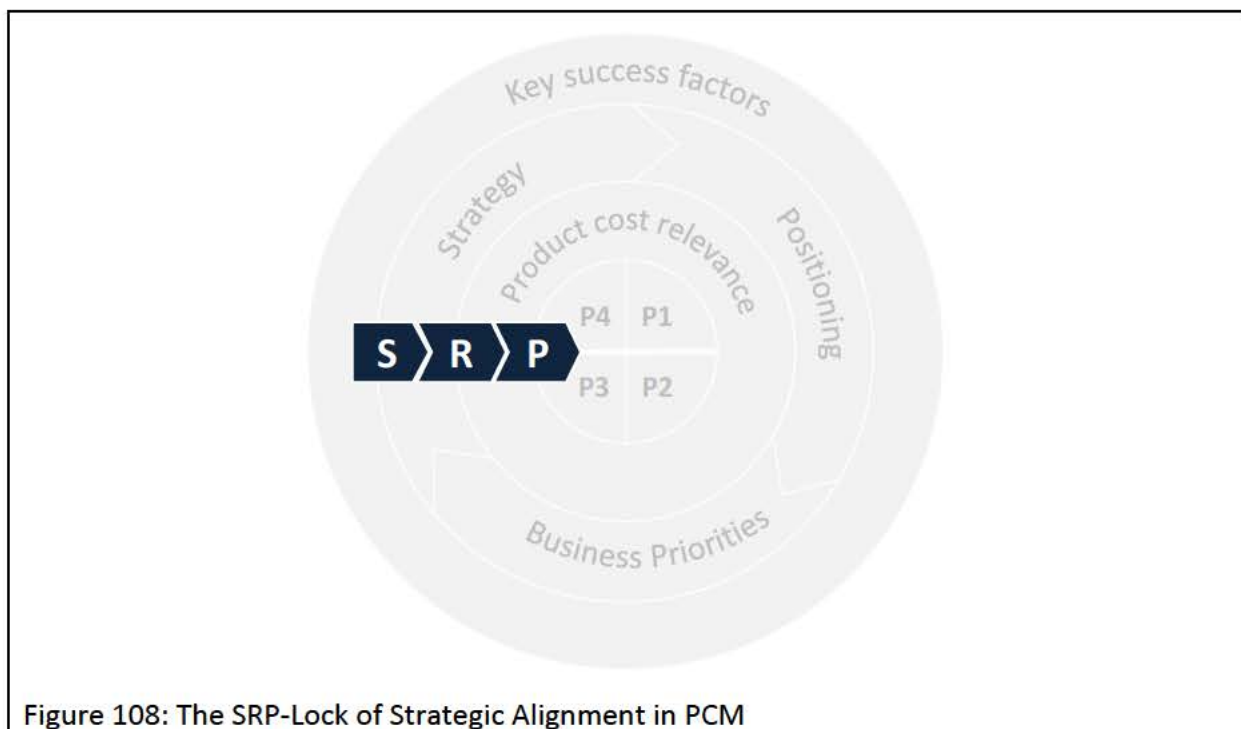


Figure 108: The SRP-Lock of Strategic Alignment in PCM

Consequently, it centres the novel classification of four different PCM-profiles impacted by the relevance of product cost as the dominant decisive factor. This relevance is informed by the company's strategic directions which have to be aligned with the KSFs of the company's external environment, ultimately leading to a strategic fit of the PCM-profile. Following this recommendation will lead to a positive impact on company performance and avoid disproportional effort on the management of product cost.

Ideally, in **Stage 1, 'Strategising'** should ensure the external strategic alignment of a company's strategic directions with the company's external environment (figure 109). The external environment typically exhibits criteria which are critical for being successful on the market, known as external KSFs. Amongst these, there are factors such as market access, selling proposition, quality, technological mastery, cost efficiency, cost transparency, flexibility, or financial strength, to name but a few.

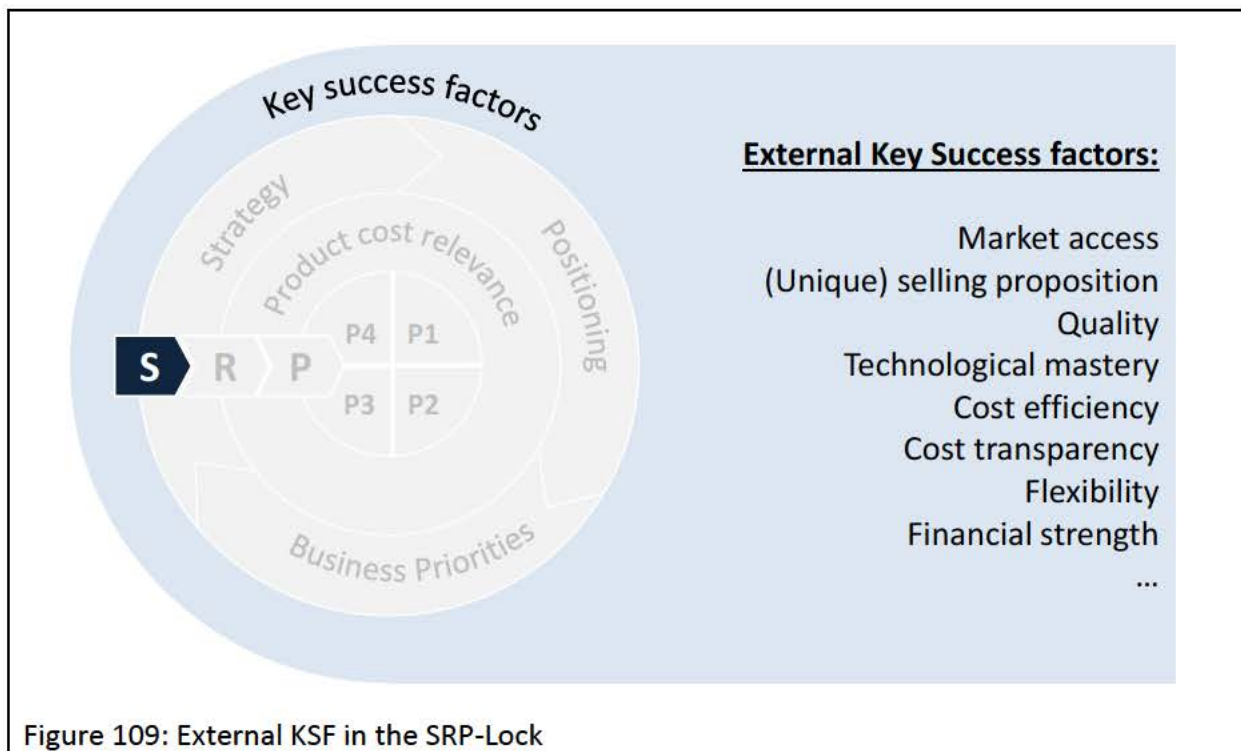


Figure 109: External KSF in the SRP-Lock

The KSF can hardly be influenced by the company but one has to be aware of and understand them in order to consciously develop and define the strategic directions of the company in alignment with them. This process is labelled as 'Strategising': aiming to align the company's positioning, its business priorities, and its strategies with the external KSF.

However, the external alignment is only the first step within the alignment approach as, within the strategic directions, all elements amongst each other need to be in line as well (figure 110 on the next page). Moreover, the company's positioning should preferably be developed first by taking up the external KSF, with the company's business priorities derived out of the positioning, which, thirdly, informs the strategy-defining process.

More specifically, three types of a company's positioning do impact upon product cost management: market positioning, company positioning and product positioning. Whilst the company's overall market and company positioning are the dominant factors, product positioning, despite being more specific and subordinate, influences the way product costs are managed to a lesser extent. This indicates already that PCM is, in principle, a company-wide approach and not limited to sole product perspectives only.

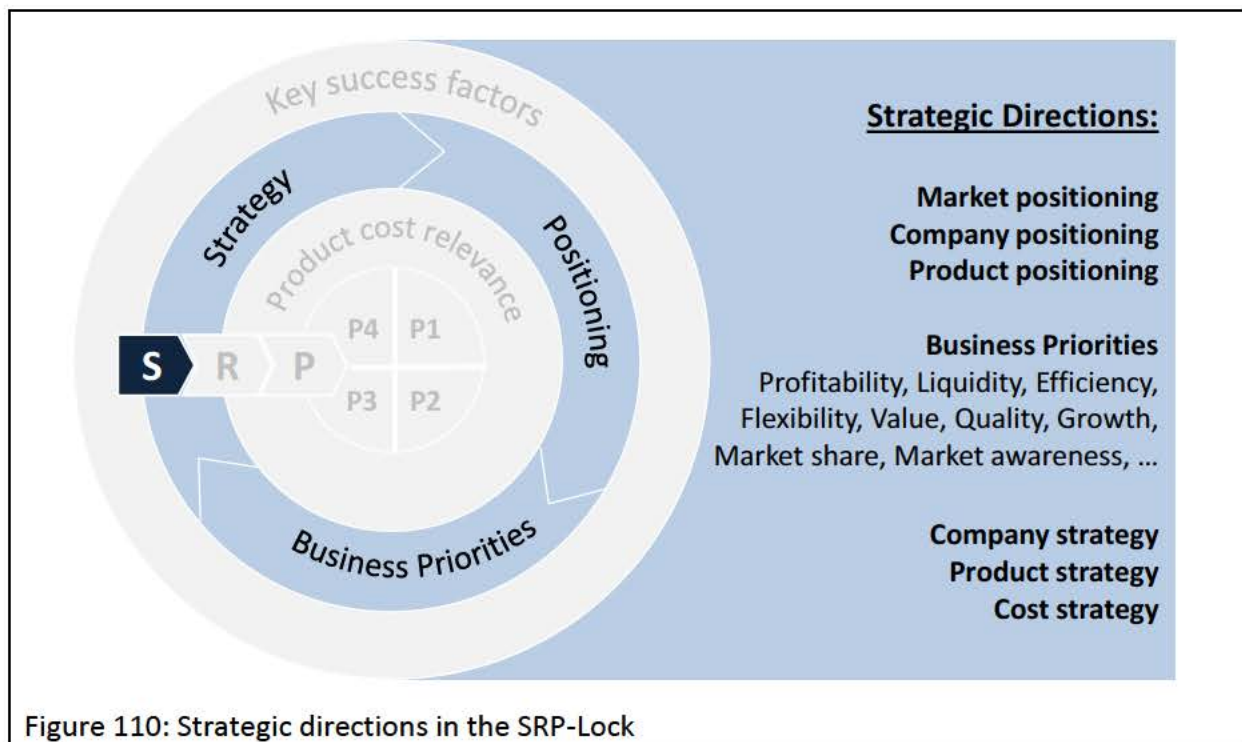


Figure 110: Strategic directions in the SRP-Lock

Business priorities are derived out of the positioning of the company. Amongst these, there are priorities such as profitability, liquidity, efficiency, flexibility, value, quality, growth, market share or market awareness. Notably, there is a distinction between priorities and targets. A company can have targets on every dimension/indicator separately and in parallel, yet the different priorities are the drivers for the management of product cost. Again, business priorities that are more general and overarching (and not any departmental or functional priorities) play a greater role compared to other, more specific or subordinate, priorities.

Similarly, strategies show the same characteristics as the concept of positioning: the three relevant types of strategies are the company strategy, the product strategy and the cost strategy. As the company's overall strategy is the dominant factor, it goes without saying

that it has to be considered when addressing the topic of PCM and only as a secondary factor in relation to any subordinate strategies, such as on the product level.

This phenomenon can be explained and understood with consideration of the fact that within a company with more than one product there is still only one way of managing product cost and not multiple different ways to do so. Consequently, not only does the principle 'SRP-Procedure' support the strategic alignment theory but also the actions within. Criteria, covering the overall company, play a greater role compared to partial or lower level criteria such as product related criteria or cost criteria.

It can therefore be concluded that in stage 1 of the SRP-approach multiple alignment efforts already have to be undertaken: external alignment with the market environment's KSFs and internal alignment on the strategic level between positioning, priorities and strategies.

Moving towards **Stage 2, 'Relevancing'** ought to compress and translate the strategic directions from the 'Strategising' phase into a relevance score, displayable on an ordinal scale and indicating the overall relevance of product cost for the company (figure 111). Still on the strategic level, it is, as for stage 1, also an intellectual alignment effort.



Figure 111: Product Cost Relevance in the SRP-Lock

Having condensed the strategic directions of the company into one score of PC-relevance the dominant contingency factor is defined. It is the expression of the company's overall importance of product cost, impacted by the strategic directions which, intentionally or not, have been defined prior to the 'Relevancing' efforts.

In other words, the relevance of product cost is a function of the product cost related elements of the company's strategic directions, namely its positioning, its business priorities and its strategies. PC-relevance cannot simply be set, detached from the strategic directions but it has to be internally aligned and derived from the strategic directions which have been defined first.

This furthermore implies an active engagement primarily with the company's overall market positioning, its main business priorities and the company's overall strategy rather than the specific product-related elements. Viewing the company as a whole, this incorporates a vertical alignment dimension indicating the potential influence that PCM-activities can have on the company's organisation.

To illustrate: a company which is positioned as an innovative-sustainable pioneer, showing business priorities of market awareness and growth and following a growth strategy to penetrate its regional home market is likely to have a lower PC-relevance than a company positioned as 'low-price-good-quality' with priority given to profitability and a company strategy focussing on customer loyalty and retention.

'Relevancing' consequently requires the existence, the awareness and understanding and the consistency of the company's strategic directions emphasising company-wide elements over product-related aspects as PCM is a potentially company-wide topic.

Finally, **Stage 3, 'Profiling'** is the heart of the 'PCM-Alignment-Theory', fuelling the decision of how to organise the PCM-activities, linking PC-relevance with a set of comprehensive PCM-profiles (figure 112).

But, similar to the previously outlined engagement with strategic directions during the ‘Relevancing’-stage, ‘Profiling’ contains more than simply selecting one specific PCM-profile out of various alternatives. The reasons for this are twofold.

First, the identified profiles are stereotypes only and factually are not that clear-cut due to the variety of dimensions and attributes characterising the profiles. Second, company-specific circumstances might overrule more characteristics thereby making them impossible to implement.

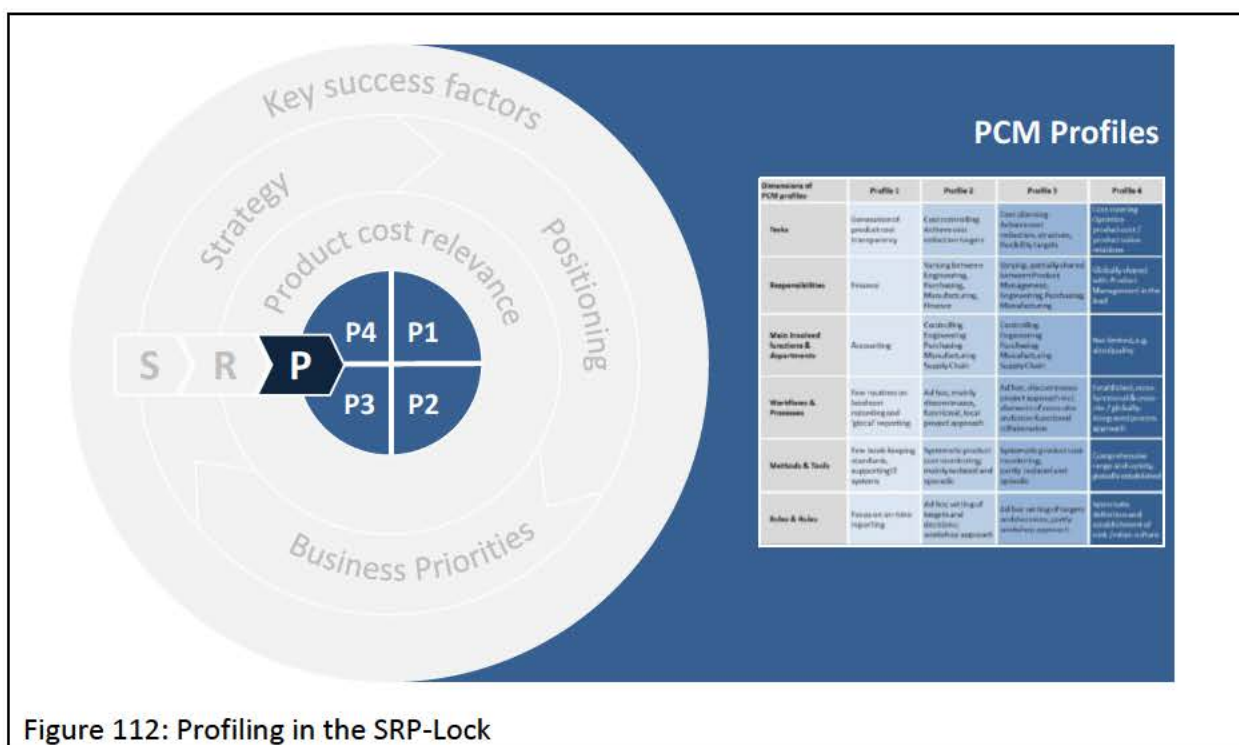


Figure 112: Profiling in the SRP-Lock

Jointly, these reasons require dedicated thoughts and decisions on how to shape the PCM-activities and create the factual PCM-profile in close connection to (and based upon) the four principle stereotypes. This is why it is labelled as ‘Profiling’ and neither ‘Selecting’ (as it is not only choosing and then establishing the profile 1 to 4) nor ‘Designing’ (as it does not start from scratch but allowing small variations of principle profiles according to the company’s set-up).

4.8.2.2.6 Findings on the 'Alignment-Theory of Product Cost Management'

Having identified the thirteen findings in solving a relevant-yet-researchable problem, and, in addition, as a major concern in practice, the thesis' ultimate finding (**finding 14**) is stated in a way that **all findings summed up can be headlined as the 'Alignment-Theory of Product Cost Management'**. More specifically, the following normative Alignment-Theory of Product Cost Management is proposed:

A classic Grounded Theory study informed by critical realism has revealed the answer to the question of how to organise PCM-activities by discovering a comprehensive '3-Stage-SRP-Alignment-Procedure of Strategising-Relevancing-Profiling'. It consists of five key elements:

- *Four 'Profiles of Product Cost Management'*
- *The decisive factor 'Product Cost Relevance'*
- *Further impacting factors 'Strategic directions' and 'external KSF'*
- *The 'Strategic-Fit-Matrix of Product Cost Management'*
- *A '3-Stage-Strategising-Relevancing-Profiling-Procedure'*

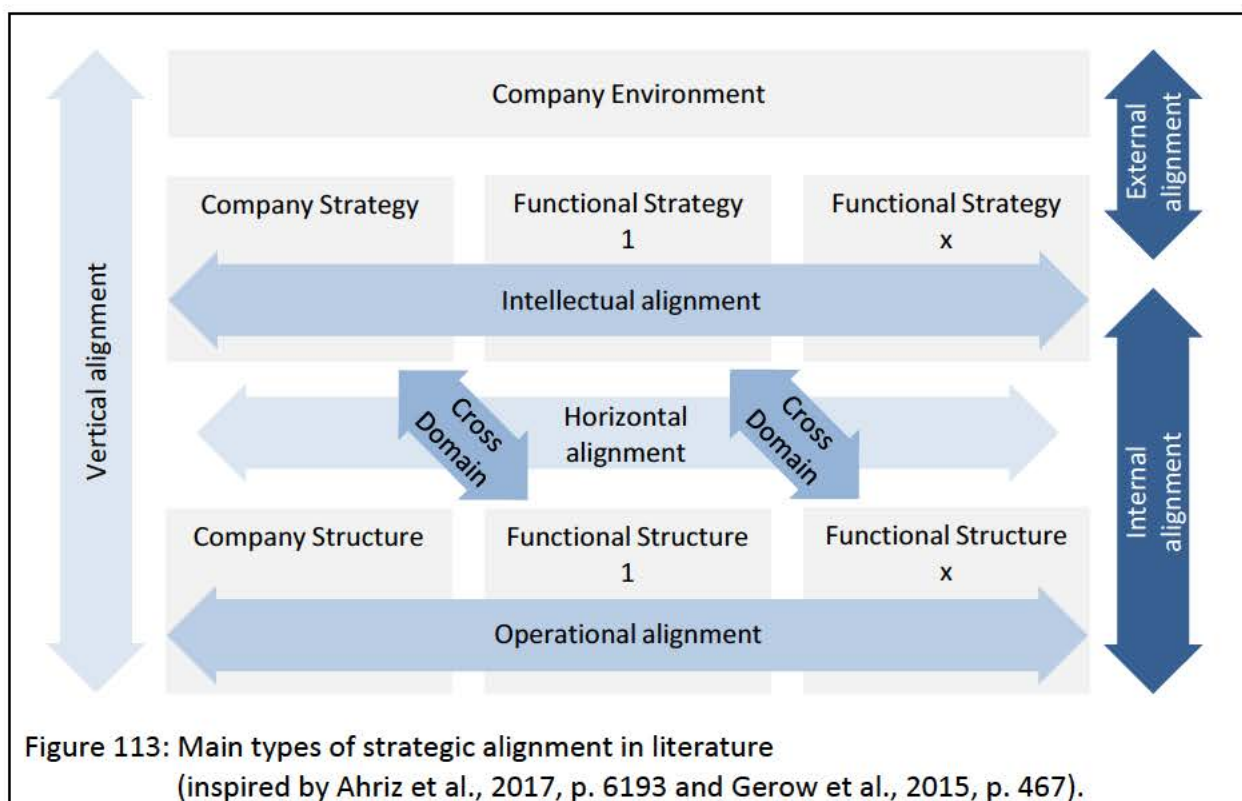
Having sketched the discovered alignment theory with the five key elements, they jointly contribute to a comprehensive alignment as summarised after the second literature review in chapter 4.7.2.1 (pp. 239-243). Putting the thesis' alignment theory into context (chapter 4.7) there is a variety of different alignment directions.

Alignment on the strategic level is labelled intellectual alignment, alignment on operational level simply is labelled operational alignment (Gerow et al., 2015, pp. 467-468). Horizontal alignment takes up another distinction and is meant to be alignment on the same level, whereas vertical alignment aims for alignment on different levels (Andrews, Boyne, Meier, O'Toole Jr, & Walker, 2012; Salimian, Khalili, Nazemi, & Alborzi, 2012, pp. 12018-12021).

Finally, a distinction can be made between internal and external alignment, indicating alignment within a company or with the company's environment (Prieto & de Carvalho, 2011, p. 1407; Prieto & de Carvalho, 2018; Yeh, 2017, p. 10).

Referring to Ahriz et al. (2017, p. 6193) and Gerow et al. (2015, p. 467) the following alignment directions are covered (figure 113):

- External alignment: Alignment of external key success factors with strategic directions of the company through 'Strategising'
- Internal alignment: All alignment steps of 'Relevancing' and 'Profiling'
- Vertical alignment: Consequent alignment according 'SRP-Procedure' starting from external key success factors down to single attributes of a PCM-profile
- Horizontal alignment: Alignment of involved functions as well as responsibilities and accountabilities across functions in the 'Profiling'-stage
- Intellectual alignment: Alignment of company positioning, business priorities and company strategy in the 'Strategising'-stage
- Operational alignment: Structural alignment across functions in the 'Profiling'-stage
- Cross-domain alignment: Alignment of workflow & processes and roles & rules



These distinct directions with their comprehensive coverage of alignment perspectives demonstrate the integrative power of the CRGT's core category of 'Aligning'. 'Aligning' fully resolves the main concern, the managerial problem of how to organise PCM-activities. It does include a major strategic alignment element in terms of intellectual and vertical

alignment during the 'Strategising' and 'Relevancing'-stage (which is why the core category was labelled 'strategic alignment' in an intermediate phase) but it goes beyond this. Mainly the 'Profiling'-stage adds also operational and horizontal alignment and particularly cross-domain alignment if needed.

Importantly, one should not mix up internal alignment with the involvement of internal functions. As the profile descriptions show, one can align perfectly with certain functions that are not to be involved. The opposite should not be the case. Similarly, the misalignment, leading to mis-fit, can take two principle forms: either the profile level is too low compared to the PC-relevance, which indicates a situation in which the company's product cost management is too restricted/frugal/shy or the opposite can be stated, that the profile level is too high compared to the PC-relevance, which indicates a situation in which the company's PCM shows excessive effort/waste of resources.

Furthermore, as it has been shown that the various types of alignment are covered by the thesis' findings, it is justified to label the theory as an 'Aligning-Theory'. Its rationale is next to the alleged impact on company's performance as a practical implication for decision-makers seeking advice in relation to organisational theory, as soon as it comes to questions relating to the organisation of PCM-activities. This triggers the explication of formally answering the initial research questions (2.5.3.2, pp. 69-70) as well.

Having outlined the theory's rationale, the theory itself is clearly allocated within strategic alignment theory and the closely linked theory of strategic fit, both of which are part of organisational theory's contingency theory (Eva et al., 2018; Garlichs, 2011, p 3; Marín-Idárraga & Cuartas-Marín, 2013). These theories unambiguously claim a positive relation of high strategic fit or strategic alignment with company performance and/or efficiency and efficacy (Gupta & Zhang, 2019; Walter, Kellermanns, Floyd, Veiga, & Matherne, 2013).

In other words, the alignment theory can be labelled as a 'success factor of PCM' in a sense that 'the higher the level of alignment, the higher the success of the PCM'. However, remembering the initial scoping literature review, for cost management overall success factors have been investigated which do not include alignment. Instead, aspects of the PCM-

organisation itself have been listed, indicating that a more ‘comprehensive’, ‘systematic’, ‘participative’, ‘interdisciplinary’ approach leads to higher levels of success (2.4.2.2, p. 41).

What seems to be a contradiction at first sight, actually is a support of the extant knowledge by the thesis’ findings as well as an extension of it. The supporting part of the findings is that the four different levels of PCM indicate a higher level of sophistication as the ‘more of XYZ, the higher the level’ similar to much of the existing literature.

Theory overview	
The Alignment-Theory of Product Cost Management	
Theory component	Instantiation
Means of representation	<ul style="list-style-type: none"> * Words * SRP-Lock of Product Cost Management * Strategic-Fit-Matrix of Product Cost Management * Table of four Product Cost Management Profiles
Primary constructs	<ul style="list-style-type: none"> * Aligning * Strategising, Relevancing, Profiling * Product Cost Management Profiles, Product Cost Relevance * Key Success Factors, Positioning, Business Priorities, Strategies
Statements of relationships	<ul style="list-style-type: none"> * Sequential 3-Stage Alignment Procedure * Product Cost Relevance as function informed by external Key Success Factors, Positioning, Business Priorities, and Strategies
Scope	<ul style="list-style-type: none"> * Product Cost Management activities in profit-oriented companies of the manufacturing industry in Germany-Austria-Switzerland (GAS)
Causal explanations	<ul style="list-style-type: none"> * Contingency Theory (of which the thesis' Alignment-Theory is part of) postulates that there is no single optimum way for all companies to, in this case, organise product cost management activities. * Rather it is a question of fit between the organisational product cost management profile level and the dominant contingency factor, in this case, product cost relevance.
Testable propositions	<ul style="list-style-type: none"> * The thesis' alignment theory should support companies to foster their company performance if strategic fit between product cost management profile and product cost relevance is achieved
Prescriptive statements	<ul style="list-style-type: none"> * The way you organise a company's product cost management should be aligned with the company's product cost relevance. * You should organise these activities with regards to four principle product cost management profiles. * The company's product cost relevance should strategically fit with the level of the product cost management profile. * This fit should be achieved by an alignment process following a 3-Stage-Strategising-Relevancing-Profiling-Procedure

Table 17: Structural components of the thesis’ theory (template from Gregor, 2006, p. 620)

Stating the obvious, the 'value-oriented PCM-level' has potentially more power to achieve cost-related targets than the 'basic level'. The extension of the success factor view in literature is to add a dimension of PC-relevance against which the effort or the intensity is mirrored. Doing so, disproportionate effort, resulting in escalating organisational cost, can be avoided when following the alignment theory.

Lastly, as it was the overarching goal of the research to develop a 'theory', the outcome should be challenged versus the expectations in order to justify the label 'theory' (Vander Linden, 2022b).

Walsh et al. (2020, p. 13) take this up and link their CRGT ambitions with Gregor's typology of theories (2006, pp. 619-621) including also explanatory and prescriptive theories (and so does Urquhart, 2023, p. 9). Aiming for a normative theory, this particular conceptual potential of CRGT towards prescriptive theory supports the critical realist approach chosen as "[critical] Realism, in all of its brands and in [the] social world, uses the notion of causal powers or underlying generative mechanisms as the seat of action and as the axis of explanation" (Pawson, 2013, p. 67).

