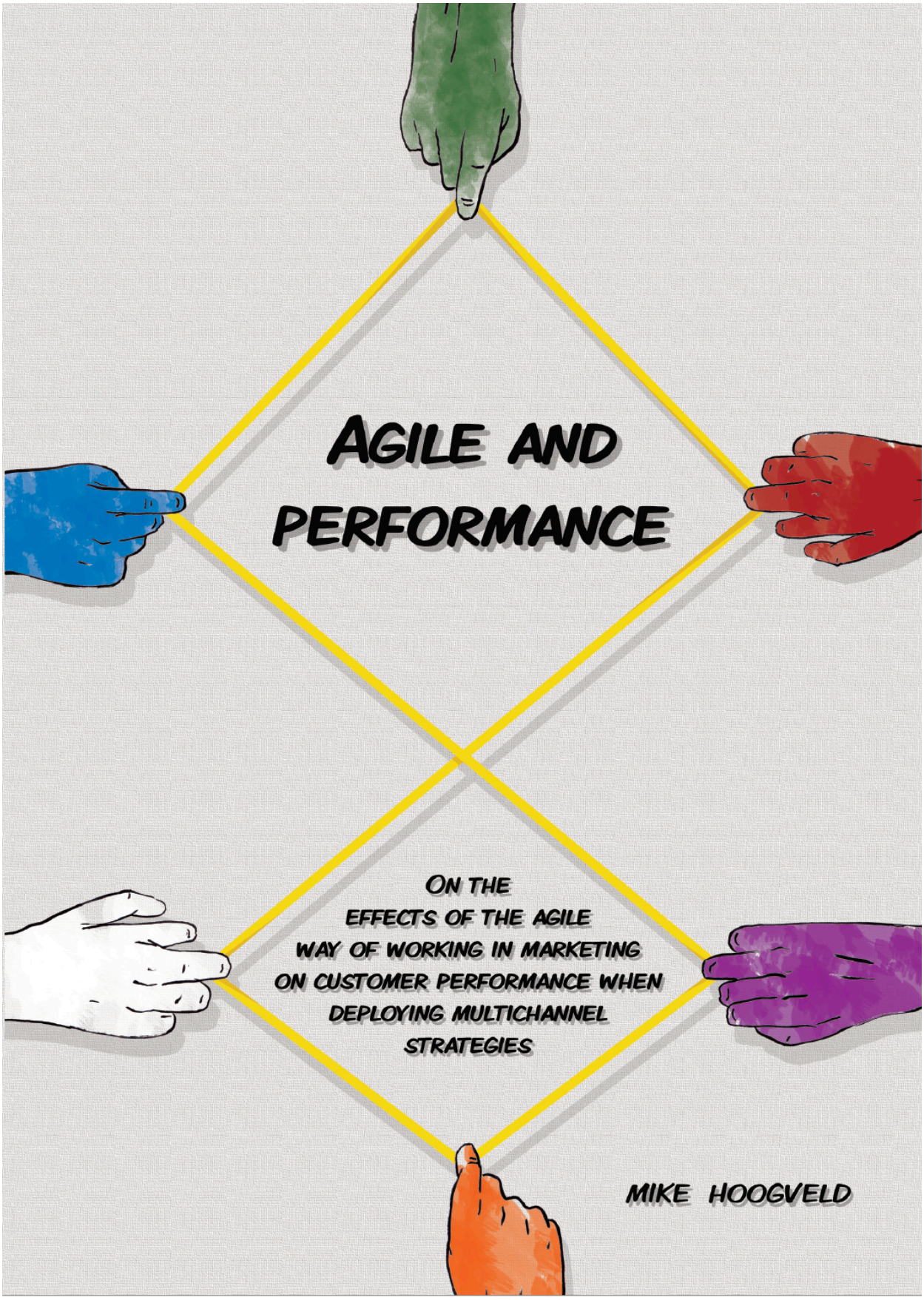

AGILE AND PERFORMANCE

ON THE EFFECTS OF THE AGILE WAY OF WORKING IN MARKETING ON CUSTOMER PERFORMANCE WHEN DEPLOYING MULTICHANNEL STRATEGIES

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Agile and performance

On the effects of the agile way of working in marketing on customer performance when deploying multichannel strategies

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Preface and acknowledgements

It has been quite some time now since the idea for starting a PhD research began to take shape. In my life as a consultant, I had become fascinated by the fact that nearly all the organisations I worked with, were experiencing problems in integrating their marketing, sales and customer service activities. Although the respective departments clearly shared a common goal - creating value for customers and thus generating customer lifetime value - they just seemed to refuse cooperation. And with the proliferation of online channels, it just became increasingly harder to improve their performance for customers. This made me wonder how one could solve this persistent problem.

It took some courage for me deciding to enlist and begin. And I have certainly experienced the last six years as challenging. Combining a PhD study with a successful consultancy practice and an active family life requires a lot of self-discipline, and necessitates support and understanding from your family. I consider myself lucky to have had all this at my disposal. So, it is with pride and, frankly, also with some relief that I present to you the result of my hard work.

Why would anyone choose to sacrifice seven years of his life in trying to pursue a doctorate? This question has been asked me very often by family, friends and people I work with. And I have sometimes asked it myself as well. What was I doing? Why did I want to spend nearly all of my spare time on writing a thesis? What drove me to get up at six every Saturday and Sunday morning to work on it in the cold and dark? Performing a doctorate research just seems to embody a strange paradox. Based on the admission criteria for PhD candidates, one could conclude that this requires at least an average level of intelligence. But to deprive oneself of spare time for six years, and even invest a significant amount of money in it, seems to be something that only very dumb people do.

So why? I think the answer lies in a distinction between emotional and rational arguments. Although there is a multitude of reasons from the rational perspective, I tend to think that only a few applied to me when enlisting at Nyenrode. Obviously, it has brought me deeper and wider knowledge in professional respect, thus building a bridge between theory and practice. However, I personally believe that, in my case, the explanation is grounded almost fully in emotional motives. At some point, I started to feel the need to challenge myself. I wanted to follow my curiosity by immersing myself in an intellectual playground.

Retrospectively, I can conclude that it turned out to offer me just what I was looking for. It has opened up a whole new world for me. I have really enjoyed meeting so many inspired and inspiring people. I have marvelled at the customs and traditions of the international academic community. I have struggled with the brain teasing richness of the philosophy of science. And I have mastered skills I find very valuable, such as designing a research approach, performing a systematic literature review, building a conceptual model and formulating hypotheses, doing statistical analysis, performing case studies, and writing papers in academic English.

All this has given me an enormous burst of energy. I think I have never been as productive before. Doing this PhD research has triggered me to start teaching and write four management books, both giving me a lot of pleasure. In that sense, a PhD research is a far better alternative for a sports car or motor bike, should one endure a mid-life crisis and not have a hobby. However, in all honesty, I also have developed a love/hate relationship with my thesis. Although it was a fantastic journey, I have also encountered setbacks and experienced moments of despair. I have been angry and disappointed, and I have even considered to stop. But, fortunately, it was all worth it.

Therefore, first and foremost, I would like to thank John Koster. He has been a very pleasant and knowledgeable tour guide on this amazing journey, in a very patient and respectful way. It has been a privilege to experience his wit and his amazingly fast and sharp way of thinking. His brainpower just is really inspiring. It taught me numerous things, amongst which the self-discipline of continuously stretching myself for improving the quality of my work, and enjoying the luxury of taking my time for this. Doing this challenging project together is something quite special, and I have come to appreciate it a lot. We have travelled a long way together, and I certainly hope it was as much worth his time and effort as it has been for me. I sincerely hope we can continue our scholarly partnership in the future.

Then, I also want to thank the members of the reading committee: Rini van Solingen, Henry Robben, Ed Peelen and Edward Groenland. I have appreciated their selfless investment of time and effort very much. Moreover, I want to thank Ivo de Loo, Ronald Jeurissen, Els Sonneveld, Helène Pannekoek, Marijke Hoogendoorn, Jos Schijns, Jeroen van der Most, Josje van Beek, Edwin Burgers, Arend Ardon, Linda Groot, Hans Molenaar, Egbert Jan van Bel, Marije Teerling, Jolanda Bakker, Patrick Lammers, Albert de Koning, Jorrit Pijlman, Jamila Bloemers and Zaïsha Cowles for offering their invaluable help at certain points in time. They all know why.

Furthermore, I was honoured that my two very dear friends, Pieter Paul van Oerle and Elmo Wieland, wanted to serve as paranymphs during my defence. And, of course, I am also very grateful for the support Carla Jonker has given me all along the winding road, helping me through the deadlocks and other moments of truth. I wish her endless amounts of good karma.

This all wouldn’t have been possible without my parents, who have always believed in me. They saw the immense value of a good education and of being able to pursue dreams. This paved the way to a career in which I can do what I sincerely like and am good at. Next, I want to thank my parents-in-law, who have served as ‘cheer leaders’ all along by showing sincere interest and pride, and thus making me feel that what I was doing really mattered.

Finally, I want to thank the three utmost important people in my life. Suzanne, my wonderful wife, and our two great boys, Julius and Floris, have supported me all along. They intuitively felt how important this was for me. I have been absent physically or mentally a lot in working on this thesis, but they always understood. And, luckily, we have always found an excuse to celebrate my intermediate successes with a cheerful dinner at Café Restaurant Amsterdam. I herewith solemnly swear to them that I will now dispose of my ugly bathrobe, once and for all.

Mike Hoogveld
Bergen, February 2020

Chapter 1: introduction

This chapter describes the rationale behind this research, which is based on the challenges practitioners experience in deploying multichannel strategies and the lack of empirical academic literature on this topic. Based on the management problem, our research questions are formulated and translated into our conceptual model and accompanying hypotheses. The chapter also presents an overview of the structure of this thesis and summarizes the contents of each chapter it contains.[1]

1.1 Customers increasingly use multiple channels and demand a seamless journey

Challenges for companies using more than one channel as part of their marketing strategy have become increasingly complex. Nowadays, the vast majority of customers has become accustomed to using various communication and distribution channels at different stages of their orientation, decision and buying processes (Pantano & Viassone, 2015). Up from 72% in 2011, in 2018 83% of customers now demands a seamless journey (E-tailing Group, 2018): i.e. 'an integrated customer experience across all different communication and distribution channels customers perceive when buying from one supplier' (Kotler & Armstrong, 2015).

Based on this observation, the next sections discuss why deployment of multichannel strategies is critical for organisations, how they struggle with the complexity of these strategies, and why this endangers the performance of organisations.

1.1.1 Deployment of multichannel strategies is critical

As customers demand a seamless journey when using multiple channels, it is critical for organisations to deploy 'multichannel' strategies. Mintzberg (1994) defines *strategy* as 'some sort of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation'. Mintzberg (1990) also identifies related deployment activities that involves 'setting goals, determining actions to achieve these goals, and mobilizing resources to execute the actions'. Kaplan and Norton (2004 and 2008) call this *strategy execution* and define it as 'the implementation of strategies by translating them into systematic actions within daily operations' (Bossidy & Charan, 2002; Neilson, Martin, & Powers, 2008), which concerns choices regarding organisational aspects such as structure, processes, systems, leadership, culture and reward systems.

With respect to communication and distribution channels, organisations can generally deploy two strategy types, being single/separate channel and multichannel (Neslin & Shankar, 2009). In a *single/separate channel strategy*, a go-to-market strategy is applied in which an organisation either deploys just one channel or deploys multiple but separated channels (Sa Vinhas et al., 2010). In a *multichannel strategy*, a go-to-market strategy is applied in which organisations deploy multiple channels while intending to 'align the multiple channels as to create an integrated customer experience that is consistent and coordinated across all channels' (Stone, Hobbs, & Khaleeli, 2002). A small number of authors use the term 'omnichannel' instead of multichannel for labelling a

[1] *Parts of chapters 1, 2 and 3 have been based on two publications in academic journals (double blind peer reviewed). See Appendix A for further details.*

multichannel strategy as defined above (Brinker & McLellan, 2014; Rigby, 2011). Because of the limited use of the term 'omnichannel' in academic literature, 'multichannel' has been selected as our preferred term.

It is expected that multichannel strategies can enhance the revenues of organisations. This expectation is based on three assumptions, as identified in the literature. Firstly, an increased number of channels and their alignment could enable organisations to reach more prospects and convert these prospects into customers more effectively. Secondly, the improved customer experience could increase customer satisfaction, which leads to more loyal customers and therefore retention. Thirdly, the improved customer experience could increase the buying frequency and volume of customers, resulting in a higher contribution margin per period. Thus, the combination of these three effects leads to more customers that have a longer customer relationship and contribute more (Kumar & Venkatesan, 2005; Weinberg, Parise, & Guinan, 2007; Li, Konuş, Pauwels, & Langerak, 2015; Herhausen, Binder, Schoegel, & Herrmann, 2015).

Despite the relevance of multichannel strategies as described above, organisations still struggle with the complexity of these strategies, which is elucidated below.

1.1.2 Organisations struggle with the complexity of executing multichannel strategies

The complexity of multichannel strategies seems significantly larger as compared to single/separate channel strategies, and many organisations are struggling with this complexity (Kabadayi, Eyuboglu, & Thomas, 2007). Based on in-depth interviews with marketing and sales executives, Baumgartner, Hatami and VanderArk (2012) conclude that one of the major themes for marketers is the necessity to master multichannel management, while Lemmens (2011) concludes that sales, marketing and customer service have to cooperate more as buyers are using more different channels. Based on a large survey among marketers, Gregoriadis and Robinson (2012) conclude that only 32% of the companies rate themselves as good or excellent in coordinating integrated campaigns across different channels, the main factors preventing effective execution in practice being lack of a clearly defined strategy, fragmentation of departments and/or poor organisational structure, disparate technology and systems, and ownership and accountability. In addition, based on in-depth interviews with marketing managers, Valos concludes that more research is needed to provide multichannel guidelines and insights for marketers to reduce multichannel marketing implementation problems, as these practitioners meet vast internal challenges in areas such as organisational structure, processes, data and people (Valos, 2008; Valos, 2009; Valos, Polonsky, Geursen, & Zutshi, 2010).

1.2 The management problem

As a result of the complexity of multichannel strategy execution, organisations are risking a deterioration of their performance. In their studies, Booz and Hamilton (2007) conclude that up to 40% of customers are not being served effectively, because companies cannot target specific customer needs with their existing channel approaches. This suggests a substantial portion of marketing and sales budgets is being spent inefficiently. Other studies confirm that the majority of companies has not achieved multichannel integration, thus inhibiting the capitalization of performance potential in terms of prospect conversion, customer loyalty, buying frequency, or contribution margin (Cunnane, 2011; Accenture, 2013; Weinberg et al., 2007; Li, et al., 2015).

The struggle with the complexity of multichannel strategies and the corresponding performance risks, pose a challenging problem for practitioners. Based on the complications as described above, it becomes clear that many organisations need to adapt their channel strategy execution as to maintain or improve their performance when deploying multichannel strategies. With this need as a starting point, the management problem is:

What can enable practitioners in achieving successful multichannel strategy execution?

1.2.1 Towards more specific research questions

As a first step in answering the question above, a structured literature review has been performed to determine what has been identified in literature about enablers for successful multichannel strategy execution. This literature review is discussed in detail in Chapter 2. In summary, the literature review indicated that little research is available on the enablers for multichannel strategy execution specifically.

However, a multitude of academic articles focuses on this issue in a theoretical way. The enablers, as identified in literature, have been grouped per category. Based on this, in total five different enablers seem to be relevant for multichannel strategy execution (see sections 2.1.1 tot 2.1.6). These enablers are:

- strategy alignment;
- culture and leadership;
- organisational structure;
- customer insight deployment;
- agile way of working.

As will be motivated in section 2.2, our research focuses on the agile way of working, which is defined by the European Foundation for Quality Management as 'the set of activities that add value by transforming inputs into outputs, enabling the organisation to adapt in a timely way and continually improve its performance through incremental change' (EFQM, 2013: 87).

However, although the literature theoretically identifies the agile way of working as a potential enabler for multichannel strategy execution, the question is whether this can be supported by empirical evidence. Therefore, our study aims to research this empirically, by answering the following two research questions:

1. *Within the setting of executing multichannel strategies, to which extent is there a relationship between the agile way of working and customer performance?*
2. *If this relationship exists, what specific elements constitute this relationship?*

Analysis of the available literature resulted in a number of relevant theories and models that potentially explain the research questions as stated above. Next, a conceptual model has been developed based on an analysis of the available literature, which is presented in the next section.

1.3 Conceptual model

In this section our conceptual model is elucidated, based on the available literature.

1.3.1 The agile way of working

Looking at the agile way of working (as defined in section 1.2.1) at a higher abstraction level, our interpretation of the available literature is that its essence revolves around organisational learning, as will discussed in depth in Chapter 2. Organisational learning can be defined as 'a skilled process in which knowledge is created, acquired, and transferred, and through which behaviour is modified based on the new knowledge and insights (Garvin, 1993). Kotter (2014) concisely characterizes the essence of agility as an ongoing process of learning, while Cappelli et al. (2018) state that all key agile principles focus on delivering immediate feedback so that teams can improve performance by learning through iteration. In 2012, Rigby stated that omnichannel retailers need to test and learn quickly, but few are adept at test-and-learn methodologies. In 2016 Rigby et al. stress that agile's core is about creating a learning organisation, in which deployment of customer feedback will generate better results. In 2018, Rigby again states that the agile way of working accelerates learning as agile organisations have institutionalised feedback and evaluation processes. Furthermore, Gothelf (2017) states that the cross-functional collaboration within agile organisations is aimed at continuous learning, as to improve their responsiveness in terms of time-to-market. Based on these insights as discussed in Chapter 2, our conclusion is that agile is a specific form of organisational learning.

Using this conclusion as a starting point, our aim now was to identify a useable model of organisational learning that could serve as the basis for our own conceptual model. The thorough evaluation by Hussain and Yazdani (2017) of the currently available literature on organisational learning pointed to Senge's organisational learning model. This was confirmed by Vizard and Rudd (2015: 26), stating that 'many of the key concepts that Senge introduced […] are also key concepts of the Agile movement. The fact that both are rooted in the same principles should make clear that […] they share a common philosophy.' Based on the overview by Hussain et al. (2017), our own evaluation of the subset of literature offering theoretical models regarding organisational learning also identified Senge's model as highly relevant (Senge, 1990; Senge, 1994; Senge & Sterman, 1992a, 1992b; Senge, Dow & Neath, 2006; Senge, Lichtenstein, Kaeufer, Bradbury, & Carroll, 2007). Therefore, we based our conceptual model on the model presented by Senge, as further discussed in Chapter 2

Senge (Senge, 1990; Senge et al., 1992a, 1992b) has identified three elements facilitating organisational learning. These three elements have been selected to serve as the three independent variables in our conceptual model. The three elements are:

- Goals: the governing concepts for defining what an organisation seeks to accomplish and how it intends to operate;
- Tools and methods: the practical means an organisation deploys for performing its activities and monitoring progress;
- Organisational infrastructure: the roles, communication and structure within an organisation that determine how resources are allocated.

Besides these three independent variables, our conceptual model also comprises the dependent variable of customer performance, which is discussed below.

1.3.2 Customer performance and its relationship with the agile way of working

As is discussed in depth in Chapter 2, the available literature identifies the relevance of organisational learning in relation to performance. Argyris (1999) suggests that one of the most important effects of organisational learning is that it enables organisations to improve their performance for customers. Shah et al. (2006) agree with this by proposing that learning and continuous improvement sustain performance optimisation and competitive advantage. Slater and Narver (1995) acknowledge this by stating that organisational learning is valuable to a firm's customers as it focuses on understanding and effectively satisfying their needs through new products and ways of doing business, which also includes channel management. According to them, organisational learning creates superior customer value in dynamic and turbulent markets, and they propose that the marketing function has a key role to play in the creation of a learning organisation. In their view, marketing should be learning-driven. This necessitates market experiments through channels of distribution, thus enabling marketers to continuously update their understanding of needs and attributes that customers value. Slater et al. (1995) state that organisational learning has a direct relationship with customer performance outcomes, of which customer satisfaction is the most important. This relationship is confirmed in earlier work by Parasuraman, Zeithaml and Berry (1988a, 1988b, 1991, 1994) who state that the most important factors facilitating service quality, which includes channels, are the communication and control processes implemented in organisations to manage employees and facilitate cooperation. As depicted in their Gaps Model of Service Quality, these processes help an organisation to learn from customer feedback as to continuously improve the alignment between the customers' expectations concerning the service and the customers' perceptions of the service experiences. This alignment is called 'service quality', which increases customer satisfaction and thus customer value. In conclusion, the publications above are congruent in their suggestions that a relationship exists between organisational learning and customer performance.

As can be derived from the argumentation above, and is elucidated in sections 2.3 and 2.4, our view is that the agile way of working is a specific form of organisational learning. Its potential benefit within multichannel strategies is to increase the speed, volume and perceived value of improvements in channels for customers. As a result of the improved fit between expected and perceived channel experiences, the customers become more satisfied. Ultimately, this customer satisfaction generates more customer value through more customer loyalty and higher contribution margins, which are defined in Table 16 (Slater et al., 1995; Parasuraman et al., 1988a). As will be described in the section below, customer satisfaction is a constituting part of the independent variable 'Customer performance'.

1.3.3 Defining the variables

Our goal was to select an existing and generally accepted model which could serve as the operationalisation for the three independent variables in our conceptual model. Therefore, as the in-depth analysis in Chapter 3 shows, the currently available models have been inventoried and assessed. This resulted in the selection of the Objectives-Principles-Strategies (OPS) framework, which has been adapted to marketing practice (see sections 3.2.6.1 to 3.2.6.3). This model comprises twelve so called 'tactics' (Soundararajan, 2013). Together, these twelve tactics represent the agile way of working that enables multichannel strategy execution, as defined in section 1.2.1 (EFQM, 2013). These twelve tactics have been translated into 74 indicators used for operationalisation of the three independent variables in our conceptual model below.

Having operationalised the agile way of working, our next aim was to define the dependent variable of customer performance. Our selection of a suitable operationalisation is described in section 3.2.6.7: as the source of our definition of the agile way of working is the European Foundation for Quality Management, and our aim is to use uniform definitions as much as possible, the dependent variable 'Customer performance' has also been based on their definition (EFQM, 2013: 54). This definition is: 'the outcomes for customers that demonstrate the effectiveness of the organisation's deployment of its strategy and processes'.

The EFQM operationalisation of customer performance comprises the constructs as identified by Slater et al. (1995), and Parasuraman et al. (1988a), being speed of improvements, volume of improvements, perceived value of improvements, customer satisfaction, customer loyalty and value of the customer (see section 2.4.2). The EFQM (2013: 54) has operationalised the construct of customer satisfaction into two sub-items, one for the experience of products and services, and the other for the experience of channels and processes. The construct of customer loyalty also consists of two sub-items, being attitudinal loyalty and behavioural loyalty. EFQM has also operationalised the construct of value of the customer in two sub-items, being contribution margin from products and services and customer lifetime value. Thus, the variable 'Customer performance' consists of nine items, which are further described in section 3.2.6.8.

Based on our definition of the independent and dependent variables, the section below discusses the formulation of our hypotheses and the resulting conceptual model.