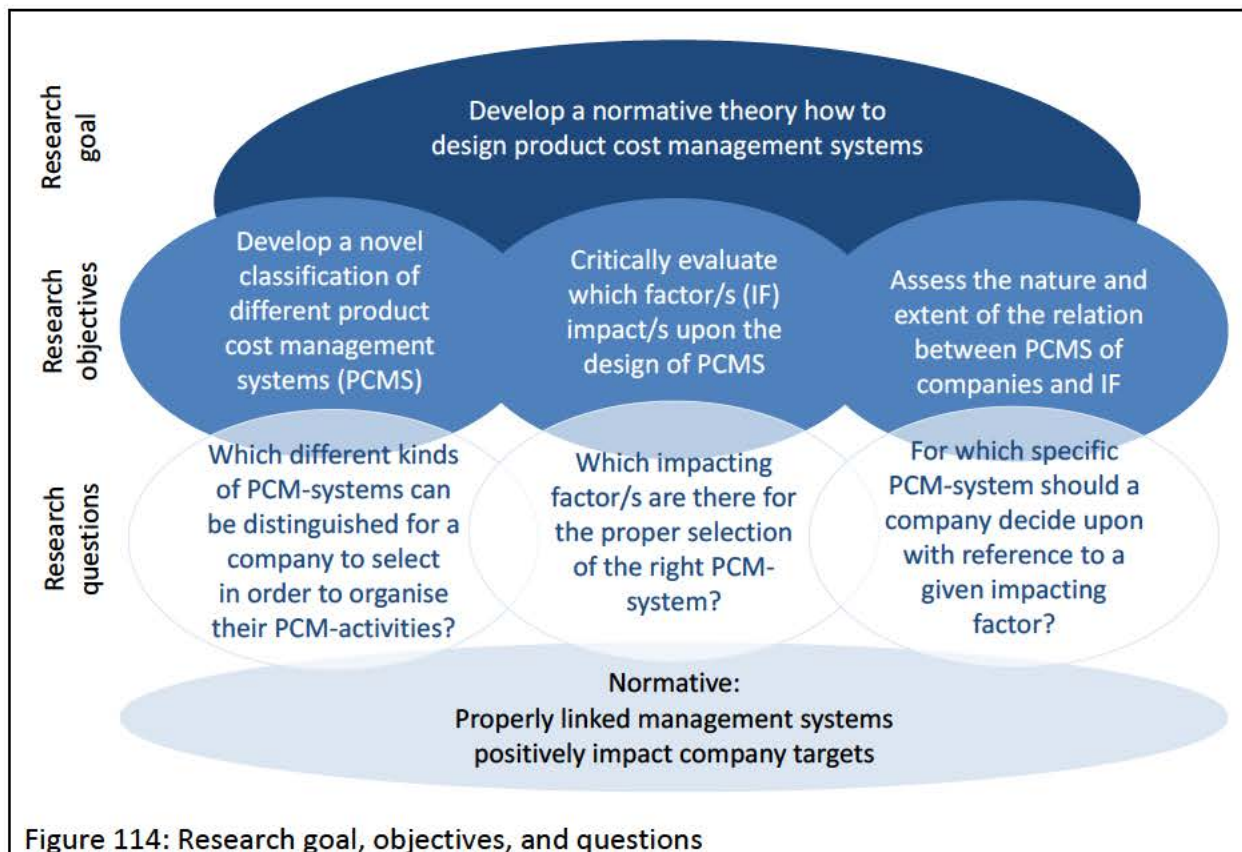
Referring to Gregor, the thesis outcome can be claimed to be a 'type 5 theory for design and action' as it indicates, "how to do something [and] gives explicit prescriptions (e.g. methods, techniques, principles of form and function)" (Gregor, 2006, p. 620).

The 'something' of the theory is the organisation of PCM-activities, whereas the 'how' of the theory is the '3-Stage-SRP-Procedure' with its included key elements. Also, Gregor's structural components of theories (Gregor, 2006, p. 620) are available: Means of representation, constructs and statements of their relationship and scope as shown in table 17. To label the thesis' theory as a theory, consequently, is principally justified.

4.8.3 Answering the research questions

Having presented the thesis' findings in the previous section as a whole, the final requirement is to explicitly answer the original research questions as stated in chapter 1.1 and 2.5.3.2.

Moving the focus away from the methodology's findings with its inherent jargon towards the view of the initial research questions is a redundancy that is consciously accepted. It serves a purpose by providing the shortest possible way to share the results of the research by closing the loop between questions and answers.



4.8.3.1 Question 1: Which different kinds of PCM-systems can be distinguished for a company to select in order to organise their PCM-activities?

The answer to the first research question about the existence of differing product cost management systems can be considered as being given by the specified four PCM-profiles. As 'system' was a catchword at the beginning, standing for any similar term such as 'type' or 'variant', the 'profiles' do cover the research's intention. The profiles themselves (figure 115 below) are distinguished by their PCM-tasks, the corresponding responsibilities and accountabilities, the main involved functions and departments, workflow and processes, methods and tools as well as roles and rules which are in place in an organisation (see 4.8.2.2.2, p. 255).

Although it should be assumed that the borders between the profiles are somewhat floating and not 100% clear-cut due to the variety of dimensions and attributes which are loaded onto the profiles, they are distinguishable from each other and guide the alleged selection process. A simple ‘selection’ however, with an easy-to-apply mechanism (as the research questions implies), has not been revealed in the obtained data. Rather the theory’s term of ‘Profiling’ suggests an adaptation of every dimension in each individual case.

Dimensions of PCM profiles	Profile 1	Profile 2	Profile 3	Profile 4
Tasks	Generation of product cost transparency	Cost controlling Achieve cost reduction targets	Cost planning Achieve cost reduction, structure, flexibility targets	Cost steering Optimize product cost / product value relations
Responsibilities	Finance	Varying between Engineering, Purchasing, Manufacturing, Finance	Varying, partially shared between Product Management, Engineering, Purchasing, Manufacturing	Globally shared with Product Management in the lead
Main involved functions & departments	Accounting	Controlling Engineering Purchasing Manufacturing Supply Chain	Controlling Engineering Purchasing Manufacturing Supply Chain	Not limited, e.g. also Quality
Workflows & Processes	Few routines on local cost recording and ‘glocal’ reporting	Ad hoc, mainly discontinuous, functional, local project approach	Ad hoc, discontinuous project approach incl. elements of cross-site and cross-functional collaboration	Established, cross-functional & cross-site / globally-integrated process approach
Methods & Tools	Few book-keeping standards, supporting IT systems	Systematic product cost monitoring; mainly isolated and sporadic	Systematic product cost monitoring; partly isolated and episodic	Comprehensive range and variety, globally established
Roles & Rules	Focus on on-time reporting	Ad hoc setting of targets and decisions; workshop approach	Ad hoc setting of targets and decisions; partly workshop approach	Systematic definition and establishment of cost-/value-culture

Figure 115: PCM-profiles to answer research question 1

Moreover, the profiles are not only distinct from each other but also show a hierarchical characteristic, being built-on-each-other, with higher-level profiles showing ‘more of

everything' compared to lower-level profiles (chapter 4.6.2.2, p. 230). In an attempt to label those four principle profiles, the attributes of profile 1 justify calling it a 'basic PCMP' as all dimensions of it show rather basic attributes.

Due to its value-oriented tasks as a main distinguishing factor, profile 4 can be labelled as 'value PCMP'. Similarly, taking the main tasks as an easy-to-understand criterion to label the PCMP, profile 2 can be labelled as the 'cost-reduction profile', whereas profile 3 might be called 'comprehensive PCMP' as it puts cost structure and flexibility into focus next to cost reduction. The identified PCMP are:

- Basic PCMP
- Cost reduction PCMP
- Comprehensive PCMP
- Value-oriented PCMP

4.8.3.2 Question 2: Which impacting factors are there for the proper selection of the right PCMS?

The dominant impacting factor for the PCM-'Profiling'-approach, to answer the second research question, was discovered to be the relevance of product cost in a company (4.8.2.2.3, pp. 262-264).

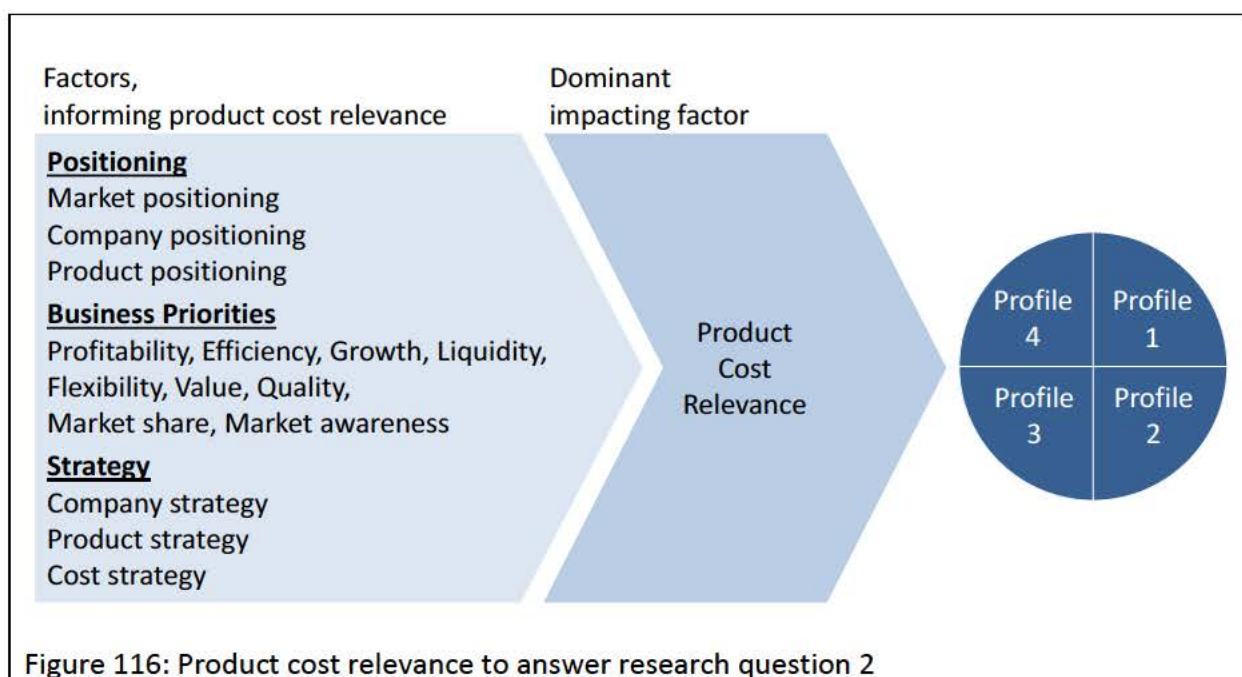


Figure 116: Product cost relevance to answer research question 2

But even though the relevance itself does seem to be a simple concept (with an ordinal scale being able to capture the result), the way towards it via 'Relevancing' seems much more sophisticated. PC-relevance itself seems to be a function of the diverse strategic directions of a company triggered by the company's positioning, its business priorities and the defined strategy (figure 116 on the previous page).

More specifically it turned out that market positioning, company positioning and product positioning are most important with regard to positioning dimensions with market positioning and company positioning assumed to inform PC-relevance the most (4.4.2.7, p. 210). For business priorities, profitability, liquidity, efficiency, flexibility, value, quality, growth, as well as market share and awareness, are the dominant priorities. Out of these, profitability and efficiency should be considered as triggering PC-relevance, followed by growth and liquidity and the rest of the stated indicators (4.4.2.4, p. 206). Considering strategies, company strategy, product strategy and cost strategy inform the relevance of PC-relevance. Out of these, the company strategy is considered as being the most influential, followed by product strategy and cost strategy (4.4.2.3, p. 205).

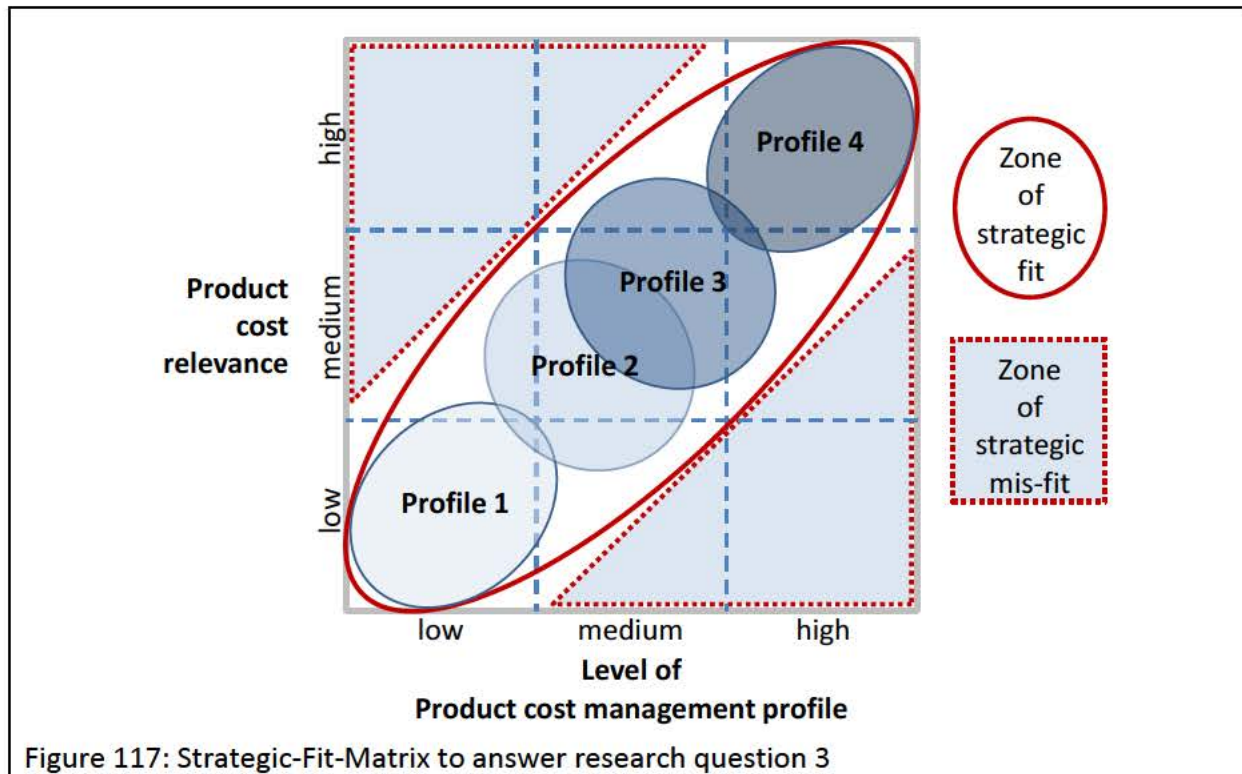
Lastly, the external market environment, showing its KSFs, has to be considered as well as it impacts upon the mentioned strategic directions of the company (positioning, business priorities and strategy), however, this is only indirectly. These KSF can take any form or type, as the study revealed examples of a limited list of an especially relevant set only.

4.8.3.3 Question 3: Which specific PCM-system should a company decide upon with reference to a given impacting factor?

Having answered research question 1 and 2, it is clear that the 'PCM-systems' are represented by the four 'PCM-profiles' and that the 'impacting' factor is the 'decisive' factor of product cost relevance.

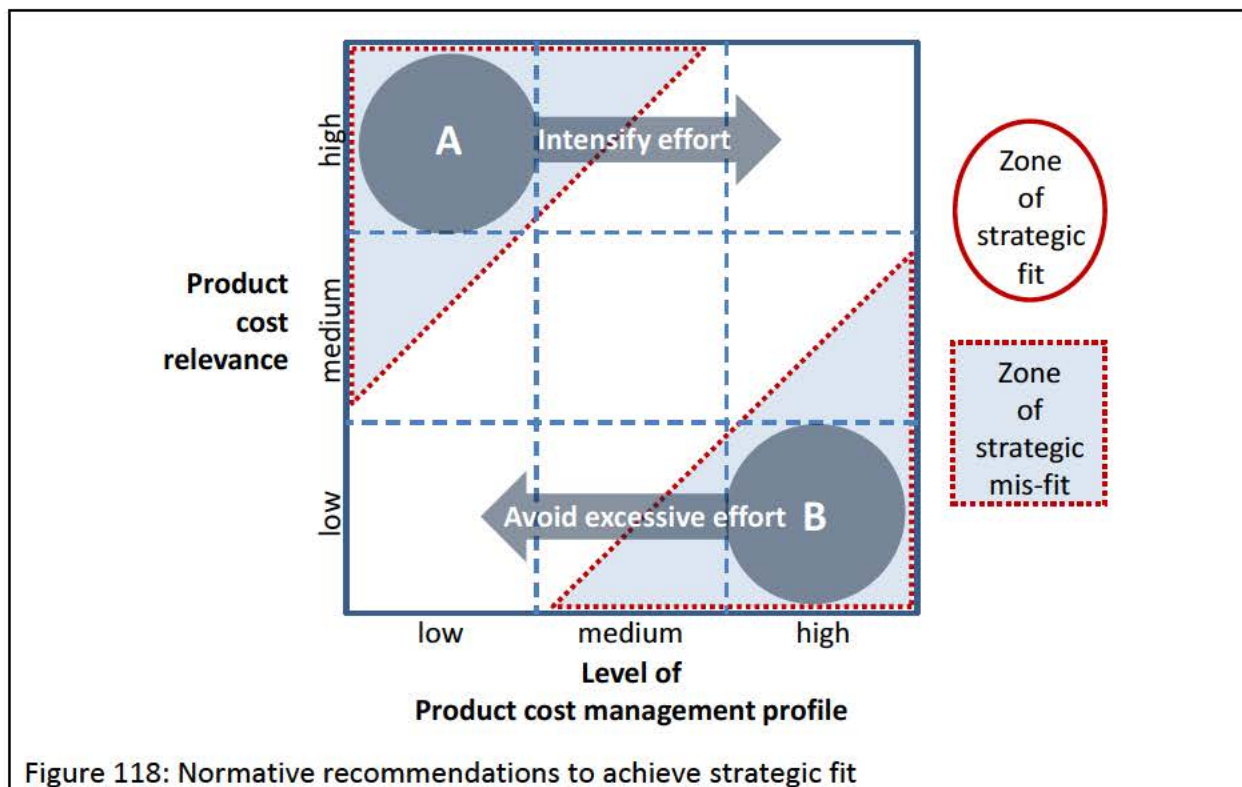
The relationship between the level of the PCM-profiles and the PC-relevance is straightforward in terms of answering the third research question: the higher the PC-relevance the higher the level of the identified PCM-profiles (figure 117). This then ensures the strategic fit of both dimensions, which is the ultimate goal of profiling the way product

costs are managed (4.8.2.2.4, p. 264). More specifically, this means that if a company shows only low PCR, it should decide correspondingly for a low-level PCM-profile 1. On the other hand, if the PCR is rather high, the PCM-profile 4 should be established.



This is a clear prescriptive finding, however this is less clear for 'middle or average' relevance scores compared to low or high PC-relevance which suggest the adoption of a type 1 or type 4 profile accordingly. For those mid-level relevance situations, it might be more difficult to decide whether to go for profile 2 or profile 3. This is why hybrid forms, considering even further contingency factors, should be expected to fit the company's specific situation even better.

Taking this finding and seldom starting from scratch, any existing mis-match of PCR and PCMP, which have not achieved strategic fit so far, should be transformed in a way that PCR and the level of the PCMP are again aligned with each other (figure 118). Consequently, there are two directions to consider: as the PCR is mainly fixed by the company's strategic directions, and the PCM has to be adopted accordingly. Either, the level of the PCMP has to be raised, if the PCR so far is higher than the profile's level or the profile's level should be decreased if it is overly high compared to the PCR.



Arriving at an ideal situation in which a company is, for whatever reason, free to align its PCM-activities with its PC-relevance from scratch, a '3-Stage-Aligning-Procedure' is recommended (see 4.8.2.2.5, p. 268). This procedure puts together all PCM-elements discovered and they are outlined in a meaningful and actionable mechanism, taking up the direction of the impacting factors as exposed by the study. It can be visualised as a 'SRP-Lock' of the 'Strategising-Relevancing-Profiling-Alignment-Procedure' moving from external KSF to the central PCM-profiles in three stages (figure 119). Referring to chapter 4.8.2.2.5, only a brief summary is provided to limit redundancies

During **Stage 1, 'Strategising'** should ensure the external strategic alignment of a company's strategic directions with the company's external environment. Ideally, the strategic directions are derived from the external KSF.

Moving towards **Stage 2, 'Relevancing'** ought to compress and translate the strategic directions from the 'Strategising' phase into a relevance score, displayable on an ordinal scale and indicating the overall (strategic) relevance of product cost for the company. Still on the strategic level, it is, as for stage 1, also an intellectual alignment effort.

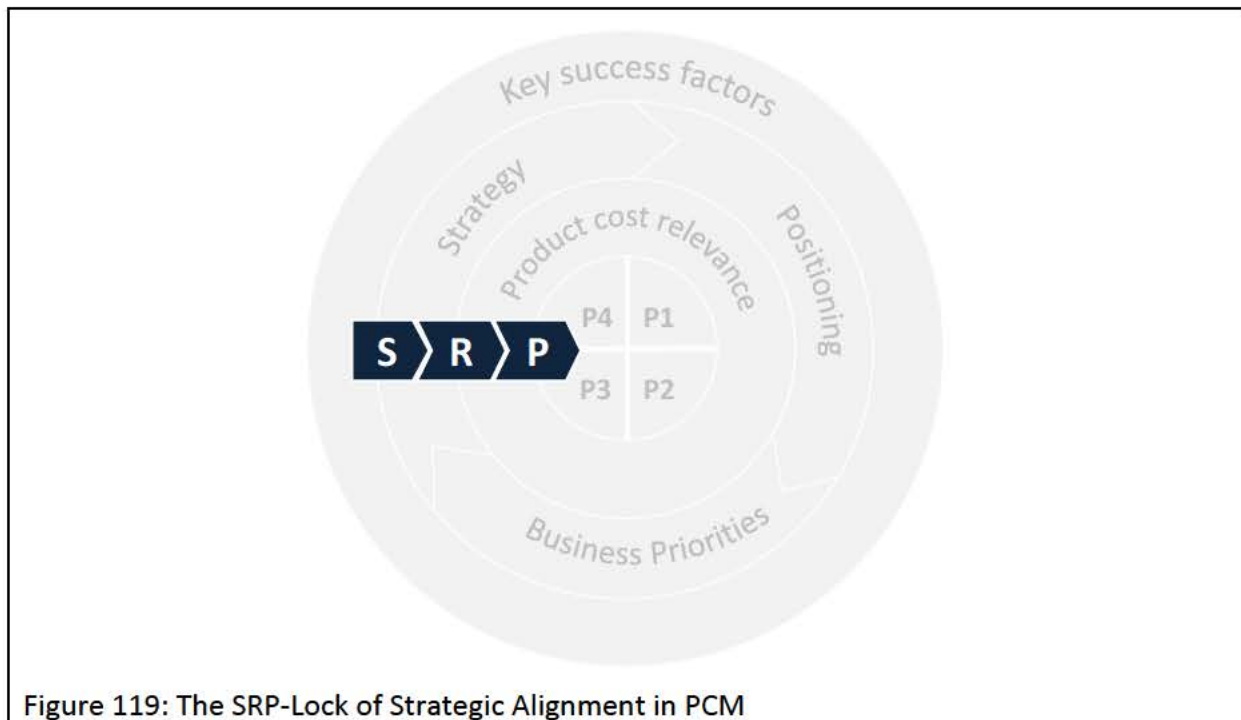


Figure 119: The SRP-Lock of Strategic Alignment in PCM

Finally, **Stage 3, 'Profiling'** is the heart of the 'PCM-Alignment-Theory', compelling the decision on how to organise the PCM-activities, linking PC-relevance (see research question 2) with the set of four itemised PCM-profiles and its incorporated dimensions (see research question 1).

4.8.4 Practical implications derived from the study

As previously stated, this study is all about providing a contribution to practice. This goal is set as a result of the relevance gap and the communication gap. Therefore, with respect to the latter, a dedicated transfer/translation should be provided to enable the research to deliver the highest possible impact (Ren & Bartunek, 2020). Research, to be practical, consequently has to "answer the question of 'what do I need to do - that I haven't done so far, or that I need to do more of, less of, or differently – and how do I do it?'" (Wickert, Post, Doh, Prescott, & Prencipe, 2021, p. 8). In doing so, the 'so what' question can be answered in case the research was too theoretical or not specific enough (Vosburgh, 2022) to be accepted and taken up by practitioners.

Management research has started to adopt this approach and provides a growing number of practical implications for managers or organisations in general in the research reports, e.g. addressing the designing and structuring of organisations (Bartunek & Rynes, 2010, pp.

103-106; Dello Russo, Mirfakhar, & Miraglia, 2022), as is the case in this thesis. Thus, a specific overview of actionable recommendations is provided constituting some practical implications. The most stringent way to apply the findings is to transfer them into designated recommendations to show their interactions and effects (appendix 16 (p. 438) and figure 120)

This transfer is quite straightforward/simple as it only requires a slight rewording of the findings. It evokes the concept of there being ‘two sides of a coin’ and demonstrates the study’s connectedness of theory and practice.

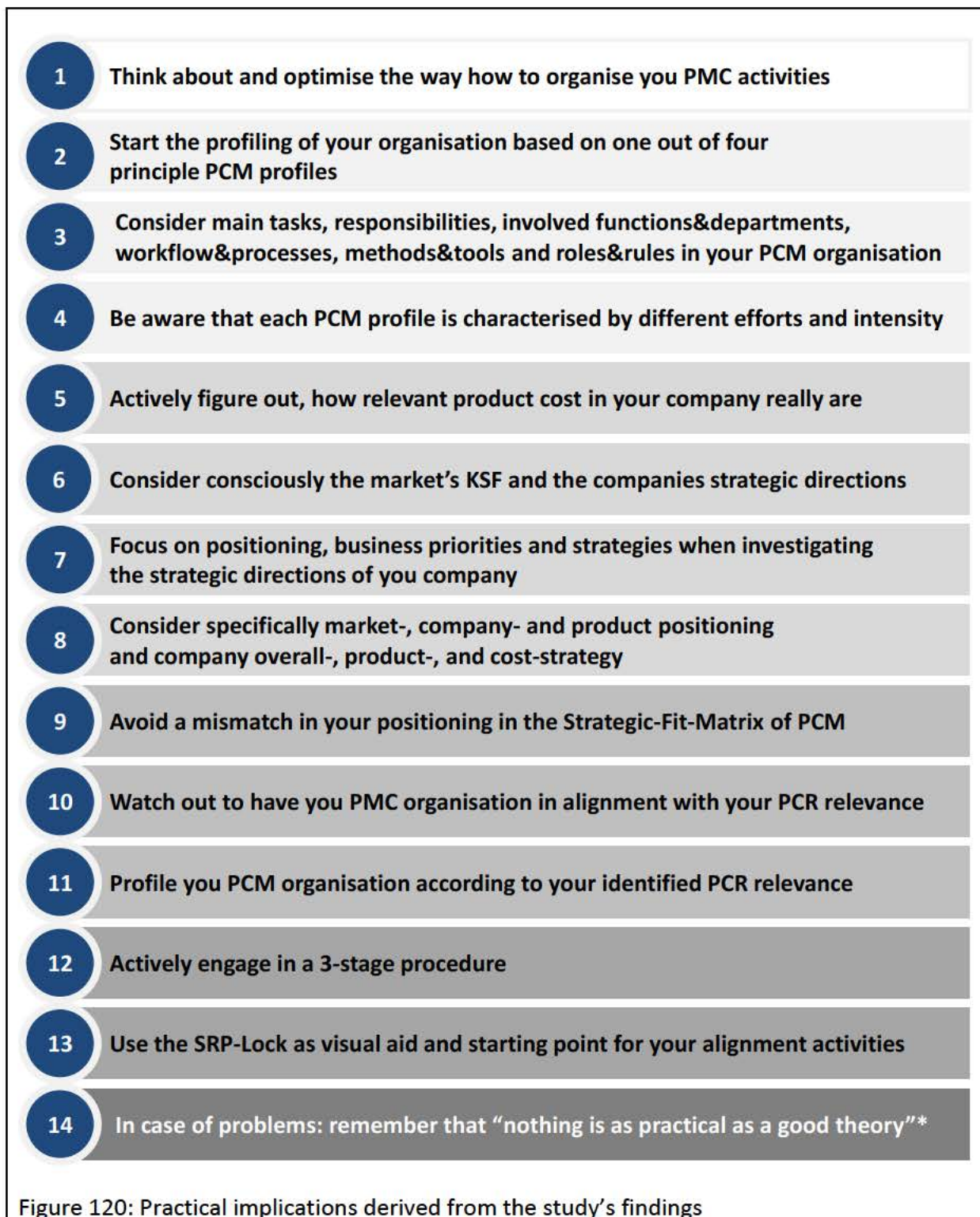
Implication 1 (which is directly derived out of finding 1) is that a company should think about and optimise the way PCM-activities are organised. Not only is it a relevant problem (that is so far unsolved) but it also delivers a positive impact on company performance.