1.3.4 Formulating the conceptual model

Based on the operationalisation of the three independent variables representing the agile way of working, and the dependent variable representing customer performance, our conceptual model consists of two parts. The left part contains three independent variables which aim to explain the dependent variable in the right part (Groenland, 2009). Thus, our conceptual model is formulated as follows (Figure 1):

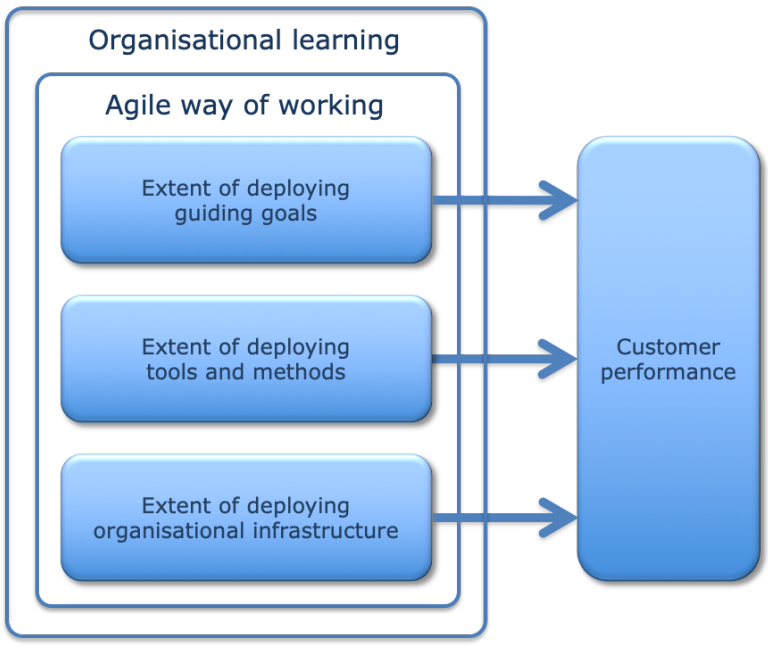

Figure 1: Conceptual model

1.4 Conclusions and outlook

As customers are increasingly using multiple communication and distribution channels, and are demanding a seamless journey across all channels, it has become critical for organisations to deploy multichannel strategies, in which they intend to align the multiple channels as to create an integrated customer experience that is consistent and coordinated across all channels. However, the complexity of executing multichannel strategies is significantly larger as compared to executing single/separated channel strategies, in which organisations either deploy just one channel or deploy multiple but separately managed channels. Many organisations are struggling with this complexity. Thus, these organisations are risking a deterioration of their performance, and need to adapt their strategy execution.

Therefore, the question is what the enablers are for successful multichannel strategy execution. A systematic literature research, as elucidated in Chapter 2, showed that five enablers could be identified, but that little empirical evidence is available. These enablers are: strategy alignment, culture, organisational structure, customer insight deployment, and the agile way of working. Based on two arguments, the agile way of working has been selected as our focal point. Firstly, as is elucidated in section 2.2, the agile way of working is a proven method for the complexity of IT projects. By deploying agile approaches, organisations can achieve performance improvements concerning prioritization, team productivity, time-to-market, alignment, predictability, quality, costs, value creation for the customer, and customer satisfaction. The complexity of IT projects seems quite comparable to the complexity of multichannel strategies in marketing as both concern intangible services, are dynamic, require speed, are costly, necessitate close cooperation of different specialists, and frequently need customer feedback to check on the value creation. Secondly, little is known about agile within the business domain, and especially within the marketing domain, which makes this unexplored area an interesting topic for expanding academic and practitioner's knowledge.

Given our focus, the aim of this present research is:

> *To determine empirically whether there is a relationship between the agile way of working and customer performance within a multichannel strategy setting, and what specific elements constitute this relationship.*

Based on this aim, two research questions have been formulated, as presented in section 1.2.1. The next chapters discuss the consecutive steps that have been taken in order to answer these research questions. The section below presents a brief overview of the contents of these chapters.

1.4.1 Overview of this thesis

This thesis consists of six chapters in total, with the following structure:

- Chapter 1: introduction
- Chapter 2: literature
- Chapter 3: designing a research approach
- Chapter 4: survey
- Chapter 5: case studies
- Chapter 6: discussion and conclusions

Below, each of the chapters following this introductory chapter, will be discussed in summary.

1.4.1.1 Chapter 2: literature

Chapter 2 discusses our synthesis of the available academic literature on enablers for multichannel strategy execution. The five identified enablers are: strategy alignment, culture, organisational structure, customer insight deployment, and the agile way of working. Next, it substantiates the focus of our research on the agile way of working. It then focuses on the agile way of working and describes this enabler in three ways. First, its relevance for marketing and multichannel strategies is elucidated. Secondly, the relationship between the agile way of working and customer performance is explained through the concept of 'organisational learning'. Finally, the chapter describes what the essence of the agile way of working is, and how it is being deployed in daily practice by several organisations.

1.4.1.2 Chapter 3: research approach

Based on the 'onion framework', Chapter 3 discusses the design of our research approach in terms of research philosophy, methods, time horizons and, finally, the techniques and procedures. The chapter substantiates our deductive approach and our selection of multiple methods for triangulation purposes. It elucidates our combination of a survey and a follow-up case study for deeper understanding of the survey results, within a cross-sectional time horizon.

Based on our research questions the chapter then describes the approach of a systematic literature review aimed at the identification and selection of a suitable model. By applying inclusion and exclusion criteria, seven models were selected for further analysis. Based on this analysis, the Objectives-Principles-Strategy (OPS) framework was identified as best suitable for adaptation from the IT domain to the marketing domain. Next, the OPS framework was assessed in detail regarding its suitability for adaptation to marketing practice. Additionally, the chapter describes the identification and operationalisation of the dependent variable 'Customer performance' and the addition of four exogenous variables.

Subsequently, our survey approach is presented in detail by describing the techniques and procedures applied to meet the credibility criteria of validity, reliability and generalisability. Next, the sampling technique, questionnaire design, pilot testing, and administration procedures are elucidated. Finally, the techniques and procedures of our case study are presented. The chapter describes our deployment of a 'chain of evidence' to perform credibility checks concerning validity and reliability. It also describes how the cases are selected and how multiple sources of evidence will be combined using the template analysis technique.

1.4.1.3 Chapter 4: survey

Chapter 4 describes the statistical analysis of our survey data, which uses a three-tier approach of factor analysis, regression analysis and validation. Based on the outcomes of this analysis, the interpretation of the results is discussed. These results identify 21 indicators of which the survey respondents confirm relationships with customer performance. Based on these findings, the chapter then discusses our criticism on the original OPS framework, and interprets the relationships within the survey results.

Finally, this chapter also describes a further check on the 53 of the 74 indicators that were eliminated during our statistical analysis and determines relevant relationships between some of these elements and the nine individual indicators constituting the dependent 'Customer performance' variable.

1.4.1.4 Chapter 5: case studies

Chapter 5 describes how four case studies have been performed at organisations deploying multichannel strategies to establish a deeper understanding of the survey outcomes. In order to create *ceteris paribus* conditions as much as possible, the respective marketing departments of Essent, Energiedirect.nl, Eneco and Nuon have been selected as their characteristics are comparable. The aim of this multi-case approach is to determine whether the indicators of the relationship between the agile way of working and customer performance are experienced by practitioners in daily practice. This chapter describes that, by deploying a template analysis within a triangulation approach, the relevance of the 21 indicators as identified in the survey plus a subset of the 53 eliminated indicators could be confirmed in practice.

1.4.1.5 Chapter 6: discussion and conclusions

Based on all activities and results of our study, as presented in the preceding chapters, Chapter 6 describes how all outcomes should be integrated and discusses the interpretation and evaluation of the outcomes holistically. It reflects on our research approach, the conclusions and the limitations of their reach, and the managerial implications. Finally, our suggestions are presented for future research, concerning the 21 indicators that were quantitatively validated by the survey, supplemented by the conceptual insights from the case studies.

Chapter 2: literature

This chapter discusses the available literature on enablers for multichannel strategy execution. It then focuses on the agile way of working and describes this enabler in three ways. First, its relevance for marketing is elucidated. Next, its relationship with customer performance is explained through the concept of 'organisational learning'. Finally, the chapter describes what the essence of the agile way of working is, and how it is being deployed in daily practice by several organisations.

2.1 Identifying enablers for multichannel strategy execution

As elucidated in Chapter 1, customers are increasingly using multiple communication and distribution channels. As these customers are demanding a seamless journey across all channels, it has become critical for organisations to deploy multichannel strategies, in which they intend to align the multiple channels as to create an integrated customer experience that is consistent and coordinated across all channels. However, the complexity of executing multichannel strategies is significantly larger as compared to executing single/separated channel strategies, in which organisations either deploy just one channel or deploy multiple but separated channels. Organisations are struggling with this complexity. Thus, many organisations are risking a deterioration of their performance and need to adapt their strategy execution.

Neslin et al. (2006, 2009) state that the success of multichannel strategy execution is determined by different organisational enablers. An *enabler* is defined as 'something that makes it possible for a particular thing to happen or be done' (Ghoshal & Bartlett, 1994, p. 108). As to identify what enablers influence customer performance when deploying multichannel strategies, a systematic literature review has been performed, according to the guidelines of Kitchenham (2007). The review protocol consisted of two phases. In the first phase, digital libraries and Google were queried to identify all available academic literature describing enablers influencing the performance of multichannel strategies. In the second phase, the resulting literature was analysed to identify the enablers it described and group these enablers.

In phase 1, the literature research was focused on articles written in English that are available online. The information sources comprised five digital libraries, being Google Scholar, IEEEXplore, Wiley Interscience, Elsevier Science Direct, and SpringerLink. As inclusion criteria, both conference papers and journal articles were admitted. Moreover, these papers and articles should identify the enablers in either a conceptual or empirical way, or both. As exclusion criteria, all publications from non-academic sources were ignored.

The five information sources have been queried using multiple terms. As specified in Table 1 below the search terms consisted of three different categories. Within a category the search terms were combined using the Boolean 'OR'. The resulting three lists were subsequently combined using the Boolean 'AND'. The search was restricted to title, keywords and abstract. In addition to these queries, a 'snowball' approach was used to broaden the results by analysing the literature references in the articles.

Table 1

Search terms used in stage 1 of the SLR

Category	Search terms
Strategy	Multichannel; omnichannel; cross-channel; channel; touchpoint; marketing.
Enabler	Enabler; factor; condition; facilitator; requirement; circumstance; organisation; structure; strategy; skill; staff; culture; value; leadership; management; responsibility; rewarding; expertise; knowledge; training; education; information; data; measure; insight; system; process; procedure; budget; report; cooperation; office.
Effect	Performance; result; inhibit; facilitate; success; failure; problem.

For storing the relevant papers, the citation management procedure as reported by Dingsoyr and Dyba (2008) has been applied using Mendeley Desktop. The citations were exported to an Excel spreadsheet, logging the sources for each citation. Next, in phase 2, the enablers identified in the publications were captured in the Excel spreadsheet, which resulted in the overview below.

2.1.1 Little empirical evidence available on the enablers of multichannel strategy execution

The literature review indicates that little empirical evidence is available on the relevance, functioning and effects of enablers for multichannel strategy execution. However, a multitude of academic articles focuses on this issue by discussing theory. Table 2 below presents an overview of the literature.

Table 2

Enablers for multichannel management

Publication	Identified enablers
Valos (2008, 2009)	Integrated channel strategies; organisational structure; culture and leadership; customer insights; human resources management; adaptive processes
Zhang, Farris and Irvinet (2010)	Strategy alignment; organisational structure; customer insights; continuous improvement processes
Rangaswamy and Van Bruggen (2005)	Organisational structure; rewarding; customer insights; resource allocation
Weinberg, Parise and Guinan (2007)	Organisational structure; cross-channel cooperation; customer insights; human resources management
Dewell (2007)	Adaptiveness
Schijns and Groenewoud (2006)	Organisational structure; customer insights
Payne and Frow (2004, 2005)	Customer insights; evaluation and adaptation; integrated channel strategies
Neslin, Grewal, Leghorn and Shankar (2006)	Customer insights; organisational structure; integrated channel strategies; evaluation and adaptation; resource allocation

Müller-Lankenau, Wehmeyer and Klein (2006)	Integrated channel strategies
Neslin and Shankar (2009)	Organisational structure; customer insights; integrated channel strategies
Sousa and Voss (2006)	Flexible improvement processes; customer insights
Hughes (2006)	Iterative processes; customer insights; strategy alignment
Van Bruggen, Antia, Jap, Reinartz and Pallas (2010)	Organisational structure; flexibility and adaptibility
Berman and Thelen (2004)	Customer insights
Barker (2011)	Customer insights; culture and leadership
Valos, Polonsky, Geursen and Zutshi (2010)	Adaptive approaches
Ganesh (2004)	Customer insights
Wilson and Daniel (2005)	Dynamic capabilities
Lewis, Whysall and Foster (2014)	Customer insights
Krohmer, Homburg and Workman (2005)	Adaptiveness
Oh, Teo and Sambamurthy (2012)	Customer insights
Pentina and Hasty (2009)	Integrated channel strategies; information systems integration
Wallace, Johnson and Umesh (2009)	Integrated channel strategies
De Swaan Arons, van den Dreist and Weed (2014)	Experimentation; customer insights
Webb and Lambe (2007)	Strategy alignment; organisational structure
Kabadayi, Eyuboglu and Thomas (2007)	Integrated channel strategies; organisational structure; customer insights
Kabadayi (2011)	Adaptive decision making
Sa Vinhas et al. (2010)	Channel strategies
Kotler, Rackham and Krishnaswamy (2006)	Cross-channel cooperation; measurement processes; information systems integration; culture and leadership
Rouziès, Anderson, Kohli, Michaels and Weitz (2005)	Organisational structure; iterative processes; customer insights; culture and leadership;
Shah, Rust, Parasuraman, Staelin and Day (2006)	Organisational structure; adaptive processes; leadership; customer insights
Biemans, Brencic and Malshe (2010)	Organisational structure; testing
Matthyssens and Johnston (2006)	Organisational structure; information systems integration
Lee, Sridhar, Henderson and Palmatier (2012)	Organisational structure
Guenzi and Troilo (2007)	Customer insights; culture and leadership
Le Meunier-FitzHugh and Piercy (2007, 2011)	Organisational learning; customer insights; culture and leadership
Rigby (2018)	Agile way of working

Based on our inventory in Table 2 above, the following tally frequencies were determined:

- Customer insights: 21
- Organisational structure: 15
- Integrated channel strategies: 9
- Culture and leadership: 7
- Information systems integration: 3
- Strategy alignment: 2
- Human resources management: 2
- Adaptiveness: 2
- Evaluation and adaptation: 2
- Iterative processes: 2
- Resource allocation: 2
- Continuous improvement processes: 1
- Rewarding: 1
- Agile way of working: 1
- Organisational learning: 1
- Flexible improvement processes: 1
- Flexibility and adaptability: 1
- Adaptive approaches: 1
- Dynamic capabilities: 1
- Experimentation: 1
- Adaptive decision making: 1
- Cross-channel cooperation: 1
- Measurement processes: 1
- Adaptive processes: 1
- Testing: 1

As a next step, based on our interpretation, the identified enablers have been grouped per category and were given an overarching descriptive name. This resulted in the following categorisation:

- Customer insight deployment: customer insights; information systems integration (total frequency: 24);
- Organisational structure: organisational structure; cross-channel cooperation; human resources management; rewarding; measurement processes (total frequency: 20);
- Agile way of working: adaptiveness; evaluation and adaptation; iterative processes; continuous improvement processes; agile way of working; organisational learning; flexible improvement processes; flexibility and adaptability; adaptive approaches dynamic capabilities; experimentation; adaptive decision making; adaptive processes; testing (total frequency: 17);
- Strategy alignment: integrated channel strategies; strategy alignment; resource allocation (total frequency: 11);
- Culture and leadership: culture and leadership (total frequency: 7).

Based on this, the articles identify in total five different enablers for multichannel strategy execution. These enablers are:

- Strategy alignment;
- Culture and leadership;
- Organisational structure;
- Customer insight deployment;
- Agile way of working.

This categorisation has resulted in the overview as presented below.

2.1.2 Enabler 1: Strategy alignment

In literature, the common conclusion is that organisations need to develop new competitive strategies in an era of multichannel marketing, with the prerequisite that the multichannel strategy is aligned with the overall business strategy. Valos (2008) states that if multichannel strategy addresses both competitor strategy and customer needs, strengthening competitive advantage and increasing customer satisfaction can both be achieved. This is confirmed by Weinberg et al. (2007: 386) who propose that 'designing a holistic strategy constitutes a critical first step towards developing an effective multichannel marketing program.' Hughes (2006: 121) also sees a strong 'need for integrated customer contact strategies' while Pentina and Hasty (2009: 360) come to the same conclusion: 'Firms that have adopted multichannel retailing, need to develop new competitive strategies'.

Payne and Frow (2004: 528, 2005) propose that multichannel strategies should be an integral part of the 'customer relationship management strategy' and that both should be a congruent translation of the overall business strategy. Kabadayi et al. (2007: 196) argue that business strategy has been insufficiently linked to multichannel marketing, and they have found 'strong support for the contention that multichannel systems make the greatest contribution to firm performance when they are properly aligned with the firm's business strategy'. For this purpose Neslin and Shankar (2009) have proposed a Multichannel Customer Management Decision framework as a structured roadmap to link multichannel strategy with overall strategy.

In conclusion, it seems useful for organisations deploying multichannel strategies to integrate their multichannel strategy into their overall strategy, or at least align both properly.

2.1.3 Enabler 2: Culture and leadership

Several academics propose that culture and leadership are key for successful multichannel strategy execution. Rouziès et al. (2005: 115) see a strong gap between marketing and sales, caused by what they call 'different mindsets', and to improve performance they propose alignment by creating cross-functional teams. Kotler et al. (2006) conclude that strong cultural differences between marketing and sales exist, caused by the personality types of marketers and salespeople, and that aligning them is key to improving customer performance. Webb and Lambe (2007) state that two key behaviours should be used by organisations to integrate multiple channels: the use of superordinate goals internally, and effective internal communication about cultural values to steer behaviour.

Shah et al. (2006: 116) look at this issue from the customer centricity perspective. They propose that 'change is achieved by altering behaviour patterns and helping employees understand how the new behaviours benefit them and improve performance'. All employees should behave as customer advocates and share information with their counterparts in other channels. According to Guenzi and Troilo (2007: 102) 'creating superior customer value requires changes in the company's culture, managerial systems as well as people's attitudes and behaviours', which should be a matter for the entire company. Valos (2008: 240) confirms this by stating that 'the complexity of implementing multichannel marketing requires internal structures, processes and organisational culture to be reconfigured.' Le Meunier-Fitzhugh and Piercy (2007, 2011: 288) add to this that 'a positive management attitude towards coordination will help to develop a culture of sharing, will allow compatible goals to be set and joint planning to take place, as well as establishing an 'esprit de corps', and developing a common vision. These activities should have a direct impact on collaboration between sales and

marketing.' Again, culture and leadership are the issue here.

Based on this overview, it seems useful for organisations deploying multichannel strategies to actively build a culture and leadership style that emphasises internal cooperation focused on creating value for customers.

2.1.4 Enabler 3: Organisational structure

Several academic articles propose that successful multichannel strategy execution requires organisational structures to be reconfigured, with the optimal solution being dependent on the specific situation of the organisation. Rangaswamy and Van Bruggen (2005: 7) state that most organisations are not well structured for providing their customers with an integrated brand experience across channels. 'For example, in many companies, separate divisions or marketing groups are responsible for different channels. Often, no one is specifically responsible for ensuring the uniformity of customer experiences across channels.' Weinberg et al. (2007: 387) concluded that 'most companies have a difficult time with multichannel marketing because silos exist within their organisations', which is confirmed by Van Bruggen, Antia, Jap, Reinartz and Pallas (2010: 336): 'Without channel leadership, the consumer's experience cannot be seamless.' Rigby (2011: 74) also states that multichannel strategies requires 'a separate team that has autonomy, a distinctive set of talents, different knowledge bases, and a willingness to take bold risks.'

According to Valos (2009: 197) 'the complexity of implementing multichannel marketing requires internal structures and processes to be reconfigured', which is confirmed by Hughes (2006: 113) who states that 'channel integration is a strategic issue potentially requiring structural changes to the organisation'. Webb and Lambe (2007: 31) support this view, calling it 'internal coordination', while Pentina and Hasty (2009: 360) support higher degrees of multichannel coordination and integration as this 'can provide synergies that would mutually benefit all channels, at the same time positively affecting the bottom line.'

Schijns and Groenewoud (2006) acknowledge this by proposing that a coordinated, fully integrated multichannel approach is most efficient and effective. They also indicate that this necessitates human, organisational, operational, and technological adjustments. Neslin et al. (2006) have proposed that the question needs to be researched whether the organisational structure with regard to channel management should be independent or integrated. Based on their literature research, Zhang et al. (2010: 171) still conclude that 'creating the appropriate organisational structure is arguably the greatest challenge facing all multichannel retailers' while 'there has been little research in the marketing literature' on this issue. However, Rigby, Sutherland and Noble (2018:92) stated that 'hierarchical organisational structures do not align with customer behaviours as many companies still have separate structures and P&Ls for online and offline operations, but customers want seamlessly integrated omnichannel experiences.' According to them 'an agile way of working, using a clear taxonomy that launches the right cross-organisational teams makes such alignment possible.' Rouziès et al. (2005) also propose to create cross-functional teams.

In conclusion, it seems useful for organisations deploying multichannel strategies to implement organisational structures that overarch silos by creating cross-functional teams focused on integrated customer experiences.

2.1.5 Enabler 4: Customer insight deployment

There is large academic support for integrating systems and customer data across channels. Schijns and Blokland (2004: 5) noted that 'most organisations now have multiple systems loosely tied together to support their supply chain. Without proper integration, these systems can create organisational roadblocks to integrating the multiple selling channels, resulting in a lack of channel connectivity.' Ganesh (2004, p. 140) agrees: 'Building and retaining a long-term association with customers requires that relationship management applications should be able to accommodate all the various channels. Rangaswamy et al. (2005) state that multichannel customers often complain about the inconsistency of information and responses across channels. Consistency is considered key to customer satisfaction in multichannel settings (Sousa & Voss, 2006). Pentina et al. (2009: 362) acknowledge this: 'Creating and maintaining cross-channel databases and understanding individual preferences for channel use can help firms create superior multichannel shopping experiences. This can be achieved by using Customer Relationship Management (CRM) systems.'

Rangaswamy et al. (2005) therefore propose that organisations should develop methods for identifying and integrating data from various channels and analysing cross-channel customer behaviour to help firms make strategic and tactical choices. Payne and Frow (2004: 530, 2005) stress that 'a company's ability to execute multichannel integration is dependent on the organisation's ability to gather and deploy customer information from all channels and to integrate it with other relevant information'. Hughes (2006: 112) agrees: 'Effective channel management requires that all channels share knowledge about a customer's relationships with the company', which is also confirmed by Weinberg et al. (2007). Neslin and Shankar (2009: 72) state therefore that 'the ideal position for a firm would be complete customer data integration (CDI), or an integrated, single view of the customer across channels.' Biemans et al. (2010) add to this that sharing process information within the departments involved is necessary to improve performance.

Zhang et al. (2010: 173) concluded that in 2010 little had changed thus far: 'The traditional data collection and management approach is centred around each channel, which means that many retailers do not have the ability to track transaction information across channels and have no way to measure the profitability of their multichannel customers. Multichannel strategies call for a customer-centricity approach to data integration.'

2.1.6 Enabler 5: Agile way of working

The common view in literature is that, within multichannel strategies, iterative operational processes should serve as the basis for continuously improving performance. Hughes (2006) proposes that multichannel organisations need short-cycle processes for collecting and responding to customer feedback. However, in his case study, he could not identify organisations using these in practice. As to align the activities of marketing and sales, Kotler et al. (2006) sketch some fundamentals for a learning organisation: implementing systems to continuously track and manage the joint activities, establishing common metrics to periodically evaluate the overall success of these activities, and mandating the teams to frequently meet as to review and improve their cooperation. Rouziès et al. (2005) propose to have teams work on a common, iterative process with integrated goals and joint incentives. Rigby (2018: 3) concluded anecdotally that 'retailers with agile IT departments have been transitioning to multichannel (a hallmark of most successful retailers these days) far more quickly and successfully than others'.

Valos et al. (2010: 428) state that 'adaptive approaches will enable multichannel marketing to contribute to competitive advantage in dynamic environments'. Kabadayi

(2011: 766) agrees with this by saying that within multichannel strategies processes 'that permit adaptive decision making are needed.' Krohmer et al. (2002: 453) also see that 'cross-functional dispersion of influence on marketing activities' including multichannel management is necessary to create 'adaptiveness, reflecting the ability of the organisation to adapt to changes in its environment.' Wilson and Daniel (2005) acknowledge this, while calling this phenomenon 'dynamic capabilities.' Shah et al. (2006: 117) also see that 'the key challenge concerning customer-centric processes is developing the ability to dynamically match the customer's requirements' regarding channel usage. Van Bruggen et al. (2010: 338) agree, by stating that 'the challenges of designing channels for today's customers are the need for flexibility and adaptability.' Sousa and Voss (2006: 359) also see this necessity for flexible processes as they expect that channels 'will experience rapid technological evolutions and that, in the future, we will witness a profusion of new channels.'

Although there is a rich body of academic literature on continuous improvement and iterative processes, little empirical evidence has been published on this subject within the context of marketing. Wilshaw and Dale (1996) concluded this, and not much has changed since then. Publications on this topic are very specifically focused, e.g. on the issues of external analysis (Sližienė & Vaitkienė, 2003), campaign measurement (Wu & Hung, 2007) or product development (Mohr-Jackson, 1996).

The integration of continuous learning and improvement principles in processes stems from the work of Edward Deming and Taiichi Ohno (Liker, 2004). Based on the early works of Shewhart, Deming formalized continuous improvement in the still widely used plan/do/check act cycle (Moen & Norman, 1990). Ohno used this cycle as the basis for continuous improvement ('Kaizen') processes as the core of the Toyota Production System, which ultimately resulted in the continuous improvement approaches used within Lean and in agile methods such as Scrum and Lean Startup (Imai, 2012; Ries, 2011; Womack & Jones, 2003; Schwaber & Sutherland, 2012). The same principles can be found in the 'Internal Business Process' and 'Learning and Growth' sections of the balanced scorecard approach (Kaplan & Norton, 1996).

Currently, the deployment of agile is gaining ground within marketing to create an adaptive operation that incrementally develops its strategy by experimenting (de Swaan Arons, van den Driest & Weed, 2014). According to them, this is especially relevant for the dynamics and complexity of multichannel operations. Blank (2013: 54) claims that using the 'lean startup' methodology, which is based on agile principles, results in fewer failures than using traditional approaches. Referring to the Agile Marketing Manifesto values (Ewel & Cass, 2012), Blank (2013: 54) describes these principles as a methodology that 'favours experimentation over elaborate planning, customer feedback over intuition, and iterative design over traditional big-design-upfront development' in focusing on continuous improvement processes to create value more effectively. Recently, he sees large companies beginning to implement the lean startup methodology. However, so far not much has been written about the implementation of agile principles in marketing practice (Dewell, 2007; Piercy & Rich, 2004; Piercy & Morgan, 1997; Poolton, Ismail, Reid & Arokiam, 2006).

2.2 Focus of our research: agile way of working as an enabler of multichannel management

The present research focuses on just one of the five enablers, being the agile way of working. The reason for choosing this focus is twofold. Firstly, the agile way of working is a widely used method for the complexity of IT projects, offering potential improvements in prioritization, team productivity, time-to-market, alignment, predictability, quality, costs, value creation for the customer, and customer satisfaction (Cappelli & Tavis,

2018). The complexity of IT projects seems comparable to the complexity of multichannel strategies as both concern intangible services, are dynamic, require speed, are costly, necessitate close cooperation of different specialists, and frequently need customer feedback to check on the value creation (de Swaan Arons et al., 2014; Dewell, 2007). Secondly, little is known about agile within the business domain, and especially within the marketing domain, which makes this unexplored area a relevant topic for expanding academic and practitioner knowledge.

As discussed in Chapter 1, our focus on the agile way of working excludes the other four enablers from our research. An important consideration is that enablers such as culture and organisational structure are always present, influencing whatever activities an organisation is performing, and a vast amount of both empirical and theoretical literature is available about these two enablers more in general (Day, 2006; Rust, Moorman, & Bhalla 2010; Shah et al., 2006; Homburg, Droll & Totzek, 2008; Kumar, Venkatesan, & Reinartz 2008). Despite the exclusion, these factors could implicitly influence the performance of organisations deploying multichannel strategies.

Based on this substantiation of our choice to focus on the agile way of working as an enabler of multichannel management, the section below describes the relevance of the agile way of working in more detail.

2.3 A closer look at the relevance of agility

Kotter (2012: 46) states that 'perhaps the greatest challenge business leaders face today is how to stay competitive amid constant turbulence and disruption' as he sees an 'increasing speed of business and a need for organisations to be quicker and much more agile.' According to Kotter 'the old ways of setting and implementing strategy are failing as most organisations can't keep up with the pace of change, let alone get ahead of it.' Therefore, 'the existing structures and processes that together form an organization's operating system need an additional element to address the challenges produced by mounting complexity and rapid change'. He calls this additional element agility, stating that 'strategy should be viewed as a dynamic force that constantly seeks opportunities, identifies initiatives that will capitalize on them, and completes those initiatives swiftly and efficiently' by deploying 'an ongoing process of searching, doing, learning and modifying' (Kotter, 2012: 46). Cappelli and Tavis (2018: 48) agree with Kotter (2012), stating that as 'speed is the new business currency, […] core businesses and functions within companies should largely replace their long-range planning models with nimbler methods that allow them to adapt and innovate more quickly'. They see a fundamental shift within organisations towards creating multidisciplinary teams and 'pushing decision rights down to the front lines, equipping and empowering employees to operate more independently'. Denning (2018) as well as Kavadias, Ladas and Loch (2016: 95) acknowledge this shift: organisations wanting to create and capture more value for and from their customers through their business model, should establish 'an agile and adaptive organisation by moving away from traditional hierarchical models of decision making in order to make decisions that better reflect market needs and allow real-time adaptation to changes in those needs. The result is often greater value for the customer at less cost to the company.' In their in-depth analysis of 40 companies, they identified agility as a key factor within the majority of these companies. Neren (2016: 4) also emphasizes that the agile way of working enables teams to learn quickly from feedback as to improve their value creation: 'in an agile methodology, engineers create multiple versions and iterations of prototypes in a concentrated timeframe to put potential solutions in the hands of users as quickly as possible. The teams can then use the feedback from their customers to quickly and efficiently improve the products.' Rigby, Sutherland and Takeuchi (2016: 42) see the agile way of working 'spreading across a

broad range of industries and functions and even into the C-suite […], accelerating growth by taking people out of their functional silos and putting them in self-managed and customer-focused multidisciplinary teams.' They state that although the agile way of working 'is less useful in routine operations and processes, these days most companies operate in highly dynamic environments. They need not just new products and services but also innovation in functional processes. Companies that create an environment in which agile flourishes find that teams can churn out innovations faster in both those categories.' According to them 'agile is most effective and easiest to implement when the problem to be solved is complex, solutions are initially unknown, product requirements will most likely change, the work can be modularized, and close collaboration with end users (and rapid feedback from them) is feasible.' In their experience, 'these conditions exist for many product development functions, marketing projects, strategic-planning activities, supply-chain challenges, and resource allocation decisions. They are less common in routine operations such as plant maintenance, purchasing, and accounting' (Rigby et al., 2016: 42). Rigby, Sutherland and Noble (2018: 90/96) stated that 'by now most business leaders are familiar with agile innovation teams. These small, entrepreneurial groups are designed to stay close to customers and adapt quickly to changing conditions. When implemented correctly, they almost always result in higher team productivity and morale, faster time to market, better quality, and lower risk than traditional approaches can achieve.' According to them, when implementing the agile way of working 'the most successful companies first focus on vital customer experiences that cause the greatest frustrations among functional silos.' And these companies report relevant results: 'The business is better able to read changing conditions and priorities, develop adaptive solutions, and avoid the constant crises that so frequently hit traditional hierarchies. Disruptive innovations will come to feel less disruptive and more like adaptive business as usual. Changes come on line faster and are more responsive to customer needs. Finally, the business delivers measurable improvements in outcomes, not only better financial results but also greater customer loyalty and employee engagement' (Rigby et al., 2018: 90/96).

The overview above suggests that the agile way of working focuses on learning from and performing for customers by creating and capturing superior value of the customer through products, services, channels and customer processes. The agile way of working mainly revolves around organisational structures and processes, as to facilitate speed and flexibility. It is most relevant in rapidly changing or unknown circumstances, where complexity applies. As has been discussed earlier, these characteristics apply to multichannel strategy execution.

The relevance of the agile way of working now having been elaborated, the following section discusses how the agile way of working relates to customer performance.

2.4 How the agile way of working can improve customer performance

Denning (2018: 49) distinguishes three key factors within agile, of which one is 'The Law of the Customer', aimed at continually creating optimal value for customers. Kotter (2014: 47) characterizes the essence of the agile way of working as an 'ongoing process of searching, doing, learning and modifying.' Rigby et al. (2018: 96) state that 'Agile's incremental and iterative test-and-learn approach […] accelerates learning. The business is better able to read changing conditions and priorities, and develop adaptive solutions.' Cappelli et al. (2018: 48) acknowledge this adaptivity: 'all key agile principles focus on delivering more-immediate feedback throughout the year so that teams can become nimbler, "course-correct" mistakes, and improve performance by learning through iteration.' Rigby (2012: 74) stated that 'omnichannel retailers need to test and learn quickly but few are adept at test-and-learn methodologies. So, a second task is to

upgrade testing and learning skills to 21st-century levels.' Rigby et al. (2016: 45) stress that agile's core is about creating a learning organization where 'people should be happy to learn things that alter their direction, even late in the development process, as that will put them closer to the customer and make for better results.' Rigby (2018: 4) also states that an agile organization 'welcomes and celebrates learning.' Finally, Gothelf (2017) states that the cross-functional collaboration within agile organisations is aimed at continuous learning, as to improve their responsiveness in terms of time-to-market.

Reflecting on the agile way of working at a higher abstraction level, our interpretation of the available literature as discussed above is that the essence of the agile way of working revolves around organisational learning. The section below elucidates the concept of organisational learning.

2.4.1 Organisational learning

In academic literature (Hussain et al., 2017) Argyris and Schön are considered as the scholars to first publish on the issue of organisational learning (Argyris & Schön, 1978). Argyris (1999: 32) stated that organisations 'need to learn faster than their competitors and to develop a customer responsive culture as to create a competitive advantage. Therefore, organisations need to maintain knowledge about new products and processes, understand what is happening in the outside environment and produce creative solutions using the knowledge and skills of all within the organization. This requires co-operation between individuals and groups, free and reliable communication, and a culture of trust.' Argyris (1999) suggests that one of the effects of organisational learning is that organisations can improve their performance for customers. According to him, these organisations improve their ability to translate customer needs and expectations into products and services, thus creating a competitive advantage.

According to Hussain et al. (2017), the publications of Senge are cited most in academic literature, and he is generally considered as the conceiver and thought leader of organisational learning, coining the term 'learning organisation'. Senge and Sterman (1992b: 356) describe a learning organisation as 'a group of people working together collectively to enhance their capacities to create results for their customers they really care about', thus suggesting a relationship with customer performance. According to Senge, Dow and Neath (2006: 424) 'the basic rationale for such organisations is that in situations of rapid change only those that are flexible, adaptive and productive will excel'. As described in section 2.5 below, flexibility and adaptiveness are important aspects of agile. Senge et al. (2006: 424) continue by stating that 'for this to happen, organisations need to discover how to tap people's commitment and capacity to learn at all levels.' This necessity is confirmed by Hamel and Prahalad (1994: 51) by stating that organisations need to adapt continuously to their changing environment. Therefore, 'senior managers' first task is to develop a process for pulling together the collective wisdom within an organisation' by balancing autonomy and authority. Garvin et al. (2008: 116) emphasize the importance of 'concrete learning processes and practices', which includes 'prototyping, simulations and experimentation with new products or services […] collecting information on competitors, customers, suppliers and market trends, […] performance evaluation, and analysis'. Garvin (1993) states that these processes and practices become manifest in three types of activities, namely information acquisition, information dissemination, and shared implementation of knowledge. According to Garvin (1993), the tangible external results of these activities are the improvements in products and services, as well as in customer interactions, which are part of the multichannel strategy in the present research. Van Solingen (2000: 79) also states that in improving products and services 'learning is often the main process in organisations.'

Garvin, Edmondson and Gino (2008) agree with Senge (2006) that these activities are facilitated by a supportive learning environment. Several authors have identified elements that constitute this supportive learning environment. In summary, these elements include goal setting, leadership styles, organisational structures, diversity, communication and collaboration processes, and tooling (Yukl, 2009; Milway & Saxton, 2011; Schilling & Kluge, 2009; Crossan, Lane, & White, 1999; Argote, 2011; Argote, 2013; Edmonson, Garvina, & Gino, 2008; Argote, McEvily, & Reagans, 2003, March, 1991; Dixon, 2017; Gibson & Gibbs, 2016; Hedberg, 1981; Nevis, DiBella, & Gould, 1995; Tannenbaum, 1997; Popper & Lipshitz, 2000; Brown & Duguid, 1991; Weick & Westley, 1996; Ulrich, Jick, & Von Glinow, 1993; Pedler, Burgoyne, & Boydell, 1997; Goh & Richards, 1997). As stated earlier, Senge (1990, 1994, 2006) also acknowledges the need for a supportive learning environment and has identified three elements that comprise and overarch the elements as described above. Based on this, Senge's three elements have been selected to serve as the three independent variables in our conceptual model. As will be discussed in section 2.5.2, the concepts within the agile way of working create a facilitating context for a learning organisation and these concepts can be categorized under the three elements as identified by Senge (1990, 1994, 2006). These three elements are:

- Goals: the governing concepts for defining what an organisation seeks to accomplish and how it intends to operate;
- Tools and methods: the practical means an organisation deploys for performing its activities and monitoring progress;
- Organisational infrastructure: the roles, communication and structure within an organisation that determine how resources are allocated.

The next section discusses the concept of organisational learning as placed within a marketing context.

2.4.2 Organisational learning within a marketing context

The academic marketing literature suggests a relationship between organisational learning and performance, mainly clustered in marketing themes such as customer centricity and market orientation (Morgan & Turnell, 2003; Slater et al., 1995), but also regarding multichannel strategies (LeMeunier-FitzHugh & Piercy, 2007). In the academic literature, customer performance is generally considered to be one of the important elements constituting organisational performance (Kaplan & Norton, 2005; EFQM, 2013).

Shah et al. (2007: 121) saw that 'learning and continuous improvement sustain the performance excellence and competitive advantage gained by virtue of customer centricity.' Slater et al. (1995: 63), elaborating on their extensive research on market orientation, have taken an in-depth look at organisational learning from the perspective of markets, competitors and customers. They concluded that 'a culture of marketing orientation and entrepreneurship can achieve maximum effectiveness only if it is complemented by appropriate organisational structures and processes'. These organisational structures and processes are aimed at 'maximizing organisational learning on how to create superior customer value in dynamic and turbulent markets, because the ability to learn faster than competitors may be the only sustainable source of competitive advantage', considering value of the customer as a constituting element of customer performance. They agree with Day (1994: 38), who states that 'a superior ability to learn is critical because of the acceleration of market and technological changes, explosion of available market data, and importance of anticipatory action' and is a 'competency-based source of competitive advantage because of its complexity, usefulness (for numerous activities from product development to customer service), and difficulty to imitate.' Slater et al. (1995: 66/71) also state that 'organisational learning is valuable to a firm's

customers […] because it focuses on understanding and effectively satisfying their expressed and latent needs through new products, services, and ways of doing business.' According to them, these customer insights help organisations improve their performance for customers, as confirmed by Day (1994). This relationship is also acknowledged in earlier work by Parasuraman, Zeithaml and Berry (1988a, 1988b, 1991, 1994). They state (Parasuraman et al., 1988b: 35) that 'delivering consistently good service quality is difficult but profitable for organisations', which also involves deployment of channels. Based on earlier research, Parasuraman et al. (1988a) state that customer satisfaction is directly related to value of the customer (as is currently applied in the widely used Net Promotor Score instrument (Reichheld, 2003)). As expressed in their Gaps Model of Service Quality (Parasuraman et al., 1988b), this customer satisfaction is generated by the extent to which two factors are aligned: the customers' expectations concerning the service and the customers' perceptions of the service experiences. This alignment is what Parasuraman et al. (1991) call 'service quality'. This service focus could be considered universal to all marketing activities as Vargo and Lusch (2004: 2) state that 'service provision rather than goods is fundamental to economic exchange'.

As can be derived from our argumentation above, the mechanism behind the object of our research is that the agile way of working enables a specific form organisational learning. Thus, the organisation increases the speed, volume and perceived value of improvements in channels for its customers. As a result of the improved fit between expected and perceived channel experiences, the customers become more satisfied. Ultimately, this customer satisfaction generates more value of the customer through more customer loyalty and contribution margins (Parasuraman et al., 1988a). As described in section 2.4.3 below, customer satisfaction is a constituting part of the independent variable in our conceptual model: 'Customer performance'.

According to Parasuraman et al. (1988b: 35), the most important factor facilitating service quality is the 'communication and control processes implemented in organisations to manage employees'. As depicted in their Gaps Model of Service Quality, these processes help an organisation to learn from customer feedback on expectations and experiences as to continuously improve service quality and thus value of the customer.

Slater et al. (1995: 66/71) acknowledge this, by stating that 'the marketing function has a key role to play in the creation of a learning organisation.' According to them 'marketing strategy should be learning-driven as well. Marketers must continuously maintain a clear and unbiased understanding of the product and service attributes that customers value. To identify latent needs, they must augment traditional market research with market experiments. Innovative promotional media, channels of distribution, and pricing structures will become more important in this era of fragmenting markets.' According to Slater et al. (1995) organisational learning has a direct relationship with two distinct customer performance outcomes, being customer satisfaction and new product success.

2.4.3 Customer performance

As mentioned in Chapter 1, the dependent variable in our conceptual model, 'Customer performance', is based on the definition by the EFQM (2013: 54). This definition is: 'the outcomes for customers that demonstrate the effectiveness of the organisation's deployment of its strategy and processes'. The EFQM operationalisation of customer performance comprises the constructs as identified by Slater et al. (1995), and Parasuraman et al. (1988a), and considers customer satisfaction (as shown in Figure 2.1. above) to be a constituting part of customer performance. The EFQM uses six main constructs being speed of improvements, volume of improvements, perceived value of

improvements, customer satisfaction, customer loyalty and value of the customer (see section 2.4.2 and Table 3 below).

Table 3

Operationalisation of the dependent variable 'Customer performance'

Measures	**Operationalisation**
1. Speed of improvements	Speed of realizing improvements in products, services, channels or customer process (Ganesh, 2004; Van Bruggen et al., 2010)
2. Volume of improvements	Number of realized improvements in products, services, channels or customer process (Barker, 2011; Biemans et al., 2010)
3. Perceived value of improvements	The value of the products and/or services as perceived by the customer (Neslin et al., 2009; Sa Vinhas et al., 2010)
4. Customer satisfaction	4.1 Customer satisfaction about the experience of products and/or services (Lee, Sridhar, Henderson, & Robert, 2012; Neslin et al., 2009; Payne et al., 2004)
	4.2 Customer satisfaction about the experience of channels and processes (Lee et al., 2012; Neslin et al., 2009; Payne et al., 2004; Zhang et al., 2010)
5. Customer loyalty	5.1 Attitudinal: preference for the organisation in customer's purchase intention (Neslin et al., 2009; Payne et al., 2004; Zhang et al., 2010)
	5.2 Behavioural: customer repurchase within a specified period (Neslin et al., 2009; Payne et al., 2004; Zhang et al., 2010)
6. Value of the customer	6.1 The contribution margin generated from the product and/or service revenues (Lee et al., 2012; Neslin et al., 2009)
	6.2 Customer lifetime value: the net profit attributed to the entire future relationship with a customer (Lee et al., 2012; Neslin et al., 2009; Meunier-Fitzhugh & Piercy, 2007; Oh, Teo, & Sambamurthy, 2012; Zhang et al., 2010; Sa Vinhas et al., 2010)

As can be seen in Table 3 above, the EFQM (2013: 54) has operationalised the construct of customer satisfaction into two sub-items, one for the experience of products and services, and the other for the experience of channels and processes. The same applies to the construct of customer loyalty, being attitudinal loyalty and behavioural loyalty. Furthermore, this applies to the construct of value of the customer, which the EFQM has operationalised in into contribution margin from products and services and customer lifetime value. Thus, the variable 'Customer performance' consists of nine items, which are further described in section 3.2.6.8.

As also discussed in more detail in Chapter 3, the three organisational learning elements of our conceptual model have been operationalised using the values and principles of the agile way of working. For a better understanding of the essence of the agile way of working, the different aspects of the agile way of working will be briefly discussed in more detail.

2.5 Understanding the essence of the agile way of working

The European Foundation for Quality Management states that agile organisations have the 'ability to identify and respond effectively and efficiently to opportunities and threats'

and defines the agile way of working as 'the set of activities that add value by transforming inputs into outputs, enabling the organisation to adapt in a timely way and continually improve its performance through incremental change' (EFQM, 2013: 22/87). It is generally agreed upon in literature that the agile way of working originates from a meeting in 2001, where seventeen developers who called themselves 'organisational anarchists' gathered to start a movement aimed at increasing the adaptability of waterfall programming methods. Based on their knowledge of lean, scrum, and other approaches (e.g. extreme programming, crystal, adaptive software development, feature driven development, and dynamic systems development method), these developers wrote the 'Manifesto for Agile Software Development'. Since its conception, the four values and twelve principles, as described in this manifesto, form the basis for all different approaches within the agile way of working, including those applied within the marketing domain. (Rigby et al., 2016; Ewell et al., 2012).

2.5.1 The agile manifesto

The original text of this manifesto is shown in Figure 2 below (Beck et al., 2001):

'We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions	*over*	*processes and tools*
Working software	*over*	*comprehensive documentation*
Customer collaboration	*over*	*contract negotiation*
Responding to change	*over*	*following a plan*

That is, while there is value in the items on the right, we value the items on the left more.'

Figure 2: the four values in the original text of the agile manifesto

The four values of the manifesto were elaborated in twelve principles (Beck et al., 2001), as is shown in Figure 3 below:

'We follow these principles:

Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Business people and developers must work together daily throughout the project.

Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

Working software is the primary measure of progress.

Agile processes promote sustainable development. The sponsors, developers and users should be able to maintain a constant pace indefinitely.

Continuous attention to technical excellence and good design enhances agility.

Simplicity - the art of maximizing the amount of work not done - is essential.

The best architectures, requirements, and designs emerge from self-organizing teams.

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.'

Figure 3: the twelve principles in the original text of the agile manifesto

As is described in chapters 1 and 3, our conceptual model and its operationalisation have both been elaborated based on the values and principles in the agile manifesto as shown above. For illustration purposes, the next section discusses how the agile manifesto is applied in daily practice.

2.5.2 The application of the agile manifesto in daily practice

As described earlier, the agile way of working is essentially aimed at optimizing value creation for customers through organisational learning. This can be achieved by translating the values and principles of the agile manifesto into concepts that can be applied to marketing processes. The most important concepts are summarized below, (Rigby et al., 2016; Cappelli et al., 2018; Barton, Carey, & Charan, 2018; de Swaan Arons et al., 2014; Blank, 2013; Ries, 2011; Sutherland, 2015), being:

- Multidisciplinary, end-to-end teams;
- Facilitative leadership;
- Rhythm of incremental iterations;
- Prioritization based on feedback loops;
- Continuous improvement.