Implication 2 sheds light on the recommendation to focus on four alternative organisational PCM-profiles, which are now pre-defined and, in principle, describe how to organise the PCM-activities. It eases the design of the PCM-organisation as it gives a concrete outline of how the PCM-organisation should operate.

Implication 3 indicates, in addition, the dimensions which should be considered when profiling the product cost management organisation. These are the main tasks, responsibilities, involved functions and departments, workflow and processes, methods and tools as well as roles and rules. Other dimensions don’t appear to be relevant and don’t have to be considered in the first instance.

Implication 4 points out that different organisational profiles are characterised by their different effort and intensity. This does not mean that effort and intensity would be decisive factors as, in fact, the opposite is the case: they are outcomes of the aligning procedures.

Implication 5 moves to the decisive factor, PC-relevance, and proposes to actively figure out, determine or develop the importance of product cost in the company. This relevance should inform the organisational set-up of PCM and not the other way around.



Implication 6 guides the actions in a way that the market's KSF as well as the company's strategic directions should be considered when determining the PC-relevance. PC-relevance is not given, neither should it be set without being derived out of those surrounding factors.

Implication 7 and 8 detail the recommendation regarding the strategic directions and direct the attention towards how to operationalise them. The positioning, the business priorities and the company strategies are important. Specifically, the market, company, and product positioning need to be investigated, or developed if they do not exist. The same applies to overall, product and cost strategy in the company.

Implication 9 suggests to use the matrix method as a visual aid to present a match or mismatch between PC-relevance and the PCM-profile. Based on this opposition, a mismatch should be avoided as either company performance overall is at risk or the efficient achievement of the product cost targets is affected.

Implication 10 and 11, provide advice on how to embark on an alignment between PC-relevance and PCM-profile by actively profiling the PCM-organisation based on the relevance. Consequently, it is not only a selection out of the four principle PCM-profiles but, taking these as starting point, adjusts its dimensions specifically to the company's situation.

Implication 12 advocates that the '3-Stage-Alignment-Procedure' should ideally be adopted by first executing 'Strategising', then 'Relevancing' and then 'Profiling'. This clearly implies that the question of how to organise PCM-activities should be an integral part of the strategy process in a company by translating the company's strategic directions into organisational forms which should then be implemented. Not only does this follow the advice not to engage into a 'best practice' philosophy in a way that simply believes 'the more the better' (McAdam, Miller, & McSorley, 2019), but it also rejects other approaches such as 'resource based' management which would define the available organisation ('resources') as step-off point and, with that, reverse the rationale (Assensoh-Kodua, 2019).

Implication 13 suggests the SRP-Lock as a second visual aid, next to the Strategic-Fit-Matrix when engaging into the alignment procedure. Due to its link to empirical data and its resemblance to other management visuals (such as 'bull's eye', 'target on dashboard', '360degree visuals' etc.) its acceptance should be promising.

Implication 14, which is also directly derived by the list of findings, finally encourages to ‘trust the process’ and to act in the sense of the theory, in case any hurdle or problem should occur during the alignment procedure. As the theory is strongly grounded in empirical data, making use of a data pool (accessed via co-researchers with long standing experience in the field of PCM) which can be assumed to be way above 500 different companies and following a strict and rigorous process, the expectation is to have discovered a ‘good’ theory. Citing Lewin’s belief that saying “nothing is as practical as a good theory” (1945, p. 129), the pre-requisites for the thesis’ theory seem promising.

4.8.5 Closing the loop: Critical realist lens on the thesis’ findings

Having brought the threads together from a content point of view with the portrayal of the study’s findings and answers to the initial research questions, the loop back to the paradigmatic choice, critical realism, rounds up the primary research in order to conclude the study.

In chapter 3.1 (p. 75) the expectation was raised that in a study ‘all aspects should match’, meaning research goal, research paradigm and methodology. As demonstrated, the GTM highlighted corresponding and appropriate answers contributing to the research goal to develop a normative theory. In this last step, the thesis’ results are mirrored with the key characteristics of the selected critical realist approach:

- Realist ontology with stratified reality (3 layers)
- Generative mechanism
- Causal powers
- Relativist epistemology
- Open system
- Probabilistic truth

With respect to **the stratified realist ontology**, the thesis’ outcome clearly distinguishes three elements. The four profiles of PCM have been described with attributes which are observable and measurable. They represent the empirical level as an event which is a result of a **generative mechanism**, the ‘3-Stage-SRP-Alignment-Procedure’. This procedure/

mechanism represents the real level of what should happen and, at the same time, inhibits **causal powers**, impacting the procedure/mechanism as well as the outcome. These causal powers within the theory are the impacting factors, including the decisive factor, PC-relevance, which represent the actual level in CR's ontology as it might or might not be observable. Furthermore, when it comes to the alignment's contribution to company performance, the alignment itself is loaded with causal powers to impact upon it.

Regarding the **relativist epistemology**, it can be stated that interviewees showed different and only partial views on the phenomenon of product cost management. Not only have different terms been used but also different examples are used to describe their view with regards to their part of the reality. By means of the methodology, those differing views have been superimposed to identify the pattern which comes at least close to reality even though it is still fallible. Furthermore, coding by the researcher did have an individual, situational flavour. It cannot be expected that recoding the data would lead to the exact same result, yet there is the chance to arrive at similar outcomes. Altogether, the relativist stance is well reflected in the study.

As critical realism operates with an **open system logic**, indicating that the generative mechanism can produce varying output dependent on factors outside the investigation, it advocates **probabilistic truth**. On the one side, the thesis' results, from a company point of view, hit a barrier linked to the company's external environment by focussing on the external KSF. These KSF are the (non-controllable) context which should be provided by meaningful research (McLaren & Durepos, 2021). But the external environment is more than those KSF, it is wider, it is more open. On the other side, the normative character of the thesis' alignment theory was derived by the claim that alignment leads to increased company performance. However, there are naturally other factors as well, which impact upon company performance. Therefore, it cannot be precluded that there is a deterministic effect when following the recommended strategies but rather that there is a probabilistic potential for positive impact on performance.

However, the contribution provided from critical realism, is indeed a mechanism, the 'Aligning-Procedure', which has the potential to solve an organisational problem, by

bringing an organisation from “out of phase [...] into phase” (Gorski, 2013, p. 665; Bhaskar, 1978). Translated into the thesis’ terms: the aim is to bring companies positioned in the ‘Strategic-Fit-Matrix’ in the ‘zone of misfit’ into a position in the ‘zone of fit’. Having outlined this contribution, critical realism was an appropriate choice to embed the study in.

This is also supported by the congruence between three perspectives: the managerial view with the initial step-off point, the translation into GT jargon as well a translation into CR jargon.

The managerial problem of how to design product cost management systems is the main concern in GT and the observable event in CR. The impacting factor of the manager’s view is the core category in GT and the causal power in CR. The aligning procedure for managers explains the relation between main concern and core category in GT and is the generative mechanism in CR. Altogether, this indicates that the requirement of Aliyu, Bello, Kasim and Martin (2014, p. 86), the appropriate matching of the different research steps (see 1.2.1, p. 3), can be regarded as being fulfilled.

4.9 Summarising reflections on the thesis’ Grounded Theory approach

Reflecting on the steps taken during the research phase to develop the normative theory, the dominant element, and with that the guiding thoughts, permanently circled around the challenge of stressing and demonstrating “the importance of maintaining strict, systematic adherence to the methodological process embedded within the GT approach, regardless of context” (Groen, Simmons, & McNair, 2017, p. 4) as mentioned in chapter 3.4 (p. 138).

In chapter 3.4 it was also outlined that it should be obligatory to apply and to demonstrate the application of the maximum number of CGT’s methods and traits. During chapters 4.2 to 4.8, therefore, the distinct methodological and procedural features were specifically outlined in the corresponding initial sections to provide evidence. Stepping back, an overview can be generated out of these details (as done in table 18), setting CGT’s traits against the actually conducted ‘7-steps-approach’. The result reveals that the thesis shows all essential pillars which are needed to truly label the study a GT.

# Grounded Theory's pillars / thesis chapter	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Done
	4.2	4.3	4.4	4.5	4.6	4.7	4.8	
1 Iterative data collection / analysis	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
2 All is data	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
3 Open coding	Standard	Standard	n.a.	n.a.	n.a.	n.a.	n.a.	Done
4 Selective coding	n.a.	n.a.	Standard	n.a.	n.a.	n.a.	n.a.	Done
5 Theoretical coding	n.a.	n.a.	n.a.	Standard	n.a.	n.a.	n.a.	Done
6 Memoing	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
7 Constant comparison	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
8 No preconceptions	foreshadowed research problem	Standard	Standard	Standard	Standard	Standard	Standard	Done
9 Codes	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
10 Concepts	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
11 Main concern	Standard	Standard	Standard	n.a.	n.a.	n.a.	n.a.	Done
12 Core category	Standard	Standard	Standard	Standard	n.a.	n.a.	n.a.	Done
13 Theoretical sampling	n.a.	n.a.	Standard	Standard	Standard	Standard	Standard	Done
14 Sorting	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
15 Relationships between concepts/category	n.a.	n.a.	Standard	Standard	Standard	Standard	Standard	Done
16 Delayed integration of literature	n.a.	n.a.	n.a.	n.a.	n.a.	Standard	n.a.	Done
17 Saturation	Standard	Standard	Standard	Standard	n.a.	n.a.	Standard	Done
18 Staying open	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
19 Theoretical sensitivity	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
20 Emergence, procedural	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done
21 Emergence, theoretical	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Done

foreshadowed research problem
 standard
 prioritised

Table 18: Fulfilment of CGT's traits

It also shows that the different pillars materialise in different stages of the research, such as selective coding which is not applicable in steps 3 to 7. In addition, it brings to surface that different pillars have differing priorities in different phases, which is indicated by two different colours: dark blue for priority aspects, light blue for non-priority aspects. The core category, for example, is the dedicated target of step 2 and this pillar was consequently the focus in that step. Therefore, it is marked in dark blue.

However, in step 1, the basis was developed with the first coding activities undertaken, which justifies a light blue mark only. Also, following the requirement of 'staying open' as long as possible, the core category was still in a preliminary status during the subsequent steps 3 and 4 and only was saturated and finally re-labelled after the second literature

review (changing from strategic alignment to alignment due to the gained theoretical sensitivity about different alignment directions).

# Types of comparison	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
	4.2	4.3	4.4	4.5	4.6	4.7	4.8
1 Data with data within interview	■	■	■	■			
2 Codes with codes within interview	■	■	■	■			
3 Data with codes within interview	■	■	■	■			
4 Codes with concepts within interviews	■	■	■	■			
5 Data and codes across interviews	■	■	■	■			
6 Codes and concepts across interviews	■	■	■	■			
7 Data, codes and concepts across interviews	■	■	■	■			
8 Memos with data, codes and concepts		■	■	■			
9 Codes with categories		■	■	■			
10 Concepts with categories		■	■	■			
11 Categories with categories		■	■	■			
12 Memos with categories and theoretical codes		■	■	■			
13 Memos with memos		■	■	■	■		
14 Memo piles with memo piles					■		
15 Categories, Theoretical codes with literature						■	
16 Literature with literature						■	
17 Thesis' theory with theory						■	
18 Thesis' theory with practitioners' experience							■
19 Memos with thesis' theory							■

Table 19: Thesis' actual constant comparisons

A particular aspect to highlight is the trait of 'constant comparison' throughout the study as it is not only a concrete aspect for providing evidence but is also labelled as the major core element of GT (Hallberg, 2006). The overview in table 19 also demonstrates the fulfilment of this methodological requirement, covering all steps during the study, no matter which aspects have been compared. But it also indicates that the comparisons have been made on different levels of conceptualisation/abstraction. Starting with data from interviews over codes, concepts and categories, memos have been included as well as theoretical codes and later literature and existing theories. This variety of comparisons undertaken provides further support on the study's rigour.

It is, in addition, an indicator of the increasing abstraction level during the study, so that the level of conceptualisation was steadily growing, thereby confirming the methodological robustness within the study. If there is, however, one particular aspect to challenge regarding the methodological stringency, it is the aspect of 'preconceptions'. Although open-ended towards the findings of the research, the scoping literature review in chapter 2 produced a research problem prior to starting with the GTM. An orthodox grounded theorist would reject this as a major preconception.

Classic grounded theorists, however, tolerate this as a minor deviation as long as the step 1 in the process of GT is still conducted and, as is important to note, the main concern does earn its way into the theory (Walsh et al., 2020, pp. 56/59). Being aware of this challenge, consequently, in chapter 4.2 the discovery of the main concern was transparently outlined and the initial research goal explicated as a foreshadowed problem.

Nevertheless, this awareness triggered a thought regarding the compatibility of CGT with doctoral research studies. A CGT approach puts the methodology in the centre of the research and the often-quoted adherence to its procedures to then discover a main concern (GT's jargon for the research problem). Traditional doctoral studies, on the other hand, start with identifying and defining a research problem to subsequently select a methodology. The implications are potentially weighty for undertaking research.

Although the desire to conduct research which is centred around a researchable problem in an area of interest does not necessitate methodological competence at first, GT, on the other hand, exacts the explicit wish to apply a specific methodology from the very start, without knowing the exact research problem. Yet this is only a supposed contradiction. In both approaches, a starting point is the interest in a certain, wider, research area followed by a first step to identify a more specific, researchable problem to subsequently investigate. The actual challenge is how to deal with the situation of a researcher after having defined the research problem and the research questions, while being unfamiliar with alternative research methodologies or the overall research process.

Selecting GT as methodology is potentially hazardous as the initial research problem might become invalid if it is not being grounded in the empirical data. A major part of the research's effort then would have been wasted and would need to be abandoned. This is an aspect which cannot be overemphasised enough and which has not received sufficient recognition in how-to books relating to conducting research.

Consequently, condensing these reflections after the primary research phase, the methodology-centred approach of GT in combination with the 'otherness' of the GT's research process compared to conventional research processes entails the need for a prominent presentation and critical discussion of methodological and procedural aspects within the thesis.

This might be regarded as being too excessive for both views: within the specific GT study, as well as to justify the principle decision to apply GT. On the other hand, and this is the decision taken for this study an abridged representation without sufficient critical and transparent discussion of the challenges faced, this would lead to a vulnerable research output which could potentially counteract the acceptance and adoption of the findings in theory and practice.

A final aspect which was continuously considered throughout the research was the practical aspect of theory building aiming for the intended contribution to practice. Besides other arguments, which will be outlined in chapter 5.2.3 (p. 304), a potential extension of the '7-steps-approach' from Walsh et al. was discovered in a small selection of memos not addressing theory development aspects. Those memos directed the awareness towards theory application to take action based on the GT. Simmons and Gregory (2014) propose 'Grounded Action' as complementing GT, sharing the same pillars yet not targeting theory development but instead triggering and fostering sustainable change.

Potentially this would then overcome the theory development and theory testing dichotomy in research. This is addressed in the concluding chapter, Chapter 5, which mainly focusses on discussing the contribution to theory and practice.

5 Concluding the research project

5.1 Outlining a brief overview of chapter 5

Having presented the thesis’ findings, chapter 5 now concludes the research. The thesis has arrived at the bottom of the Martini glass, which was the overarching guideline from the very beginning (figure 121).

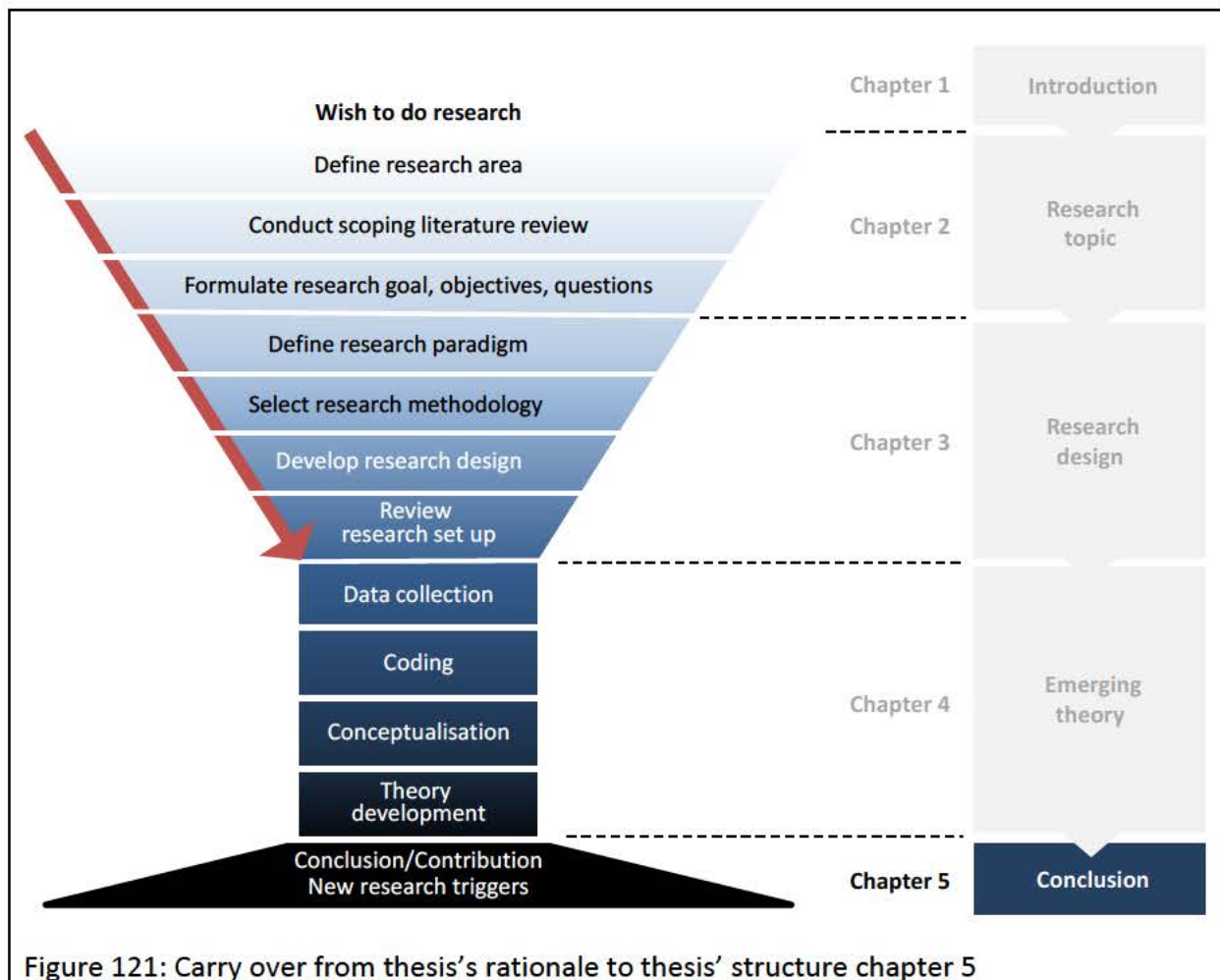
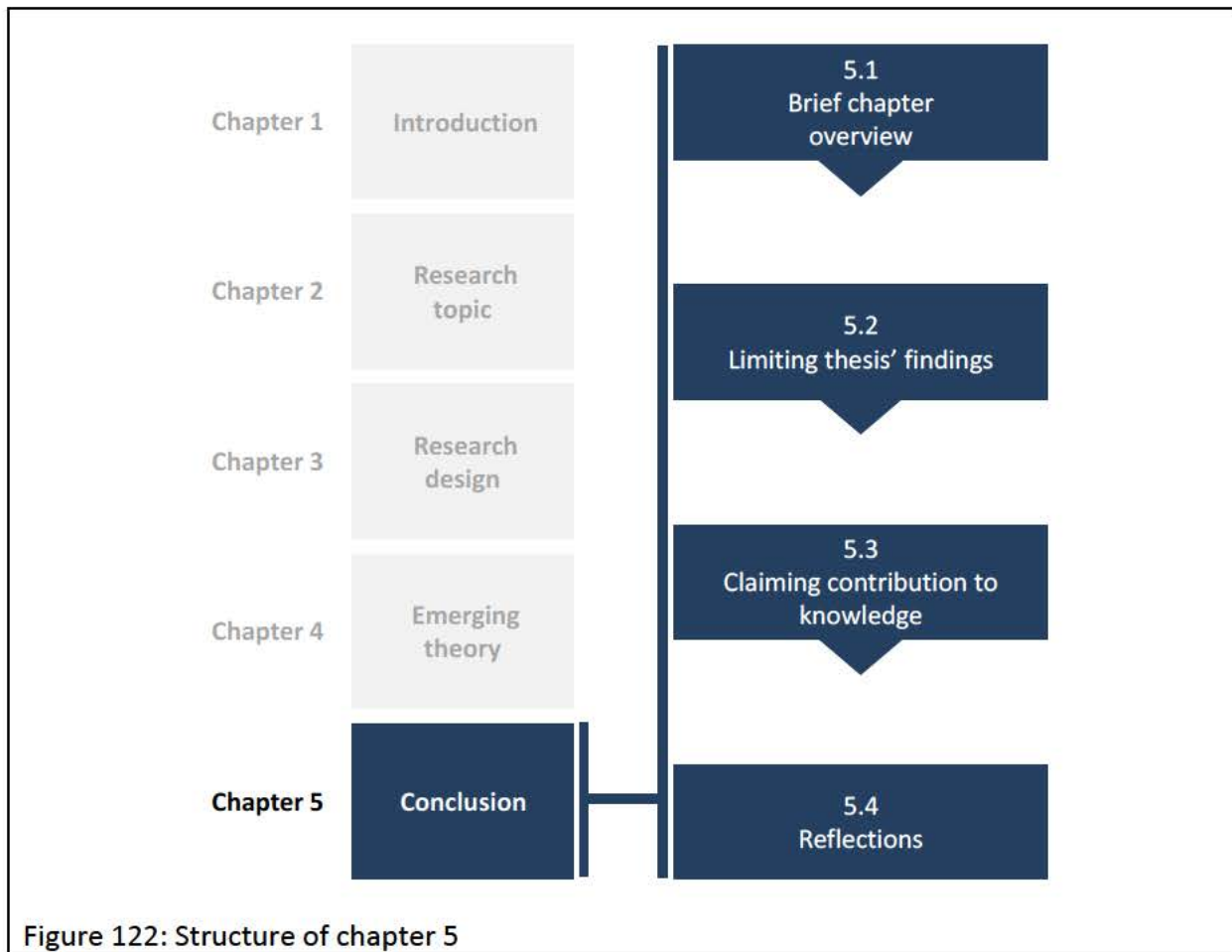


Figure 121: Carry over from thesis’s rationale to thesis’ structure chapter 5

Chapter 5 recapitulates the way forward for the study and its findings, allocates them into the relevant knowledge areas and outlines the study’s limitations (5.2). In addition (5.3), the thesis’ contribution to knowledge is outlined by formulating 12 claims. To conclude (5.4), the final reflections challenge central aspects of the study and suggest further research areas informed by this thesis (figure 122).



5.2 Limiting the thesis' findings

5.2.1 Recapping the research's way forward and its findings

To conclude the thesis' research project (which means to summarise the research results, its claims and recommendations for future research (Bunton, 2005; Trafford, Leshem, & Bitzer, 2014)), it is beneficial to step back at this point in order to sum up the study's way forward.

Chapter 1 indicated the wish to do research in the area of cost management with the ambition to bridge the theory-practice gap. To demonstrate a stringent approach, from the very beginning, a Martini glass and a carry over to the chapter structure were introduced to enable the traceability of the research. Consequently, to identify the scope of the research topic, next to gap-spotting in chapter 2, a problematisation approach was undertaken to identify a relevant research problem after a thematic literature review.

The question of how to design PCMS in relation to influencing factor/s was foreshadowed as a relevant managerial and researchable problem to direct the overall research goal towards the development of a normative theory regarding this problem (2.5.3.2, p. 69).

In Chapter 3, a pragmatic paradigm simulation exposed critical realism as the appropriate research philosophy, making this fundamental decision comprehensible to a wider, non-academic target audience, namely practitioners (3.2.2, pp. 82-103). Grounded Theory, and within that family of variants the classic variant informed by critical realism, was found suitable for theory development in the unexplored field of product cost management (3.3, pp. 104-137). The integrative hands-on-procedure from Walsh et al. then provided the principal research design, guiding the primary research (3.4, pp. 138-168).

This study with its findings was presented in Chapter 4 and revealed the thesis' alignment theory as a 'type 5 theory for design and action' (Gregor, 2006). Its findings were presented using an interwoven approach of the alternating sequences of data collection via interviews and data analysis throughout seven distinct GT steps. Consequently, the methodological peculiarities per step and related (intermediate) research findings were transparently outlined (chapters 4.2-4.7). In addition, although showing some redundancies, the thesis' overall findings were outlined in chapter 4.8 followed by concrete answers to the research questions as well as the practical implications. Finally, a critical realist lens was applied to the findings to close the loop from the prior decisions.

5.2.2 Positioning the thesis' overall findings into affected fields of enquiry

Putting the thesis' findings into the context of the wider affected knowledge areas, it can be recognised that it is possible to allocate the thesis into an intersection of four fields of knowledge and, by doing so, to amplify the extent to which the work draws on, and may have implications for, the below fields of enquiry:

- Organisational Theory
- Contingency Theory
- Grounded Theory
- Product Cost Management

Organisational Theory	Thesis draws on:	Conviction, that how business is organised is dynamically changing	Baum & Haveman, 2020, p. 268	
		Aspects of organisational efficiency, decision-making and external factors	Haveman & Wetts, 2018, p. 1	
	The thesis' study is confirmative for organisational theory, adding the case of how to organise PCM activities. Implication: Organisational problems of practitioners in cost management should be investigated more often.			
Contingency Theory	Thesis draws on:	Conviction, that there is no single best approach to organise activities	Betts, 2003, p. 123	
		Varying efficiency and effectiveness of organisational forms	Haveman & Wetts, 2018, pp. 8-9	
		Dependency between an organisation and its environment	Modarres, 2010, p. 96	
		Belief, that company-internal decision-makers impact upon the organisation	Van de Ven et al., 2013	
		Many forms of the alignment theory in management research	Ahriz et al., 2017, p. 6193 Gerow et al., 2015, p. 467	
		Concept of strategic fit	Fainshmidt et al., 2019 Hacioglu, 2020	
The thesis unfolded the particular and specific strategic CT of product cost relevance. Implication: Relevance (and other aspects) as contingency factor is worth to be investigated more often.				
Grounded Theory	Thesis draws on:	A classic Grounded Theory approach as advocated by Glaser	Glaser, 2014a	
		Critical realism as research paradigm informing classic GT	Oliver, 2012	
		Contemporary-yet-innovative 7-steps-approach of classic GT	Walsh et al., 2021	
		Strict adherence to methodological demands of classic GT	Groen et al., 2017, p. 4	
		Selected generic theoretical codes of classic Grounded Theory	Hernandez, 2009, pp. 62-66	
		The thesis aids to select/justify classic GT variants for future research projects. Implication: A more detailed dispute of the selection process of a GT variant is recommended. The thesis adds to more clarity about how to conduct a classic GT study. Implication: Recommendation to outline the maximum number of GT characteristics in a study. The thesis adds to further generic theoretical codes in classic GT. Implication: Stay open for any theoretical code emerging from the data instead of using generic codes.		
Product Cost Management Knowledge	Thesis draws on:	Purpose of cost management to deliver information (accounting school)	Shank & Govindarajan, 1993 Hansen et al., 2021, pp. 4-5	
		Belief, cost management is triggered by financial reporting (traditional accounting)	Bhimani & Bromwich, 2010, p. 2	
		Belief, cost management is triggered by functional decision making (management accounting)	Bloomfield, 2008, p. 433 Shank, 2006, pp. 355-356	
		Belief, cost management is triggered by strategy facilitation (strategic accounting)	Shank, 2006; Bromwich & Bhimani, 1994 Roslender & Hart, 2002	
		Purpose of cost management to shape/influence costs (design school)	Friedl, 2009 Drury, 2021, pp. 616-657	
		Belief, cost management is responding to a problem/crisis	Franz & Kajüter, 2002a, p. 8	
		Belief, cost management is realisation of strategic directions	Himme, 2009, p. 1052	
		Conceptualised dimensions and attributes of cost management	Kajüter, 2000	
		The idea of ordinal scaled cost management maturity models/approaches	Balachandran & Balachandran, 2005 Patil & Kshatriya, 2016	
		Value creation as a current trend in cost management	Drury, 2021, pp. 616-657	
		Increasingly powerful IT as a current trend in cost management	Drury, 2021, pp. 668-673	
		Growing benefits of integrated approaches in cost management	Cooper & Slagmulder, 2006	
		The thesis bridges the two schools of cost management (the accounting school/design school). Implication: The dichotomy should be challenged and potentially abandoned. The thesis integrates relevant organisational aspects which formerly had only been researched in an isolated manner. Implication: A more integrative view on cost management aspects is supported. The thesis emphasises the relevance of products as cost objects which had received little attention before. Implication: Product costs should receive more and more specific attention in cost management research. The thesis presents an integrative view on a number of formerly mainly isolated investigated research aspects. Implication: (Product) Cost management research should rather be become convergent than divergent.		