Multidisciplinary teams play a central role in agile organisations. These teams each are end-to-end responsible for achieving a specific purpose (e.g. revenues, profitability or customer satisfaction) for a certain customer related area (e.g. a customer segments, lifecycle phases, customer journey phases, customer processes or customer experiences). The teams are staffed with motivated individuals who, together, have all necessary expertise and are accountable for successfully achieving their team purpose.

By applying a facilitative leadership approach, management gives teams the support and trust they need, and remove impediments to more effectiveness of the teams. Management also creates dedicated physical team environments that facilitate face-to-face communication, creative problem solving, and visualisation of ideas and activities (e.g. kanban boards for tracking progress).

Teams work in a sustainable pace, using a rhythm of short, incremental iterations that last maximally four weeks (e.g. a sprint) as to achieve a short time-to-market. Teams develop a vision on how to achieve their purpose, and refrain from detailed plans and predictions, only planning those tasks that will not have changed by the time the team can start executing those tasks. To facilitate this approach, teams hold frequent, time-boxed meetings to align tasks and priorities (e.g. daily standups, planning meetings and refinement sessions).

By prioritizing their tasks based on customer feedback loops, teams learn things about on previous deliverables that may alter their direction even late in the development process, as to ensure optimal creation of value for the customer and, thus, value of the customer. Therefore, teams usually experiment on small parts of the product, service, channel or process (e.g. 'minimum viable product' or 'rapid prototype') for a limited amount of customers and during a short period of time, as to test the team's hypotheses. The teams use a fact based approach for determining whether to continue, adapt or stop these products, services, channels or processes.

As to optimize team performance, teams structurally apply continuous improvement. Usually this is done by sharing feedback, at the end of each iteration, for evaluating team processes and results on a meta level (e.g. retrospective meetings).

Based on these concepts, a facilitating context for a learning organisation is created. According to Rigby et al. (2018: 90/91) 'the autonomous teams become largely self-governing: senior leaders tell team members where to innovate but not how. And the teams work closely with customers, both external and internal. Ideally, this puts responsibility for innovation in the hands of those who are closest to customers. It reduces layers of control and approval, thereby speeding up learning and work, and increasing the teams' motivation. It also frees up senior leaders to do what only they can do: create and communicate long-term visions, set and sequence strategic priorities, and build the organisational capabilities to achieve those goals.'

2.5.3 Examples of organizations deploying the agile way of working

A wide array of organisations successfully deploying the agile way of working outside the IT domain are briefly mentioned in the available literature. Examples include Spotify, Netflix, Amazon, Bosch, 3M, SAP, Saab, ING, Amazon, Google, Salesforce, Riot Games, Tesla, SpaceX, Bank of Montreal, Gap, Pfizer, Procter & Gamble, IBM, General Electric, Johnson & Johnson, Macy's, Patagonia, Zappos, Microsoft, Cisco, John Deere, Airbnb, Dell, Google, Ikea, Lego, Nike, Rolls Royce, Ryanair, Uber, Xerox, Zara, Avaya, Wayfair, Cigna, Zipcar, Lending Club, LiveOps, Arm, National Public Radio, Zopa, C.H Robinson, Constellation Brands, USAA, Regeneron, Mitre, Intronis, OpenView Venture Partners, Intronis, and Systematic (Rigby et al., 2018; Cappelli et al., 2018; Barton et al., 2018; Rigby et al., 2016; Kavadias et al., 2016; Neren, 2016; Gothel, 2017; Power, 2013).

However, only three cases have been discussed somewhat broader in terms of performance outcomes, and only in an anecdotal manner. These cases concern ING, John Deere and Avaya. All three organisation deploy the agile way of working within their marketing organisations.

In 2015, ING 'anticipated rising customer demand for digital solutions and increasing incursions by new digital competitors ("fintechs"). Customers expected easy access to up-to-date information whenever and wherever they logged in.' Therefore, ING 'dissolved the organisational structures of its most innovative functions, including IT development, product management, channel management, and marketing - essentially abolishing everyone's job. Then it created small agile "squads" and required nearly 3,500

employees to reapply for 2,500 redesigned positions on those squads. About 40% of the people filling the positions had to learn new jobs, and all had to profoundly change their mindset.' In two years after implementing the agile way of working, 'customer satisfaction and employee engagement are both up, and ING is quicker to market with new products.' During that period, the share of 'all interactions with ING customers coming in through mobile apps, has risen from 40% to 60%, and branch visits and calls to contact centers have dropped below 1%. So, the bank has started to roll out this new way of working to the roughly 40,000 employees outside its home country'. (Barton et al., 2018: 59/61; Rigby et al., 2018: 92/93; Rigby et al., 2016; Gothel, 2017. According to Power (2013: 3) 'ING shows that agile has broader management applications. They have used agile as a key tool for collaboration across functions in customer related processes such as developing new products and in marketing campaigns. And the frequent (daily or weekly) meetings accelerate decision-making.'

According to Rigby et al. (2016: 46) John Deere 'has significantly compressed innovation project cycle times, in some cases by more than 75%' be deploying the agile way of working. And 'agile generated other improvements as well. Team engagement and happiness in the unit quickly shot from the bottom third of companywide scores to the top third. Quality improved. Velocity (as measured by the amount of work accomplished in each sprint) increased, on average, by more than 200%.'

By deploying the agile way of working, Avaya has 'improved its Net Promotor score from 20 to 65 in five years', which was 'accompanied by a 5% gross margin increase.' By deploying the agile way of working 'Avaya didn't just speed up its workflow — it communicated better with its customers.' (Neren, 2016: 4-5).

2.6 Conclusions

Our literature research identified five enablers for multichannel strategy execution. These enablers are strategy alignment, culture and leadership, organisational structure, customer insight deployment, and the agile way of working. However, little empirical evidence is available on the relevance, functioning and effects of these enablers.

As elucidated in Chapter 1, our research focuses on the agile way of working. The agile way of working originates from software development, as defined in the values and principles of the agile manifesto in 2001. In more recent years, the agile way of working has spread to business domains, including marketing practice. The cases in the available literature suggest that the agile way of working has a relationship with customer performance.

Looking at this at a more abstract level, our interpretation of the available literature is that the essence of the agile way of working is based on the concept of organisational learning. As shown in Chapter 1, our conceptual model comprises the three elements of the strategic architecture that Senge (1990, 1994) has identified for building learning organisations, as well as the views of Slater et al. (1995), and Parasuraman et al. (1988a) on how organisational learning relates to customer performance.

For a better understanding of the agile way of working, its different aspects have been discussed in more detail in the present chapter. In summary, it was described that a central row is played by multidisciplinary teams that focus on customer related topics. Working in as sustainable pace of short iterations in a facilitating team environment, these teams experiment with innovating products, services, channels and customer processes. By constantly using customer feedback and evaluating their own way of working, the teams continuously improve their performance for customers. The teams

are supported and trusted by management, that removes impediments to more effectiveness of the teams, thus creating team autonomy.

As elaborated in Chapter 1, although our focus on the agile way of working excludes the other four enablers from our research, enablers such as culture and leadership, and organisational structure are always present. This has again become clear in the literature overview concerning the application of the agile way of working in daily practice (see section 2.5.2). As can be seen in the selection of our model in Chapter 3, these enablers are implicitly comprised in the operationalised items measuring agility.

Chapter 3: research approach

Based on the research and analysis in Chapters 1 and 2, the AMM model and conceptual model have been developed to measure the deployment of the agile way of working within multichannel strategy execution and its relationship with customer performance. The next step is to select the most appropriate research approach for our measurement purposes. This chapter discusses the relevant alternatives, leading to our selection of a triangulation approach that combines case studies and a survey.

3.1 Introduction

With regard to choosing a specific research strategy and method, Guba and Lincoln (1994) state that 'questions of method are secondary to questions of paradigm, which we define as the basic belief system or world view that guides the investigation, not only in choices of method but in ontologically and epistemologically fundamental ways.' Saunders, Lewis and Thornhill (2015) have elucidated this by developing a framework to provide guidance for the successive choices researchers in social sciences need to make in their research design. Saunders et al. (2015) present this framework as 'an onion of which the layers need to be peeled away', starting with research philosophy and then consecutively on to the approaches, strategies, methods, time horizons and, finally, the techniques and procedures. See Figure 3.1 for their framework.

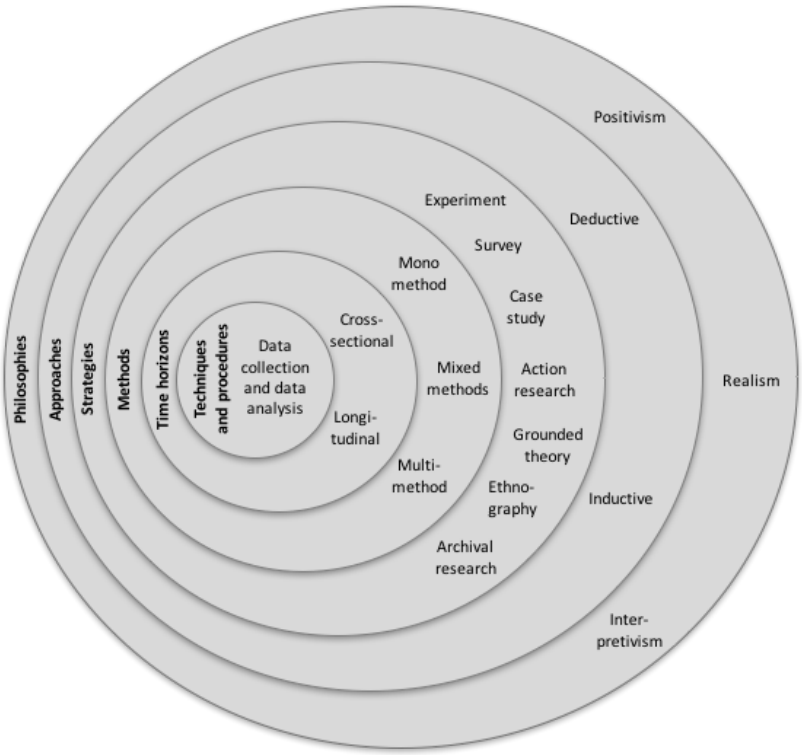

Figure 4. The 'research onion' framework by Saunders et al. (2015)

The 'research onion' framework above has served as the basis for our research design as this enables a structured and transparent design approach and facilitates reviewing and replication. Below, our decisions regarding each consecutive step of the framework are elucidated.

3.2 Research design

The aim of our study was to develop new knowledge, which is an issue that belongs to research philosophy. Research philosophy is the starting point for research design and will therefore be discussed first.

3.2.1 Step 1 - Research philosophy: interpretivism

The research philosophy one holds is based on assumptions about how one views the world, and these assumptions have implications for the research strategy and its research methods. According to Johnson and Clark (2006) 'the important issue here is not so much whether our research should be philosophically informed, but it is how well we are able to reflect upon our philosophical choices and defend them in relation to the alternatives we could have adopted'. Furthermore, Johnson et al. (2006) state that there are two central themes in the research philosophy by means of which researchers should make explicit choices for the foundations of their research design. These two themes are ontology and epistemology. Below, a brief overview of these themes will be presented.

3.2.1.1 Ontology

Ontology challenges the assumptions researchers make about the way in which the world works. It focuses on the nature of reality, raising questions about the assumptions researchers have about how the world operates and the commitment held to particular views. Within ontology two main positions can be distinguished: objectivism and subjectivism. *Objectivism* portrays the position that social entities exist in reality, external to social actors concerned with their existence. *Subjectivism* holds that social phenomena are created from the perceptions and consequent actions of those social actors concerned with their existence (Okasha, 2016; Saunders et al., 2015; Tijmstra & Boeije, 2011).

3.2.1.2 Epistemology

Epistemology deals with the question of what is acceptable knowledge in a particular field of study. Within the epistemology three philosophies can be distinguished: positivism, realism and interpretivism. *Positivism* reflects the stance of the physical and natural scientists. They prefer working with an observable reality, aiming at law-like generalisations as an end-product of their research. *Realism* is based on the belief that what the senses show researchers as reality is the truth, and that objects exist independently of our knowledge of their existence. There are two forms of realism: *direct* realism holds that what researchers experience through their senses portrays the world accurately; *critical* realism argues that what researchers experience are sensations: the images of the things in the real world, instead of the things directly. Both positivism and realism propose that the research is undertaken, as much as possible, in a value-free way and that only phenomena that researchers can observe will produce credible data.

Interpretivism advocates that it is necessary for the researcher to understand differences between humans in their role as social actors. Researchers should adopt an empathetic stance to be able to enter the social world of the research subjects and understand their world from their point of view. Methodologically, interpretivism values generalizability less than do positivism and realism (Okasha, 2016; Saunders et al., 20015; Tijmstra et al., 2011).

3.2.1.3 Our philosophical position: interpretivism

Based on the ontology and epistemology views discussed above within the context of social sciences, and given our own convictions, as well as the specific research questions within this study, our own philosophical position is that of interpretivism. This implies that the generalisability of our research is limited. This limitation is logical in our view as organisations and their specific circumstances seem to differ strongly, implying that no law-like generalisations can be made.

Our interpretivist position is the starting point for the second step in the framework, 'Approaches', which will be discussed below.

3.2.2 Step 2 - Approach: deduction

According to De Groot (2008) research, thinking and reasoning in empirical knowledge development should be an iterative process. To structure this process, De Groot has developed an 'empirical cycle' which consists of five phases. As is presented in Figure 5 these five phases are observation, induction, deduction, testing and evaluation.

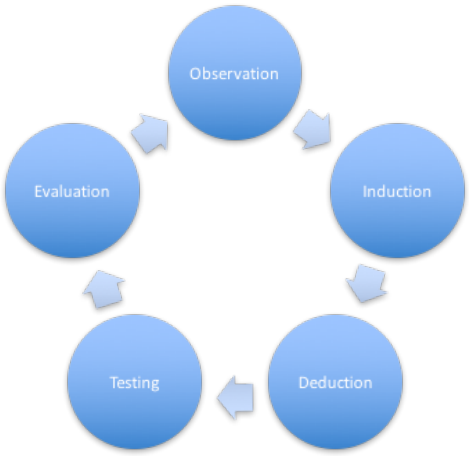

Figure 5: The five steps of De Groot's empirical cycle

According to Robson and McCartan (2016), the concepts of deduction and induction are not just part of the empirical cycle, but constitute the starting point for further research design. The *deductive* approach is 'the dominant research approach in the natural sciences, where laws present the basis of explanation, allow the anticipation of phenomena, predict their occurrence and therefore permit them to be controlled' (Collis & Hussey, 2009). In the deductive approach 'one develops a theory and hypothesis and designs a research to test the hypothesis, whereas in the *inductive* approach one collects data and develops a theory as a result of the data analysis.' And 'insofar it is useful to

attach these research approaches to the different research philosophies, deduction owes more to positivism and induction to interpretivism.' (Saunders et al., 2015). The most important differences are presented in Table 4.

Table 4

Major differences between deductive and inductive approaches to research (Saunders et al., 2015)

Deduction emphasises	**Induction emphasises**
• Scientific principles; • Moving from theory to data; • The need to explain causal relationships between variables; • The collection of quantitative data; • The application of controls to ensure validity of data; • The operationalisation of concepts to ensure clarity of definition; • A highly structured approach; • Researcher independence of what is being researched; • The necessity to select samples of sufficient size in order to generalise conclusions.	• Gaining an understanding of the meanings humans attach to events; • A close understanding of the research context; • The collection of qualitative data; • A more flexible structure to permit changes of research emphasis as the research progresses; • A realisation that the researchers are part of the research process; • Less concern with the need to generalise.

As can be noted from the formulation and elucidation of our research questions in Chapter 1, our research approach is deductive. Following a structured process, existing views on multichannel management and the agile way of working have been combined to create a conceptual model. Based on this conceptual model, hypotheses about relationships between the independent and dependent variables have been defined, and associated testable predictions were formulated. Exogenous variables have been identified to control the data. Furthermore, all constructs have been operationalised to ensure clarity of definitions and facilitate the independence of the researcher and what is being researched.

Having selected the deductive approach, the next section describes our considerations regarding the alternative research strategies.

3.2.3 Step 3 - Research strategy: survey and case study

Research can have different purposes: exploratory, explanatory, descriptive and predictive. *Explanatory* research studies situations or problems in order to explain relationships between variables (Yin, 2013). Our study has an explanatory nature as it aims to clarify the relationships as depicted in our conceptual model.

According to Saunders et al. (2015), within a deductive approach for explanatory purposes, the logical research strategies to consider are the experiment, survey and case study. They consider the relevant alternatives, as depicted within their 'research onion' framework in Figure 5.1, insufficiently suitable as these alternatives are aimed at inductive approaches (such as grounded theory and ethnography), exploratory purposes (such as action research), or descriptive purposes (such as archival research).

Therefore, three possible research strategies prevail: the experiment, survey and case study. According to Singleton and Straits (2010) 'the key features of *experiments* are manipulation and control. To test hypotheses the researcher deliberately introduces changes into the environment of subjects and observes or measures the effects of the changes. […] Thus, all experiments possess certain basic requirements that permit strong inferences about cause and effect' such as creating a controlled setting that realistically mirrors actual conditions. As is described in section 3.2.5, our AMM model comprises a large number of variables. It does not seem realistic to control all these variables *ceteris paribus*, and therefore our conclusion was that the experiment is unsuitable for testing our hypotheses and thus for answering our research question.

The second option, the *survey*, matches well with our specific research purposes. According to Saunders et al. (2015) the survey strategy is tightly associated with the deductive approach. Surveys 'allow the collection of a large amount of data from a sizeable population in a highly economical way.' They enable researchers to anonymously 'collect quantitative data which can be analysed quantitatively […] to suggest possible reasons for particular relationships between variables and to produce models of these relationships.' Singleton et al. (2010) state that 'using a survey strategy gives researchers more control over the research process' and, when sampling is used, 'it is possible to generate findings that are representative for the whole population.' However, according to Saunders et al. (2015) it takes considerable time to deploy a highly structured operation 'ensuring that the sample is representative, designing and piloting the data collection instrument and trying to ensure a good response rate.' Furthermore, 'there is a limit to the number of questions a questionnaire can contain if the goodwill of the respondent is not to be presumed on too much' at the risk of non-response or incomplete questionnaires. Finally, the wording of the questionnaires can also bias the feedback. These issues will have to be addressed in step 6 of the 'research onion' framework: techniques and procedures.

According to Saunders et al. (2015) the *case study* 'will be of particular interest if one wishes to gain a rich understanding of the context of the research and the processes being enacted.' Yin (2013) states that many researchers are sceptical of case studies as these are difficult to perform. This has multiple reasons: often 'academic rigor is lacking in case study research, they take too long, and result in massive, unreadable documents.' Furthermore, 'case studies provide little basis for scientific generalizability' as they are, like experiments, only 'generalizable to theoretical propositions and not to populations or universes.' Although our research is aimed at identifying generalizable relationships between many variables, the case study offers the possibility of an in-depth contextual investigation of relevant practical situations, thus enabling a better understanding of how the constructs within the AMM model manifest themselves in daily practice.

Based on the analysis above, the selection of a method and time horizon is elucidated below.

3.2.4 Step 4 – Methods: mixed

Having established the suitability of the survey and case study, the next question was whether to deploy only one or both of these two in what Saunders et al. (2015) specify as a 'mono method' and 'multiple methods', or integrating both in 'mixed methods'. The present research uses 'mixed methods' as it is useful to validate and interpret the relationships between independent and dependent variables in the context of daily practice by combining the quantitative data the survey generates with the qualitative data of a case study (De Boer, 2006). Tashakkori and Teddlie (2010) argue that this triangulation approach offers 'better opportunities to answer the research question and

allows to better evaluate the extent to which the research findings can be trusted and inferences made from them.'

The survey, as described above in step 3, is well suited for answering our research questions. However, according to Morris and Wood (1991), a case study enables researchers to 'gain a rich understanding of the context of the quantitative research and the processes being enacted' if they focus on complex situations where the unit of analysis is the organisation. Gummesson (2003) acknowledges this by stating that 'firms live with complexity, ambiguity, chaos, uncertainty, fuzzy boundaries and continuous change […]. Research methodologies have to adapt to this. Marketing management knowledge can only in special respects be built on surveys and statistically significant cause-and-effect links.'

Based on the criteria and arguments above, it was expected that a triangulation approach, combining the survey and case study strategies, would generate significant added value as compared to the mono method of either a survey or case study alone. Therefore, multiple methods have been deployed. First, a survey has been performed in which the AMM model again served as the basis. Next, case studies have been performed as a qualitative approach to corroborate, supplement and deepen the insights our survey would generate. Even in the event of the survey results indicating that only a part of the AMM model seems to be relevant for the relationship with customer performance, our case study would still use the AMM model in its full extent. This enabled an unbiased comparison between the quantitative and qualitative results as much as possible.

3.2.5 Step 5 - Time horizons: cross-sectional

In this penultimate step, the time horizon of the research was set by choosing between two alternatives: cross-sectional or longitudinal. According to Singleton and Straits (2017) 'the most commonly used survey design by far is the *cross-sectional* design, in which data on a sample or "cross section" of respondents chosen to represent a particular target population are gathered at essentially one point in time.' Saunders et al. (2015) state that cross-sectional studies are aimed at explaining 'how factors are related in different organisations', and most often employ the survey strategy. A *longitudinal* research, such as a trend study or panel study, is used when it is necessary to clearly show the direction in which causal relationships develop, or to study the process of change over time. However, longitudinal research can only be used quite rarely because of the practicality of time constraints (Singleton et al., 2015).

To test our hypotheses, a one-time measurement of the AMM variables and their relationships, as facilitated by a cross-sectional study, seemed sufficient. If relevant, a future longitudinal research may be initiated as an in-depth follow-up study into the process of change.

3.2.6 Step 6-A - Techniques and procedures: operationalisation

For our research purposes, as described in Chapter 1, an academically substantiated model is needed to meaure the deployment of the agile way of working within multichannel strategy execution. Therefore, an additional systematic literature review has been performed, following the guidelines of Kitchenham (2007). The specific research questions of this systematic literature review were as follows:

- What academically substantiated models for measuring deployment of the agile way of working are currently available?

- Which of these models are potentially suitable to be deployed in marketing practice?
- Which of these alternatives is best suitable to be deployed in marketing practice?
- What adaptations are possibly required for this purpose?

Based on these research questions, an iterative research strategy has been developed, consisting of three stages:

- Stage 1: querying digital libraries and Google to identify all available models for measuring deployment of the agile way of working;
- Stage 2: selecting relevant models by applying inclusion and exclusion criteria;
- Stage 3: determining the most suitable method by assessing the selected models on specific criteria.

The approach and results of each of these three stages is described below.

3.2.6.1 Stage 1 and 2: Overview and selection of models

In stage 1, the research was focused on articles written in English that are available online. Initially the information sources comprised five digital libraries, being:

- Google Scholar (scholar.google.com);
- IEEEXplore (ieeexplore.ieee.org/xplore);
- Wiley InterSciene (interscience.wiley.com);
- Elsevier Science Direct (sciencedirect.com);
- SpringerLink (springerlink.com).

As these sources generated a limited number of articles and thus methods, a 'snowball' approach was used to broaden the results. This involved analysis of the literature references in the articles to discover additional methods. As this resulted in a slight increase of results, it was decided to run a complementary Google query.

The digital libraries and Google have been queried using multiple terms. As specified in Table 5 below, the search terms consisted of three different categories. Within a category the search terms were combined using the Boolean 'OR'. The resulting three lists were subsequently combined using the Boolean 'AND'. The search was restricted to title, keywords and abstract.