Table 20: Relation of thesis to affected fields of enquiry

Table 20 (previous page) highlights main aspects regarding the relevant fields of enquiry focussing on the thesis' core, product cost management, yet not disregarding main aspects of the other areas.

With respect to **organisational theory** (see, e.g. Fligstein, 2021; Jones, 2013), Baum and Haveman rightly state: "How business is organised is always changing in response to technological, political-economic, or cultural changes" (Baum & Haveman, 2020, p. 268). This is why the question of organisational design of PCM-activities is situated within and draws upon organisational theory and why it has direct and strong managerial links and implications (Bartunek, 2008; Liu, 2020; Zilber, Amis, & Mair, 2019).

Current research on organisations not only takes up the aspect of a dynamically changing environment impacting the organisational forms, but also pragmatically considers aspects of efficiency, decision-making and external factors (Haveman & Wetts, 2018, p. 1), as does the thesis. Main perspectives within organisational theory (with each emphasising different aspects) are contingency theory (organisation design), resource-based view (resource empowerment) and institutional theory (organisation adoption and spread) (David, Tolbert, & Boghossian, 2019; Greenwood & Miller, 2010).⁷⁸ Out of these main perspectives, contingency theory was the foremost view emerging from the study.

As the findings of the thesis address a new case of an organisational problem which is solved by a contingency theory logic, the thesis' study is confirmative for the organisational theory knowledge background and implies the relevance of organisational aspects in (product) cost management which should be investigated more often.

Subsequently, **contingency theory (CT)** (Boyd, Haynes, Hitt, Bergh, & Ketchen, 2012; Donaldson, 2001, 2006; Van de Ven, Ganco, & Hinings, 2013) provides the second knowledge background from which the study develops. CT claims, as does the thesis' alignment theory, that there is no single best approach when it comes to the organisation of

⁷⁸A combining element of the three perspectives, is that "[a]ll contemporary research on organizations recognizes explicitly that organizational structure is contingent on external forces and that organizational performance is jointly contingent on structure and environment" (Haveman & Wetts, 2018, p. 9).

activities, that alternative organisation forms are not similarly efficient and effective and that there is dependency between the organisation and the company's environment (Betts, 2003, p. 123; Haveman & Wetts, 2018, p. 8). The thesis' findings draw on these convictions in the special case of the product cost management organisation.

However, there are at least two variants of contingency approaches: structural and strategic CT (Haveman & Wetts, 2018, p. 9; Ketokivi & Schroeder, 2004b; Roscoe, Skipworth, Aktas, & Habib, 2020; Shenkar & Ellis, 2022; Zvosec & Bass, 2022). The distinguishing element here is the dispute of whether an organisation is fully dependant on a company's external factors (structural approach) or whether company-internal decision-makers do impact upon the organisation with strategic decisions (strategic approach) (Haveman & Wetts, 2018, p. 9; Modarres, 2010, p. 96).

With the study's '3-Stage-Strategising-Relevancing-Profiling-Procedure', the thesis is situated in and draws upon the strategic contingency approach, as the dedicated and autonomous decision-making processes ('Strategising and Relevancing') are interposed between the market's KSFs and the PCM-organisation. In that sense, the thesis unfolded a particular and specific organisational case which explains the organisation of PCM-systems with a strategic CT.

Furthermore, within CT, the concepts of 'alignment' and 'strategic fit' play a central role (Ahriz et al., 2017, p. 6193; Fainshmidt et al., 2019; Gerow et al., 2015, p. 467; Hacıoglu, 2020). The thesis seizes the idea of both concepts extensively. Not only are there many forms of alignment represented in the SRP-procedure (figure 113, p. 275) but also the central matrix of the alignment model explicitly addresses the need for strategic fit of product cost relevance and PCM profile (chapter 4.8.2.2.4, p. 264).

Product cost relevance as a specific, newly discovered contingency factor complements CT and implies that it is intending to investigate different forms of relevance in CT.

Consequentially, **Grounded Theory** constitutes the third knowledge area affected by the thesis, although it is a research methodology (Bell et al., 2022, pp. 532-541; Creswell &

Guetterman, 2021; Holton, 2008; Ngulube, 2019). Whereas the main direction of knowledge-transfer might be interpreted by the concept that research studies benefit from existing methodological knowledge, it also provides new cases and experiences, and, in doing so, has the potential to add to knowledge with regards to the applied methodology.

As a conscious and extensively justified decision in favour of CRGT (chapters 3.2-3.4, pp. 76-168), the thesis draws on Glaser's classic GT approach (Glaser, 2014a), critical realism as a research paradigm informing Glaser's GT (Oliver, 2012), the principle contemporary-yet-innovative 7-steps-approach from Walsh et al. (2020), the strict adherence to its methodological demands (Groen et al., 2017) and selected theoretical codes provided by classic GT (Hernandez, 2009).

On the contrary, the newly discovered theoretical codes within the thesis' grounded theory, also pay back into the code family of GT. Yet it implies that those generic codes should be treated as a fall back only if the ambition to 'stay open' during the research is taken seriously. Grounding codes in data should prevent using generic theoretical codes too early in the research process as otherwise it would fuel the discussion of 'Emergence vs. Forcing' (Glaser, 2014b).

Consequently, it also implies a necessity to outline the maximum number of GT characteristics and how they were built in the study in order to support the credibility of the GTM. In this case, the timing of bringing in the generic theoretical codes is essential as it was only done during step 6, when mandatorily comparing the studies intermediate but highly saturated findings with existing knowledge.

Finally, in terms of GT as a field of enquiry and as a methodological implication, it bears repeating, that a more detailed dispute of the selection process of future studies' GT variants is strongly recommended. It would increase comprehension by readers and avoid mis-use by researchers and, ultimately, elevate the credibility of forthcoming studies.

In conclusion, **product cost management** has been identified as an overlooked research area early in the research process. Despite the fact that the product-oriented management

approach is a common form of organisation, and product costs do account for a significant share of a company's overall costs (see chapter 2.4.2.2, p. 42 and Buss & Sitte, 2014, p. 33), it still receives comparably little attention in management research.

Product costs are distinct from other cost objects, such as project costs or personnel costs, but jointly form the research and knowledge area of cost management. As identified during the initial scoping literature review (see chapter 2.4, pp. 29-49) cost management can be divided into two schools: the accounting school, with its distinct purposes of information delivery, and the design school, with its purpose to shape/influence costs (e.g. Hansen, et al., 2021, pp. 4-5; Friedl, 2009). Unintentionally, the thesis' findings cover both schools, even bridge them and, consequently, not only draw on ideas from both but also impact upon future research. This bridge can be seen within the four identified product cost management profiles: whereas profile 1 shows strong links with the accounting school, the other three profiles (2-4) increasingly inhibit more elements of the design school. The implication of this is to challenge and to overcome the alleged dichotomy of both schools and to direct future enquiries towards a more integrative view.

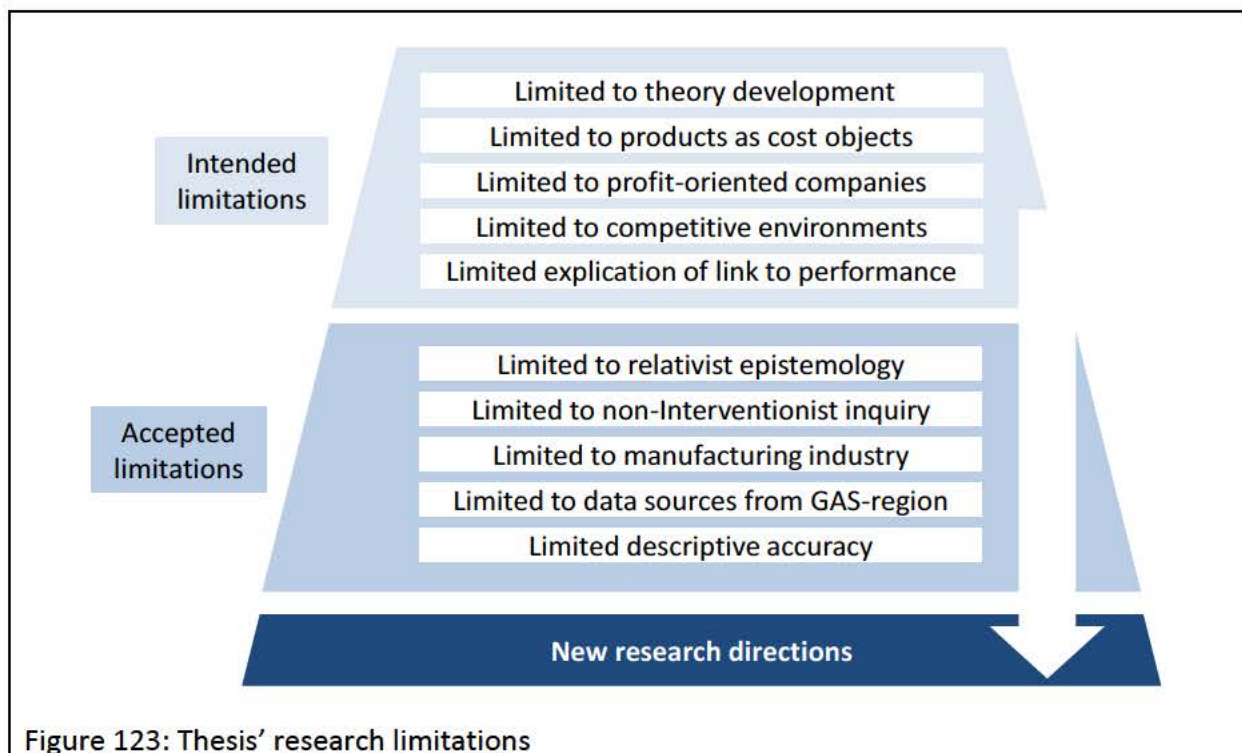
This call for a more integrative view also is implied by the thesis' findings in terms of singular aspects/dimensions which have previously been investigated in a rather isolated manner (e.g. methods). It seems promising to not only do research on single aspects alone, but to consider and investigate relationships or dependencies amongst them in a more holistic view, as do the PCM profiles. Even though the PCM profiles in particular draw on quite a number of already conceptualised cost management dimensions and attributes (e.g. Kajüter, 2000), the thesis' alignment theory takes up and develops the trend to appreciate integrative investigations in cost management (e.g. Cooper & Slagmulder, 2006). The thesis exhibits not only trends of value creation in cost management but also increasingly powerful IT capabilities (Drury, 2021, 616-673). In addition, as the thesis' PCM profiles are ordinal-scaled, they draw on related approaches such as business maturity models in cost management (e.g. Patil & Kshatriya, 2016), yet, as described in the CT-section not in the sense of 'the more mature, the better', but in a sense of 'strategic fit', i.e. to match with the relevance of product cost.

Condensing the main findings of the thesis to the integrative result of various (product) cost management dimensions into the alignment theory it finally suggests attempts to move towards a more convergent (P)CM research in future compared to the rather divergent efforts in the past (see also chapter 2.4.2.4, p. 48). Also, a higher level of recognition and focus on product costs as cost objects is implied by the relevance of the data obtained during the study, as well as during the phases of literature review (see figure 22, p. 64).

Together with other areas, cost management itself is part of management research which then is situated in the arena of the social sciences. This kind of hierarchy acts as triggering mechanism to the question of the coverage and reach of the research findings. These aspects form the research limitations.

5.2.3 Outlining the limitations of the thesis' study

The limitations of the research project are a consequence of key decisions taken when formulating the research goal, labelled as intended limitations, or due to decisions taken during the research when prioritising other aspects, which were subsequently labelled as accepted limitations (figure 123).



The thesis' study was intended to develop a theory relating to the organisation of product cost management activities. In stating this research goal, it is in the nature of things that a first boundary of the research that may constitute a limitation is the **focus on theory development** only. Within the scientific cycle of theory development and theory verification (Swanson & Chermack, 2013, p. 8; Wallace, 2004, p. 39), the verification aspect was not considered as a target. Furthermore, within CGT, 'theory verification' is not an intended approach as GT's processes already incorporate the validation of the theory. Glaser states: "testing GT is redundant since the GT procedures [that are] rigorously used generated a theory that fits and is relevant [...] so testing is not necessary" (2014h, p. 164).

Also, **other cost objects next to products** have been purposefully neglected, so that a generalisation towards cost management is not possible. On top of this, limitations regarding the coverage of product cost related research results have also been projected in an early research stage with the **exclusion of non-profit-oriented companies** and **non-competitive market environments** (see chapter 2.2, pp. 24-25).

Finally, the rationale for the normative character of the findings lies in the alleged link to the performance contribution of the targeted strategic fit between PC-relevance and PCM-profile. Therefore, as an additional research limit, the **specific link** was not explicitly investigated, not in principle nor dedicated as a function incorporating the degree of fit and the degree of performance contribution. Therefore, building up on cumulative knowledge from literature, the performance impact is an assumed one.

The relativist epistemology of critical realism as the selected research paradigm emerged during the study as a result of conscious decisions. This choice presents a limitation due to the absence of a claim of 'absolute truth'. The applied rigorous CRGT procedure and its claimed validity (see chapter 3.4.3.3, pp. 162-166) mean there are sound reasons to assert that the thesis comes 'close to the truth', yet it remains as one perspective, grounded in selected data sets, and other data sets or perspectives might lead to alternative findings, constituting the 'modifiability' of the theory.

Secondly, **no interventionist research method** was implied, which restricts a potential contribution to practice to an indirect impact only, via adoption of the presented practical implications on other/new companies.

Thirdly, the sources and methods for data collection also limit the study's boundaries. Data was only accessible from interview partners with experience related to companies with a significant share of business and activities in the **manufacturing industry** and in '**GAS-countries**' (Germany-Austria-Switzerland). Having read about the differences between German and Anglo-Saxon approaches to cost management (2.4.2.3, p. 45), a transfer or generalisation to other geographic areas or industries should be done with caution, if at all.

Lastly, in accordance with the principles of the selected GTM, aiming for explanatory power instead of descriptive accuracy, there is **no thick description**⁷⁹ related to each individual attribute of the theory's concepts/constructs. In the sketched 'SRP-Procedure', the processes of 'Strategising', 'Relevancing' and 'Profiling' are outlined, yet not operationalised. Similarly, the PCM-profiles used are stereotypical in order to raise principle understanding, yet factual profiles were not determined nor attributes stated as a comprehensive list. In sum, this limits the study for those seeking a deep-dive into a fully described portrayal of PCMS.

Despite these limitations, which will lead to new research triggers at the end of the thesis (see chapter 5.4.2, pp. 333-336), a number of contributions to knowledge can be claimed.

5.3 Portraying the thesis' contribution to knowledge

5.3.1 Doctoral thesis as contribution to knowledge

In the scientific community it is unopposed that research, especially doctoral research, has to deliver a contribution to knowledge (Baptista et al., 2015; Easterby-Smith et al., 2018, p. 384; Farrell et al., 2018, p. 5; Zuber-Skerritt & Fletcher, 2007, p. 419). Te'eni, Rowe, Ågerfalk, and Lee illustrate this dominant research orientation as focus on "contribution, contribution and contribution" (2015, p. 564). There is less consensus, however, about what should be

regarded as a contribution to knowledge (Erwee & Perry, 2018, pp. 366-367; Gendron, 2013; Nicholson, LaPlaca, Al-Abdin, Breese, & Khan, 2018; Wright, 2015).

First of all, “[k]nowledge itself is a very slippery concept with many different variations and definitions” (Nickols, 2000, p. 20) with debates lasting to date, leading to different, dynamically changing focal points (Bolisani & Bratianu, 2018, pp. 1-22; Dennis, 2019; Lehrer, 2018).⁸⁰

However, an in-depth discussion cannot be given in this thesis (e.g. Nonaka & Peltokorpi, 2006) but rather it provides an outline of a plausible approach which is taking up the introductory mentioned ambition of the DBA as a professional doctorate.

In that, it was emphasised that within a DBA study it is aimed to deliver a **‘contribution to theory and practice’**, meaning a relevant contribution to academic/theoretical knowledge on the one hand and to professional/practical knowledge on the other (Scott et al., 2004). Nevertheless, the split and main particular emphasis of those assumed opposing types of contribution in a specific research project is subject to the individual inquiry and study (Presthus & Munkvold, 2016, p. 1). Due to this variety and peculiarity of research contributions it is needed to explicitly report the contribution whilst linking them to previous sections of the research report to ensure the traceability of the research’s contribution claims (Easterby-Smith et al., 2018, p. 384). This will support the avoidance of exaggerated and over-claimed contribution statements and instead foster parsimonious, modest and realistic claims (Boer et al., 2015, p. 1249; Gay & Weaver, 2011, p. 24; Lowe, De Loo, & Nama, 2016, pp. 305/311).

Being able to summarise those explicated types of knowledge contribution as ‘intended by the researcher’, there is at least one type of contribution which is on the unintentional side

⁷⁹ A thick description would, e.g. list and describe tools which integrate different company functions in order to make manufacturing cost estimates during the development phase more efficient. This to smoothen the interface between marketing/sales, purchasing and production (see as example Petruccioli, Pini, & Leali, (2022).

⁸⁰Due to this, it is quite common to outline two or more alleged knowledge variants such as academic and professional knowledge (Meissner & Shmatko, 2019), theoretical and practical knowledge (Engstrom, 2002), tacit, implicit and explicit knowledge (Collins, 2010), declarative and procedural knowledge (Ten Berge & Van Hezewijk, 1999), know-what and know-how (Hulme, 2014) or mode 1 and mode 2 knowledge (Nowotny, Scott, & Gibbons, 2003).

of the thesis: **methodological contribution** (Wellington, 2010, p. 87). Although it informs the practice of scientific inquiry, it is not meant to be professional knowledge in the former sense. Also, despite its potential impact on theory, it is not theoretical knowledge which could be fostered. Methodological contributions are therefore somehow stuck in the middle and not always highly appreciated. Although Berg notes that a "magic in the method" (Bergh, 2003, p. 135) should not be over-emphasised as a contribution claim, there still is value in adding to existing methodological knowledge (Easterby-Smith et al., 2018, p. 384; Fetters & Molina-Azorin, 2019; Lee, 2018).

Together, it leads to a three-fold approach on contribution domains which are claimed to be fulfilled, as long as "there is an important and meaningful contribution in at least one of these domains for some constituency" (Ladik & Stewart, 2008, p. 162). Therefore, it is claimed that the thesis can provide the following contributions to knowledge:

- Contribution to theory (5.2.2)
- Contribution to practice (5.2.3)
- Contribution to methodology (5.2.4)

The discussions about the contribution to knowledge, however, are not limited to 'knowledge' alone, but address also aspects of what creates a 'contribution'. Three generic contribution models can be selected as each of them takes up major elements of this thesis and therefore offer opportunities to specify the thesis' outcome (figure 124).

Baptista et al. (2015) highlight aspects of originality, innovation and creativity triggered by novelty, significance/relevance and problem-solving. With originality being dimensions which are widespread in the contribution discussion (Frick, 2018; Hällgren, 2015; Trapido, 2015), particular focus for the thesis contribution can be put on innovation and creativity driven by relevance and problem-solving, as is frequently highlighted throughout the study.

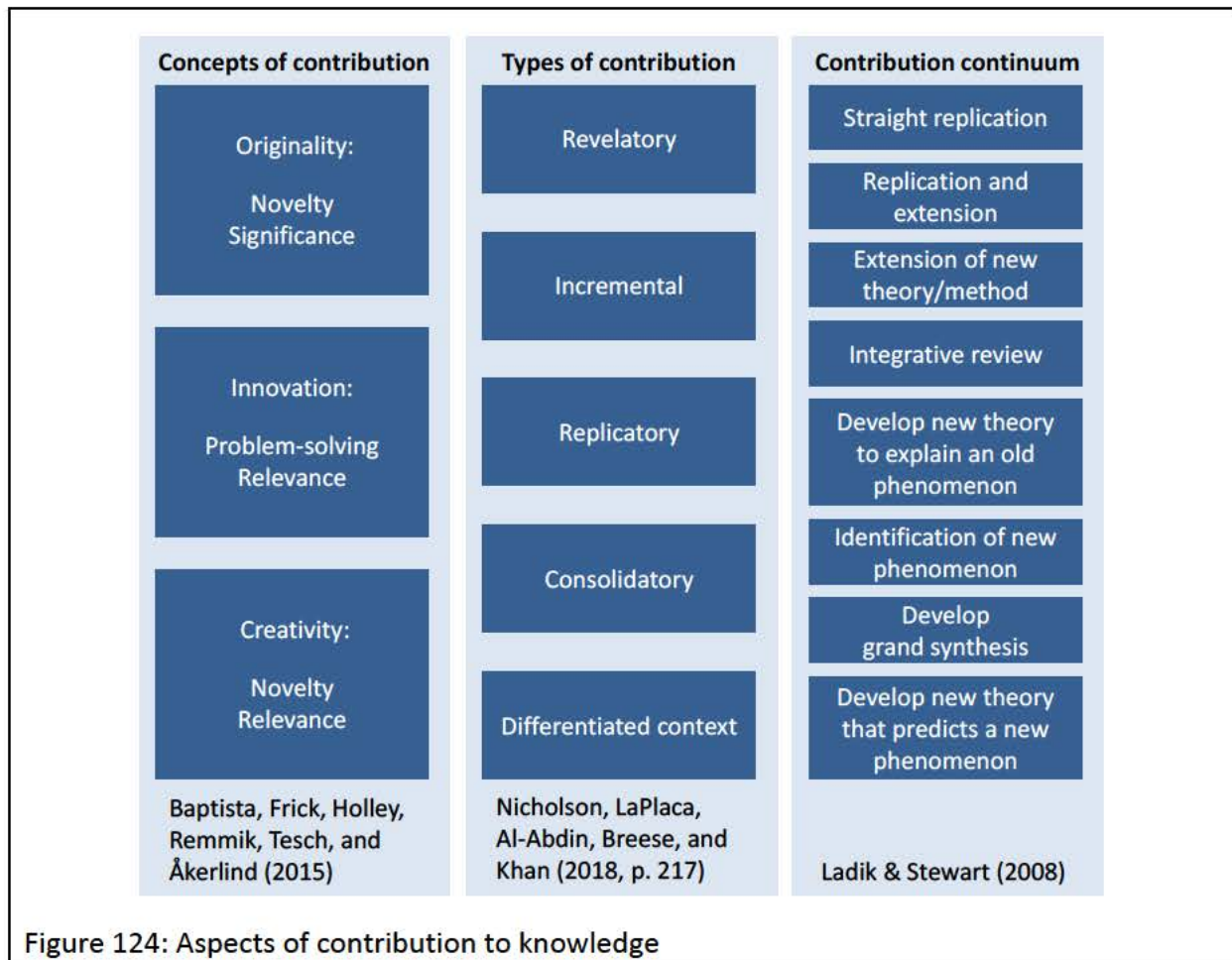


Figure 124: Aspects of contribution to knowledge

Nicholson et al. (2018, p. 217) distinguish five main types of contributions: replicatory, consolidatory, differentiated context, incremental and revelatory contributions related to different modes of inquiry during the research such as handling of extant knowledge, methodological procedures or gap-spotting. Each of these actions played a central role in different stages of the research.

Finally, Ladik & Stewart (2008) describe a contribution continuum with eight distinct intermediate positions from straight replication towards predictive new theories depending on the degree of innovation of a research study.

Although focussing more and more on different types of theory when going up in the continuum (which was the main intention of the thesis), methodological aspects (which became highly important in this study) are also considered in the lower section of the continuum.

Consequently, the way forward in the next sections is to specifically claim the thesis' contributions in order to subsequently position them into those generic contribution models. Jointly, the specific and generic contribution claims will determine the thesis' output as a whole.

In order to provide a short-cut to fully realise the thesis' contribution to knowledge without detailed explanation, the derived twelve contribution claims which are outlined in the next sections are listed in figure 125.



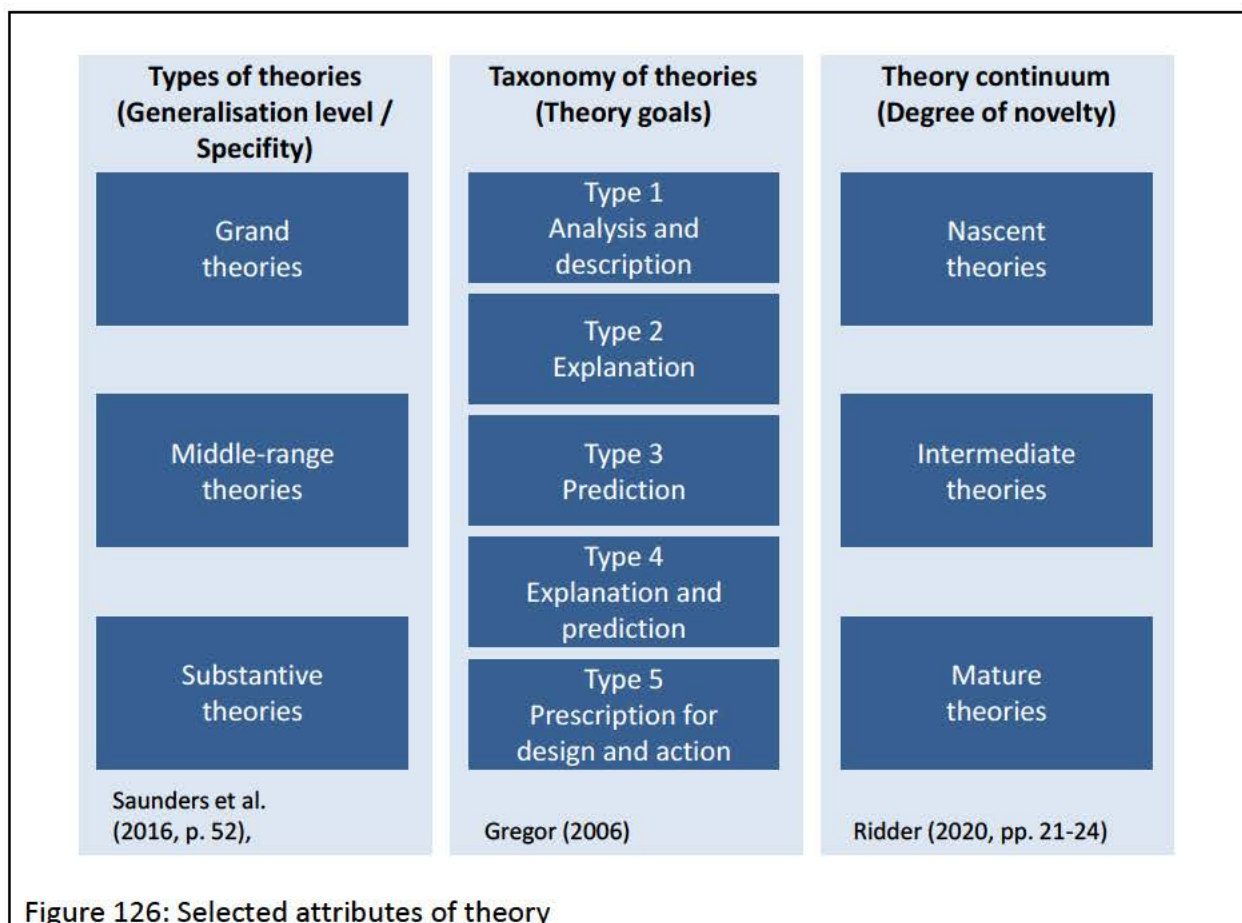
Figure 125: Thesis' 12 claims of contribution

5.3.2 Claiming five contributions to theory

5.3.2.1 Framing the thesis' contribution to theory

Similar to the extent of discussions about the 'contribution to knowledge' as noted in the previous section, a variety of debates about potential 'contributions to theory' can be stated (Ågerfalk, 2014; Boer et al., 2015; Cloutier & Langley, 2020; Colquitt & Zapata-Phelan, 2007; Corley & Gioia, 2011; Crane, Henriques, Husted, & Matten, 2016; Whetten, 1989).

As 'theory' is not always associated with positive connotations (Easterby-Smith et al., 2018, p. 132; Dennis, 2019), there is the need for a differentiated portrayal of different types of theories in order to derive potentially meaningful contributions and to also clarify what theory is not (Aguinis & Cronin, 2022; Sutton & Staw, 1995). Common attributes of theories are their generalisation level, their goals and, again, their novelty (figure 126).



Saunders et al. (2016, p. 52) distinguish three different types of theory based on their generalisation power, with grand theories tending to cover a wide area of human interest

with mainly principle and generic claims and substantive theories being quite specific but related to a certain area of interest only.⁸¹

Related to a theory's goal, Gregor (2006) develops a widely appreciated taxonomy of five different theory categories (types 1 to 5), aiming at analysis and description, explanation, prediction, explanation and prediction or prescription for design and action (Walsh et al., 2020, p. 13). Considering the degree of novelty, Ridder (2020, pp. 21-24) outlines a theory continuum from early/nascent over-intermediate to mature levels combining them with related, meaningful methodologies and methods in order to deliver a contribution to theory.

However, it should not be suggestive of considering a contribution to theory to always be a mature grand theory. The opposite is the case: the majority of theoretical contributions comes in smaller bits and pieces, acting as partial aspects of the research cycle, theory developing studies or theory verification studies, smaller scope theories or identifying researchable phenomena, constructs or models (Dennis, 2019; Makadok, Burton, & Barney, 2018). Therefore, Presthus and Munkvold (2016) generated an overview about theoretical contribution with 13 levels, starting with concepts/constructs and considering taxonomies/propositions to grand theories which help to scrutinise the thesis' specific contribution.

Commencing with the contribution claims, a 'claim 0' is stated: **The study has identified a managerial problem that is a researchable phenomenon, namely how to organise PCM-activities** (see 4.2). It is a refined, adjusted phenomenon from the scoping literature review and the problematisation approach taken to initially direct the research (2.5.3.1, pp. 63-69). Despite the fact that research should always start with a researchable problem (which is why it is only a claim 0 to start with the contribution discussion) it was still surprising, if not a mystery (Alvesson & Kärreman, 2007), that to-date the problem was neglected by research, taking the dominant product-oriented organisation forms of companies (2.5.3.1, p. 65). Furthermore, the identification of so-far-overseen phenomena is appreciated as an

⁸¹In GT jargon, a similar distinction is made between formal and substantive theory with the latter one specifically covering the local area of investigation 'only' whereas a formal theory is covering more substantive areas in diverse contexts (Walsh et al., 2020, p. 14).

incremental contribution to theory by some scholars as it is a signpost for the relevance of the research (e.g. 'type 2.1' contribution by Nicholson et al., 2018, pp. 210-212).

5.3.2.2 Claim 1: Taxonomy of four product cost management profiles

A taxonomy of four product cost management profiles was developed (4.6.2.1, pp. 227-230), serving as the principle, stereo-typed guideline on how PCM-activities could be organised. This taxonomy (4.8.2.2.2, pp. 255-262) not only distinguishes four different profiles but also indicates their distinctive dimensions with the relevant attributes showing qualitative and quantitative, ordinaly-scaled characteristics. As a whole, the taxonomy is novel to the research area, although their differentiating dimensions and attributes are not. It is their combination, their synthesis towards four profiles which makes this taxonomy novel, significant and relevant for the solution of the researchable phenomenon and, therefore original and creative in terms of the contribution concept of Baptista et al. (2015). Furthermore, it is consolidatory with respect to Nicholson et al. (2018) and a synthesis according to Ladik and Stewart (2008).

Making use of the overview of theoretical contributions from Presthus and Munkvold (2016), this taxonomy represents a level 5 out of 13 levels for theoretical contributions (framework/taxonomy) and therefore the thesis can be regarded as a contribution to theory.

5.3.2.3 Claim 2: 'Strategising-Relevancing-Profiling-Model of Product Cost Management'

The thesis' study discovered a 'Strategising-Relevancing-Profiling-Model' (SRP-Model) of PCM, as a 3-stage-process to solve the researchable problem. This model, visualised in the SRP-Lock (4.5.2.2, pp. 218-223 and 4.8.2.2.5, pp. 268-273), not only highlights the identified relevant concepts of KSFs, positioning, business priorities, strategies, relevance and profiles (see 4.4) but also links them by defining their propositional relationships, leading to the sequence of three steps to organise the PCM-activities. In that sense (Ladik & Stewart, 2008, p. 163), it is synthesis/integration although most concepts in the model are known already. However, as it is also novel, significant, problem-solving and relevant, it is an original, innovative and creative contribution according to Baptista et al. (2015) and a type 6

contribution (problem-solving) as well as a type 8 contribution (generative mechanism in critical realism) according to Presthus and Munkvold (2016).

However, one concept, 'Relevancing', earns its label already as a stand-alone contribution to theory. Inspired by GT's coding procedures and studies (Christiansen, 2006; Glaser, 1996; Nathaniel, 2019, pp. 21-22; Russell, 2014) the gerund from relevance was maintained to demonstrate its novelty (despite its actual grammatical incorrectness as a kind of neologism) as the concept of 'Relevancing' is new to the field of management research. 'Relevancing' demonstrates that PC-relevance is not something which is given by any strategic directions, in this case, but rather should be an active and conscious action of managers and decision makers to make product costs more or less relevant, as informed by strategic directions.

Similarly, 'Profiling' stands for the active action to generate a PCM-profile (opposed to simply selecting a pre-defined profile), and 'Strategising' for the active process to set strategic directions (as described intensively by numerous authors in the field of strategic management research already).

Again referring to the overview of theoretical contributions from Presthus and Munkvold (2016), the SRP-Model is positioned on level 10 out of 13 levels.

5.3.2.4 Claim 3: 'Relevancing' as concept in product cost management

Consequently, the thesis' GT has exposed 'Relevancing' as a novel concept in PCM-research, differentiating it from the noun relevance by the active engagement of people not to take relevance as given from outside (as a one-way-directed activity) but rather as a tailorable decision, which, potentially, in turn, can take the form of a two-way-directed activity. Furthermore, 'Relevancing' is distinct from prioritising as a prioritisation necessitates alternative objects against which something can be prioritised. The relevance of product costs, therefore, does not have to consider other company priorities as well but stands by itself.

Both, claim 2 and 3 ('SRP-Model' and 'Relevancing'), therefore show a high level of originality (novel and significant), innovation (problem-solving) and creativity (novel and relevant) according to the building blocks of potential contributions by Baptista et al. (2015). In the sense of Ladik and Stewart, this new concept of 'Relevancing' alone represents the identification of a new phenomenon (2008, pp. 163-164), a type 1 contribution referring to Presthus and Munkvold (2016) and it is fulfilling the criteria of originality, innovation and creativity (Baptista et al., 2015).

5.3.2.5 Claim 4: Nascent theory of 'Aligning' in product cost management

This claim takes up the initial research goal, indicating that the study revealed a normative aligning theory to address the challenge of how to organise PCM-activities. Having stated some scepticism and doubts that a theory (as positioned at the higher and highest levels of theoretical contribution) could and should constitute the theoretical contribution especially for novice researchers (such as doctoral students) before, this claim is rather strong. Characterising the thesis' theory helps to justify and level out this fourth contribution claim.

As shown in chapter 4.8.2.2.6, pp. 277-278, it is justified to mark the thesis' theory as a 'type five theory for design and action', as it indicates, "how to do something [and] gives explicit prescriptions (e.g. methods, techniques, principles of form and function)" (Gregor, 2006, p. 620). A realistic evaluation of the theoretical contribution, however, is based on the criteria novelty and generalisation level. With respect to novelty, the research goal from the very beginning was to develop a normative theory. It is in the nature of theory development that the respective theories do show a novel character, which should be positioned early in the life-cycle of a theory (Turner, Baker, & Kellner, 2018). With the CGT approach of the thesis' theory development as well as CGT's strict empiricism and emergence, the thesis' theory is a 'nascent theory' (Johnson, 2015; Seidel & Recker, 2009) and not any intermediate or mature theory.⁸² And as "deriving initial outputs from a new theory" (Makadok et al., 2018, p. 1532) is an appreciated research output, this supports contribution claim 4.

⁸²A striking resemblance between the thesis' study and Ridder's remarks about the initial phase of nascent theories underlines the 'embryonic' character (see chapters 2.5 and 4.2): "Research questions can stem from unexpected findings, from questioning assumptions, or identifying gaps in existing theory [...] the research question has to be flexible at the beginning and may be modified during the investigation if the researcher becomes more familiar with the phenomenon or the empirical investigation provides unexpected findings or surprises" (Ridder, 2020, p. 21).

In order to critically challenge this view, Weick's prominent statement about what counts as a theory in organisational science must be considered. "Products of the theorizing process seldom emerge as full-blown theories, which means that most of what passes for theory [...] consists of approximations [...] and most of them can be read as texts created "in lieu of" strong theories" (Weick, 1995, p. 385).

What seems, at first glance, to be a neglected appreciation of novel research outcomes to be labelled as theory, is related to the claimed approximated character of those emerging and nascent findings. A close reading, therefore, would imply that theories are not only approximations towards reality and truth, but facts. The opposite is the case: Theories are always approximations towards reality, otherwise they would be fact. The critical realist position with its relativist epistemology to view that there is a single reality which may be only partly observable and measurable, acknowledges that this reality might sometimes only be imperfectly comprehensible (Kilduff, Mehra, & Dunn, 2011, p. 299) with the resulting theory being an approximation, truthlikeness or verisimilitude (Cacioppo, Semin, & Berntson, 2004, p. 214; Kuipers, 2020; Roselli, 2018; Weston, 1992).

Reading Weick's critique and broadening his evaluation towards 'strong theory' instead of 'theory' only, the more plausible statement he gives is that nascent theories, which are not yet 'full-blown', are not strong theories but weak ones. Yet, this view is in the nature of things (which is why there is the distinction between nascent and mature theories), but should not prevent publishing and sharing theory in an early stage to support discussion and foster further theory building. Nascent theories therefore should be regarded as a valued theoretical contribution, an attempt to accelerate academic and practitioner discussions to further develop them into the directions of mature theories.

In terms of generalisation level, scope or coverage, it is not claimed that the thesis' theory is a universal grand theory such as agency theory or network theory (Spina, Caniato, Luzzini, & Ronchi, 2016). Neither was it intended. It is different for middle-range theories as they "are abstract enough to allow for generalizations, but close enough to observed data in order to be incorporated into propositions that can be empirically validated" (Hassan & Lowry, 2015, p. 1). In addition, they are, in contrast to grand theories, specific enough to solve major

problems in the area under investigation (Brodie, Saren, & Pels, 2011, pp. 79-81; Ponjaert, 2021, p. 134; Soltani et al., 2014, pp. 1015-1016) which is the case in this thesis. Still, there are restrictions of the thesis' theory so as to limit the findings to profit-oriented companies in the manufacturing industry which excludes companies in the service or public sector, for example, which would represent alternative substantive areas (5.1.3).

Taking up GT's jargon about different theories (substantive vs. formal theory) the thesis' theory is a "middle range theory at a substantive [...] level [...] to move beyond description of the domain of study towards a theoretical rendering that identifies key explanatory concepts and the relationships among them" (Wuest, 2012, pp. 225-226). Having done so, it is the explanatory power of the 'Alignment-Theory of Product Cost Management' which is emphasised instead of its descriptive accuracy (3.4.1, p. 142 and 4.6.1, p. 226).

Finally, further supporting the theory-claim in the case of a DBA thesis (with its ambition for practical implications and applied research) "theories can be understood as interrelated ideas about various patterns, concepts, processes, relationships, or events [...] as a system of logical statements or propositions that explain the relationship between two or more objects, concepts, phenomena" (Lune & Berg, 2017, p. 23).

Referring again to the overview of theoretical contributions from Presthus and Munkvold (2016), this nascent theory represents a level 10 (out of 13 levels) for theoretical contributions for the theoretical model as a whole and a level 11 for the middle-range theory. The same applies to allocating it within the category of new theory in Ladik and Stewart's continuum. Therefore, it can be regarded as a thesis' contribution to theory.

However, the previous claims are stated from the point of view of the research area in focus, PCM-research, which is only a part of (cost) management research. Having referred to grand theories before, the grand theory of management research which is addressed most directly by the own middle-range theory is contingency theory (CT). From the point of view of CT, the theoretical contribution of the thesis is different.

5.3.2.6 Claim 5: Product cost relevance as contingency factor in product cost management

Therefore, it can be postulated that the thesis' study has identified PC-relevance as the dominant CF for the organisation of PCM-activities, which in itself is a function of external KSF and strategic directions of the company. In the list of Presthus and Munkvold (2016), the PCR is a measurable construct and represents a level 2 (out of 13 levels) contribution.

Nevertheless, this is not a confirmatory study of CT (e.g. by hypotheses testing or deductive theorising) as the thesis' research was designed as a theory-development study. Yet, it adds to CT a resolution of a formerly-neglected organisational problem (PCM) as a side effect and provides an incremental type 5 contribution to CT (Nicholson et al., 2018, p. 217) as this existing theoretical framework has found a new, differentiated context.

Stating the resolution of an organisational problem through CT directly draws attention to the thesis' contribution to practice, which is subject to the next section.

5.3.3 Claiming four contributions to practice

5.3.3.1 Framing the thesis' contribution to practice

Similar to the debate about contribution to theory, there is also a discussion about what constitutes a contribution to practice, yet this is less intense and on a less philosophical level (Ellson, 2009; Guzman, 2009; Kustermans, 2016). Main discussion points include the practical relevance/usefulness of academic research (Asdemir & Ahrens, 2019; De Man, Luvison, & de Leeuw, 2020; Frutos-Belizón, Martín-Alcázar, & Sánchez-Gardey, 2019; Mohrman, Gibson, & Mohrman, 2001; Nicolai & Seidl, 2010), as well as the research transfer and its diffusion into practice (Carton & Mouricou, 2017, pp. 173-178; Tucker & Lowe, 2014). “[M]anagement scholars struggle to produce concrete solutions or to communicate how their research can help to tackle [...] challenges” (Wickert, Post, Doh, Prescott, & Prencipe, 2021, p. 297).

One of the reasons is “that current norms in doctoral education privilege the assumptions of the academic community at the expense of the practice community” (Anderson & Gold, 2019, p. 1). This is a concern which can be shared when considering research publications

and the articulated fear that theoretical contribution might be delegitimised through the formulation of practical implications (Bartunek & Rynes, 2010, p. 109). It is then even doubted whether “a single study [can] ever truly have meaningful implications for practice” (Bartunek & Rynes, 2010, p. 100).

As introductorily stated (1.2.2.1, pp. 6-12), this thesis study takes the opposing approach and dedicates itself to the reporting of contribution to practice. Having outlined the contribution to theory in the previous section, in isolation to the contribution to practice (which is portrayed in this section), a link between both still can be established.

This link refers to the often-quoted (McCain, 2015) statement of Lewin saying that “nothing is as practical as a good theory” (1945, p. 129). This practicality is meant to enable incidents to be handled in a way that comparable incidents are handled if theories have identified and generalised patterns and frameworks which can be applied to those incidents.

In this way, decision and action can be informed, making use of previously gained knowledge which is regarded as the practical value (Zikmund, Babin, Carr, & Griffin, 2012, p. 46). In other words, this link then represents the use and application of theory as ‘the other side of the coin’. Grounded theorists sing the the same song when outlining the practice-orientation of GT (Charmaz & Henwood, 2017, p. 248) or when stating “Grounded abstraction generates application” (Glaser, 2007, p. 106).

In that manner, contingency theory, next to its theoretical contribution, also provides ‘by nature’ practical implications which are, next to others, claimed as contribution to practice. The thesis’ theory, ‘simply by being a CT’, delivers practical implications “by identifying important contingency variables that distinguish between contexts; grouping different contexts based on these contingency variables; and determining the most effective internal organisation designs or responses in each major group” (Sousa & Voss, 2008, p. 698) accounting for an additional overarching claim 6.

5.3.3.2 Claim 6: SRP-Procedure as new practice to consciously organise PCM-activities

The discovered 'SRP-Procedure' is a new practice to enable manager and decision-makers in charge of product costs to organise product cost activities by taking up this CT's inherent logic. It is a justified practical application as it "answer[s] the question of 'what do I need to do - that I haven't done so far, or that I need to do more of, less of, or differently - and how do I do it?'" (Wickert et al., 2021, p. 304). For Presthus and Munkvold (2016) this represents a type 3 (out of 6) level contribution to practice (guideline).

From another perspective, Gregor's theory typology, this claim is supported as well. As the thesis theory is a type five theory for design and action (Gregor, 2006, p. 620), informing a concrete way of doing, there is an explicit link to practice inherent in the nature of the research's outcome. Specifically, it contains the three CT's elements as stated above, which individually and jointly inform the practice of PCM (4.8.2, pp. 251-289).

For practitioners this is useful, as they now know and understand that when they wonder about how to organise the PCM-activities the appropriate factor to consider, first, is PC-relevance which suggests different company specific situations. Secondly, they are now aware that this PC-relevance, which they have to actively determine, is informed by the product cost's context, provided by the market's KSF and the company's distinct strategic directions. Finally, the most effective PCM-profiles are determined in relation to the PC-relevance as the distinguishing factor. Altogether, these three aspects are linked through the 'Strategising-Relevancing-Profiling-Procedure', showing how practitioners can solve their organisational problem. This can be regarded as a new practice and consequently is a contribution to practice.

A further hint supporting the justification of the practical implication claim can be seen in the advice that "it may be helpful, if not mandatory, to engage early in the research design with the practitioners for whom action items are developed" (Wickert et al., 2021, p. 304). This was the case from the very beginning and throughout the research (see 4.2.1, 4.3.1, 4.4.1, 4.5.1, 4.6.1, to 4.8.1), even though it is not a sufficient but still a necessary condition

for workable problem-solutions also from a GT point-of-view (Von Alberti-Alhtaybat & Al-Htaybat, 2010, p. 213).

5.3.3.3 Claim 7: Increased company performance through increased strategic fit

A consequential claim is the potentially increased company performance through increased strategic fit when having aligned PC-relevance and PCM-profile. This 'ultimate' contribution to practice is substantiated in the close link between achieving a high degree of strategic fit and organisational performance (4.7.2.1, p. 240).

The performance term is central to the concept of fit (Carmeli, Gelbard, & Gefen, 2010; Hill, Cuthbertson, & Brown, 2012; Prajogo, 2016) and so is it for (cost) management research and practice as well (Ferreira & Otley, 2009; Lay & Jusoh, 2012; Morioka & de Carvalho, 2016; Otley, 1999). Performance, although broad in meaning, is the major 'desired outcome' of companies, especially in the case of strategic fit (Abernethy & Guthrie, 1994, p. 53).

Even though the study's intention was not to specifically investigate the relation to any performance indicator, literature discussing this link is quite clear and unequivocal (Anuar & Kamruzzaman, 2017; Farrukh, Meng, Sajid, & Shahzad, 2020; Ghonim et al., 2020; Prieto & de Carvalho, 2018; Walter et al., 2013). In addition, as Coltman et al. state: "Throwing money at instances of misalignment can be wasteful and misguided" (2015, p. 91) which highlights not only the benefits of proper alignment but also the drawbacks from misalignment. Both dimensions have been mentioned, when outlining the 'Strategic-Fit-Matrix' (4.8.2.2.4, pp. 264-267).

This is why this rationale legitimises the theory to be seen as a normative theory for companies seeking improved performance even though the methodological choice to select GT does not suggest a prescriptive character a priori (Christiansen, 2017, p. 58).

However, next to the consequential character of this practical impact as a result of the 'SRP-Alignment-Procedure', it is also a 'potential indirect' contribution only. Neither was an actual improved performance yet realised, nor was it targeted during the doctoral study. An

actual performance improvement is only achievable when conducting interventionist research, such as action research, when the concrete change of behaviour or settings is aimed for (Kemmis, 2010; Shani & Coghlan, 2019).

Prior to benefiting from changed and improved PCM-practice, the newly gained knowledge about the 'SRP-Alignment-Theory' has to be diffused into managerial minds and adopted by practitioner's actions, which is a question of knowledge-transfer.

5.3.3.4 Claim 8: Thesis' research report written to narrow communication gap

As outlined in the introduction chapter, the thesis helps to narrow the communication gap between the academic and practical world as the thesis' research report is written for two target audiences: academics and practitioners. Being aware that the thesis therefore is written 'differently' has two aspects: how it is written and what is written.

With respect to how it is written and "(t)o demonstrate a study's practical significance, there is a need to describe results in a way that makes sense for practitioners" (Aguinis et al., 2010, p. 530). Aiming to do so, the thesis makes use of numerous figures and visuals (often building upon each other) which are common practice in current day-to-day management routines. Furthermore, headlines with verbs as an integral part should ease the understanding of the line of reasoning as well as bullet point summaries being used to guide the reader's attention to the main important aspects. These aspects are derived as an outcome of a special practitioner-centric approach (Schindler, 2019, pp. 436-439).

However, the academic audience should also be served as well. Scientific jargon, especially with respect to CR or GTM, should demonstrate consistency and rigor throughout the thesis. Also, a 'classic-five-chapter-structure' (Charles et al., 2017; Joyner et al., 2018; Leshem et al., 2018, p. 163; Perry, 1998) was kept in order to stick to proven general guidelines with content which is expected to be part of a doctoral thesis.

Together, the thesis' modified presentation style might be viewed as 'bilingual', more 'figurative' and, therefore, less academic, yet it should be understood as an expression of

bridging the communication gap between the two allegedly opposed target groups (Wolf & Rosenberg, 2012, pp. 191-192).

Regarding the aspect of what is written in the thesis, explicit sections have been added or extended when there was a higher risk for non-academic readers to not fully comprehend arguments, consequences, or implications for the progress of the study.⁸³

To sum up: As originality also includes “new ways of writing, presenting [and] disseminating” (Wellington, 2010, p. 88), this thesis’ contribution to practice can be regarded as being justified.

5.3.3.5 Claim 9: The organisation of PCM-activities as relevant management topic to narrow the relevance gap

Finally, referring back to the research problem, the study identified the question of how to organise PCM-activities as a relevant management topic, which narrows the relevance gap. Next to a thematic literature review in the wider field of cost management (chapter 2.4), particularly the ‘problematization’-approach, challenging assumptions of current knowledge (see 2.5.1) has supported the recognition of a researchable and relevant managerial topic that was previously neglected.

Furthermore, ‘re-discovering’ the research problem during GT’s first step (see 4.2), with only nuances to further trim the actual research goal and to direct the subsequent research steps, provided evidence about this unresolved organisational problem of PCM. Continuing the research afterwards via data collection from practitioners (which focus solely on improvement projects in the area of PCM) the whole study was taking up the

⁸³The most obvious example is the presentation of the paradigm simulation (see chapter 3.2.2) to explain and justify the thesis’ critical realist approach. Including the paradigm simulation (as a pragmatic approach) into the thesis makes the decision-making process from that stage more explicit and understandable for readers who are not familiar with the ‘-isms’ of scientific inquiry, although it lengthens the thesis (compared to a rather conventional justification of the underlying research paradigm). Similarly, the (critical) debate about principle research methodologies and specific GT variants are included in a rather long version in order to not leave the non-academic reader alone with abridged reasonings. In contrast, this should support the credibility of the choices as being consistent and critical in every research step.

recommendation of Wickert et al. (2021, p. 304) to involve the affected target group of the research problem as much as possible.

5.3.4 Claiming three unintentional contributions to methodology

The contributions to theory and practice have been targeted at the beginning of the research. Due to the discussion about the variety of different contributions in the literature (5.3.1, pp. 306-310), both needed some framing to put them into context so as to evaluate the intended and required contribution. During the research, three additional contributions emerged which have not been explicitly aimed for, but, as “methodology matters” (Boettke, Stein, & Storr, 2018, p. 57) and in order to support their diffusion, they should be made explicit in the thesis as well. To not overstate those three distinct contributions, another ‘framing’ is not presented, neither is it required. Instead, they are directly stated in the next sections.

5.3.4.1 Claim 10: Overview of Grounded Theory variants to ease researcher’s orientation

A methodological contribution stresses the collection and the overview of existing GT variants that eases the orientation in the jumble of the manifold of GT approaches. Having critically reviewed existing portrayals of GT variants, a rather problem-centred explication about this jumble is frequently highlighted (Evans, 2013, p. 37), yet not sufficiently clarified by covering a vast number of variants.

The overview presented and evaluated from the thesis study’s perspective (3.3.2, pp. 117-137) has arisen from the practical necessity to find a methodology suitable to solve the research problem. This search had to be made explicit to justify the decision and to get confidence on it. Having done so, it is a matter of a consolidatory, integrative review (Ladik & Stewart, 2008; Nicholson et al., 2018) from a critical realist standpoint (which provided the lens for the evaluation approach).

Although this assessment with its actual ramification will surely differ when it comes to other research paradigms or research goals, theorists can build on this by further adding more GT variants to the overview. Also, the assessment criteria are far from being complete,

as they are selected for the purpose of the thesis' research goal only. Yet, the provided overview can serve as a step-off point, easing and accelerating research practice when searching for an adequate GT version.

5.3.4.2 Claim 11: Replication of Grounded Theory's '7-Steps-Procedure' in a new context

This claim is about the value of the replication and dissemination of Walsh, Holton and Mourmant's rather original 'Full-Package-7-Steps-Procedure' of CRGT in the new context of PCM. This thesis (chapters 3.4.2 and 4.2 through 4.8) represents a dedicated account of their 'how-to' contribution to improved research practice. Having done so, the study initially benefitted from their explicated innovative mode of CRGT inquiry.

However, after having conducted this research project and having applied the procedure to a new context and research area (type 5 contribution according Nicholson et al., 2018, p. 217), in turn, future research practice is informed by the thesis' peculiarities as well. Despite the notion that "Grounded theory is a well-known methodology employed in many research studies" (Chun Tie, et al., 2019, p. 1) with a long-lasting history back into the 1960s, there is an openly stated confusion on the one side and ignorance on the other about its concrete application and execution (3.4.2, pp. 149-150). The holistic approach from Walsh et al., concentrating on and integrating the key elements of CGT into a procedure and then published in 2020, is still rather novel to most researchers, theorists and practitioners. This thesis study, as an 'early adopter', can support its diffusion to enhance researchers' understanding about CGT and urge new research to properly perform the required step towards discovering new theory.

5.3.4.3 Claim 12: Extension of generic theoretical codes: 'Aligning', 'Profiling', and the Gerund 'Relevancing'

The comparison of generic theoretical codes proposes to extend the list of generic theoretical codes with 'Aligning', 'Profiling', and 'Relevancing'. In GT, a central stage is to develop theoretical codes which lift the level of abstraction significantly (Glaser, 2005, p. 11). During this stage of the study, theoretical codes did emerge (chapter 4.5, pp. 211-223), which were then compared with generic theoretical codes as proposed by Glaser (chapter 4.7.2.3, pp. 245-247).

It turned out that within the consensus family of codes ‘alignment’ and ‘aligning’ could be added, which is seen as a failure in not having listed them in this consensus family. However, it is different for ‘Profiling’ and ‘Relevancing’. Whereas ‘profile’ could be added to the type family easily, ‘Profiling’, as indicated by Gerund, appeared rather innovative in cost management research. However, known from reference to HR or Sales/Marketing (Greco & Polli, 2020; Prikshat, Kumar, Nankervis, & Khan, 2018), organisational approaches apply ‘Profiling’-procedures, so it is a valid idea to include ‘Profiling’ as theoretical code.

A novel theoretical code should be ‘Relevancing’. It seldom appears in management literature (e.g. as an adjective: Mäkitalo, 2006, p. 543) despite its grabbing implication of it i.e., to make something relevant. Agreeing to this, relevance is not necessarily a given, unaffected variable, but is subject to conscious decisions which can be influenced and defined. ‘Relevancing’ therefore could belong to the strategic family of theoretical codes. As all three theoretical codes appear to be not strictly limited to the thesis’ context, it might make sense to use them in other GT studies as well.

5.4 Reflecting on thesis’ study, practical implications, and future research

5.4.1 Challenging central aspects of the study

During the research project, phases of reflective practice (Engward & Davis, 2015; Fergusson, Van der Laan, & Baker, 2019; Raelin, 2002) have been dedicated to inform decision-making, increase the study’s quality or to challenge whether the study is still on track regarding the research goal. Those reflections have been put into the latter sections of the relevant chapters (2.6, 3.5, and 4.9).