Table 5

Search terms used in stage 1 of the systematic literature review

Category	**Search terms**
Agility descriptors	Agile; agility; lean; scrum
Maturity descriptors	Adoption; implementation; level; maturity; performance; progress; transformation
Method descriptors	Analysis; assessment; benchmark; checklist; framework; index; indicator; measurement; model; roadmap; scale; test

For storing the relevant papers, the citation management procedure as reported by (Dingsoyr & Dyba, 2008) has been applied using Mendeley Desktop. The citations were exported to an Excel spreadsheet, logging the sources and inclusion/exclusion decision

for each citation. For each stage, separate Mendeley Desktop groups and Excel spreadsheet tabs were maintained. From each article the following data were extracted and tabulated:

- the source and full reference;
- the name of the model;
- whether the model is academically substantiated;
- whether the model has been tested in practice;
- whether the model is presented in full detail.

This review resulted in 52 unduplicated models, as presented in the overview in Table 6 below.

Table 6

The models resulting from stage 1 of the systematic literature review

	Method	Origin	Approach	Level of detail	Applied in practice?	Source
1	42-points test	Practitioners	Sub processes	Medium	Unknown	http://www.allaboutagile.com/how-agile-are-you-take-this-42-point-test/
2	A better team	Practitioners	Sub processes	Medium	Unknown	http://www.jamesshore.com/Blog/abetterteam.html
3	ADAPT	Practitioners	Sub processes	Medium	Unknown	https://www.mountaingoatsoftware.com/presentations/adapting-to-agile
4	Aditi Agile Transformation Maturity Model	Practitioners	Hierarchical	Medium	Unknown	https://confengine.com/agile-india-2014/proposal/236/agile-transformation-maturity-model
5	Agile Adoption and Improvement Model	Academic	Hierarchical	Medium	No	Qumer, Henderson-Sellers, & Mcbride, 2007
6	Agile 3R Model of Maturity Assessment	Practitioners	Sub processes	Low	No	https://www.scrumalliance.org/community/articles/2015/march/agile-3r-model-maturity-assessment
7	Agile Adoption and Transformation Guide	Practitioners	Sub processes	Medium	Unknown	http://www.infoq.com/minibooks/agile-adoption-transformation
8	Agile Adoption Framework	Academic	Hierarchical	High	Yes	Sidky, 2007
9	Agile Adoption Model	Practitioners	Sub processes	Low	No	https://www.scrumalliance.org/community/articles/2013/july/an-agile-adoption-model
10	Agile Assessment	Practitioners	Sub processes	Medium	Unknown	https://nowinskipiotr.wordpress.com/2016/04/29/agile-assessment/
11	Agility Calculator Tool	Practitioners	Sub processes	Low	Yes	http://info.versionone.com/Agility-Calculator-Tool.html
12	Agile Development Maturity Model	Practitioners	Hierarchical	Low	No	http://vitalflux.com/learnt-agile-development-processes-now-whats-next/
13	Agile Enterprise Survey	Practitioners	Sub processes	Medium	Yes	http://www.storm-consulting.com/agile-enterprise-survey/
14	Agile Fluency Model	Practitioners	Hierarchical	Medium	No	http://www.agilefluency.org/model.php
15	Agile Journey Index	Practitioners	Hierarchical	Medium	Unknown	http://www.agiledimensions.com/blog/agile-journey-index/
16	Agile Maturity Map	Practitioners	Sub processes	Medium	No	http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.582.9006&rep=rep1&type=pdf
17	Agile Maturity Model	Academic	Hierarchical	High	No	Patel & Ramachandran, 2009

18	Agile Maturity Model (Danossia)	Practitioners	Scaling	Medium	No	https://danossia.wordpress.com/2010/07/12/yet-another-agile-maturity-model-the-5-levels-of-maturity/
19	Agile Maturity Model (Pettit)	Practitioners	Sub processes	Medium	No	http://www.shaunjayaraj.com/2008/08/agile-maturity-model.html
20	Agile Maturity Patterns	Practitioners	Sub processes	Low	Unknown	http://www.agilealliance.org/wp-content/uploads/files/session_pdfs/Mature Agile Teams - Essential Patterns v4 - Half day Workshop.pdf
21	Agile Maturity Self-Assessment Survey	Practitioners	Sub processes	Low	Yes	https://www.scrumalliance.org/community/articles/2015/december/agile-maturity-self-assessment-survey
22	Agile Questionnaire	Practitioners	Sub processes	Low	Unknown	http://www.thedigitalbusinessanalyst.co.uk/2014/07/Agile-Questionnaire.html
23	Agile Readiness and Maturity	Practitioners	Hierarchical	Low	No	http://programmedevelopment.com/evaluating-ability/evaluating-organisations/agile-readiness-maturity
24	Agile Self Assessment	Practitioners	Hierarchical	Medium	Unknown	http://www.agileprojectmanagementtraining.com/agile-self-assessment/
25	Agile Scaling Model IBM	Practitioners	Scaling	High	No	https://www.ibm.com/developerworks/community/blogs/ambler/entry/agile_scaling_model?lang=en
26	Agile Team Evaluation	Practitioners	Sub processes	Low	No	https://blogs.msdn.microsoft.com/ericgu/2015/10/05/agile-team-evaluation/
27	Agility Health Dashboard	Practitioners	Sub processes	Low	Unknown	http://illustratedagile.com/2012/09/25/how-to-measure-team-agility/
28	Agility Health Radar	Practitioners	Sub processes	High	Yes	http://agilityhealthradar.com
29	Agility Index	Academic	Sub processes	High	No	Vinodh & Aravindraj (2012)
30	Agility Maturity Model	Practitioners	Hierarchical	Low	No	http://info.thoughtworks.com/rs/thoughtworks2/images/agile_maturity_model.pdf
31	Agility Path	Practitioners	Sub processes	Medium	Yes	https://www.scrum.org/Blog/ArtMID/1765/ArticleID/14/%E2%80%98Evidence-Based-Management%E2%80%99-for-Software-Organizations
32	Borland Agile Assessment	Practitioners	Sub processes	Low	Yes	http://borland.typepad.com/agile_transformation/2009/03/borland-agile-assessment-2009.html
33	Comparative Agility Assessment	Practitioners	Sub processes	High	Yes	http://comparativeagility.com/
34	Comprehensive Agility Measurement Tool	Academic	Sub processes	Medium	Yes	Erande & Verma, 2008
35	Corporate Agile 10-point checklist	Practitioners	Sub processes	Low	No	http://pagilista.blogspot.nl/2012/12/a-corporate-agile-10-point-checklist.html
36	Disciplined Agile Delivery framework (DAD)	Practitioners	Scaling	High	Yes	https://disciplinedagileconsortium.org/resources/Documents/TheDAFramework.pdf
37	Depth of Kanban	Practitioners	Sub processes	High	Yes	http://leanagileprojects.blogspot.nl/2013/03/depth-of-kanban-

						good-coaching-tool.html
38	Enterprise Agility Maturity Matrix	Practitioners	Sub processes	Medium	Unknown	http://blogs.atlassian.com/2013/11/enterprise-agility-maturity-matrix/
39	Enterprise Agility Roadmap	Practitioners	Scaling	Medium	Unknown	http://www.netobjectives.com/enterprise-agility-roadmap-essentials
40	IBM DevOps Practices Self Assessment	Practitioners	Sub processes	High	Yes	http://www.surveygizmo.com/s3/1659087/IBM-DevOps-Self-Assessment
41	KPMG Agile Assessment	Practitioners	Hierarchical	Medium	Yes	http://www.compact.nl/artikelen/C-2014-3-Brummelen2.htm
42	Large Scale Scrum Framework (LeSS)	Practitioners	Scaling	High	Yes	http://less.works
43	Lean Enterprise Self Assessment Tool	Academic	Hierarchical	High	Yes	http://ocw.mit.edu/courses/aeronautics-and-astronautics/16-852j-integrating-the-lean-enterprise-fall-2005/lecture-notes/13_lesat.pdf
44	Maturity Assessment Model for Scrum Teams	Practitioners	Sub processes	Low	Unknown	https://www.scrumalliance.org/community/articles/2014/july/maturity-assessment-model-for-the-scrum-teams
45	Objectives-Principles-Strategies framework	Academic	Sub processes	High	Yes	Soundararajan, 2013
46	Roadmap for Agile Success	Practitioners	Sub processes	Medium	No	http://www.emergn.com/insights/roadmap-for-agile-success/
47	Scaled Agile Framework (SAFe)	Practitioners	Scaling	High	Yes	http://scaledagileframework.com
48	Scrum Butt Test (Nokia Test)	Practitioners	Sub processes	Low	Yes	https://34slpa7u66f159hfp1fhl9aur1-wpengine.netdna-ssl.com/wp-content/uploads/2015/12/Nokia-Test-CSM-slides.pdf
49	Scrum Maturity Model	Academic	Hierarchical	High	Yes	Yin, Figueiredo, & Mira da Silva, 2011
50	Squad Health Check	Practitioners	Sub processes	Low	Unknown	https://spotifylabscom.files.wordpress.com/2014/09/squad-health-check-model2.pdf
51	Success Factors for Agile	Practitioners	Sub processes	Low	Unknown	https://improuv.com/scrum/publication/agile-sassessment-success-factors-self-assessment-teams
52	Unoffical Scrum checklist	Practitioners	Sub processes	Medium	Unknown	https://www.crisp.se/wp-content/uploads/2012/05/Scrum-checklist.pdf

From the overview in Table 6, and the underlying research, different conclusions can be drawn, which are described below.

3.2.6.1.1: Three schools of thought within the IT domain

The first conclusion is that all models are specifically aimed at the IT domain, which means that in any case an adaptation for marketing practice would be needed. Secondly, the vast majority of the models, 44 in total, originate from practitioners, an observation that is confirmed by Adalı, Özcan-top and Demirörs, (2016). Academically substantiated models are limited in number, and they prove to be scarcely used in practice (Jalali, Wohlin, & Angelis, 2014).

Thirdly, the models vary strongly in their measurement approach, the level of detail and quality they pursue. According to Taromirad and Ramsin (2008) the proliferation of agile software development methodologies has raised the need for evaluation. Based on their evaluation they concluded that existing frameworks did not satisfy the this need. Currently, there still seems to be no commonly accepted model, as is confirmed by Schweigert et al. (2014) and Jalali et al. (2014). In general, based on our literature review, three schools of thought can be distinguished.

The first school of thought considers agile maturity mainly as an issue of scaling. The transformation starts with adoption by a single team and then spreads out to ultimately span the entire organisation. Well-known examples of this school of thought are the LeSS, SAFe and DAD methods (Ambler & Lines, 2012; Scaled Agile, 2011; The LeSS Company, 2014). However, to date there is no academic evidence for the relationship between the scaling levels and organisational performance improvement.

The second school of thought assesses an organisation in its entirety on the hierarchical level of maturity it has reached in different agility aspects. Many attempts have been made to define agile maturity in terms of hierarchical levels (Schweigert et al., 2014), mostly by linking it to ISACA's Capability Maturity Model Integration, the CMMI (Chrissis, Konrad, & Shrum, 2011). However, to date there is no academic evidence for the relationship between these hierarchical levels and organisational performance improvement.

Finally, the third school of thought maintains that agile maturity is not a generic concept and cannot be assessed in terms of hierarchical levels. It views agile practices strictly as means to an end which have to be tailored to the specific goals and needs of an organisation. Therefore, its conviction is that it is necessary to look at each sub process separately.

In comparing these three schools of thought, the counts in Table 3.3 showed that the models within the third school of thought are far more numerous and have been applied in practice relatively more often. Our preliminary impression was that the models within the third school of thought are less complex than the other models and therefore seem more usable for our research purposes.

As a next step, in stage 2, all 52 models have been analysed in more detail to determine their relevance, as is described below.

3.2.6.1.1 Analysis identifies five models that seem suitable

In stage 2, inclusion and exclusion criteria have been applied for assessing the relevance of the 52 models as to identify those methods that address the research questions. These criteria are specified in Table 7 below.

Table 7

Inclusion and exclusion criteria used in stage 2 of the structured literature review

Goal	**Criterion**
Inclusion	1. Articles that present a method for measuring deployment of the agile way of working
Exclusion	1. The method is not academically substantiated 2. The method cannot be analysed in detail as the article and any additional documentation do not present all constituent parts

Applying the inclusion and exclusion criteria in stage 2, as specified in table 3.4, resulted in 45 models being rejected and seven methods being selected. These seven models are:

- the Agile Adoption and Improvement Model;
- the Agile Adoption Framework;
- the Agility Index;
- the Agile Maturity Model;
- the Comprehensive Agility Measurement Tool;
- the Objectives-Principles-Strategies framework;
- the Scrum Maturity Model.

Based on in-depth analysis, these seven models are discussed briefly below.

3.2.6.1.1.1 Agile Adoption and Improvement Model (AAIM)

The AAIM (Qumer, Henderson-Sellers, & McBride, 2007) represents the second school of thought, focusing on hierarchical maturity levels. The AAIM consists of six hierarchical levels, called 'agile stages': agile infancy, agile initial, agile realization, agile value, agile smart and agile progress. Each stage specifies goals that must be achieved to attain a particular business value through the use of an agile software development approach. The AAIM is meant as a method-independent tool 'for the adoption, assessment and improvement of an agile software development process'. It contains an agility model to quantitatively measure the degree of agility, based on eighteen characteristics. Details on the operationalisation of these characteristics are not available.

According to the authors the key features of the AAIM are the ability to 'facilitate the measurement and assessment of the current degree of agility of a software development organisation and its processes' and to 'provide a roadmap for the establishment of a systematic agile software development environment and the systematic use of agile practices within it'.

The AAIM is still conceptual of nature, as it has not been applied to practice yet. Its operationalisation has not been elucidated in the available literature. Its suitability for marketing practice is limited.

3.2.6.1.1.2 Agile Adoption Framework (AAF)

The AAF (Sidky, 2007) also supports the second school of thought, deploying hierarchical maturity levels. The AAF consists of five hierarchical levels that are derived from the CMMI: collaborative, evolutionary, effective, adaptive and encompassing. It is meant to enable software development organisations in assessing their readiness for adoption of agile and to determine what set of agile practices should be introduced. The framework assesses the readiness by using the Sidky Agile Maturity Index (SAMI) using a four-step process: identifying discontinuing factors, project level assessment, organisational readiness assessment, and reconciliation.

The SAMI uses five principles that are based on the twelve principles of the Agile Manifesto (Beck et al., 2001). For the operationalisation of the agility levels these five SAMI principles have been translated into 40 practices and concepts that can be measured by 249 indicators at the development and management level. It has been positively reviewed by Gren, Torkar and Feldt (2015).

The AAF has only been applied to practice once and its data collection and analysis approach has not been elucidated in the available literature. The variables used in the

model are not always the most relevant ones for answering the underlying research questions and are not always adequately measured.

3.2.6.1.1.3 Agility Index (AI)

The AI belongs to the third school of thought, focusing on sub processes. According to Vinodh and Aravindraj (2012) 'the recent trend in the manufacturing sector is to produce highly customized products in a shorter period of time to satisfy the niche needs of customers. In order to satisfy this requirement, the Agile Manufacturing technique is being deployed.' Based on literature research and case studies Vinodh and Aravindraj (2012) have proposed the AI 'to evaluate the current agile position of a firm'. Their model consists of four agile enablers: manufacturing strategy agility, manufacturing management agility, workforce agility, and technology agility. These four enablers comprise nineteen agile criteria, which in turn comprise 66 agile attributes.

Although the AI model creates the impression to be thoroughly substantiated, it is outside the scope of the present research. The contents of the model are specifically tailored for production departments of technical manufacturing companies, which makes it fundamentally different from the other models examined, and inadaptable for marketing practice. Therefore, the model will not be part of further assessment.

3.2.6.1.1.4 Agile Maturity Model[2]

The Agile Maturity Model subscribes to the first school of thought, deploying on hierarchical maturity levels. It has been developed by Patel and Ramachandran (2009) to 'improve and enhance the agile software development methodology and boost up the agile principles and objectives'. Inspired by the CMMI the model describes the agile position of an organisation in five hierarchical levels: initial, explored goals, defined, improved, and mature. The four levels above the 'initial' level comprise eighteen key process areas that consist of 95 assessment criteria called 'best agile practices'. These criteria are used to map the agile position on fourteen different 'areas of improvement', which include agile principles such as simple design, collective ownership, and on-site customers.

Applying 95 'best agile practices' to fourteen 'areas of improvement' results in 1,370 measurement points, making the Agile Maturity Model an elaborate and complex method. Moreover, Patel et al. (2009) have not presented empirical evidence for the relevance of using hierarchical levels to describe the agile position of software development organisations.

3.2.6.1.1.5 Comprehensive Agility Measurement Tool (CAMT)

The CAMT represents the third school of thought, focusing on sub processes. Erande and Verma (2008) have developed their CAMT to 'determine the responsiveness of an enterprise to external turbulences, […] by measuring its ability to adapt their strategy to unpredictable changes'. The authors state that 'lean is a pre-requisite for being agile' but do not substantiate on this. However, based on this vision the authors have selected the 'Lean Aerospace Initiative – Lean Enterprise Self Assessment Tool (LAI-LESAT)' and

[2] The Agile Maturity Model is not abbreviated to AMM as to prevent confusion. Our own model is called the Agile Marketing Model and already abbreviated to AMM.

adapted it to build their own CAMT model. It comprises the 'ten most critical agility enablers that are present in any enterprise independent of industry it is operating in', scoring organisations on their level of TAKT time, plant capacity, inventory, problem solving, e-manufacturing, continuous improvement, operational flexibility, quick changeover, internal customer satisfaction, and human resource management.

The CAMT model is specifically aimed at measuring corporate agility at the strategic level, making it too general for adaption to the specific marketing practice. Furthermore, the model is insufficiently substantiated and therefore it will not be part of further assessment.

3.2.6.1.1.6 Objectives-Principles-Strategies framework (OPS)

The OPS (Soundararajan, 2013; Soundararajan & Arthur, 2011) adheres to the third school of thought, focusing on sub-processes. The OPS is strongly inspired by the CMMI and the Agile Adoption Framework (Sidky, 2007) but the authors state it is 'a primary disadvantage of these frameworks that a set of practices is "forced" on an organisation at defined levels, which compromises the flexibility offered by agile methods.' Therefore, they 'advocate the need for a more comprehensive agile assessment process that assesses the people, process, project and product characteristics of organisations adopting agile methods.' They have developed an approach to determine how capable an organisation is in providing the supporting environment to implement an agile method, and to determine how effective the implementation of the agile method is in achieving its objectives.

The OPS has been applied to practice multiple times. Its operationalisation as well as its data collection and analysis approach has been elucidated thoroughly in the available literature. The variables used in the model are sufficiently suitable for adaptation to marketing practice.

3.2.6.1.1.7 Scrum Maturity Model (SMM)

The SMM (Yin, Figueiredo, & Mira da Silva, 2011) represents the first school of thought, using hierarchical maturity levels. The SMM aims to offer a 'roadmap to lead and aid software vendor organisations in improving their development processes'. It focuses specifically on the scrum approach. Inspired by the CMMI, it is a hierarchical model using five levels: initial, managed, defined, quantitatively managed, and optimizing. Based on action research the model has been defined in four iterative cycles. It measures the five scrum maturity levels using eighteen objectives linked to 79 practices that are operationalized in 57 metrics.

The SMM has not been applied in practice yet. Furthermore, the authors do not present empirical evidence for the relevance of using hierarchical levels to describe the agile position of software development organisations.

This initial analysis resulted in the Agility Index model and Comprehensive Agility Measurement Tool model to be rejected. The remaining subset of five models was analysed in more detail in stage 3.

3.2.6.2 Stage 3: In-depth assessment of the five relevant models

In the final step, stage 3, the models have been assessed on validity (Kitchenham, 2007). Furthermore, the models have been assessed on suitability, using the criteria of comprehensiveness, measurement level, and specific suitability for marketing practice. This last criterion has been operationalized using Kotler's classical definition of marketing processes (Kotler & Armstrong, 2015, p. 93): 'marketing is the process by which organisations create value for customers and build strong relationships to capture value from customers.' For an organisation to achieve these objectives, Kotler et al. (2015) contend that the following five essential sub-processes need to be performed successfully: opportunity identification, new product development, customer attraction, customer retention and loyalty building, and order fulfilment.

For these sub-processes to be effective in facilitating a multichannel customer experience, Kotler has identified the following success factors (Kotler, Rackham, & Krishnaswamy, 2006):

- Jointly involving (or setting up integrated teams comprising) marketing, sales, and customer service in key activities such as assessing customer needs, analysing top opportunities, generating value propositions, setting targets, and coordinating channels;
- Emphasizing shared responsibility for results between the team members and stakeholders;
- Implementing systems and shared databases to track and manage these joint activities;
- Establishing common metrics for evaluating the success of the joint activities;
- Creating reward systems to laud the success of the joint activities;
- Enforcing the conformity of team members and stakeholders to systems and processes;
- Mandating the team members and stakeholders to periodically review and improve the joint activities.

These six sub-criteria have been used to constitute the criterion 'Suitability for marketing practice', presented as criterion number 12 in Table 8 below. The preceding eleven validity and suitability criteria are based on Kitchenham (2007).

Table 8

Assessment criteria for models

Quality aspect	Criterion	Operationalisation
Validity	1. Description of goals	• Are the aims of the model clearly stated?
	2. Relevance of variables	• Are the variables used in the model the most relevant ones for answering the underlying research questions?
	3. Adequacy of measures	• Are the variables used in the model adequately measured?
	4. Definition of measures	• Are the measures used in the model fully defined?
	5. Description of scoring systems	• Are scoring systems described?
	6. Justification of data collection method	• Are the data collection methods adequately justified?
	7. Description of statistical methods	• Are the statistical methods described?
	8. Scoping of inferences	• Is the scope for drawing wider inference explained?
	9. Independence	• Does the model have an unbiased, neutral character (e.g. not steering towards a desired outcome such as a commercial purpose)?
	10. Deployment in practice	• Has the model been empirically tested or is it only conceptually defined?
Suit-ability	10. Comprehen-siveness	• Does the method completely cover all the characteristics of the agile way of working in general instead of limiting itself to a specific agile approach (e.g. Scrum, Kanban, XP)?
	11. Measurement level	• Does the method measure deployment of the agile way of working at the team level or higher?
	12. Suitability for marketing processes	• Do the variables match with (or can they be adapted to) Kotler's success factors for multichannel marketing processes? o Joint involvement; o Shared responsibilities; o Shared systems; o Common metrics for evaluation; o Reward systems for joint activities; o Enforcing conformity; o Mandate for review and improvement.

The results of applying the assessment criteria on these models, are presented in Table 9 below. The scoring categories as shown in this table are as follows (Kitchenham, 2007):

- 0: the method does not meet the criterion (e.g. description is missing in the paper; not applicable);
- 1: the method meets the criterion insufficiently;
- 2: the method meets the criterion sufficiently;
- 3: the method meets the criterion well or fully.

Table 9

Assessment results of the five remaining models

	Method				
Criterion	Agile Adoption & Improve-ment Model	Agile Adoption Frame-work	Agile Maturity Model	Objectives Principles Strategies Frame-work	Scrum Maturity model
1. Description of goals	2	3	2	3	2
2. Relevance of variables	2	2	2	3	2
3. Adequacy of measures	0	2	2	3	2
4. Definition of measures	0	3	0	3	3
5. Description of scoring systems	0	3	0	3	2
6. Justification of data collection method	0	0	0	3	0
7. Description of statistical methods	0	0	0	3	0
8. Scoping of inferences	1	2	2	2	1
9. Independence	2	3	2	3	3
10. Deployment in practice	0	1	0	2	0
11. Comprehensiveness	3	3	3	3	1
12. Measurement level	3	3	3	3	3
13. Suitability for marketing practice	1	2	2	2	1

The main conclusion from this assessment is that, of the five remaining models that have been selected to continue to stage 3, three were still in a conceptual phase and have not been deployed in practice yet (Agile Adoption and Improvement Model, Agile Maturity Model, and Scrum Maturity Model). Furthermore, the measures of the Agile Adoption and Improvement Model and the Agile Maturity Model are insufficiently detailed and therefore these methods were unsuitable for the purposes of the present research. The Scrum Maturity Model also proved unsuitable, as it focuses specifically on Scrum instead of on agile in general.

The Agile Adoption Framework meets most criteria sufficiently, but it has been used in practice only once and in a limited setup. The Objectives-Principles-Strategy (OPS) framework has met all criteria sufficiently, well or fully, which means its basis proved suitable for measuring deployment of the agile way of working in marketing practice. Therefore, the OPS framework has been selected for adaptation to marketing practice.

The OPS framework will be described in more detail in the next section.

3.2.6.3 In-depth analysis of the OPS framework

For our research purposes, a model is needed to determine the extent to which the agile way of working is being deployed within multichannel strategy execution by organisations. Therefore, it is necessary to perform an in-depth analysis of the OPS framework as to determine how well suited it is to measure the deployment of the agile way of working or can be adapted to do so. This analysis is described below.

The building blocks of the OPS framework are 'objectives', 'principles', 'strategies', 'practices' and 'indicators'. Table 10 below presents the definition of the five concepts, as described by the author of the OPS framework, Soundararajan (2013). The 'strategy' concept of the OPS framework differs strongly from our earlier definition of single channel and multichannel *strategies*. As to avoid confusion about this OPS framework term, this will be called a 'tactic' as of now.

Table 10

Operationalisation of the five concepts within the OPS framework (Soundararajan, 2013: 109)

Concept	Definition	Example
Objective	'The aims that any agile software development approach pursues that are based on the values articulated in the Agile Manifesto'	Minimal waste
Principle	'The guidelines that govern the process by which the desired objectives are achieved'	Simplicity
Tactic	'The tangible concepts that facilitate the implementation of the principles'	Incremental development
Practice	'The characteristics of the people, process, project, product and environment aspects that are specific to a tactic'	Time-boxing releases
Indicator	'The observable properties of a practice that enable direct measurement of the existence or use of that practice'	The extent to which release cycles are time-boxed

Based on the values and principles as presented in the Agile Manifesto (Beck et al., 2001), additional literature research, interviews with practitioners, observations, and empirical tests, Soundararajan has used five objectives as the foundation for the OPS framework (Soundararajan, 2013; Soundararajan & Arthur, 2011; Soundararajan, Arthur & Balci, 2012; Soundararajan, Arthur, & Chigani, 2012; Soundararajan, Balci, & Arthur, 2013). These five objectives are linked to nine principles that, in turn, are linked to sixteen tactics. These three concepts are all described in full detail in Table 11 below. Subsequently, the tactics are linked to 57 unique practices that are operationalized in 123 unique indicators (the construct definitions of these remaining two concepts are presented in Appendix 3.1). Thus, the structure of the OPS framework consists of five hierarchical layers forming a pyramid-like shape.

Table 11

Working definitions for the five objectives, nine principles and sixteen tactics (Soundararajan, 2013)

Concept	Item	Construct definition
Objective	Human centric	People are more important than processes, practices and tools
	Value driven	Maximize stakeholder value(s): increased revenue, improved customer satisfaction, and reduced cost
	Minimal waste	Keep things simple - build only what is necessary
	Maximal adaptability	Maintain flexibility: (a) accommodate change and (b) freedom to choose appropriate practices
	Continuous innovation and learning	Innovate and improve the development process through the frequent examination and evaluation of past

		development activities
Principle	Frequent delivery of working software	Deliver working software frequently: iteration length maximum four weeks
	Technical excellence	Provide an environment for achieving technical excellence - select the right people, right process and right practices to build working software of value to the customer
	Simplicity	Keep the development process simple: produce a product that displays only the necessary functionality
	Empowering teams of motivated individuals	Build teams of motivated individuals and empower them by pushing the decision-making process to the lowest level
	Constant development pace	Build software at a constant pace: the amount of work performed during each iteration should be constant
	Accommodating change	Accommodate change with minimal impact
	Continuous stake-holder communication	Promote interaction among the stakeholders at regular intervals
	Frequent reflection and improvement	Re-examine the development process regularly with the intent to better understand and improve that process
	Striving for customer satisfaction	Promote customer satisfaction by providing maximum value to the customer
Tactic	Iterative progression	Develop the product over several iterations/cycles in sequence: decompose the overall development lifecycle into multiple time-boxed (fixed length) release cycles and each release cycle into time-boxed iterations
	Incremental development	Build the product incrementally: develop only a selected and prioritized set of features during a release cycle
	Short delivery cycles	Deliver valuable products frequently
	Evolutionary requirements	Allow the features/ requirements to evolve over the development lifecycle
	Continuous feedback	Gather feedback from the customers and users on a regular basis
	Refactoring	Refine the architecture, design, code, and/or other process artefacts regularly to improve the quality of that artefact by altering its internal structure while preserving its external behaviour
	Test-first development	Write the unit tests first before writing code. Also, capture the customer acceptance criteria for features and stories before proceeding to the downstream development activities
	Self-managing teams	Allow the team members to determine, plan, and manage their day-to-day activities and duties under reduced or no supervision
	Continuous integration	Team members integrate their work frequently, leading to multiple integrations per day
	Minimal documentation	Maintain just-enough documentation to satisfy the needs of the development team and the customer
	High-bandwidth communication	Facilitate continuous communication among the stakeholders (in-person, face-to-face interactions)
	Retrospection	Re-examine the goals, results and the development process regularly with the intent to optimize the effectiveness of the activities
	Client-driven iterations	The customers prioritize the features: build only what is of value to the customers
	Distribution of expertise	Ensure that the team is composed of people with the appropriate skill sets to complete the assigned tasks
	Configuration management	Manage the evolution of the product and other artefacts, both during the initial stages of development and during all stages of maintenance
	Adherence to standards	Use a standard to decompose the goals the team has agreed to comply with into activities

As can be seen in Figure 6 further on, reading the model from left to right, each objective is linked to multiple principles, and each principle is linked to multiple tactics. In the opposite direction, reading the model from right to left, it becomes clear that the objectives overlap mutually, while the same applies to the principles. The reason for this is that most of the tactics are linked to multiple principles and most of the principles are linked to multiple objectives.

The indicators of the OPS framework can be grouped into two categories. The first group measures the *capability* of the organisation to facilitate the deployment of the agile way of working. Examples include concepts such as planning, estimation, requirements management, prioritizing and customer feedback. The second group measures the *effectiveness* of the agile way of working within the organisation. Examples include concepts such as time-boxing, customer satisfaction and team empowerment.
Based on the analysis as described above, the next step is to determine to what extent the OPS framework needs to be adapted for deployment in marketing practice. The approach and outcomes of this assessment are described in the following section.

3.2.6.4 Adaptation of the OPS framework to marketing practice

The objective, principle and tactic concepts of the OPS framework have been operationalized by Soundararajan (2013) in practices and indicators, as presented in Appendix 3.1. In order to determine if and how the OPS framework can be adapted to and deployed in marketing practice, a detailed assessment of these practices and indicators was needed. This was done by establishing to which degree each of the practices and indicators are relevant and substantively applicable for marketing practice. Table 12 below presents the judgment categories and underlying criteria that have been deployed in this assessment approach.

Table 12

Judgment categories and corresponding criteria of the assessment approach

Judgment	**Criteria**
Maintain	The indicator is relevant for marketing processes (see definition in section 3.2.6.2 (Kotler et al., 2015))
	No changes to the form or contents of the indicator are necessary for specific application to the marketing practice (for example: time-boxing of iterations)
Adapt	The indicator is relevant for marketing processes
	Changes to the form or contents of the indicator are necessary for specific application to the marketing practice (for example: testing improvements in marketing concepts such as products, services and channels *instead of* technical software testing)
Delete	The indicator is only specifically relevant for software development practice and not for marketing practice (for example for the following strategies: refactoring, coding standards, configuration management, continuous integration)

The results of this assessment are elucidated in Appendix 3.1. These results indicate that of the sixteen tactics within the OPS framework, four tactics, including all their practices and indicators, were assessed as being specific for software development and irrelevant for marketing practice. The tactics of 'Refactoring', 'Test-first development', 'Continuous integration', and 'Configuration management' should therefore be deleted from the framework. The tactic of 'Refactoring' concerns activities to improve readability and reduce complexity of existing software code, as to make this code easier to maintain and extend (Beck, Fowler, Harvie, & Fields, 2009). Thus, this is not applicable to marketing. The tactic of 'Test-first development' concerns a software development approach in which tests are developed based on requirements first, after which the software code is written and then being tested (Beck, 2003). Again, this is not applicable to marketing. The tactic of 'Continuous integration' is a concept, derived from Extreme Programming (XP), in which developers merge their upgrades or extensions of software code to a shared mainline several times per day, as to prevent integration problems at the end of the whole development process (Duvall, Matyas, & Glover, 2007). As applies to the two earlier tactics, this is not applicable to marketing. Finally, the tactic of 'Configuration management' is a systems engineering process aimed at establishing and maintaining consistency of software and hardware performance throughout their lifecycle (Quigley & Robertson, 2015). Again, this is not applicable to marketing.

These four eliminated tactics consisted of sixteen unique practices, comprising 45 unique indicators. The remaining twelve tactics consist of 41 unique practices, comprising 78 unique indicators. The assessment of these indicators resulted in the following conclusions:

- 51 unique indicators can be maintained unchanged to make the OPS framework usable for marketing practice as they are relevant and applicable (see the respective explanations in Appendix 3.1);
- 23 unique indicators should be adapted to make the OPS framework usable for marketing practice as their contents need to be made specifically applicable to marketing (see the respective explanations in Appendix 3.1);
- 4 unique indicators ('Agree with coding standards', 'Adopting coding standards', 'Adhering to coding standards' and 'Pair-programming and collective code ownership'), constituting one integral 'practice' ('Coding standards') should be deleted as this concerns a specific software development artefact which is irrelevant for marketing practice.

Based on these outcomes, our conclusion is that the OPS framework seems suited for adaptation to marketing practice. After deleting the four strategies that are specific for software development and irrelevant for marketing practice, twelve strategies remain. Of the 78 indicators within these twelve strategies only four indicators (5,1%) should be deleted and 51 indicators (65,3%) remain unaltered. Furthermore, the 23 remaining indicators (29,4%) only need a minor adaptation in wording, while leaving the meaning of the indicator fully intact.

3.2.6.5 Operationalisation of the three independent variables

The aim of assessing the OPS framework was to develop a model to measure the extent to which the agile way of working is being deployed for multichannel strategy execution within organisations. The corresponding adaptation of the OPS framework to marketing practice thus resulted in a new model. For practical reasons, this model will be given the working name 'Agile Marketing Maturity' (AMM) model.

The AMM model serves as the operationalisation of the three independent variables in our conceptual model. These three variables were based on the three elements as identified

in the strategic architecture for building learning organisations (Senge, 1990: 256-257; Senge, 1994; Senge & Sterman, 1992a, 1992b). The three elements are:

- Goals: the governing concepts for defining what an organisation seeks to accomplish and how it intends to operate;
- Tools and methods: the practical means an organisation deploys for performing its activities and monitoring progress;
- Organisational infrastructure: the roles, communication and structure within an organisation that determine how resources are allocated.

Based on their definitions, each of the twelve AMM tactics has been assigned to one of the three independent variables above. Figure 6 below shows the resulting operationalisation.

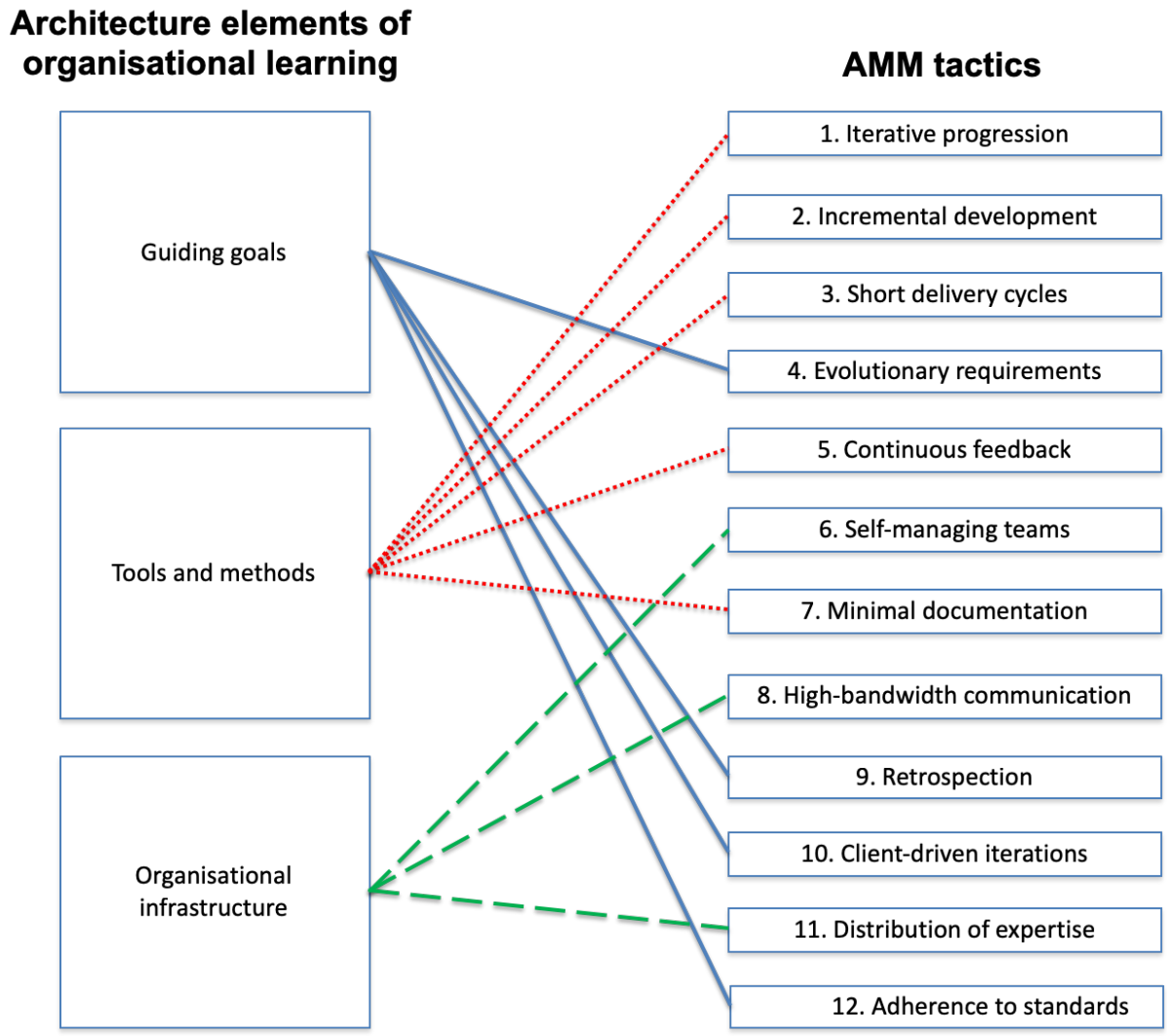

Figure 6: The linkages between the three architecture elements of organisational learning and the twelve AMM tactics

The sections below elucidate the rationale behind the operationalisation as shown in Figure 6 above.

3.2.6.5.1 Goals: tactics 4, 9, 10 and 12

Senge (1990, 1994) describes the element of 'goals' as the approach an organisation (e.g. a team) follows for translating its goals into concrete activities. This includes choices about what principles it deploys in formulating goals and how these goals are adapted based on advancing insights.

Translated to context of the agile way of working, the 'goals' element is best operationalised by tactics 4, 9, 10 and 12 (see Table 3.8 for the definition of these constructs):

- Tactic 4, 'evolutionary requirements', measures whether a team restricts itself to defining the goals (e.g. features/requirements) only at a high level upfront, refining them just-in-time, and reprioritizing them when new goals are identified by the team or its customers. This approach could save time, and enable teams to focus on and flexibly adapt to customer wants and needs in its value creation, thus potentially improving customer performance (see section 3.2.6.8 for the operationalisation of the target variable customer performance).

- Tactic 9, 'retrospection', measures whether a team evaluates its goals, results and underlying activities regularly, with the intent to optimize the effectiveness of the activities. This approach could enable continuous improvement of the team's way of working on a meta level, and this improved way of working could result in better customer performance.

- Tactic 10, 'client-driven iterations', measures whether a team uses customer input to determine how the priorities within its goals should be set, so the team will only deliver improvements that are of value to its customers. This focus on value creation for its customer could lead to better and more relevant results from the customers' perspective, thus improving customer performance.

- Tactic 12, 'adherence to standards', measures whether a team uses a standard to decompose the goals the team has formulated into activities. By deploying this standardisation, teams could improve the quality of their work and save time, thus delivering better results more quickly to customers. This could improve customer performance.

In summary, these four tactics measure how a team formulates its goals and the underlying activities, and how a team adapts its goals based on advancing insights.

3.2.6.5.2 Tools and methods: tactics 1, 2, 3, 5 and 7

Senge (1990, 1994) describes the element of 'tools and methods' as the practical means an organisation (e.g. a team) deploys for performing its activities and monitoring progress. Translated to the context of the agile way of working, the 'tools and methods' element is best operationalised by tactics 1, 2, 3, 5 and 7 (see Table 3.8 for the definition of these constructs):

- Tactic 1, 'iterative progression', measures whether a team deploys the method of decomposing the overall development lifecycle of improvements into multiple time-boxed release cycles, and each of these release cycles into time-boxed iterations. By this approach, customers could receive the partial results earlier and experience their added value longer. Furthermore, the teams can adapt their goals if partial results are valued less by customers than expected. Thus, the customer performance could improve.

- Tactic 2, 'incremental development', measures whether a team develops its improvements incrementally by deploying tools for estimating, prioritizing and selecting the necessary activities and managing these by using a backlog tool. By developing improvements in small steps, teams could adapt their goals if partial results are valued less by customers than expected. Thus, the customer performance could improve.

- Tactic 3, 'short delivery cycles', measures whether a team frequently delivers the improvements it has developed to its customers by deploying a planning method consisting of cycles lasting four weeks or less. By working in time-boxed iterations, teams need to prioritize frequently in what activities are most valuable from the customers' perspective. This focus on value creation for its customer could lead to better and more relevant results, thus improving customer performance.

- Tactic 5, 'continuous feedback', measures whether a team uses a defined method for gathering feedback from customers and using this feedback as input for designing and altering its improvements. This is specifically instrumental for the agile way of working. By using the customers' needs and wants as a starting point for improvements, these improvements could become more valuable for the customers, thus improving customer performance.

- Tactic 7, 'minimal documentation', measures whether a team uses visual tools for maintaining documentation and tracking progress. Using minimal documentation could save teams time, which they can deploy for developing the improvements themselves. From the customers' perspective, this is a more valuable allocation of scarce time, potentially leading to quicker and better results. Thus, it could improve customer performance.

In summary, these five tactics measure what methods and tools a team deploys for using customer feedback as input, maintaining documentation and tracking progress, while developing its improvements in an iterative and incremental way using a backlog and time-boxed cycles.

3.2.6.5.3 Organisational infrastructure: tactics 6, 8 and 11

Senge (1990, 1994) describes the element of 'organisational infrastructure' as the roles, communication and structure within an organisation that determine how resources are allocated. Translated to the context of the agile way of working, the 'organisational infrastructure' element is best operationalised by tactics 6, 8 and 11 (see Table 3.8 for the definition of these constructs):

- Tactic 6, 'self-managing teams' concerns the roles of teams versus the role of their managers. This tactic measures whether a team is empowered by management to autonomously determine, plan, and manage their day-to-day activities, as to take ownership of its responsibilities and work under reduced or no supervision. This sense of freedom could enable teams to focus on what is most valued by the customers and be influenced less by internal priorities. Thus, the customers could receive more improvements that are more valuable to them, which improves customer performance.

- Tactic 8, 'high-bandwidth communication', measures whether a team continuously communicates through face-to-face interactions for determining, planning, tracking and evaluating its activities. By using this synchronous communication,

the quality and speed of the team's cooperation could improve, resulting in more and better improvements. Thus, customer performance could improve.

- Tactic 11, 'distribution of expertise', concerns both roles and structure. This tactic measures whether a team is composed of people with the appropriate skill sets to complete the assigned tasks. If teams have all required tasks on board, they could operate more independently from the rest of the organisation. This could increase the speed with which they deliver improvements to customers, thus positively influencing customer performance.

In summary, these three tactics measure how the teams are structured and how they communicate, as well as how the management and team roles are devised to allow for self-management of the teams.

The specification of twelve tactics of the AMM model are integrally presented in Appendix 3.1. Based on this, the next section presents a description of the in-depth operationalisation of the twelve tactics, enabling measurement of the deployment of the agile way of working for multichannel strategy execution.

3.2.6.6 In-depth operationalisation and measurement

The operationalisation of the twelve tactics within the AMM model into 40 unique practices and 74 unique indicators has been visualized for each tactic. The details per tactic can be seen in Appendix 3.2. Figure 7 below shows an example of this visualization for the tactic Incremental Development.

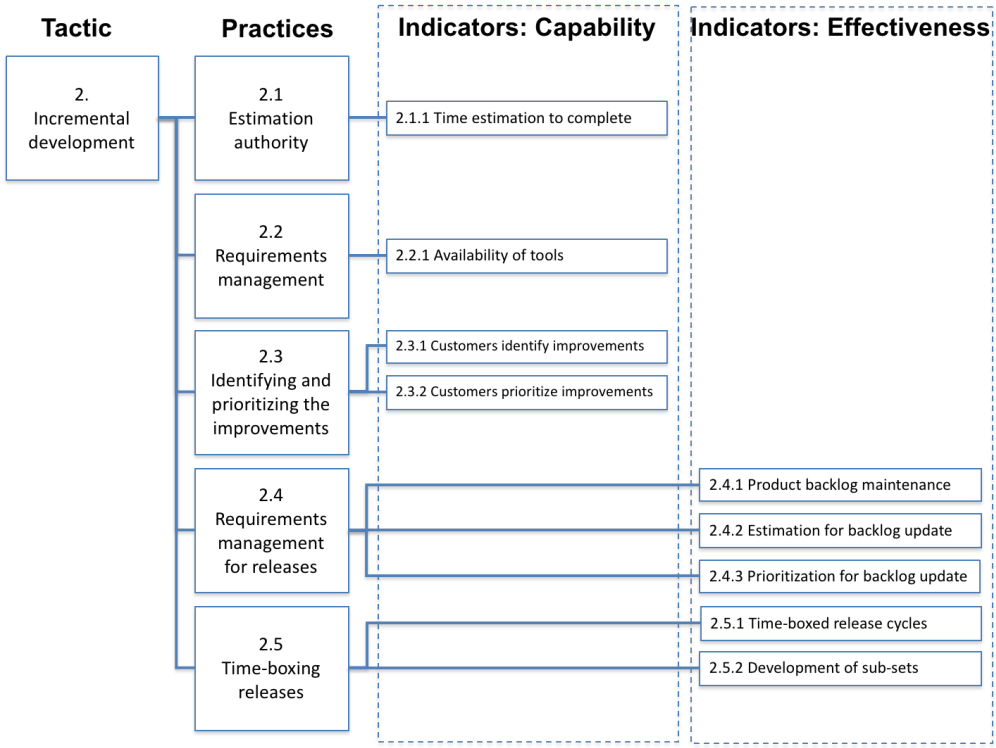

Figure 7: The operationalisation of the tactic 'Incremental Development'

As elucidated in section 3.2.6.3, the indicators of the AMM model measure the deployment of the agile way of working two different aspects. The first group measures the *capability* of the organisation to facilitate the deployment of the agile way of working, while the second group measures the *effectiveness* of the agile way of working within the organisation. Each indicator uses a 5-point rating scale (1 being lowest and 5 being highest) to determine the extent to which an organisation deploys specific aspects of an agile practice. The indicator scores add up to an average score per practice. Next, the scores per practice add up to a weighted average score per tactic. Based on these scores per practice, the organisation can determine what its current deployment level of the agile way of working is in terms of capability and effectiveness, and what improvement opportunities this offers.