Upon reflection, some central aspects of the thesis did occupy a lot of attention and are worth outlining to summarise the gain in knowledge. These central aspects are related to the thesis’ characterising traits (chapter 1.2.2, pp. 5-18) and therefore can be summed up in dimensions of

- contribution to practice
- methodological challenges
- personal development

The desire to achieve the intended **contribution to practice** was a continuous challenge and followed two approaches: the knowledge-production and the knowledge-transfer. Whilst the knowledge-production focussed on the identification and selection of a relevant management topic, the remaining part of the production was aiming at providing a useful research result as well. Considering the usefulness of the research result as an important secondary aspect to enhance the contribution to practice (Beer, 2011; Markides, 2010; Rousseau & Boudreau, 2011), has led to the conviction that a pragmatic approach to the research, in contrast to a dogmatic approach, is a supporting research element (Pistrang & Barker, 2012; Simpson, 2009).

This kind of pragmatism necessitated the 'need-to-know' in relation to alternative choices, if there were any, and the consequences of following alternatives paths (Morgan, 2014, p. 1047). This caused lengthier explanations and justification (research paradigm, research methodology) for those methodological decision points which practitioners are less familiar with. An abbreviated portrayal, as is more conventional for professional doctoral theses, would have risked diluting the practitioner's understanding. The most prominent part of this is the conducted paradigm simulation in chapter 3.2.2. The subsequently-increased volume was accepted, as the informed readers of the thesis, who are more familiar with these topics, can choose to pass over the related passages.

The knowledge-transfer is characterised by the attempt to write the thesis 'differently', at least to some extent. It is in agreement with the notion that "the most successful manuscripts will be those that provide novel insights through innovative and creative inquiry that editors and reviewers would never even have thought of" (Te'eni et al., 2015, p. 564). The two superlatives in the quote are meant to address journal publications and ways of inquiry. Making an analogy to doctoral theses and their presentation, the dimensions of novelty, creativity, and innovation (5.3.1, pp. 306-310) still suggest a promising reception. However, more explanation and more justification are needed to let this 'otherness' fulfil institutional requirements or to convince examiners (Simmons, 2022, pp. 41-53). A shorter research report presentation would have been possible at the cost of the intended contribution to practice and less critical/differentiated (methodological) discussions.

However, in every formal aspect, supporting a contribution to practice remains meaningless, if actions or practical improvements are not stimulated or motivated by the research results, as seen from a content point of view. Ultimately, the practical implications derived from the thesis' findings (see chapter 4.8.4, pp. 285-289 or appendix 16, p. 438) constitute and finalise this contribution.

As one of the thesis' limitations is the absence of a thick description (see chapter 5.2.3, p. 306) a potential reproach can be countered by providing a list of further reading related to the practical implications which is documented in table 21. This further reading is mainly drawn from the study's literature review during step 6 (chapter 4.7, pp. 236-248) and screening of literature when finishing the research report. It covers the knowledge areas as stated in chapter 5.2.2 (pp. 298-304)

Notably, the presented overview of the practical implication and related management literature demonstrates the coverage of a broad variety of management themes and the various links established by this thesis to existing management concepts. Amongst others, management practices in the areas of organisational design and organisational change or strategic management and strategic fit, for example, contribute to (and benefit from) this thesis.

The close interconnectedness of the thesis' new Alignment-Theory of Product Cost Management and common management practices serves as prima facie indicator for the GT quality criterion of workability (Walsh et al., 2020, p. 5). On the contrary, with the new Alignment-Theory of Product Cost Management and its practical implications, the audience therefore should not be averse to the recommended actions (Okimoto, 2014, pp. 401/402).

	Practical implication	Further reading / First aid literature
1	Think about and optimise the way how to organise you PCM activities	For the relevance of PCM and organisational design: Arthur D Little (2014), Baum & Haveman (2020), Schuth (2013)
2	Start the profiling of your organisation based on one out of four principle PCM profiles	For organisational change: Gibbons (2019), Stouten, Rousseau, & De Cremer (2018)
3	Consider main tasks, responsibilities, involved functions&departments, workflow&processes, methods&tools and roles&rules in your PCM organisation	For specific dimensions/attributes of a (cost management) organisation: Kajüter (2000), Worren (2018), Stanford (2018).
4	Be aware that each PCM profile is characterised by different efforts and intensity	For perspectives on effort: Inzlicht, Shenhav, & Olivola (2018); Gielnik, Spitzmuller, Schmitt, Klemann, & Frese (2015).
5	Actively figure out, how relevant product cost in your company really are	For relevancing and products costs: Iglesias, Ind, & Schultz (2020), Hint (2022), Trianni, Cagno, Neri, & Howard (2019).
6	Consider consciously the market's KSF and the companies strategic directions	For KSF and Strategic directions: Gimpel et al. (2021), Henry (2021), Yevtushenko, Shuba, Berezyuk, & Odiyanenko (2022).
7	Focus on positioning, business priorities and strategies when investigating the strategic directions of you company	For Positioning, Business Priorities and Strategy: Andaleeb (2017), Iyer, Davari, Zolfagharian, & Paswan (2019), Saqib (2020), Darino, Sieberer, Vos, & Williams (2019), Fuertes et al. (2020).
8	Consider specifically market-, company- and product positioning and company overall-, product-, and cost-strategy	
9	Avoid a mismatch in your positioning in the Strategic-Fit-Matrix of PCM	For alignment dimensions and strategic fit: Blokdyk, G. (2021), Ahriz et al. (2017)
10	Watch out to have you PMC organisation in alignment with your PCR relevance	For alignment and logic of profiles: Ahriz et al. (2017), Rajest, Regin, & Shynu (2022), Periañez-Cristobal, Calvo-Mora, Rey-Moreno, & Suárez (2021), Kleineidam, J. (2022), Nugent, R. (2023), Thornton (2021).
11	Profile you PCM organisation according to your identified PCR relevance	
12	Actively engage in a 3-stage procedure	For approaches on organisational change: Rosenbaum, More, & Steane (2018), Hornstein (2015).
13	Use the SRP-Lock as visual aid and starting point for your alignment activities	For visuals in communication and presentation: Cameron & Green (2019), Schreim (2023), Streeb, El-Assady, Keim, & Chen (2019).
14	In case of problems: remember that "nothing is as practical as a good theory"	For "trust the process"-mind set in change management: Datskovska (2020), Lynch et al. (2018).

Table 21: Literature recommendations related to practical implications

As this still might appear somehow schematic, a full-package PCM-optimisation process can be sketched, based on good practice management and project expertise. From the perspective of a manager the following steps can be recommended and are applicable to any organisational status quo:

Undertake a job to optimise your PCM-organisation. It will contribute to the company's performance overall. Furthermore, it will either specifically help to avoid excessive effort in your PCM-organisation or bring it to the required level, to achieve your PCM-target/s.

Based on the four identified PCM-profiles (basic, cost reduction, comprehensive or value-oriented profiles), allocate your current organisational status into this spectrum by considering tasks, responsibilities, involved functions, workflow and processes, methods & tools as well as roles & rules.

Next, you should determine your current or targeted product cost relevance (=‘Relevancing’) by taking into account your company's strategic direction (strategy, business priorities, positioning) and the market's KSF. Details about this are available in the findings section.

As subsequent step, check, if there is any mis-alignment between:

- External market and your positioning
- Positioning and business priorities
- Business priorities and strategy
- Strategic directions and product cost relevance
- Product cost relevance and PCM-profile level

If there is any mismatch or unaligned relation, go and align it. If there are multiple unaligned relations, go to the one which is most left in the SRP-Lock and start alignment there, followed by the other aspects. In doing so, you ensure that you are closest to the ideal ‘SRP-Procedure’ which is to start ‘Strategising’ based on external market KSF.

In any case, as a fallback solution, focus the optimisation on the proper positioning in the 'Strategic-Fit-Matrix of Product Cost Management' by adapting the PCM-organisation to the current/targeted PCR-relevance. Reasons for this approach could be that there are no chances to change the company's strategic directions, even though they might not be in perfect harmony or well developed.

At the end of executing this job, having profiled the PCM with all its dimensions according to the PCR relevance, the PCM-organisation will contribute to the company performance, the product cost target achievement and, in the case of lowering the profile level, will avoid excessive organisational PCM-costs.

When it comes to the related **methodological reflections**, the thoughts therefore are more diffuse. As an overarching aspect one might claim an incommensurability of conventional research as taught in doctoral education and GTM. The basic challenge is about the focal point of the research. Whilst conventional research emphasises a problem-centric research approach which is then used to define subsequent research steps (see Martini Glass), it is the methodology which is in the centre of attention for grounded theorists to subsequently discover the research problem (Martin, Scott, Brennen, & Durham, 2018, p. 18). This is in opposition with the introductorily-stated view of Holden and Lynch (2004, p. 397).

On a doctoral level, this discrepancy alone would not constitute a major problem, as it is expected to critically approach the intended research. However, a more prominent explication of these two contradicting ways forward would help the novice researcher to avoid struggling with severe challenges in order to allow them to properly conduct a CGT.

The biggest challenge of those is to avoid any preconceptions during GT. It is indeed a challenge not to enter the primary research phase with a preconception once you have conducted a literature review. Therefore, doctoral education or textbooks on post-graduate research would be well advised to highlight this risk more prominently. Furthermore, having gone through the GT study as practitioner, it can be challenged whether the professional experiences, which are intended to increase the theoretical sensitivity (1.2.2.1, p. 6), are not tending to foster preconceptions learned in years of practice in the researched field and,

with that, reducing the necessary openness of the researcher. A worry, which is shared by Glaser: “The researcher sees what he has been trained to see” (Glaser, 2005, p. 3).

Successfully building the ‘mental wall’ and keeping distance from former knowledge is counter-intuitive to the assumed benefit to bring in the professional experiences which should foster relevance and usefulness of the research. This phenomenon might even be labelled as a ‘dilemma of managerial GT research’. So, similar to the question of whether a GT study can be conducted after having done a literature review (in the substantial field of investigation), it can be challenged whether GT is a methodology that is appropriate for research done by practitioners in their field of professional experience or expertise.

For the purpose of this study, the way out of this dilemma was the strict adherence to the research design chosen in order to avoid any short-cuts, implicit reasoning, untraceable progress or even unintentional “fabrication” of results (Bedeian, Taylor, & Miller, 2010, p. 716). Also, coding and conceptualisation was permanently challenged by reflecting on the process and considering whether other codes, other concepts or abstractions would be similarly, if not more, meaningful. As an example of this, using the term ‘contingent on’ was challenged by the attempt to code for any resource-based indicators as an alternative approach to organisational theory as it was questioned whether a preconception was present in the initial use of contingent.

Having concluded the main parts of the study, it was recognised that the SRP-Lock has a visual resemblance with the research onion of Saunders et al. (2016, p. 124) which was introduced during one of the doctoral program’s taught modules. It is not possible to check whether this had an influence in the sense of a preconception or whether it increased the sensitivity towards more opportunities to structure data. These continuous doubts make a GT study quite exhausting and it is difficult to decide whether to remain open or to close a theme at a particular point in time.

Conversely, the fear not to fulfil the ‘staying open’ requirement might have led to an even higher sensitivity to read and stick to the data obtained by the interviews even more closely and intensively. Theoretical saturation played an important role and the question of

whether new data really did or did not add to new concepts or new explanations was raised rather more often than less often. This, together with Glaser's hint that doubts and states of confusion are essential for the proper progress of GT (Breckenridge, 2014; Chametzky, 2016, p. 163), finally turned the doubts into confidence with respect to the research result.

However, the explication of thoughts and actions during the study was a trigger for reflections on the **personal development** and the constant challenge in relation to the appropriateness of the path followed. The personal gain in knowledge is also built on the procedural and methodological approach that was used. Distinguishing tacit and explicit knowledge, it can be questioned whether explicit knowledge, with the need to be demonstrated to others, might not harm the related action itself. Too much thinking about an action (in this case, a research step or a conceptualisation), as portrayed in the centipede's dilemma can confuse the actor, at least temporarily.

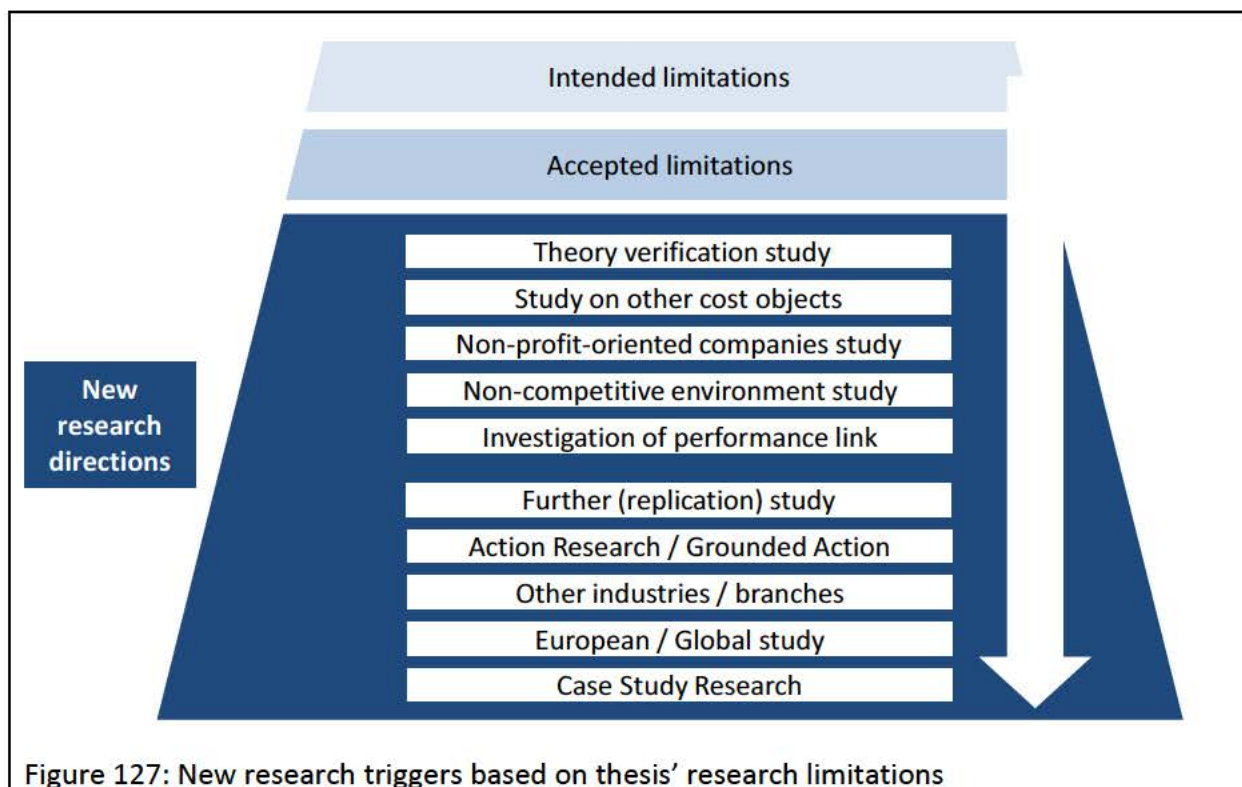
Having overcome the state of confusion, the learned aspects and content can contribute to new behaviour, ideas and insights. In this special case of GT, it can be summed up to a new way of viewing patterns in behaviour, which can be called "Gerunding" (Nathaniel, 2019, p. 21). Out of the 'Relevancing' gerund and various other GT related gerunds such as "Opportunizing" (Christiansen, 2006) it became obvious that the ability to formulate concepts of behaviour increased significantly, both in professional and day-to-day settings. Discovering or seeing any kind of gerunds, no matter how obvious or latent they are, is therefore an outcome at the end of the study, but also a good starting point for discussing the research project to make it stand out from the outset.

5.4.2 Ejecting new triggers for future research

The thesis' research has answered the defined research questions (chapter 4.8.3, pp. 278-285) within some specific boundaries, either intended from the beginning or accepted as decision-points during the study, which jointly constitute the research limitations (5.2.3, pp. 304-306). Having identified the 'Aligning-Theory of Product Cost Management' as being a nascent theory, those stated limitations should serve as step-off points to increase the

theory's maturity by conducting additional research. Figure 127 lists these new research triggers which are based on the thesis' research limitations.

A fundamentally different research approach to the 'Alignment-Theory of Product Cost Management' would be a **theory verification study**. Even though, 'theory verification' is not a desired or intended approach within CGT (5.2.3, p. 305), there is value in actively stepping back and taking an alternative approach to scientific inquiry. Not only would it increase the chances that the theory gains wider acceptance by non-grounded-theorist academics, but the generation of hypotheses arising out of the theory's propositions and the operationalisation of the constructs forming the theory would allow the theory to grow and evolve.



Not related to context but rather to the central cost object, a **study on other cost objects**, next to product cost, would also support the diffusion of the theory to a broader managerial audience. Project costs for project managers or quality costs for quality managers are equally as important as product costs are for product managers. Widening the core object of the theory from a particular focus to more objects would prepare the ground to move the

theory from the substantive field of investigation to a more generalised formal theory (Glaser, 1989).

Taking the dedicated research boundaries of the manufacturing industry, profit-oriented companies in competitive environments or the focus on companies located in the GAS-nations, a second research trigger would be an **extended replication on other contexts** (Ladik & Stewart, 2008). Particularly, comparative studies on companies in **GAS-nations** versus Anglo-Saxon nations might enrich the theory as differences between these two groups were a finding during the scoping literature review (2.4.2.3, p. 45). Alternatively, a view on European or global perspective could be taken. Moreover, **other industry contexts** would support the diffusion of the theory to a broader managerial target group. The same applies to markets which are characterised by either **non-profit structures or monopolistic situations**.

Likewise, it would be the case if **the link between aligned PCM-profile with company performance was explicitly investigated**. In CT this link is often claimed but needs empirical support in each individual case (Chaib Lababidi, Lababidi, Colak, & Dayan, 2020; Kureshi, 2013; Maletič, Maletič, & Gomišček, 2018); empirical evidence, consequently, would blight potential doubts about the relevance of the 'Alignment-Theory of Product Cost Management'.

As it has been shown that the relativist epistemology acknowledges different perspectives on a phenomenon, a **replication study** would not only enlarge the data set upon which the theory is based but also would potentially add other perspectives. This, consequently, would aid movement closer to reality by extending, redirecting, or modifying the theory.

In the same way, the thesis' study, although aiming for a contribution to practice, waived an interventionist approach to deliver a direct impact by creating change in an organisation. Therefore, **action research projects**, applying the PCM-theory in concrete settings not only would create this direct impact but also contribute to the emerging theory by theory elaboration from the practical side (Eden & Ackermann, 2018, p. 1148). Yet, 'putting theory

into action/practice' (Coghlan & Shani, 2018, p. 30) is also emphasising the theory verification aspect of theory development (3.3.1.3, pp. 113-116).

Similarly, interventionist approaches can be taken following **Grounded Action** methodology or a **interventional mode of GT** (Artinian, 2014; Simmons & Gregory, 2014; Spooner, 2006). Both share the aspect that "Grounded action is grounded theory with an added action component in which actions are systematically derived from a systematically derived explanatory grounded theory" (Simmons & Gregory, 2014, p. 130). It would be of particular interest to enhance the groundedness of actions in PCM-organisational design by making use of a shared methodological foundation.

As GT is not aiming at descriptive accuracy, other methodologies, such as **case study research**, could enrich the theory by providing thick descriptions of single concepts. The PCM-profiles, to state one example, have been stereotyped by a variety of dimensions and attributes (4.8.2.2.2, pp. 255-262) allowing also intermediate positions, based on the 'Strategising' and 'Relevancing'-stages, upfront. It would be beneficial to learn about factual PCM-profiles in detail which could serve as concrete input into the 'Profiling' stage for other companies experiencing the same or similar CF's.

However, this is not inconsistent with the principle pragmatic research approach taken in this thesis, advocating Feyerabend's methodological pluralism (3.2.2.4.2, p. 92). To encourage varying research approaches, as well as varying contexts or research goals, as sketched above, must not discourage research from following a similar approach to scientific inquiry. Knowledge related to the organisation of PCM-activities will benefit from contributions provided by various and complementing investigations. Taken as such, this is not only the end of the thesis, but the beginning of the advancement of the 'Alignment-Theory of Product Cost Management', which is now, to formulate it as critical realist and grounded theorist, ready and waiting to be detailed or modified.

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Appendix 1: Findings of literature review in research area “cost management”

Finding	Chapter	Assumption	Gap	Remark and evaluation
1 Split into three tribes: traditional accounting, management accounting and strategic management accounting	2.4	There are three distinct variants of the accounting school		Assumption can be challenged: possibly there is a different amount of or different variants
2 Highest focus: strategic management accounting, triggered by star burst article 1981 leading to academic discussion	2.4.1		Neglected spot: traditional accounting and management accounting under-researched	
3 Strategic management accounting again split into activity view, attribute view and marketing view	2.4.1.2	There are three distinct variants of strategic management accounting		Assumption can be challenged: possibly there is a different amount of or different variants
4 Tribes, although historically developed one after the other, should be implemented in practice as three different accounting approaches	2.4.1.3	There are three distinct variants of the accounting school		Assumption can be challenged: possibly there is a different amount of or different variants
5 Focus on multitudinous costing techniques in relation to other contextual factors	2.4.1.3		Neglected spot: research issues besides costing techniques and partially in relation to other factors are overlooked, at least under-researched	
6 Rationale about link between strategic aspects and costing techniques	2.4.1.3	Cost information needs are dependent on strategic direction of the company		Assumptions should be challenged: the strategic link can be used to create a stepp-off point in order to focus and consequently limit the research scope
7 Little, if any, insight about practical implication of this rationale	2.4.1.3		Neglected spot: practical implications of cost information needs and strategic aspects under-researched	
8 Broadening the accounting view towards an interdisciplinary framework and multiple cost drivers	2.4.1.3	Cost management (accounting school) is interdisciplinary and driven by multiple costs		Assumptions should be kept: there is no other indication obvious
9 Lack of normative concept / theory to make the conviction explicit and concrete	2.4.1.3		Application spot: normative concept / theory about implications of strategy on cost management would extent extant knowledge	
10 Paradox of strategic management accounting: high interest vs. negligible impact (relevance gap)	2.4.1.3		Confusion spot: clarification of reasons for the paradox to explain competing observations	

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	Finding	Chapter	Assumption	Gap	Remark and evaluation
11	Reasons for relevance gap not conclusively clarified	2.4.1.3		Confusion spot: clarification of reasons for the paradox to explain competing observations	
12	Insufficient clarity about terminology (definitions, meanings,...) incl. intercultural differences	2.4.1.3	There is a common terminology achievable and it is a desirable outcome	Confusion spot: clarification of competing, at least ambiguous terminology	Assumption should be kept: only common terminology enables scientific discourse
13	Mismatch of dynamics and variety between theoretical strategic concepts and actual practice	2.4.1.3	The dynamics and complexity of either theoretical concepts or factual reality can not be overcome to achieve a more stable and therefore useable theory		Assumption can be challenged: possibly, the current concepts are just not well-defined to remain stable and useable
14	Competence problems of accountants hinder adoption of broadened theoretical concepts	2.4.1.3		Neglected spot: empirical evidence missing	
15	Missing empirical evidence of significant, measurable benefits in firms (do they exist? are they meaningfully measured?)	2.4.1.3		Neglected spot: empirical evidence missing	
16	Obvious unsearched territory existing and easily identifiable, however either focussed on looking into the past and descriptive or focussed on further advancement of costing techniques, limited to information delivery purpose	2.4.1.4	Gap-filling does contribute to knowledge (theory and practice)	Neglected spots Confusion spots Application spots	Assumption can be challenged: when searching for incremental knowledge increase ok, but, as shown by the relevance gap, it is not promising.
17	Emerge of design school middle 1990s impacted by economic crisis and cost related strategies (Porter)	2.4.2	Cost management is important to master competitive business environments with a more action-oriented cost management concept		Assumptions should be kept: otherwise the research initiation is at its end at this point in time
18	Notion about design school being represented by German scholars	2.4.2	Culture does have an impact on cost management practice	Neglected spot: current practices / influences of culture on cost management under-researched and missing empirical evidence	Assumption can be challenged: this assumption is lacking empirical foundation of current management practice, through globalisation one could expect mixed forms

Appendix 1: Findings of literature review in research area “cost management”

Finding	Chapter	Assumption	Gap	Remark and evaluation
19 Notion that design school's purpose is broadened to actively shape costs	2.4.2	Cost management is important to master competitive business environments with a more action-oriented cost management concept		Assumptions should be kept: otherwise the research initiation is at its end at this point in time
20 Move from accountant's role to other and multiple functions increasing organisational complexity	2.4.2	Cost management is interdisciplinary Organisational aspects are relevant for cost management	Neglected spot: implications under-researched Application spot: organisational aspects you be extended and/or complemented	Assumptions should be kept: there is no other indication obvious
21 Distinction between re-active and pro-active tribe	2.4.2	There exists a bi-polar, at least distinct separation of cost management approaches	Neglected spot: distinction is lacking empirical evidence	Assumption can be challenged: possibly there is a different amount of or different variants
22 Re-active approach: claimed not to be promising / successful	2.4.2.1	Pro-active cost management is superior to re-active cost management	Confusion spot: on the one hand there is the notion about strategic contingency, on the other hand there is the notion that pro-active cost management is superior to re-active cost management Neglected spot: distinction is lacking empirical evidence	Assumption can be challenged: supported by the confusion spot of competing concepts and the neglected spot of lacking empirical evidence this precondition can be thrown over board
23 Pro-active approach: continuous instead of occasional, even more comprehensive, triggered by the strategy / external factors, not by a problem / internal factors, even more enhanced interdisciplinarity and company-internal interaction and participation	2.4.2.1	Pro-active approach can be described using distinct categories		Assumptions should be kept: this possibly directs the research towards a topic
24 Majority of research is conceptual, normative-descriptive	2.4.2.2	There is a need for normative theories as a desirable research outcome	Neglected spot: normatives are at least under-researched	Assumptions should be kept: considering a contribution in management research a normative theory would contribute to both, theory and practice, this possibly directs the research towards a topic

Appendix 1: Findings of literature review in research area “cost management”

Finding	Chapter	Assumption	Gap	Remark and evaluation
25 Variety of dimensions / elements in cost management in investigation	2.4.2.2	Gap-filling does contribute to knowledge (theory and practice)	Neglected spots Confusion spots Application spots	Assumptions should be partially kept: it can be challenged whether it is meaningful to fill the gaps for each and every sport, however the definition of focus spots eventually directs towards a research topic with respect to focus
26 No common framework yet existing, however research can be allocated into several categories: company-internal or external factors, tasks, tools / methods, objects, targets, organisation / structure as well as success factors.	2.4.2.2	There are categories which comprehensively describe cost management	Neglected spot: integration of currently mainly isolated aspects is overlooked, at least under-researched	Assumptions should be kept: this possibly directs the research towards a topic
27 Focus of research: tasks as distinguishing factor to justify separate approach between accounting/design school as well as re-active / pro-active -> action orientation	2.4.2.3	There are different forms of cost management There are two distinctly different forms of cost management	Neglected spot: other factors which support a distinction between accounting/design school and re-active/pro-active approach are under-researched and lacking empirical evidence	Assumptions should be kept: this possibly directs the research towards a topic
28 Either-/or-assumption of re-active and pro-active	2.4.2.3	There are two distinctly different forms of cost management		Assumption can be challenged: possibly there is a different amount of or different variants
29 Besides that: numerous cost management issues, research plurality yet mainly isolated single / few aspects -> no integration	2.4.2.3		Neglected spot: integration of currently mainly isolated aspects is overlooked, at least under-researched	
30but further focus: cost reduction, internal-external factors, company-size/strategic factors or industry/country focus	2.4.2.3	Cost reduction targets in different contexts is the main point of interest in cost management	Confusion spot: the notion that pro-active cost management is superior to re-active cost management competes with the focus on cost reduction which is often triggered by a reaction to a problem	Assumption can be challenged: considering the assumption that there are different cost management systems which can be described using to be defined categories, then one could remain open to other cost management targets

Appendix 1: Findings of literature review in research area “cost management”

	Finding	Chapter	Assumption	Gap	Remark and evaluation
31	Ill-kept aspects: organisational responsibility/accountability, time-series analysis of success factors	2.4.2.3		Neglected spot: mentioned aspects are under-researched	
32	Obvious unsearched territory existing and easily identifiable considering the plurality / complexity of theoretical combinations of aspects	2.3.2.3		Neglected spots Confusion spots Application spots	
33	Despite the conviction of strategic contingency factors influencing cost management, ...	2.4.2.3	Strategic contingency factors do impact upon the choice of a cost management system		Assumptions should be challenged: this possibly directs the research towards a topic
34	... little is said about the definition of these factors and allocation of these to certain cost management models				
35	Terminology issues: system vs. profile vs approach vs.	2.4.2.3	There is a common terminology achievable and it is a desirable outcome		Assumption should be kept: only common terminology enables scientific discourse
36	Little scientific discourse but isolated development without exploration of commonalities and differences	2.4.2.3		Neglected spot: integration of currently mainly isolated aspects into a system approach is overlooked, at least fairly under-researched	
37	Research status: divergence phase (broadening/deepening > atomization), bigger research area then accounting school	2.4.2.4		Neglected spot: integration of currently mainly isolated aspects into a system approach is overlooked, at least fairly under-researched	
38	Ambition to close relevance gap by adding more and more applications in different contexts (countries, industries, ...) to avoid allegation to be too general, too unspecific	2.4.2.4	Gap-filling does contribute to knowledge (theory and practice)	Neglected spots Confusion spots Application spots	Assumptions should be partially kept: it can be challenged whether it is meaningful to fill the gaps for each and every sport, however the definition of focus spots eventually directs towards a research topic with respect to focus