3.2.6.7 Level of measurement of the variables

The independent variables in our conceptual have now been operationalized using the constructs within the AMM model, as described in Appendix 3.1. For our conceptual model to be comprehensive, an operationalisation was also required for the dependent variable 'Customer performance'. As to ensure the independent and dependent variables in the conceptual model are measured at the same entity level (Babbie, 2015), the unit of analysis of the independent variables within the AMM model has been used as the starting point. These independent variables measure the deployment of the agile way of working at the organisation level. Therefore, the dependent variable 'Customer Performance' will also be measured at the organisation level, in terms of how the organisation perceives its performance for customers. An earlier example of this combination of measurements levels can be seen in the Gaps Model of Service Quality (Parasuraman et al., 1991).

3.2.6.8 Operationalisation of the 'Customer performance' variable

As this variable is defined based on the EFQM Excellence model, its operationalisation is also determined using uniformly the constructs and measures of the EFQM Excellence framework that are relevant to the AMM model (EFQM, 2013). Table 13 below presents this operationalisation.

Table 13

Operationalisation of the dependent variable 'Customer performance'

Measures	**Operationalisation**
1. Speed of improvements	Speed of realizing improvements in products, services, channels or customer process (Ganesh, 2004; Van Bruggen et al., 2010)
2. Volume of improvements	Number of realized improvements in products, services, channels or customer process (Barker, 2011; Biemans et al., 2010)
3. Perceived value of improvements	The value of the products and/or services as perceived by the customer (Neslin et al., 2009; Sa Vinhas et al., 2010)
4. Customer satisfaction	4.1 Customer satisfaction about the experience of products and/or services (Lee, Sridhar, Henderson & Robert, 2012; Neslin et al., 2009; Payne et al., 2004)
	4.2 Customer satisfaction about the experience of channels and processes (Lee et al., 2012; Neslin et al., 2009; Payne et al., 2004; Zhang et al., 2010)
5. Customer loyalty	5.1 Attitudinal: preference for the organisation in customer's purchase intention (Neslin et al., 2009; Payne et al., 2004; Zhang et al., 2010)

	5.2 Behavioural: customer repurchase within a specified period (Neslin et al., 2009; Payne et al., 2004; Zhang et al., 2010)
6. Value of the customer	6.1 The contribution margin generated from the product and/or service revenues (Lee et al., 2012; Neslin et al., 2009)
	6.2 Customer lifetime value: the net profit attributed to the entire future relationship with a customer (Lee et al., 2012; Neslin et al., 2009; Meunier-Fitzhugh & Piercy, 2007; Oh, Teo & Sambamurthy, 2012; Zhang et al., 2010; Sa Vinhas et al., 2010)

An important remark needs to be made here in respect to the EFQM Excellence measures: besides facilitating individual members in improving quality, the European Foundation for Quality Management aims to benchmark any member organisation by comparing it to other relevant members. For that purpose, two specific guidelines are deployed:

- EFQM Excellence does not prescribe specific required indicators, but instead facilitates organisations to choose their own preferred indicators, under the condition that these indicators are relevant to the operationalisation of the EFQM measures;
- EFQM Excellence focuses on quality improvement. Therefore, it does not consider absolute scores for its measures, but instead considers their change over a certain period of time. This delta is usually measured over a 12-month time span.

The implications of these guidelines can best be illustrated using a practical example for the 'Customer loyalty' measure in Table 3.10 above. In this example, two companies are being compared. Company A sees consumers as its target group and serves one million small customers, which generate EUR 100 million in annual revenues. Company B sees businesses as its target group and serves 10 large customers, which generate EUR 10 million in annual revenues. Both companies have chosen to monitor their customer loyalty by measuring the value of repurchases its existing customers have generated within one year. Table 14 below shows how the value of repurchases in absolute figures differs strongly between company A and B, suggesting company A performs better than company B. However, when comparing the relative change in the value of repurchases, company B proves to have a superior performance. This measurement of relative change enables the comparison of organisations, independent of the size of their revenues, their customer focus or their average customer size.

Table 14

Example of EFQM's relative change measurement

Figures	**Company A**	**Company B**
Number of existing customers	1,000,000	10
Annual revenues of these existing customers	EUR 100,000,000	EUR 10,000,000
Value of repurchases in previous year	EUR 5,000,000 (5%)	EUR 1,000,000 (10%)
Value of repurchases in current year	EUR 7,000,000 (7%)	EUR 2,000,000 (20%)
Relative improvement in customer loyalty	40% ((7-5)/5)	100% ((2-1)/1)

An additional advantage of these guidelines is that it solves the problem of organisations not wanting to share specific absolute figures because of confidentiality issues.

Altogether, this makes the EFQM comparison technique well usable for the purposes of the AMM model.

Finally, in order to be able to determine the relationships between the independent and dependent variables, it is necessary to identify whether there are exogenous variables influencing these relationships. This is discussed below.

3.2.6.9 Exogenous variables

As exogenous variables correlate directly or inversely with both the independent and dependent variables, they obscure some or all of the correlation between the independent and dependent variables. If exogenous variables apply, it is necessary to control for their effects by keeping these variables constant (Montgomery, 2012).

The literature research, aimed at constructing the operationalisation and conceptual model, has been reassessed to identify articles that propose theoretical presumptions regarding potential control variables. Based on these conceptual articles the following control variables have been determined:

- *Market focus*
  Without answering the question, Hughes (2006), Neslin et al. (2009), Webb and Lambe (2007) and Oh et al. (2012) propose that the market focus of organisations might influence their multichannel performance, stating that business customers presumably show different channel behaviour than consumers do. Within an multichannel strategy, this distinction in channel behaviour might influence the effect an agile approach has on customer performance. Therefore, it is useful to control the AMM model for the go-to-market strategy of an organisation, in terms of whether it is aimed either at consumers, or at businesses and organisations, or at both.
- *Channel scope*
  Apart from possible differences in channel behaviour between consumer or business markets in general, Kabadayi, Eyuboglu and Thomas (2007) suggest that the number of channels the organisation deploys within its multichannel strategy might influence its performance. They state that the more channels an organisation deploys, the more complex it becomes to integrate the channel operation as to offer an multichannel experience to customers. The customer perspective also offers a relevant issue. Lee et al. (2012) argue that the more an organisation has customers who use multiple channels, the more difficult it is for this organisation to perform well for all its customers. Therefore, it is relevant to control the AMM model for two variables:
    - the number of channels deployed by an organisation;
    - the proportion of customers using multiple channels in their interaction with the organisation.
- *Size*
  In addition to the market focus and channel as described above, Neslin et al. (2006), Oh et al. (2012), Valos (2008), Van Bruggen et al. (2010), and Weinberg et al. (2007) propose that the scale of the organisation might influence its performance within an multichannel strategy. The posit that the more people are involved, the more complexity this generates in the multichannel processes, thus inhibiting performance. Based on this assertion, it is necessary to control the AMM model for the number of employees active within the organisation.

Based on the analysis above, four control variables will be added to the AMM model: one for the market focus of the organisation, two for channel scope (number of channels deployed by the organisation; proportion of customers using multiple channels), and one

for the number of employees within the organisation. As was determined for the dependent variable 'Customer performance', these four control variables will also be measured at the organisation level as the unit of analysis. The operationalisation of these variables will be elucidated in section 3.2.8.4. With the addition of the control variables, the AMM model is ready for deployment in our research.

3.2.7 Step 6-B – Techniques and procedures: survey

In step 4, a multiple methods research approach was selected, combining the survey and case study strategies. The final step was to design the techniques and procedures of these two strategies. This section focuses on the survey strategy.

Designing the techniques and procedures of the survey strategy involves decisions regarding issues of credibility, sampling, questionnaire technique and design, testing, and administering. These decisions are elucidated in the sections below.

3.2.7.1 Credibility checks

In designing the survey, three criteria need to be met in order to maximize the credibility of the survey results. These criteria are validity, reliability and generalisability (Yin, 2013; Saunders et al., 2015). Table 15 shows the techniques and procedures that have been applied in our survey to meet these three criteria.

Table 15

Techniques and procedures applied to meet credibility criteria

Criterion	**Check**	**Techniques and procedures applied**	**Research phase**
Validity	Seeking to establish a causal relationship, as distinguished from spurious relationships	- Construct validity: checking with operationalisation of the OPS and EFQM Excellence framework measures to verify that correct operational measures for the concepts are being studied - Content/predictive validity: conducting expert interviews	Research design
Reliability	Demonstrating that the operations of the study can be repeated, with the same results	- Replication: offering full transparency in how raw data was gathered and analysed - Subject error and bias: sending out survey on 'neutral' working days; ensuring anonymity of respondents - Observer error and bias: pre-testing the survey; checking internal consistency using Cronbach's alfa	Data collection
Genera-lisability (external validity)	Determining the extent to which findings are equally applicable to other research settings	- Defining the domain to which the study's findings can be generalized - Checking by an independent data expert of the accurate application of statistical techniques and the results of the analysis.	Data analysis

3.2.7.2 Sampling technique

According to the Dutch Chamber of Commerce, 1,665,795 organisations were registered in the Netherlands on January 1st, 2017 (Kamer van Koophandel, 2017). Based on our research questions, the relevant population consists of all organisations in the Netherlands deploying multiple channels for acquiring, servicing and retaining customers. When excluding the holding companies and self-employed, for which multichannel strategies are irrelevant, this leaves a population of 335,120 organisations (KvK, 2017).

Given the available time and budget, and given the size of the population, it was infeasible to survey this entire population (census). Therefore, a sample has been selected. To enable statistical inference from the sample about the population, using a probability sample was the logical choice for our survey strategy. The process of probability sampling can be divided into three steps (Saunders et al., 2015):

1. Identifying a suitable sampling frame based on the research question;
2. Deciding on a suitable sample size;
3. Selecting the most appropriate sampling technique and selecting the sample.

3.2.7.2.1 Step 1: Identifying a suitable sampling frame

The sampling frame for any probability sample is a complete list of all the cases in the population from which the sample will be drawn. The demarcation of this population entailed a challenge in the sense that it is impossible to determine 'a priori' whether an organisation deploys multiple channels or only a single channel. However, as a result of the 'proliferation of multichannel systems, for organisations the use of multiple channels has become the rule rather than the exception' (Furst, Leimbach, & Prigge, 2017). Therefore, it could be expected that the majority of the 335,120 Dutch organisations deploys multiple channels.

An assumption was used to refine the demarcation of the population of 335,120 organisations, as to increase the probability of finding organisations that deploy multiple channels. This assumption was that if an organisation employs one or more people in dedicated marketing functions, this organisation will probably deploy multiple channels. This correlation is suggested by Stojkovic, Lovreta and Bogetic (2016). Thus, as representatives of their organisation, the marketers serve as a proxy for the organisation itself, enabling higher response rates.

However, the Dutch population of marketers is neither transparent nor easily accessible. Moreover, research by Edwards et al. (2007) indicates that databases of companies or individuals are often incomplete, inaccurate or out of date. The most effective opportunity to reach marketers is therefore through specific educational institutes, professional associations and trade journals.

Based on this demarcation and our access to relevant sources, the sampling frame therefore consisted of the following groups:

- All members of NIMA (Nederlands Instituut voor Marketing);
- All students, alumni and other relevant relations of Beeckestijn (the largest Dutch executive educator for the marketing profession);
- All subscribers of Tijdschrift voor Marketing (the leading Dutch marketing trade journal);
- All relevant relations in our own network.

The net, manually deduplicated, sampling frame thus comprised 11,852 individuals.

3.2.7.2.2 Step 2: Deciding on a suitable sample size

The appropriate sample size for our research was a minimum of 384 respondents, based on the following parameters (Burns, Veeck, & Bush, 2016):

- The size of the total population from which the sample is drawn: it is estimated that more than 100,000 marketers are active in the Netherlands (Boon, 2016);
- The confidence level: set at the usual level of 95%;
- The tolerable margin of error: set at the usual level of 5%.

As the population is over 100,000 entities, it can be considered an infinite population (Burns et al., 2016). Then, the formula for calculating the minimum sample size is as follows:

$$n = z^2p(1-p)/e^2$$

Where:
n = minimum sample size
z = standard deviation
p = population variability
e = margin of error
At a 95% confidence level the *z* value is 1.96. For *p* the worst scenario value of 0.5 is applied, representing the highest possible variability. This lead to a minimum sample size of $(1,96)^2*0.5*(1-0.5)/(0.05)^2 = 384$

Based on the analysis of response rates by Neuman (2005) the expected response rate for this type of survey is 10-20 per cent. According to Saunders et al. (2015) it is even 11% or lower for internet-mediated surveys. Based on the extensive character of the AMM model, a conservative estimate of 10% has been applied. The sample size could therefore be calculated as follows (De Leeuw, Hox, & Dillman, 2008):

$$n^a = nx100/re\%$$

Where:
n^a = actual sample size required
n = minimum sample size
re% = estimated response rate, expressed as a percentage

This leads to a sample size of 384*100/10 = 3,840.

3.2.7.2.3 Step 3: Selecting the most appropriate sampling technique and the sample

Five different techniques can be used to select a probability sample. These are simple random, systematic, cluster, stratified random and multi-stage sampling. In selecting the appropriate technique, an important criterion is whether the sampling frame contains clusters or strata. This indeed applied to our sampling frame as it was built up of four different subgroups that could potentially generate different substantive results.

These four strata were:

- Potential respondents who are uniquely a NIMA member;
- Potential respondents who are uniquely a Beeckestijn student, alumni or relation;
- Potential respondents who are uniquely a Tijdschrift voor Marketing subscriber;
- Potential respondents who are uniquely a relevant network relation.

Because of the relevance of this grouping, simple random and systematic sampling techniques are inapplicable. Multi-stage sampling is irrelevant as there are no geographical issues.

The remaining two techniques, stratified random and cluster sampling, are comparable to a large degree. From these two alternatives, the *stratified random* technique has been selected as it offers superior capabilities to reduce sampling errors (Burns et al., 2016). Therefore, from each stratum a proportionate sample was drawn randomly. This was done by applying systematic sampling, based on the alphabetic order of the potential respondents' surnames.

The sampling fraction is the proportion of the total stratum that needs to be selected. It can be calculated by dividing the actual sample size by the total population: 3,840/11,852 = 0.324. In practice, this meant that one in every three cases was selected, leading to an applied sampling fraction of 0.333. By rounding up per stratum this resulted in a total actual sample size of 3,952 cases.

3.2.7.3 Questionnaire technique

There are five different types of questionnaires, based on how they are administered and the amount of contact with the respondents. These five types can be categorized in two groups. The *self-administered types* are the internet-mediated questionnaires, postal questionnaires, and delivery and collection questionnaires. The *interviewer-administered types* are telephone questionnaires and structured interviews.

Selecting a specific questionnaire technique is based on the research question and the assessment of ten criteria (Dillman, Smyth, & Christian, 2014; Saunders et al., 2015; Hewson, Vogel, & Laurent, 2015), as presented in Table 16:

Table 16

Assessment of criteria for selecting the questionnaire technique

Criterion	**Assessment**
Characteristics of the respondents	Used to and open to surveys
Importance of reaching a particular person as respondent	Medium
Importance of respondents' answers not being contaminated or distorted by researcher	High
Types of questions needed to collect the required data	Simple
Number of questions needed to collect the required data	High
Sample size required for the analysis, taking into account the probable response rate	Large
Time available to complete the data collection and entry	Limited
Budget available to complete the data collection and entry	None
Availability of interviewers and field workers to assist	None
Ease of automating data entry	High

Based on the assessment of these criteria the category of self-administered questionnaires seemed to be best applicable. Within that group the internet-mediated questionnaire technique was selected, as it offers multiple advantages in terms of efficiency compared to postal questionnaires and delivery and collection questionnaires (Dillman et al., 2014).

3.2.7.4 Questionnaire design

The design of the questionnaire was based on the operationalisation of the constructs as described by the AMM model. The questionnaire consists of three distinct parts:
- Specific questions related to the target variable;
- Specific questions related to the independent variables;
- General questions related to the exogenous variables.

3.2.8.4.1 Specific questions related to the target variable

In this section of the survey the operationalisation of the AMM model is translated into statements about the change of specific customer performance items for the organisation. This part of the AMM operationalisation was based on the EFQM definitions. The EFQM benchmark policy prescribes a frequency of twelve months and therefore this was used unabridged as the measurement period for the statements.

Based on the research questions and the nature of the statements, the most suitable form was ordinal measurement, by deploying rating questions that collect opinion data (De Leeuw et al., 2008). For this purpose, rating scales are most frequently used for asking the respondent how strongly he or she agrees or disagrees with a certain statement, usually in a five-point rating scale (Saunders et al., 2009).

Table 17 below illustrates how the statements were elucidated, using the EFQM customer performance item 2.2 'Customer lifetime value' as an example (see section 3.2.6 for more details).

Table 17

Example translation of the operationalisation of one of the nine 'Customer performance' items into a statement

Operationalisation of the 'customer performance' item	**Translation into a statement about the applicability for the organisation**
2.2 The net profit attributed to the entire future relationship with a customer	In the past year the value of the customer (the net profit attributed to the entire future relationship with our customers) has …

The statements are measured using a five-point rating scale containing the following items (the associated coding is shown in parentheses):
- Sharply decreased (1);
- Slightly decreased (2);
- Remained unchanged (3);
- Slightly increased (4);
- Sharply increased (5);
- Not applicable (0).

3.2.7.4.2 Specific questions related to the independent variables

In this section of the survey the operationalisation of the AMM indicators were translated into rating questions using the five-point rating scale, identical to the original OPS framework (Soundararajan, 2013). Table 18 illustrates how this is elucidated, using the

AMM indicator 10.3.1 'Client driven iterations' (see section 3.2.6 for more details).

Table 18

Example translation of the operationalisation of AMM indicators into statements

Operationalisation of the AMM indicator	**Translation into a statement about the existence in the organisation**
10.3.1 The extent to which the improvements in products, services or channels developed so far are in sync with customers' expectations	So far, the improvements in products, services or channels we developed are in sync with customers' expectations

The five-point rating scale now contained the following items (the associated coding is shown in parentheses):

- Strongly disagree (1);
- Disagree (2);
- Agree nor disagree (3);
- Agree (4);
- Strongly agree (5);
- Not applicable (0).

3.2.7.4.3 General questions related to the exogenous variables

Based on our literature research, four exogenous variables were identified as relevant to the AMM model (see section 3.2.6). These four exogenous variables were translated into attribute questions. As the alternative options for 'market focus' are mutually exclusive and collectively exhaustive, a category question was most relevant. For both 'size' and 'channel scope' a self-coded quantity question was most effective (Dillman et al., 2014). Table 19 illustrates how this was elucidated (the associated coding is shown in parentheses, if applicable).

Table 19

Translation of the AMM's exogenous variables into questions

Exogenous factor	**Translation into questions**

Market focus: whether the go-to-market strategy is aimed either at consumers or at businesses and organisations, or at both	• On which market(s) does your organisation focus?
	  • Consumers (1);
	  • Businesses and organisations (2);
	  • Both (3);

Size: the number of employees active within the organisation	• How many persons are employed by your organisation? Specify the number: …
Channel scope: the number of channels deployed within the multichannel strategy	• How many different channels does your organisation deploy within its multichannel strategy? Specify the number: … • How many of your customers use multiple channels in their interaction with your organisation? Specify the estimated percentage: …

3.2.7.5 Technique: constructing the questionnaire

Nyenrode Business University provides the solution of Qualtrics for composing online surveys. According to its own website (qualtrics.com) this organisation is the 'exclusive partner of 99 of the top 100 business schools'. Based on these facts, Qualtrics was used for constructing our questionnaire. The standard Qualtrics layout, as selected by Nyenrode, has been applied unaltered.

At the beginning of our questionnaire, a brief introduction explained the purpose and approach of the questionnaire to the respondents. This introduction included the Nyenrode logo and the neutral title 'Agility self-assessment', as suggested by Dillman et al. (2014). As for the order and flow of the questions, a grouping was established based on the twelve 'tactics' within the AMM model. The first and main part of the questionnaire was dedicated to the independent variables. Thus, it consisted of blocks with themes such as 'Client driven iterations', containing the associated questions about capability and effectiveness 'indicators'. The penultimate block was dedicated to the target variable 'Customer performance', while the last block was dedicated to the extraneous variables, as suggested by De Leeuw et al. (2008). At the end of the questionnaire the respondents were thanked for completing the questionnaire. They were also asked to leave their e-mail address in case they would like to receive the outcomes of the research.

3.2.7.6 Testing and validity assessment

As a next step, the questionnaire was used in structured individual interviews with three respondents. Each interview was concluded with an evaluation to identify possible improvements regarding the following aspects: order of the questions; clarity and unambiguousness of the questions; completeness of the topics (De Leeuw et al., 2008).

The three evaluations resulted in an adjustment in the order of the questions regarding the independent variables, as to make it a more logical flow from the respondent's perspective. This was achieved by grouping the twelve AMM 'tactics' under more general theme headings and thus altering their order. Thus, tactics 2 and 12 were split up in multiple parts which were grouped under different theme headings (see Table 20).

Table 20

The adapted grouping and order of the questions within the twelve AMM tactics

Theme heading	**AMM MODEL strategies**
1. Communication	• Tactic 8 – High bandwidth communication
2. Documentation	• Tactic 7 – Minimal documentation
3. Knowledge	• Tactic 11 – Distribution of expertise
4. Development	• Tactic 2 – Incremental development (partially) • Tactic 3 – Short delivery cycles
5. Requirements	• Tactic 4 – Evolutionary requirements • Tactic 12 – Adherence to standards (partially)
6. Teams	• Tactic 6 – Self-managing teams
7. Planning	• Tactic 1 – Iterative progression • Tactic 12 – Adherence to standards (partially)
8. Feedback	• Tactic 2 – incremental development (partially) • Tactic 5 – Continuous feedback
9. Evaluation	• Tactic 9 – Retrospection
10. Customers	• Tactic 2 - Incremental development (partially) • Tactic 10 – Client driven iterations

Subsequently, a trial run of the survey was conducted to determine whether respondents experienced problems in answering the questions, and to ensure no problems occurred in recording the data, as well as to check the reliability of the questionnaire (Saunders et al., 2015).

To perform the three interviews and the trial run of the survey, a test group was needed that was as similar as possible to the final population in the sample. Therefore, a Beeckestijn class containing seventeen people was selected. Of this group three persons were interviewed, as described above. Subsequently, twelve other persons completed the updated pilot questionnaire. Of these twelve people, eleven persons attended a plenary session to evaluate the questionnaire. This number of participants was above the minimal required number of ten (Fink, 2002).

In the evaluation session the following topics were addressed (Bell, 2014):
- The time required to complete the questionnaire;
- The clarity of the instructions;
- The clarity and unambiguousness of the questions;
- The completeness of the topics;
- The clarity and attractiveness of the layout;
- Other specific comments.

The main finding of the evaluation session was that the questionnaire required a long but acceptable time to complete. In addition, the findings resulted in some minor adjustments to the wording of the questions related to the AMM model indicators within AMM practices 3.3, 4.1 and 12.2.