Appendix 2: From 38 findings to 11 key findings

#	Finding	Chapter	Key finding after grouping	#
2	Highest focus of research in accounting school: strategic management accounting, triggered by star burst article 1981 leading to academic discussion	2.3.1	Cost management is a researched territory	1
17	Emerge of design school middle 1990s impacted by economic crisis and cost related strategies (Porter)	2.3.2		
1	Split of accounting school into three tribes: traditional accounting, management accounting and strategic management accounting	2.3	Different variants of cost management are differentiated	2
3	Strategic management accounting again split into activity view, attribute view and marketing view	2.3.1.2		
4	Tribes, although historically developed one after the other, should be implemented in practice as three different accounting approaches	2.3.1.3		
21	Distinction between re-active and pro-active tribe of design school	2.3.2		
28	Either-/or-assumption to distinguish re-active and pro-active cost management	2.3.2.3		
8	Broadening the accounting view towards an interdisciplinary framework and multiple cost drivers	2.3.1.3	Different variants of cost management are conceptually sketched	3
27	Focus of research in design school: tasks as distinguishing factor to justify separate approach between accounting/design school as well as re-active / pro-active -> action orientation	2.3.2.3		
19	Notion that design school's purpose is broadened to actively shape costs	2.3.2		
18	Notion about design school being represented by German scholars	2.3.2		
23	Pro-active approach: continuous instead of occasional, even more comprehensive, triggered by the strategy / external factors, not by a problem / internal factors, even more enhanced interdisciplinarity and company-internal interaction and participation	2.3.2.1		
6	Rationale about link between strategic aspects and costing techniques	2.3.1.3	Notion that strategy and cost management are linked	4
33	Despite the conviction of strategic contingency factors influencing cost management,	2.3.2.3		
34	... little is said about the definition of these factors and allocation of these to certain cost management models	2.3.2.4	Little, if any investigation of relation between strategy and cost management	5
7	Little, if any, insight about practical implications of this rationale	2.3.1.3		
24	Majority of research is conceptual, normative-descriptive	2.3.2.2	There are normative hints for cost management available	6
22	Re-active approach: claimed not to be promising / successful	2.3.2.1		
9	Lack of normative concept / theory to make the conviction explicit and concrete	2.3.1.3		
13	Mismatch of dynamics and variety between theoretical strategic concepts and actual practice	2.3.1.3		

Appendix 2: From 38 findings to 11 key findings

#	Finding	Chapter	Key finding after grouping	#
10	Paradox of strategic management accounting: high interest vs. negligible impact (relevance gap)	2.3.1.3	Ambition to close relevance gap mainly through gap-spotting	7
11	Reasons for relevance gap not conclusively clarified	2.3.1.3		
15	Missing empirical evidence of significant, measurable benefits in firms (do they exist? are they meaningfully measured?)	2.3.1.3		
38	Ambition to close relevance gap by adding more and more applications in different contexts (countries, industries,) to avoid allegation to be too general, too unspecific -> viscous loop	2.3.2.4		
16	Obvious unsearched territory existing and easily identifiable, however either focussed on looking into the past and descriptive or focussed on further advancement of costing techniques, limited to information delivery purpose	2.3.1.4		
31	Ill-kept aspects: organisational responsibility/accountability, time-series analysis of success factors	2.3.2.3		
32	Obvious unsearched territory existing and easily identifiable considering the plurality / complexity of theoretical combinations of aspects	2.3.2.3		
25	Variety of dimensions / elements in cost management in investigation	2.3.2.2	Research plurality, yet mainly isolated single / few aspects	8
29	Besides that: numerous cost management issues, research plurality yet mainly isolated single / few aspects -> no integration	2.3.2.3		
5	Focus on multitudinous costing techniques in relation to other contextual factors	2.3.1.3		
14	Competence problems of accountants hinder adoption of broadened theoretical concepts	2.3.1.3		
20	Move from accountant's role to other and multiple functions increasing organisational complexity	2.3.2		
30but further focus: cost reduction, internal-external factors, company-size/strategic factors or industry/country focus	2.3.2.3		
26	No common framework of cost management research yet existing, however research can be allocated into several categories: company-internal or external factors, tasks, tools / methods, objects, targets, organisation / structure as well as success factors.	2.3.2.2	No common framework of cost management research yet existing, however, research can be allocated into several categories	9
36	Little scientific discourse but isolated development with exploration of commonalities and differences	2.3.2.3	Research status: divergence phase (broadening/deepening instead of discourse > atomization) / Insufficient clarity about terminology (definitions, meanings,....) incl. intercultural differences	10 / 11
37	Research status: divergence phase (broadening/deepening > atomization), bigger research area than accounting school	2.3.2.4		
35	Terminology issues: system vs. profile vs approach vs.	2.3.2.3		
12	Insufficient clarity about terminology (definitions, meanings,....) incl. intercultural differences	2.3.1.3		

Appendix 3: Samples of diverse evaluations of GT (see chapter 3.3.2.2)**Grounded Theory**

variants	Exemplary evaluations
Original GT	<ul style="list-style-type: none"> * Credited to Glaser and Strauss, is associated with * ...no explicit/distinct philosophical stance (Nathaniel, 2011, p. 187). * ...realist, objectivist and positivist positions (Bryant, 2002, pp. 30-32, Lo, 2013, p. 17; Lomborg & Kirkevold, 2003) * ...pragmatist positions (Nathaniel, 2011; Strübing, 2010)
Glaserian GT	<ul style="list-style-type: none"> * Acknowledged after split from Straussian GT * Further advancement indicating closer link to objectivist ontology (Hallberg, 2006, p. 144; Simmons, 2014, p. 275) * Glaser, heavily disputing constructivist tendencies in GT (Glaser, 2014c) * Glaser “indicates his cognizance of his alleged positivist proclivity” (Kenny & Fourie, 2015, p. 1281) * Glaser’s pragmatic and philosophically neutral advice about GT (Glaser & Tarozzi, 2007, p. 27).
Classic GT	<ul style="list-style-type: none"> * Closely tied to Glaserian GT and used interchangeably (Christiansen, 2008; Rieger, 2018; Walsh, Holton & Mourmant, 2019, p. 9) * Sketched in opposition to constructionist GT embodying objectivist view (O’Connor, Carpenter, & Coughlan, 2018). * Can “adopt any epistemological perspective appropriate to the data and the ontological stance of the researcher” (Holton, 2009, p. 38).
Objectivist GT	<ul style="list-style-type: none"> * Bound to a (post-)positivist epistemology ...but '(post-)positivist GT' bound to objectivism as ontology ...and contrasted against constructivist GT with its interpretive epistemology (Charmaz, 2000). * Objectivist and positivist GT are used synonymously (O’Callaghan, 2012, p. 238). * Glaserian GT is stated as a objectivist, positivist or realist GT (Taghipour, 2014, p. 100) * Straussian GT is stated as a objectivist, positivist or realist GT (Belgrave & Seide, 2018, pp. 11-13), yet less often
Realist GT	<ul style="list-style-type: none"> * Incorporating objectivist ontology and positivist epistemology ...but far less spread label, despite its congruent philosophical direction (Belgrave & Seide, 2018, pp. 10-11) * Opposed to relativist and pragmatist GT Glaser, Simmons or Stern as proponents tied to Glaserian GT as well as classic GT (Lo, 2014, p. 63).

Appendix 4: Participants' characteristics for purposive/theoretical sampling

Characteristics shared by the members of the convenient sample	Characteristics, differing among the members of the convenient sample
Known personally by the researcher	Differing sub-branches of the manufacturing industry
Professional background in the manufacturing industry	Differing areas of expertise/functions within PCM
Professional background in or related to product cost management	Different levels of experiences in terms of professional years and completed projects
With few exceptions (especially for step 1 of the study, see pp. 156-159) professional background as management consultants	Either a rather general work approach or more of a meticulous working style
Credibility to provide authentic data (see p. 166)	

Appendix 4: Participants’ characteristics for purposive/theoretical sampling

	#	Position	Main industry	Main function	Comp	Character
Step 1	1	CEO	Automotive	General	2	Generalist
	2	CFO	Transportation	Finance	3	Meticulous
	3	Consultant	Rail	General	5	Generalist
	4	Head of Cost Mgmt	Energy	Development	2	Meticulous
	5	COO	Mech. Engineering	Operations	4	Generalist
	6	Head of PCM	Automotive	Product cost	3	Meticulous
	7	CEO	Medical	General	4	Generalist
	8	Consultant	Defence	Purchasing	5	Meticulous
	9	Jun. Product mgr	Chemicals	Product management	1	Meticulous
	10	Product manager	Electronics	Product management	2	Generalist
	11	Sales Director	Automotive	Sales	2	Generalist
	12	Consultant	Piping, Machinery	Purchasing/Strategy	20	Meticulous
Step 2	13	CTO	Medical	Research/Development	3	Meticulous
	14	Consultant	Machinery	Cost Engineering	20	Meticulous
	15	Consultant	Transportation	Development	5	Meticulous
	16	Consultant	Packaging	Engineering	5	Meticulous
	17	Consultant	Rail	Processes	10	Meticulous
	18	Head of Division	Automotive	General	3	Generalist
	19	Consultant	General	General	25	Generalist
	20	Consultant	General	Cost calculation	25	Meticulous
	21	Consultant	Electronic	Development	25	Generalist
	22	Consultant	Energy	Strategy/Purchasing	50	Hybrid
Step 3	23	Consultant	Mech. Engineering	Development	10	Generalist
	24	Consultant	Commercial vehicles	Cost Calculation	25	Meticulous
	25	Consultant	Aviation	Development	25	Generalist
	26	Consultant	General	Value Engineering	25	Meticulous
	27	Inh. Consultant	Automotive	Purchasing/Engineering	10	Meticulous
	28	Managing Partner	Packaging	General	100	Hybrid
	29	Consultant	Ship building	Purchasing	50	Meticulous
	30	Consultant	Drives	Cost Engineering	25	Meticulous
	31	Consultant	Electronic	General/Org	25	Generalist
	32	Consultant	Energy	Cost Down	25	Meticulous
	33	Consultant	Rail	Cost Down	25	Generalist
	34	Consultant	Construction	Engineering	25	Generalist
	35	Consultant	Semiconductors	Purchasing/Org	25	Generalist
	36	Consultant	Aerospace	General	25	Generalist
Step 4	37	Consultant	Piping, Machinery	Purchasing/Strategy	n.a.	Meticulous
	38	Consultant	Commercial vehicles	Cost Calculation	n.a.	Meticulous
	39	Consultant	Energy	Strategy/Purchasing	n.a.	Hybrid
	40	Consultant	Machinery	Cost Engineering	n.a.	Meticulous
	41	Consultant	Aerospace	General/Org	50	Meticulous
	42	Consultant	Mech. Engineering	General/Org	50	Meticulous
	43	Consultant	Energy	Cost Down	n.a.	Meticulous
	44	Inh. Consultant	Automotive	Purchasing/Engineering	n.a.	Meticulous
	45	Consultant	General	Value Engineering	n.a.	Meticulous
	46	Consultant	General	Cost Calculation	n.a.	Meticulous
	47	Consultant	General	General/Org	50	Meticulous
Step 7	48	Managing Partner	Packaging	General	n.a.	Hybrid
	49	Managing Partner	General	Strategy/Org/Cost	100	Hybrid
	50	Managing Partner	General	Strategy/Org/Cost	100	Hybrid
	51	Managing Partner	General	Strategy/Org/Cost	100	Hybrid
					Sum	1094

Appendix 4: Participants’ characteristics for purposive/theoretical sampling

	#	Position	Sampling goal	Sampling direction	Sampling content
Step 1	1	CEO	Cover organisational hierarchies, functions which are relevant for PCM and variety of branches within manufacturing industry	Diversity of perspectives	Hierarchy and function
	2	CFO			Hierarchy and function
	3	Consultant			Multifaceted view
	4	Head of Cost Mgmt			Hierarchy and function
	5	COO			Hierarchy and function
	6	Head of PCM			Hierarchy and function
	7	CEO			Hierarchy and function
	8	Consultant			Multifaceted view
	9	Jun. Product Mgr			Hierarchy and function
	10	Product manager			Hierarchy and function
	11	Sales Director			Hierarchy and function
	12	Consultant			Multifaceted view
	13	CTO			Hierarchy and function
Step 2	14	Consultant	Move towards problem-solution driven PCM consultants making use of consultants’ multiplier effect	Diversity of perspectives	Multifaceted view
	15	Consultant			
	16	Consultant			
	17	Consultant			
	18	Head of Division			
Step 3	19	Consultant	Get higher clarity of the categories and concepts	Maximise diversity in groups and concepts	Any
	20	Consultant			Different combination of main branches and functions as before
	21	Consultant			
	22	Consultant			
	23	Consultant			
	24	Consultant			
	25	Consultant			
	26	Consultant			
	27	Inh. Consultant			
	28	Consultant			
	29	Consultant			
	30	Consultant			
	31	Consultant			
	32	Consultant			
Step 4	33	Consultant	Challenge the usefulness of the identified categories in terms of their relations. As a group: Data from 0 new branches and 0 new functions.	Minimise diversity in groups and foster diversity of concepts	Strategy, Priorities
	34	Consultant			Positioning, Relevance
	35	Consultant			Strategy, Positioning
	36	Consultant			Relevance, Positioning, KSF
	37	Consultant			Organisation, Alignment
	38	Consultant			Organisation, Alignment
	39	Consultant			Relevance, Priorities, KSF
	40	Consultant			Alignm., Strategy, Posit.
	41	Consultant			KSF, Posit., Prior., Strategy
	42	Consultant			Alignm., Prior., Relevance
Step 7	43	Consultant	Delimit scope of the theory	Maximise diversity in groups and concepts	Org., Strategy, Alignment
	44	Managing Partner			Highest possible/accessible competence and fast recognition
	45	Managing Partner			
46	Managing Partner				
47	Managing Partner				

Appendix 5: Advantages of the generated convenient sample

Advantage	Explanation / Justification
Support of problem-centric perspective	By its very nature, data gained from cost management consultants differs from data gained from the wider population in a way that there is an explicit problem-centric perspective in the data, considering problem-identification and -solving, development of recommendations, practical interventions and the proper provision of information rising out of the consulting practice of the participants and their professional competencies (De Caluwé & Reitsma, 2010; Silacheva, 2019).
Potential to slide the data	As the consultants act as multipliers of knowledge about a greater number of different companies, this multiplicity of experiences not only enlarged the amount of data gained from singular companies but also inhibited the potential to slice the data according to any emerging needs during the study (Urquhart, 2023, pp. 158-160).
Foundation of purposive/theoretical sampling	<p>The diversity of experiences and knowledge pertaining to various companies serves also as the foundation for the flexible purposive/theoretical sampling. This sampling approach, as outlined in chapter 3.4.1 (page 145) and Qureshi (2018b), was utilized in subsequent stages of the selected GT approach. For a comprehensive understanding of the specific sampling stages, the study's individual steps in chapter 4 should be referred to. In most cases, the purposive/theoretical sampling was then based on known characteristics of the participants and how they related to the research goal overall (or it was possible to find out the characteristics prior to the invitation/planning of the interview) as well as the direction of the specific GT step (see appendix 4 for the participants' characteristics as well as the methodological remarks per GT-step in chapter 4). It was this argument particularly that ensured the meaningful fulfilment of the CGT's pillar of theoretical sampling (McCrae & Purssell, 2016, p. 2285) as knowing or getting to know the participant's relevant characteristics is a prerequisite for enabling "[s]ampling according to the dictates of the emerging theory" (Coyné, 1997, p. 625).</p> <p>The generated research frame potentially provided data from more than 1000 different companies due to the wider experience of those involved, with consultants having experience of assignments across a wide spectrum. Entering the research phase, the researcher felt comfortable that the size of the convenient sample would be sufficiently big enough so as to inhibit the potential for saturation of the emerging theoretical constructs (Francis et al., 2010).</p> <p>Consequently, the alleged critique of convenience sampling not accurately representing the characteristics of the whole population (Bell et al., 2022, p. 200; Brewis, 2014) could be dismissed. The remaining data pool within the research frame still seemed comparably high and it enabled the proper and meaningful execution of the subsequent steps of purposive/theoretical sampling by staying in control of participant characteristics, as demanded by the GT methodology (Morse & Clark, 2019).</p> <p>More specifically, the second stage of the sampling was bound to the concrete GT-steps as adopted from Walsh et al. and, with the emergent research process, subject to frequent change, depending on the individual research step (chapter 4). However, some principle comments on the sampling strategy can be provided upfront as an overall summary.</p>

Appendix 6: Invitation letter

Dear XXX!

My name is Claude Maxion, and I am a doctoral student in the Faculty of Business, Education, and Professional Studies at the University of Gloucestershire at Cheltenham and Gloucester, UK.

I am currently conducting a research study in the area of Cost Management. The purpose of this study is to develop a theory of Product Cost Management in the manufacturing industry using a Grounded Theory approach. To do so, I plan a series of interviews to collect data which are analysed subsequently. Therefore, I would kindly ask you whether you would be interested in participating in this study and invite you for an interview. The interview would take place in a safe environment, potentially using online communication media such as Skype or MS Teams. A few open-ended questions would be asked, giving app. 30-60 minutes room to answer them.

The participation in this interview is completely voluntary and you may withdraw from the study at any time. The study is completely anonymous; neither your name, nor the name of the company you are working for or any names of business partners such as suppliers, customers or clients will be stated when processing your data and publishing the study.

The information created by this interview is considered confidential information to be held by me, Claude Maxion, and the University of Gloucestershire only. The results will be anonymously processed in the doctoral thesis.

Furthermore, the GDPR (General Data Protection Regulation 2018) requires that the interviewees must be provided with a privacy information regarding the collection, usage, and retention of their personal data. Therefore, please find also link to the Privacy Notice and the Research Ethics Handbook, which are published on the website of the University of Gloucestershire:

<https://www.glos.ac.uk/docs/download/Privacy-notices/Research-Participants-Privacy-Notice>

<https://www.glos.ac.uk/information/knowledge-base/research-ethics-a-handbook-of-principles-and-procedures/>

Please feel free to contact me any time for any reason or concern you might have. I very much look forward to hearing from you!

Yours sincerely,
Claude Maxion
Doctoral Student, University of Gloucestershire

email: claudemaxion@aol.com
phone: +49 (0)173 3092781

Appendix 7: Electronic support during data collection, storage, and analysis

Recordings
Recording 06-13-20, 02:29 PM
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Transcript unlocked

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Interview transcript 001
Doctoral thesis of Claude Maxion (CM), University of Gloucestershire

Transcript

Initial phase (00:00):
Silence....Setting up the voice recorder

CM (00:55):
So now we can start. As you have already received my invitation letter, you know that my study is about product cost management and as I use the particular method of grounded theory, I really will orient you a few general and open questions to elaborate and to explain in your company a bit about your product cost management and what are your main issues, your points of interest. Your focus points are in managing product costs.

#	Transcribed data	Code	Concept	(Main) Category / Concern
604	001-086 but we don't have a streamlined well organised way of working.	Lacking streamlined product cost organisation	Steering activities	Organizing product cost management activities
605	001-091 ... to know... under this or other circumstances this and that cost information or direction... it is not really existing.	Lacking directions	Steering activities	Organizing product cost management activities
608	002-069 We do have the information... Somewhere.... We need information technology. We need targets, at least a strategy. Liquidity today? Sure? Earnings in the future? Sure. Profitability etc. What should we focus on when calculating the cost?	Giving directions	Steering activities	Organizing product cost management activities
610	003_049 So, we have no joint vision, no joint mission whatsoever, which could guide our activities.	Lacking leadership	Steering activities	Organizing product cost management activities
611	003_057 It's more muddling through.	Absence of central planning	Steering activities	Organizing product cost management activities
612	003_060 I would like to change that so that we all know into which direction to go. What do we need, cost-wise? What is our strategy... for the company overall, of course, but also for our product portfolio and in my area of responsibility?	Giving cost directions	Steering activities	Organizing product cost management activities
613	003_083 I don't see that everybody works into the same direction.	Directing the staff	Steering activities	Organizing product cost management activities
615	005_030 So, there it was more a "lucky thing" to find the right price.	Leaving to chance	Steering activities	Organizing product cost management activities
619	005_121 I saw empty eyes.	Being clueless	Steering activities	Organizing product cost management activities
621	008-039 At least in target setting and some general guidelines from a strategy.	Absence of direction	Steering activities	Organizing product cost management activities
622	009-041 This [no long-term direction] is what I mean that our product cost manager has big problems.	Lack of long-term orientation	Steering activities	Organizing product cost management activities
626	001-088 If you should have for example someone taking care about the product management or product development, product cost ... cost-wise.	Taking care of product cost	Taking care of product cost	Organizing product cost management activities
627	003_103 Who takes care of it for the product or for the portfolio.	Taking care of product cost	Taking care of product cost	Organizing product cost management activities
628	005_051 So, uh, they don't take care about the product cost themselves and they only looked for, let me say, head count numbers.	Taking care of product cost	Taking care of product cost	Organizing product cost management activities

Appendix 8a: Thesis' validation methods – Constant comparison

Validation method	Details
Constant comparison	<p>To substantiate the catchword 'constant comparison' for the thesis' actual practice, it helps to report the comparison steps as they occur, e.g. in figure 59 (p. 170), or as a summary, e.g. in table 19 (p. 293). As it is shown, constant comparison, in many different ways, was the main inherent method in every single research step throughout the study. Not only were comparisons between the different slices of data, obtained by the conducted interviews, but also comparisons between different levels of conceptualisations/abstraction were considered in order to foster the groundedness of the theory in the data. Ideally, it was aimed to compare conceptualisations of higher abstraction levels with lower-level data, in order to stick as close as possible to basic data.</p> <p>During the procedure, specifically during the crucial first step (due to the 'foreshadowed problem', see page 175), a total of 25 iterations have been executed. These iterations primarily involved comparing data with codes, as well as codes with other codes. The purpose of this extensive comparison was to enhance the confidence in the validity of the main problem identified by the data, ensuring that it was not merely a result of preconceived notions.</p> <p>Furthermore, as demonstrated in chapter 4, a total of 19 different comparison directions have been conducted. These comparisons encompassed a wide range of scenarios, such as comparing well over 1000 codes during the initial phase of the research, as well as performing a sanity check at the conclusion of the study. The latter involved comparing the theoretical framework with the collective experience of highly knowledgeable senior management consultants, who have successfully completed more than 400 company assignments.</p> <p>Taken together, these rigorous comparisons have effectively mitigated any potential risk of inadequately comparing the emerging theory at various levels of abstraction with different sources of data. It can be confidently asserted that this risk has been successfully negated.</p>

Appendix 8b: Thesis' validation methods – Member checks

Validation method	Details
Member checks	<p>As with constant comparison, it is imperative to explicate to clarify the various types of member checks, as there exists a range of alternative approaches for their execution (Birt, Scott, Cavers, Campbell, & Walter, 2016). The fundamental principle underlying the idea of respondent validation is that “Member checking provides a way for the researcher to ensure the accurate portrayal of participant voices by allowing participants the opportunity to confirm or deny the accuracy and interpretations of data” (Candela, 2019, p. 620).</p> <p>In that, various forms of member checking vary from a simple verification of whether-or-not the data obtained from the participant has been transcribed/documentated correctly to a more complex analysis of the corresponding data. In some cases, member checking involves also validating abstracted and conceptualized data that has been informed by multiple sources of information (Birt et al., 2016, p. 1804). Given the critical realist perspective adopted in this study, which posits that individuals have the capacity to emancipate themselves from their own subjective experiences, the focus of member checking was on validating highly conceptualized or theorized data.</p> <p>In order to ensure the rigor and validity of the study, two trailblazing steps were implemented that involve member checks. These steps, namely step 4 and step 7, play a pivotal role in the research process. Step 4 involves outlining the rough theoretical model, while step 7 focuses on finalising the study by speaking-up the grounded theory.</p> <p>The rationale behind incorporating member checks in these specific steps is twofold. Firstly, in step 4, the aim was to establish confidence in the accurate identification of the constituent elements of the theoretical model. This confidence is essential for enhancing the efficiency of the study, alongside the targeted efficacy. By conducting member checks at this stage, the accuracy and completeness of the theoretical model can be verified, ensuring that it aligns with the intended objectives of the research. Secondly, the member check also serves as an indicator of sufficient saturation of the concepts and categories during these stages. This is crucial in minimising the risk of requiring major iterations at a later point in time. By assessing the level of saturation through member checks, it can be ascertained that the concepts and categories have been adequately explored and developed, thus reducing the likelihood of significant revisions in subsequent stages.</p> <p>In the context of the final step, step 7, which involves the closure of the study through the process of writing-up (and prior to that, speaking up), a similar line of reasoning can be applied. The rationale was to approach the participant who possessed the most experience and knowledge from the earlier phases of the study. The purpose of this approach was to have presented the current status of the emerging theory as of that particular date. By doing so, the data provided by this participant, along with his extensive experience, could be validated.</p> <p>It was deemed reasonable to utilize this criterion as a means to initiate the conclusion of the study, provided that no major concerns were raised. It is worth noting the appropriately articulated caution that member checks do not enhance the quality of a study (Thomas, 2017). Rather, their purpose is to minimize the potential number of mistakes in data collection and processing, ultimately contributing to the process of conceptualization (Mays & Pope, 2020, p. 218).</p>

Appendix 8c: Thesis’ validation methods – Confirmability audit

Validation method	Details
Confirmability audit	<p>This confirmability audit employed a threefold approach to achieve its objectives. Firstly, it served as an additional element of the constant comparison method by juxtaposing the theory against an additional set of data. This allowed for the further scrutiny of the theory's validity and applicability.</p> <p>Secondly, it introduced a novel method of data collection. In the initial interviews, open-ended questions were posed to the participants, allowing them to freely express their thoughts on any given phenomenon. However, in the final interviews, a different approach was adopted. The interviewees were presented with a set of data, referred to as the 'provisional theory', and were then asked to provide comments and feedback on this data. This shift in data collection methodology was significant, as it required the interviewees to relate their responses to the theoretical framework presented to them at that stage.</p> <p>Lastly, the third purpose of this approach was to gather additional new data that could contribute to the study and its analysis. The aim was to incorporate this data into the research prior to reaching a point of theoretical saturation, if feasible (Walsh et al., 2020, p. 46). By doing so, this sought to ensure a comprehensive exploration of the subject matter.</p> <p>In conclusion, this three-pronged approach served to enhance the study's validity and depth. It allowed for a thorough examination of the theory, introduced a novel data collection method, and facilitated the acquisition of additional data. These endeavours were undertaken in order to advance the understanding of the PCM related theory.</p> <p>Correspondent to the achieved high level of conceptualisation, interviewees had been chosen from the sampling pool with the intent to maximise the variety of covered companies and emerged theoretical concepts. This was achieved by choosing participants with the highest number of companies they could represent and the highest assumed number of different project assignments, the latter being an indicator of the familiarity with the highest number of different phenomena in PCM and therefore with different concepts/constructs/categories.</p>

Appendix 8d: Thesis’ validation methods – Authenticity of date

Validation method	Details
Authenticity of data	<p>In order to address potential allegations regarding the authenticity of the collected data, all members of the research pool demonstrated a keen interest in adhering to sound management practices and developing actionable and problem-solving solutions. This approach was favoured over the generation of superficial solutions that may only serve to temporarily overcome managerial challenges. Consequently, by involving these individuals as ‘co-researchers’, it can be assumed that their contributions to the study were not consciously biased in an attempt to steer the expected results away from an accurate representation of reality. On the contrary, their role as ‘co-researchers’ is widely recognized as a means to foster insights and findings that are relevant to practical applications (Antonacopoulou, 2010). This aligns with the overarching goal of the thesis, which aimed to make a meaningful contribution to the field of practice (see chapter 1.2.2.1, pp. 6-12).</p> <p>The present study, in accordance with the critical realist research perspective, acknowledges and values the existence of diverse personal viewpoints among the participants. This recognition aligns with the notion that these divergences constitute an integral component of the “part of the reality we seek to understand” (Maxwell, 2018, p. 22). Consequently, it was posited that the inclusion of such a sample would potentially expedite the advancement of the research towards generating actionable recommendations, as the mindset of the participants would be congruent with the research objective.</p> <p>The initial sampling process also took into consideration, to a certain subjective extent, the career trajectory and achievements of the participants in the field of product cost management. For the consultants, this included the evaluation of the success rate of projects conducted. Not only is this a consequence of a skill of being able to grab a company’s problem and its reality, but also to articulate it in a meaningful and credible way, which was important for the study’s CGT. Additionally, the cost management consultants within the researcher frame showed familiarity with various different aspects of PCM supporting the aim to involve knowledgeable practitioners. However, none of the participants could be characterised as to inhibit a show-up mentality or an ambition to dominate conversations by trying to push forward a personal agenda, even though they were known as people with a strong mind based on reflective practice. Especially during the study’s last step, the confirmatory audit, it was valuable to involve participants who are not ‘yes-people’, nodding at what is presented to them but being highly skilled in providing feedback which is unaffected by other people’s opinion.</p> <p>Likewise, all the participants possessed a strong expertise in contemporary management methods, instilling trust in the process of any acknowledged methods when input is provided appropriately (true to the motto in jargon: “garbage in - garbage out”). Furthermore, in order to foster an open and honest relationship towards the researcher and not to harm the study’s quality, all of them could be considered being spurred by the ambition to provide honest and unbiased input rather than just to endure the interviews for the sake of doing them.</p> <p>Finally, prior to the interviews only minimal (during the first steps of the study) or rare (during later steps) information had been provided to the interviewees (with the exception of the last step 7, the confirmatory audit), and opportunities to consciously direct interview data towards any wishful path were effectively minimised, therefore the data can be deemed authentic and representative of the empirical reality, albeit in a multifaceted and partial manner for each individual.</p>

Appendix 9: The main concern (step 1): sample data, codes, and concepts

Transcribed data	Code	Concept
<i>And I know from other companies that they are far more efficiently structured,</i>	Efficient company structure	Achieving organisational efficiency
<i>Believe me: We do a lot of cost meetings, a lot of unnecessary ad hoc meetings,</i>	Numerous meetings	Achieving organisational efficiency
<i>Those technicians want to stabilise the performance of our sensors to save energy and to reduce emissions off the customer motors ... that's our selling proposition.</i>	Differing motivation between Engineering and Product management	Aligning interests
<i>So, they are sitting between two chairs.</i>	Vacuum position	Aligning interests
<i>We don't have a department which is taking control about product cost, e.g. in development or so</i>	Lacking cost responsibility and accountability	Allocating responsibility and accountability
<i>However, I have to state, that here, um, nobody is really responsible to manage product cost.</i>	Missing responsibility	Allocating responsibility and accountability
<i>So, we in product management, we fight against other functions. We fight against them, our competition and competitors.</i>	Solving conflicts	Balancing conflicts
<i>Engineering is reinventing the wheel all the time and aims to innovate and innovate</i>	Conflicting mindset in Engineering	Balancing conflicts
<i>But that's hard, really hard because despite all the new wind, the changes ... different functions still do have different targets and priorities. This sucks.</i>	Functional misalignment of product cost targets	Balancing targets
<i>Purchasing: They have their purchasing prices and yes, they use this information, but not primarily product related but component related.</i>	Functional target alignment with Sourcing	Balancing targets
<i>Despite this shortcoming, we try to share the needed necessary roles in a pragmatic way as they are not officially assigned, which is a problem as everybody needs to show a great deal of flexibility</i>	Flexible roles	Defining roles & rules
<i>Most others do comment or remain quite as they are not interested.</i>	Interpretation of personal role	Defining roles & rules
<i>You cannot believe how people react when they are invited for cost out workshops. They even do not answer</i>	Showing disrespect	Committing to product cost
<i>And the financial incentives take a big portion of an individual's salary, so these come first.</i>	Incentives to gain commitment	Committing to product cost
<i>And, there is, I would say, a missing of the willing to optimise these processes</i>	Lacking improvement willingness	Cultivating improvement culture
<i>Nobody had a clue how to think about it, how to judge. We do it since years, it works... that was the answer. Now, I doubt it.</i>	Staying in comfort-zone	Cultivating improvement culture

Transcribed data	Code	Concept
<i>Because I am the one who is in charge of initiating any improvement actions for our portfolio.</i>	Initiating actions	Initiating actions
<i>And now he is trying to give his best but now this situation is too much for him because things have changed.</i>	Suffering change	Initiating actions
<i>Are we doing the right things? I don't know.</i>	Challenging the defined tasks	Defining product cost tasks
<i>It's not really management, it's probably only a product cost calculation or monitoring.</i>	Distinguishing calculation and monitoring tasks	Defining product cost tasks
<i>It's difficult for us to hire competent people, cost managers, in our area. They are already in other companies, so not willing to change or simply too expensive.</i>	Lacking proper competence of resources	Deriving competencies
<i>Also on their side: no cost-sensitivity or insight what are cost drivers.</i>	Doubting cost awareness	Deriving competencies
<i>but we are only recalculating the cost one time a month. Nothing else is possible.</i>	Frequency of product cost status updates	Monitoring for action initiation
<i>I know very little about the real product costs.</i>	Intransparent product cost status	Monitoring for action initiation
<i>Now what else is special: we have about one million components and if you want to try to control every component... you can't do it</i>	Consideration of complex product hierarchy	Detailing product cost structure
<i>I mean, it is okay to have different costing approaches. I mean, such as actual cost per engine, of course, or a cost as an average over the year, this is can be meaningful,</i>	Variety of cost breakdown approaches	Detailing product cost structure
<i>fact-based decision making,</i>	Fact-based decision making	Enabling decision making
<i>So we don't have transparency about our product cost. That's very disappointing, especially for me as a product manager.</i>	Intransparent product cost status	Enabling decision making
<i>And this drives people mad. So much effort into controlling and figures, but no transparent guideline how to decide.</i>	Guidelining decision making	Establishing clear guidelines
<i>here is a clear instruction in place</i>	Establishing clear instructions	Establishing clear guidelines
<i>there is the need and there is the wish to involve the other functions, which are related to this product life cycle in a very, very closed way.</i>	Involving functions contributing during product life cycle	Integrating functions
<i>in order to get all the different departments working together, that's really the hard one,</i>	Enabling internal collaboration	Integrating functions
<i>If you should have for example someone taking care about the product management or product development, product cost ... cost-wise.</i>	Taking care of product cost	Taking care of product cost
<i>So, uh, they don't take care about the product cost themselves and they only looked for, let me say, head count numbers.</i>	Taking care of product cost	Taking care of product cost

Transcribed data	Code	Concept
<i>So, we are often also quite late and always giving the right direction is nearly impossible.</i>	Problematic decision making	Making decisions
<i>its in the top management, mainly development.</i>	Assigning decision making to top management	Making decisions
<i>And if we have many plants and locations worldwide and spread, and then it's a challenge to connect and align the data</i>	Facing organisational and data complexity	Organising information and work flow
<i>this is especially a problem that in early phase of a product development or redesign we don't have the specs, the specifications, not yet fixed</i>	Mismatch of available information	Organising information and work flow
<i>Like, now, we can't go to the customer, like to, "Hey, come on. Our products cost are rising up, so we need these now the cost are 10% higher".</i>	Reacting towards customers after price increases	Reacting on deviations
<i>especially obvious when there is a sign that we are too costly. I mean when controlling comes back to us.</i>	Meetings to react on cost indication	Reacting on deviations
<i>However, we are not yet at full speed because we are also lacking resources.</i>	Lacking proper resources	Rightsizing capacities
<i>I would estimate minimum the same number in total on top as full-time equivalent in this case.</i>	Questioning capacity efficiency of indirectly affected resources	Rightsizing capacities
<i>and for us and the problem then is, um, of course we are suffering from this a lot ... it's not transparent how these target costs are set and why. And so therefore this is a big problem.</i>	Intransparency of target cost setting	Setting product cost targets
<i>So, yeah, as a first point to have a clear overview or to have a clear transparency ... that's a target that we have since long or that we fulfil every month I would say.</i>	Targeting cost transparency	Setting product cost targets
<i>So, for example, purchasing is reporting yearly savings of x percent, and we don't find them in our, what we call standard cost in engineering. The standard costs are yearly averages, which you build.</i>	Conflict between Sourcing and Engineering tools	Specifying tools & templates
<i>but at least the results should be in line with each other or somehow, we should be able to having built a bridge to explain the one or the other deviation, because otherwise this is what we are really suffering.</i>	Bridging separated tools	Specifying tools & templates
<i>It's more muddling through.</i>	Absence of central planning	Steering activities
<i>I would like to change that so that we all know into which direction to go. What do we need, cost-wise? What is our strategy... for the company overall, of course, but also for our product portfolio and in my area of responsibility?</i>	Giving cost directions	Steering activities

Appendix 10: The core category (step 2): sample data, codes, and concepts

Transcribed data	Code	Concept
<i>we are driven by competition or by costs or prices of competitions. Thats why we do it as we do it.</i>	Linking business driver to management system	Building cause-and-effect relationship
<i>with our corporate direction we live quite good with our kind of accuracy.</i>	Accepting accuracy limitations due to corporate direction	Building cause-and-effect relationship
<i>You have to consider changes also of our own strategy. Will it be the same as today?</i>	Considering strategic change	Considering strategic change
<i>Different times, different targets. Or different strategy, different targets.</i>	Changing targets/ strategies over time	Considering strategic change
<i>and they are playing this like together, it's a joint long-term oriented exercise.... and it works...</i>	Long-term perspective	Forward looking
<i>Nobody gives the long-term direction as it was done in the past.</i>	Appreciating long term directions	Forward looking
<i>being positioned as cost-efficient innovative technologies</i>	Cost positioning versus competition	Positioning on the market
<i>we are not as strong to influence the market price, we can only follow the market, no alternatives right now.</i>	Weak company market position	Positioning on the market
<i>Targets and the strategies for the product cost are given by the C- level in our company, which is of course good.</i>	Targets and strategy as general direction	Following strategy
<i>The product cost should be in line with the product strategy.</i>	Aligning product cost with strategy	Following strategy
<i>So, we have no joint vision, no joint mission, target or whatsoever, which could guide our activities.</i>	Following vision & mission	Following vision & mission
<i>We are in a very highly sophisticated engineering process or product environment which mostly you win due to good engineering</i>	Engineering as CSF	Fulfilling key success factor
<i>A big share of the projects is to redesign due to the quality problems. So, a lot of time effort was spent for testing validation and all this stuff, no matter whether for component, system or supplier validation.</i>	Quality as success factor	Fulfilling key success factor
<i>of course, the product cost are very important and the product cost management is very important also to our company or other companies in the group</i>	High importance of product cost	Relevancing product cost
<i>In the past, product cost aspects were not that important.</i>	Low importance of product cost	Relevancing product cost
<i>The overall priorities were different.</i>	Differing overall priorities	Setting business priorities
<i>I don't know much because the company doesn't want to spend so much time in product costing.</i>	De-prioritising product cost	Setting business priorities

Appendix 11: The related categories (step 3): sample codes and concepts

Code	Concept	Category
Involving functions contributing during product life cycle	Involved functions & departments	PCM-organisation
Involving functions	Involved functions & departments	PCM-organisation
Benchmarking	Methods & Tools	PCM-organisation
IT power for tool development	Methods & Tools	PCM-organisation
Lacking cost responsibility and accountability	Responsibilities	PCM-organisation
Assigning responsibility	Responsibilities	PCM-organisation
Sign-off procedures	Roles & Rules	PCM-organisation
Assigning tasks to roles	Tasks	PCM-organisation
Monitoring product costs	Tasks	PCM-organisation
Frequency of pc status updates	Workflow & Process	PCM-organisation
Product cost reporting	Workflow & Process	PCM-organisation
Bringing back from imbalance	Balanced with strategy	Strategic alignment
Levelling out organisation and strategic targets	Balanced with strategy	Strategic alignment
Strategy first	Dependency on strategy	Strategic alignment
Dependency on company priorities	Dependency on strategy	Strategic alignment
Drawn out of strategic decisions	Derived out of strategy	Strategic alignment
Derive guidelines from strategy	Derived out of strategy	Strategic alignment
Determined by strategic directions	Determination by strategy	Strategic alignment
Made in Germany	Determination by strategy	Strategic alignment
Consider strategy during development	Development out of strategy	Strategic alignment
Progressing after strategy	Development out of strategy	Strategic alignment
Reflecting strategic outset and job descriptions	Fit to strategy	Strategic alignment
Fitting to master plan	Fit to strategy	Strategic alignment
Alignment with future directions	In alignment with	Strategic alignment
Misaligned management systems	In alignment with	Strategic alignment
Bring in line strategy and processes	In line with strategy	Strategic alignment
Conflict between strategy and operations	In line with strategy	Strategic alignment
Correspondence of pc target and company strategy	Match with strategy	Strategic alignment
Matching the strategy	Match with strategy	Strategic alignment
Following company strategy	Company strategy	Strategy
Derive from company strategy	Company strategy	Strategy
Setting cost strategy	Cost strategy	Strategy
Importance of cost strategy	Cost strategy	Strategy
Complex product strategy	Product strategy	Strategy
Reflecting product strategy	Product strategy	Strategy
Management appreciation of material efficiency	Efficiency	Business Priorities
Boosting efficiency	Efficiency	Business Priorities
Flexibility as pre-requisite	Flexibility	Business Priorities
Adoption to demand	Flexibility	Business Priorities
Driving company's activities	Growth	Business Priorities
Increasing sales volume after cost reduction	Growth	Business Priorities

Code	Concept	Category
Improve DPOs	Liquidity	Business Priorities
Focus points profitability and liquidity	Liquidity	Business Priorities
Get known on the market as target	Market awareness	Business Priorities
Reputation on the market	Market awareness	Business Priorities
Market share as target	Market share	Business Priorities
Increasing market share through reduced pc	Market share	Business Priorities
Increasing margin	Profitability	Business Priorities
Targeting profit	Profitability	Business Priorities
Quality as priority	Quality	Business Priorities
Quality problems	Quality	Business Priorities
Value creation as target	Value	Business Priorities
Appreciation of improved functionality	Value	Business Priorities
Emphasising cost related aspects	High	PC relevance
Intense product cost discussions	High	PC relevance
Lowest attention to product cost	Low	PC relevance
Product cost not in focus	Low	PC relevance
Varying importance of product cost	Medium	PC relevance
Differing product cost relevance	Medium	PC relevance
Cost structure dependency on product functionality	(Unique) selling proposition	KSF
Superior functionality influencing cost level	(Unique) selling proposition	KSF
Trend towards TCO approach	Cost efficiency	KSF
Trend towards sustainable cost approach	Cost efficiency	KSF
Missing awareness about cost structure	Cost transparency	KSF
Initiating action	Cost transparency	KSF
Financial power needed	Financial strength	KSF
Resilience	Financial strength	KSF
Importance of flexibility	Flexibility	KSF
Being prepared for dynamic customer demands	Flexibility	KSF
Knowing the key success factors	Market access	KSF
Production follows market	Market access	KSF
Cost of poor quality transparency	Quality	KSF
Importance of PPM-reports	Quality	KSF
Engineering-driven business segment	Technological mastery	KSF
Pioneering high-tech solutions	Technological mastery	KSF
Outside view on company	Company positioning	Positioning
Being seen as conservative and cost efficient	Company positioning	Positioning
Market differentiation as decisive point	Market positioning	Positioning
Target market position triggering product cost approach	Market positioning	Positioning
Cost positioning versus competition	Market positioning	Positioning
Product functionality as sales argument	Product positioning	Positioning
Product price as competitive criterion	Product positioning	Positioning

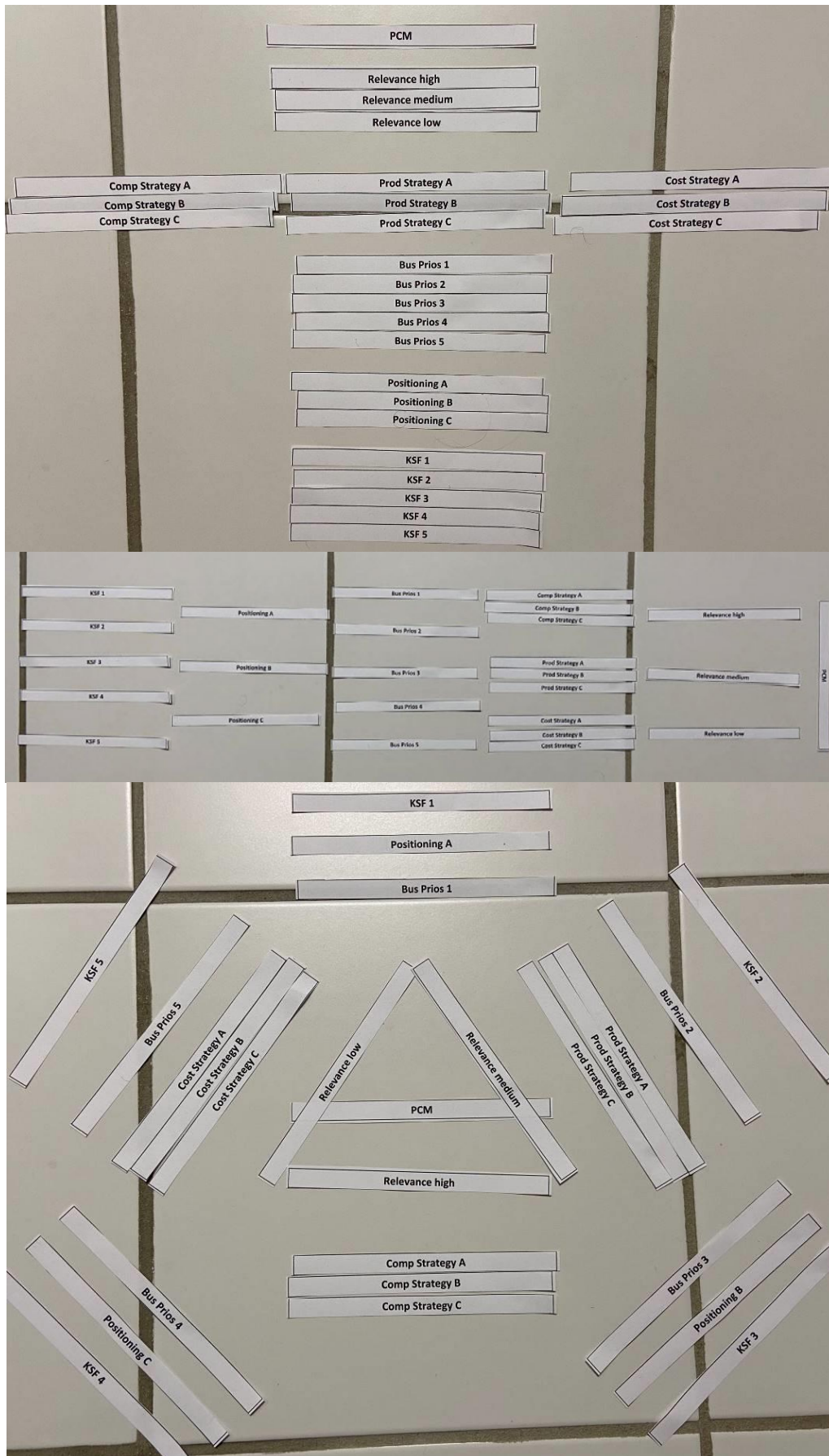
Appendix 12: Outcome of sorting session (step 4): Direction of categories

The why, product cost management activities arranged in the central question (main concern) in product cost management	Product cost management organisation	Starting point
Strategic alignment is the core category . So it's solving the main concern. So this aligning process is the core of the problem-solving. If alignment is reached, you are done	Strategic alignment	Closest to FCM organisation
Ultimately, there needs to be an alignment of strategic aspects and the FCM organisation	Strategic alignment	Closest to FCM organisation
Alignment connects the input variable's with the output variable of how to organise FCM	Strategic alignment	Between FCM organisation and rest
Which variable's go into the strategic alignment? One? Multiple?	Strategic alignment	Between FCM organisation and rest
What needs to be aligned or in line with the FCM system?	Strategic alignment	Between FCM organisation and rest
There are so many different strategies and strategy levels stated by the participants, it seems too complex as if these could serve as straight indicators/influencer of FCM systems	Strategy	Not next to strategic alignment
When comparing either two companies or one company before/after a project , interviewees most often state that management gives product cost higher or less priority (weight, focus, relevance, importance, ...) -> seems as a typical 'game changer' outblinking everything else	Product cost relevance	Next to strategic alignment
During all the interviews, one can find hints about the relevance of PC in all strategic aspects : *Price as KSF -> costs are relevant *Affordability as company positioning -> costs are relevant *Profitability as priority -> costs are relevant *Growth strategy -> costs can be relevant	Product cost relevance	Next to strategic alignment
The relevance of product costs is, in any form, mentioned most frequently as an influencing factor of FCM and seems to dominate the decision	Product cost relevance	Close to strategic alignment
Interviewees are clearer when stating the importance of product cost than when stating other strategic aspects of product cost management	Product cost relevance	Close to strategic alignment
Product cost strategy surely impacts directly the product cost relevance	Strategy	Next to Product cost relevance
If there is a clear strategy formulated, then you can read a lot about the product cost relevance in it (from complete absence to key element of major strategic actions)	Strategy	Next to Product cost relevance
As always: a strategy is the way to reach the target -> many targets are prioritized	Strategy	After Business priorities
Interviewees like to talk about 'strategies', not being able to create a direct link to FCM but making the impression that they are more impactful than other aspects ('stuck in the middle')	Strategy	Closer than Business priorities, Positioning or KSF
With new management on board, priorities often change quickly , triggering strategy and organisational changes	Business priorities	Before Strategy
As always: a strategy is the way to reach the target -> many targets are prioritized	Business priorities	Before Strategy
Even though a priority is given to cost-down activities this does not necessarily mean that the FCM organisation changes at the same time. A proper strategy is needed how to attain the targets .	Business priorities	Before Strategy
The company's priorities are clearly linked to the question of how the company is positioned. You give priority to those cost aspects which support your cost positioning	Business priorities	After Positioning
Remarkable: product positioning is mentioned not so often compared to, e.g. company positioning. This indicates that the way how FCM are managed is more a question of company-wide directions (more long-term) instead of single-product related issues (more diverse in multi-product-companies)	Positioning	Far away from FCM organisation
Questions of positioning are often still fuzzy in terms of impact on product cost unless you already use cost aspects to position yourself (e.g.: the pioneer of full-range portfolio -> questionable influence (often) versus ... best price alternative on the market -> stronger influence (seldom))	Positioning	Distant to FCM organisation
Common sense: Companies position themselves according to any success factors they consider as being relevant	Positioning	Close to KSF
In more 'strategic' consulting projects, they start with reviewing / changing the company positioning	Positioning	At the beginning of internal activities (+ after) Close to KSF
KSF can not be influenced by company but do influence the company's organisation	Key success factors	Most distant from FCM organisation
Many internal decisions consider the external KSF as input	Key success factors	Most distant from FCM organisation
KSF only have indirect impact on FCM organisation	Key success factors	Most distant from FCM organisation
The amount of mentions of KSF indicate only a minor influence on FCM	Key success factors	Most distant from FCM organisation
One can not simply take KSFs and decide about the best FCM system	Key success factors	Most distant from FCM organisation

Appendix 13: Sample notes & memos informing the theoretical codes (step 4)

Note / Memo	Intermediate code	TC
Difference between KSF and Strategy: KSF not influenceable, Strategy: own decision	Strategy as decision-making	Strategising
Market position is comparably stable and can not be changed short-term / ad hoc (also product positioning)	Positioning changeable in the long run	Strategising
Strategies are not given, need development	Strategies are developed	Strategising
Strategic directions come from different decisions not only the strategy itself, strategic decisions are made on different levels	Strategic directions as decision-making	Strategising
I read out of the diverse INs that Strategy, Positioning and Business Priorities are seen as strategic elements which should be defined and considered then for the PCM-organisation	3 key elements of the strategy process	Strategising
I see two cases: 1) You first develop the strategy and then develop the organisation or 2) The strategy is already there and you base the organisation on it	Alternative procedures of the strategy	Strategising
It is important to make product cost important	Making product cost important	Relevancing
When comparing either two companies or one company before/after a project, interviewees most often state that management gives product cost higher or less priority (=weight, focus, relevance, importance, ...) -> seems as a typical 'game changer' outshining everything else	Prioritising product cost	Relevancing
Comparing memos: relevance comes/goes into two directions: A: Develop a strategy, relevance is the outcome. B: Look at the existing strategy and derive the relevance out of it.	Two procedures how to derive product cost relevance	Relevancing
The type of PCM-organisation in the two companies was completely different	Qualitative PCM org characteristics	Profiling
The more the better is not always right	Quantitative PCM org characteristics	Profiling
Obviously, there is not a simple PCM-classification from which one can choose. The organisational process seems much more time-consuming and effortful	Absence of PCM typology	Profiling
You have to be quite conscious and smart to develop a PCM-organisation, it is not a typical or common organisational design topic	Conscious development of PCM org	Profiling
Much effort goes into the alignment of the different stakeholders	Alignment taking effort	Aligning
The PCM has to be aligned with all related functions and in every direction	Alignment as todo	Aligning
The alignment is not just there, it is a process	Alignment is process	Aligning
As consultant you frequently have to align the organisation with the strategy	Alignment as task	Aligning
You have to change and adapt until it matches with your strategy	Alignment achieved by changing and adapting	Aligning
It's a matching process	Alignment as process	Aligning
Need to balance strategic aspects with organisation	Alignment by balancing	Aligning

Appendix 14: Outcome of sorting sessions informing the SRP-Lock (step 4)



Appendix 15: Result of a sorting session regarding PCM-profiles (step 5)

	1	2	3	4
Targets Tasks	[Strips]	[Strips]	[Strips]	[Strips]
Resp	[Strips]	[Strips]	[Strips]	[Strips]
Process	[Strips]	[Strips]	[Strips]	[Strips]
Functions	[Strips]	[Strips]	[Strips]	[Strips]
Roles + Rules	[Strips]	[Strips]	[Strips]	[Strips]
Tools + Methods	[Strips]	[Strips]	[Strips]	[Strips]

Appendix 16: From thesis' findings ----->

- 1 The question of how to organise activities in product cost management (PCM) is a relevant managerial problem
- 2 Four different profiles of product cost management can be described showing alternative variants, how PCM activities can be organised
- 3 The profiles comprise of: main tasks, responsibilities, involved functions& departments, workflow&processes, methods&tools and roles&rules
- 4 The four profiles build upon each other, being able to be measured on an ordinal scale, e.g., from 1 to 4
- 5 Dominant decisive factor for the managerial problem is the product cost relevance in a company
- 6 Product cost relevance is mainly informed by the market's key success factors and the company's strategic directions
- 7 The relevant company's strategic directions include the positioning, the business priorities and the strategy
- 8 Relevant positionings are market-, company- and product positioning
Relevant strategies are company overall-, product-, and cost-strategy
- 9 Opposing the profile's level to the product cost relevance can span a matrix of strategic fit with areas of match and areas of mismatch
- 10 Product cost relevance and the profile level of the company's product cost management should be in alignment
- 11 Alignment is achieved by profiling the product cost management system dependent on the product cost relevance
- 12 A 3-Stage-Alignment-Procedure of Strategising-Relevancing-Profiling solves the managerial problem
- 13 The 3-Stage-Alignment-Procedure can be visualised by a SRP-Lock which centres the four product cost management profiles as targets
- 14 All findings summed up can be headlined as the Alignment-Theory of Product Cost Management

-----> to practical implications

- 1 Think about and optimise the way how to organise you PMC activities
- 2 Start the profiling of your organisation based on one out of four principle PCM profiles
- 3 Consider main tasks, responsibilities, involved functions&departments, workflow&processes, methods&tools and roles&rules in your PCM organisation
- 4 Be aware that each PCM profile is characterised by different efforts and intensity
- 5 Actively figure out, how relevant product cost in your company really are
- 6 Consider consciously the market's KSF and the companies strategic directions
- 7 Focus on positioning, business priorities and strategies when investigating the strategic directions of you company
- 8 Consider specifically market-, company- and product positioning and company overall-, product-, and cost-strategy
- 9 Avoid a mismatch in your positioning in the Strategic-Fit-Matrix of PCM
- 10 Watch out to have you PMC organisation in alignment with your PCR relevance
- 11 Profile you PCM organisation according to your identified PCR relevance
- 12 Actively engage in a 3-stage procedure
- 13 Use the SRP-Lock as visual aid and starting point for your alignment activities
- 14 In case of problems: remember that "nothing is as practical as a good theory"*