3.2.7.7 Administering the questionnaire

Based on the outcomes of the trial run, the questionnaire was updated to its final version (see Appendix 3.2). Next, the sample was contacted by e-mail. Three of the sources presented in section 3.2.7, being the NIMA, Beeckestijn and Tijdschrift voor Marketing organisations, sent out personalized e-mails in their own house style, containing identical body texts and a hyperlink to the online survey. In addition, personalized LinkedIn messages were sent to our own relations, containing an identical body text and hyperlink.

To maximize response, the body text incorporated a passage in which the survey was positioned as an anonymous, theoretically sound benchmark tool. This passage emphasized the fact that investing their time in this online self-assessment would provide the valuable opportunity to compare their own organisation with others. In addition, the respondents were invited for a future event, where the results of the research are to be presented. Furthermore, ten copies of our book 'Agile Managen' were raffled (which may have resulted in some bias, posing a threat to internal validity).
The techniques and procedures of our survey strategy are discussed in more detail in Chapter 4. The section below elucidates the techniques and procedures of our case study strategy.

3.2.8 Step 6-C – Techniques and procedures: case study

As discussed in section 3.2.4 the aim of our case studies was to corroborate, supplement and deepen the insights our survey would generate. Lee and Lings (2012: 228) define a case as 'a specific situation within a single social setting'. Furthermore, 'the object of

interest of the study in some way concerns the case itself, and not just what is going on within the single situation one is collecting data from.' Yin (2013) defines a case study as 'an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context […]. The case study copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis.'

The decisions concerning the design of the techniques and procedures of the case study strategy involves considerations regarding issues of credibility, case selection, deployment of sources and the protocol for retrieving and analysing information. These decisions are all elucidated in the sections below.

3.2.8.1 Credibility checks

Saunders et al. (2015) and Lee et al. (2012) state that qualitative research can be divided in two approaches: deductive and inductive. Our theory and model have been developed based on literature research and was validated in our survey, and the model will ultimately be validated in a survey. Therefore, Yin's (2013) deductive case study approach has been chosen as a starting point. However, according to Saunders et al. (2015), 'there is debate about this deductive approach as applied to qualitative analysis'. Bryman (2016) formulates the argument against it as follows: 'The prior specification of a theory tends to be disfavoured because of the possibility of introducing a premature closure on the issues to be investigated, as well as the possibility of the theoretical constructs departing excessively from the views of participants in a social setting.' Therefore, in this current research the Yin method will be enriched with an inductive aspect in the sense that the template analysis method (King & Brooks, 2016) will be used to analyse the collected data. As will be explained later, this template analysis method is both deductive and inductive by nature as it allows for iteratively supplementing the initial theory with insights derived from the qualitative data.

Another issue is that the knowledge claims of case study research are often criticized for lack of generalizability, i.e. the representativity of the case situation. One reason for this is that most cases reported are single cases (Easton, 2010). Yin (2013) adds that 'the short answer is that case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a 'sample', and the investigator's goal is to expand and generalize theories (analytical generalization) and not to enumerate frequencies (statistical generalization)'. Lee et al. (2012) state that 'the underlying logic of case study is not necessarily based on generalising findings to other situations. In fact, it is a source of debate as to whether one should be concerned with issues of validity, reliability or generalisability within case study research.'

Still, there is much debate over what is 'good case research'. To address this quality issue, Yin (2013) presents four tests for case study research that are widely accepted by methodologists. These four tests, and how these are operationalized in this current research, are presented in Table 21 below.

Table 21

Four design tests for quality of the case study research (Yin, 2013: 39)

'Design test	**Theoretical explanation of the concept**	**Operationalized through**
Construct validity	To secure that correct operational measures have been established for the concepts that are being studied	1. Triangulation through multiple sources of data or interviews. 2. Providing readers with a chain of evidence using quotes from informants. 3. Allowing interviewees to review the draft case and give feedback.
Internal validity	To make sure that a causal relationship has been established. Internal validity is a concern of explanatory or causal case studies but not for exploratory or descriptive cases that do not attempt to make causal statements	4. Pattern matching through cross-case analysis. 5. Searching for negative cases, ruling out or accounting for alternative explanations.
External validity	To prove that the domain to which a case study's findings belong can be generalized	6. Specification of the population of interest. 7. Replication logic in multiple case studies.
Reliability	Demonstrating that the findings from a case study can be replicated if the case study procedures are followed	8. A standardized interview protocol. 9. Constructs well defined and grounded in extant literature. 10. Providing an audit-trail by offering access to data.'

Six forms of operationalisation of Yin's design tests, being 1, 3, 4, 5, 6 and 7, are elucidated in the following sections. With regard to operationalisations 2, 8 and 10, Yin (2013) suggests to use a chain of evidence. The steps involved in this chain of evidence are presented in Figure 8 below:

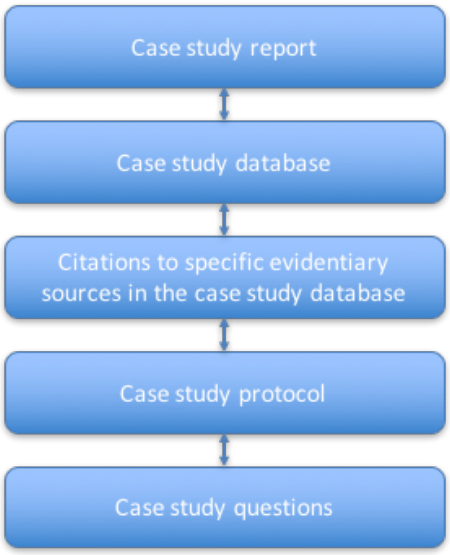

Figure 8: Yin's chain of evidence

This chain of evidence has been deployed in our study by developing a case study and interview protocol, providing a case study database that includes all relevant documents, and a transparent referral to citations that underpin the conclusions of the case study report. Thus, all content and processes are available for replication purposes.

As for operationalisation 9, it is prescribed that the constructs used in the case study research are well defined and grounded in extant literature (Yin, 2013). This requirement is being met as our constructs are all based on structured literature reviews. These reviews resulted in the selection and operationalisation, being the AMM model.

Below, the remaining six forms of operationalisation of Yin's design tests (1, 3, 4, 5, 6, 7) are described in more detail.

3.2.8.2 Case selection: design test operationalisation 4, 5, 6 and 7

According to Herriott and Firestone (1983) and Hersen and Barlow (1976) multiple-case designs are preferable to single case designs as their evidence is regarded as being more robust, by offering the opportunity to replicate the results. Yin (2013) acknowledges this: 'although all designs can lead to successful case studies, multiple-case designs may be preferred over single case designs' if the researcher follows a replication instead of a sampling logic. However, while Yin (2013) sees the multiple-case design becoming more prevalent, he is cautious about them being significantly 'more expensive and time-consuming to conduct.' Therefore, he states that 'even if a researcher can only do a two-case study, the analytic benefits will be substantial' as one has the possibility of direct replication. Thus, the 'analytic conclusions independently arising from two cases will be more powerful than those coming from a single case.' Based on this trade-off between increasing costs and time consumption on the one hand, and increasing analytic benefits on the other hand, a multiple-case design has been chosen which consists of four cases.

Regarding operationalisation 4, 6 and 7 of Yin's design tests, the aim is to eliminate exogenous factors. Therefore, to approximate the *ceteris paribus* conditions as much as feasible, the two initial case studies have been performed within two separate organisational units of the same company, being Innogy. Innogy is internationally active in the energy sector, supplying gas and electricity to consumers, organisations and businesses. The focus of this case study research is on Innogy's consumer market in the Netherlands. The rationale behind this focus is that this market is very competitive, as the products and services are increasingly becoming a commodity and consumers are increasingly price sensitive (Grol, 2017). As to innovate their customer value propositions, and to improve the customer experience within their multichannel strategies, the marketing departments within the consumer divisions of all the large competitors in the Dutch market (Innogy, Nuon, Eneco) have started deploying an agile way of working. However, these organisation differ in how recent they have started deploying an agile way of working, and to what degree.

First, the two initial, large case studies have been held within Innogy and the congruency of both outcomes have been analysed. To corroborate these insights, two additional case studies have been held at Nuon and Eneco, by using an iterative approach. If, based on the first results of these two additional case studies, the outcomes would confirm the outcomes of the two initial case studies, each of the two additional case studies would be kept limited in scope. If, however, the outcomes would partly or wholly contradict the earlier outcomes, each of the two additional cases would be executed in the same full scale as the two initial case studies.

The unit of analysis of the case studies has been the organisation, as was the case in the quantitative research. For the initial pair of case studies, this concerned two identical

Innogy departments, each responsible for a different consumer brand of the same product: Essent and Energiedirect.nl. The second pair of case studies concerned two competitors of Innogy that compare strongly to this specific organisation in terms of size, age, background, organisational structure, propositions, target groups and channel deployment, which enables a *ceteris paribus* approach as much as feasible. These competitors are Eneco and Nuon, which have been deploying agile for some years now, and thus are more mature in this respect.

For operationalisation 5, Yin (2013) advises to select cases in such a way that this enables researchers to rule out or account for alternative explanations. The Essent, Energiedirect.nl, Eneco and Nuon organisations differ in the degree to which they have implemented an agile way of working in terms of recency, organisational structure, and deployment of techniques and tools, which offers the opportunity to check for alternative explanations.

3.2.8.3 Deployment of sources and techniques: design test operationalisation 1 and 3

To meet the requirements of operationalisation 1 of Yin's design tests, a triangulation approach has been deployed. Lee et al. (2012) state that 'most case studies will at the very least employ a mix of data collection methods.' Therefore, Yin (2013) presents six different sources of evidence that can be combined, based on their respective strengths and weaknesses. These six sources are:

- interviews;
- direct observations;
- participant observation;
- physical artefacts;
- documentation;
- archival records.

Based on the different characteristics as described by Yin (2013), the following sources have been selected: interviews, direct observations, physical artefacts, and documentation. Table 22 shows the strengths and weaknesses of each of these four sources.

Table 22

The selected sources of evidence and their strengths and weaknesses (Yin, 2013: 67)

'Source of evidence	**Strengths**	**Weaknesses**
Interviews	• Targeted: focuses directly on case study topics • Insightful: provides perceived causal inferences and explanations	• Bias due to poorly articulated questions • Response bias • Inaccuracies due to poor recall • Reflexivity: interviewee gives what interviewer wants to hear
Direct obser-vations	• Reality: covers events in real-time • Contextual: covers context of case	• Time-consuming • Selectivity: broad coverage difficult without a team of observers • Reflexivity: event may proceed differently because it is being observed • Cost: hours needed by human observers

Physical artefacts	• Insightful into cultural features • Insightful into technical operations	• Selectivity • Availability
Documen-tation	• Stable: can be reviewed repeatedly • Unobtrusive: not created as a result of the case study • Exact: contains precise names, references, and details of an event • Broad coverage: long span of time, many events, and many settings	• Retrievability: can be difficult to find • Biased selectivity: if collection is complete • Reporting bias: reflects (unknown) bias of author • Access: may be deliberately withheld'

Based on the characteristics as shown in Table 22, our expectation was that the combination of interviews, direct observations, physical artefacts and documentation could lead to a study in which the weaknesses of each individual source of evidence were compensated by the strengths of the other three sources of evidence.

3.2.8.3.1 Interviews

Interviews usually play an important role in case studies, according to Silverman (2011). With regard to techniques technique, two main types of interviews can be distinguished, being in-depth and structured interviews (Yin, 2013). In-depth interviewing is 'probably the most popular technique in academic qualitative research. It is also a useful base to build from in looking at other qualitative techniques. […] Its goal is to gather rich, in-depth answers which tap deeply into the respondents own experiences, feelings, and opinions.' (Lee and Lings, 2012). In-depth interviews can be categorized in two types, being unstructured and focused (also called semi-structured) interviews. According to Lee et al. (2012) these are 'two ends of a continuum and thus rarely used in their purest form. […] *Unstructured* interviews can make it very difficult in pragmatic terms to generate useful data. […] *Focused* interviews, on the other hand, are particularly useful if you already have a clear theoretical appreciation of your topic, allowing you to structure a good topic guide.' Saunders et al. (2015) propose that 'in an explanatory study, semi-structured interviews are the most effective method to understand the relationships between variables, such as those revealed from a descriptive study.'

Based on these arguments, the focused (or semi-structured) interview has been selected as our interviewing technique. According to Yin (2013) this means that a person 'will be interviewed for a short period of time […] in a conversational manner, following only a strongly limited set of questions to corroborate certain facts that the researcher already thinks have been established'. Yin's advice in this respect is that 'the specific questions must be carefully worded, so that the researchers appears genuinely naive about the topic and allows the interviewee to provide a fresh commentary about it'.

3.2.8.3.1.1 Interview protocol

Based on the considerations above, the interview guide comprised the smallest possible number of open questions related to the tactics of the AMM model. The concept version of this guide was first tested in an interview at a different organisation, being Sonepar. The resulting, final interview guide consisted of the topics listed below:

1. Welcoming the interviewee and doing a mutual personal introduction;
2. Explaining the backgrounds of the research:
    - PhD candidate Nyenrode Business University;
    - Relationship between agile way of working and customer performance in an omnichannel setting;
3. Explaining the goal and contents of the interview;
    - Quantitative research already completed;
    - Validating the outcomes of the present research in daily practice by conducting case studies;
4. Promising a strict confidential and anonymous treatment of interviewee's input;
5. Asking for permission to record and transcribe the interview;
6. Opening the substantive part of the interview;
7. Explaining the elements that constitute the variable 'Customer performance':
    - The increase, decrease or remaining unchanged in the last twelve months of:
        - the value of the products and/or services as perceived by the customer;
        - the customer satisfaction about the experience of products and/or services delivery;
        - the customer satisfaction about the experience of customer service;
        - the preference for the organisation in customer's purchase intention;
        - the customer loyalty (repurchase after contract expiration);
        - the gross margin generated from the product and/or service revenues;
        - the value of the customer (net profit attributed to the entire future relationship with a customer);
        - the number of completed improvements in products, services, channels and customer processes;
        - the speed of completing improvements in products, services, channels and customer processes;
8. Asking the substantive questions:
    - Initial and main question:
        - In what way are the different elements of the agile way of working influencing your formula's level of customer performance?
    - Follow-up questions (Note: only use if interviewee gets stuck):
        - You previously also mentioned element X. Could you elucidate that?
        - Are there any additional elements? If so, which?
        - Probing:
            - Could you expand on that?
            - What do you mean by that?
            - Why is that?
9. Closing the substantive part of the interview;
10. Explaining the follow-up steps;
11. Thanking the interviewee for cooperating.

The main question of the interview was: in what way are the different elements of the agile way of working influencing your formula's level of customer performance? As to minimize our influence on the interviewees in cataloguing the relevant indicators spontaneously, this initial question was the only question asked, if possible. However, based on the evaluation of the test interview, additional questions were prepared to resume the interview in case the interviewees' input would strand. Both the initial and follow-up questions have been formulated based on the recommendations of Lee et al. (2012).

The setting for the individual, face-to-face interviews was on-site, using a separated, closed meeting room. As to ascertain uniformity in gathering the information, one and the same person has conducted all interviews and transcribed the recorded contents (Lee et al., 2012; Silverman, 2014). These transcriptions have been produced in accordance with the validity guidelines as proposed by Symon and Cassell (2012), Baarda, de Goede and Teunissen (2005), Wester and Peters (2004), and Maso and Smaling (1998). The interviews have been transcribed literally, leaving out irrelevant sounds and passages (e.g. introduction, fillers, straying) and with correction of grammatical errors.

3.2.8.3.2 Direct observations, physical artefacts, and documentation

As for the direct observations and physical artefacts, meetings have been attended to factually check the actual deployment of the agile artefacts as represented by the 'indicators' within the AMM model. These observations were supplemented by workplace visits to check for these artefacts and the general setting.

Regarding the analysis of relevant documentation, the goal was to gather factual information about the design of the agile way of working and about performance measurement. In consultation with the contact persons of the organisations, documents have been retrieved in the form of plans, project descriptions, memoranda, proposals, progress reports, and evaluation studies. According to them, these documents would provide insight as complete and accurate as possible.

3.2.8.4 Case study protocol: purpose

Central to the chain of evidence within this approach is a case study protocol. According to Yin (2013) a case study protocol 'is a major way of increasing the reliability of case study research and is intended to guide the investigator in carrying out the data collection'. This protocol describes a structured approach that consists of three elements, being the purpose of the research, the data collection, and the evaluation. These three elements are elucidated below.

The starting point for defining the purpose of the research is the case study question to be answered. Based on the outcomes of the literature reviews and survey, this case study question was formulated as follows:

> *To what extent can the elements of the relationship between the agile way of working and customer performance be identified in daily practice?*

Answering this case study question was based on our theoretical framework, as represented by our conceptual model. As described earlier in this chapter, our conceptual model consists of three independent variables operationalised in twelve groups of indicators representing the 'agile way of working', and one dependent variable, being 'customer performance'. The case study will focus on all indicators constituting the operationalisation of the conceptual model, which are described in more detail in Appendix 3.1. The aim of the case study is to corroborate the findings of the preceding survey and thus is more descriptive than explanatory by nature.

For this purpose, a structured data collection procedure has been applied. This procedure, constituting element two of the case study protocol, is elaborated below.

3.2.8.4 Case study protocol: data collection procedure

As a first step in the data collection phase, the brand leads, Albert de Koning of Essent and Jorrit Pijlman of Energiedirect.nl, were approached with a proposal to have their organisational units participate in our research. After their approval, two contact persons were assigned to arrange all practical issues. These contact persons were Jamila Bloemers of Essent and Zaïsha Cowles of Energiedirect.nl. As the basis for our case studies was a triangulation approach, these contact persons have provided for the required sources of information, being interviews, direct observations, physical artefacts, documentation, and measurements.

3.2.8.4.1 Interviews

As a first step, the interviewees were selected using the organisational charts of the respective brand formula organisations (see Figures 9 and 10 below).

[As requested by Innogy, the contents of this figure are hidden]

Figure 9: Organisational chart of Formula Management Essent as per 1 September 2017

[As requested by Innogy, the contents of this figure are hidden]

Figure 10: Organisational chart of Formula Management Energiedirect.nl as per 1 September 2017

The selection of the interviewees was done independent of the brand leads and contact persons, based on the criteria as shown in Table 23 below.

Table 23

Selection criteria for interviewees at Essent and Energiedirect.nl

General selection criteria (Silverman, 2014; Yin, 2013; Lee and Lings, 2012; Singleton and Straits, 2017)	**Specific, additional selection criteria for interviewees at Essent**	**Specific, additional selection criteria for interviewees at Energiedirect.nl**
• The number of interviews must at least be 20% of the total population; • Interviewees must be able to provide relevant input for the research question; • Interviewees must represent a cross-	• Brand lead; • Agile coach; • At least one Product Owner; • At least one Chapter Lead; • At least one team member of each team; • At least one team member representing	• Brand Lead; • At least one team manager; • At least one team member of each team; • At least one team member having recently participated in a large project.

section of the organisation; • If possible, interviewees must be selected at random; • Interviewees must be willing to cooperate.	each specialism (Chapter).	

Based on the organisational charts and selection criteria, ten persons at Essent and eight persons at Energiedirect.nl have been invited, and all have cooperated as an interviewee (see Table 24 below).

Table 24

Interviewees for the four case studies
[As requested by Innogy, the contents of this table are hidden]

In the triangulation approach of the case study research, the information gathered from the interviews has been supported and supplemented by direct observations, physical artefacts, documentation, and measurements. The next section elucidates on the deployment of these additional sources.

3.2.8.4.2 Direct observations, physical artefacts and documentation

As can be inferred from the contents of the AMM model, the agile way of working comprises multiple artefacts. Examples of these agile artefacts are the backlogs, Kanban board, user stories, and the various meetings. To ascertain that these artefacts are factually deployed in daily practice, at least one session has been attended of each type of team meetings that were being held (see Table 25 below). These observations have been captured in meeting reports.

Table 25

Meetings attended at Essent and Energiedirect.nl

Meetings attended at Essent	**Meetings attended at Energiedirect.nl**
• Daystart: team KO2 • Retrospective/planning meeting: team KO3 • Plenary ('all hands') retrospective meeting: all Essent formula employees	• Weekstart: all Energiedirect.nl formula employees • Retrospective meeting ('performance dialogue') Online • Retrospective meeting ('performance dialogue') Marketing & Sales

The observations were supplemented by workplace visits to perform an additional check on the artefacts and to view the physical setting of the teams. These were recorded in photographs and screenshots.

As for the analysis of relevant documentation, the goal was to gather factual information about the design of the agile way of working and about performance measurements. In consultation with the contact persons of the organisations, the following documents were

retrieved and analysed if available: organisational charts, descriptions of the way of working, evaluation studies, and team barometers.

3.2.8.4.3 Measurement

The measurement of the dependent variable 'customer performance' has been performed at all four case studies. At the objects of the main case studies, Essent and Energiedirect.nl., this measurement was performed twice, with an interval of six months, as to generate longitudinal insights. The same measurement has been performed for the smaller case studies at Eneco and Nuon, but only once for each.

These measurements constitute the fifth and final information source of data collection, which forms the second step in the case study protocol. The third step in the case study protocol is the evaluation, which is discussed below.

3.2.8.5 Case study protocol: evaluation

The evaluation phase is aimed at analysis and interpretation. It consists of three main activities: categorising data, recognising relationships, and drawing conclusions (Saunders et al., 2015). According to Yin (2013) and Silverman (2011), the available analytical procedures can be distinguished in approaches that are either inductive or deductive by nature, or a combination of both. Based on the comparison of the different procedures (Saunders et al., 2015; Silverman, 2011; Miles & Huberman, 1994), an iterative approach was selected that offers the opportunity of both inductive and deductive analysis and interpretation. This *template analysis method* (Gordon & Langmaid, 1988; King & Brooks, 2016) consists of six steps, as depicted in Figure 11 below.

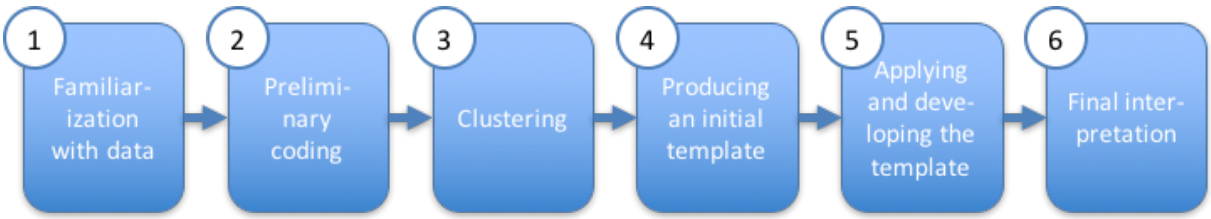

Figure 11: The six steps of template analysis

For step 1, familiarization with data, the advice of King et bal. (2016) has been followed to transcribe and analyse our own interviews and additional data, as to enable a profound 'engagement with and reflection on' our data. In step 2, preliminary coding, our *a priori* themes from the AMM were supplemented by the themes that emerged from the subset of three interviews that were selected at random. In step 3, based on the preliminary analysis in the two preceding steps, the emerging and *a priori* themes were 'clustered into meaningful groups and ordered hierarchically, with broader themes encompassing one or more levels of more narrowly focused themes'. The initial version of our coding template was produced in step 4, 'representing the template with a diagram showing the hierarchical organisation of themes within each cluster'. In step 5 this initial template was applied to the remaining data items and amended where necessary. This process of application and refinement was performed in an iterative way.

The resulting template consisted of six categories comprising a total of 40 indicators. In step 6, this final template was used to interpret the data (King et al., 2016). This template is shown in Table 26 below.

Table 26

Final version of the coding template

Category	**Indicator**	
1. Iterative progression	1.2.1	It is expected to estimate the time required to complete each story and feature
	1.4.2	The length of an iteration is 4 weeks or less
	1.5.1	The extent to which an iteration backlog is maintained
	1.5.2	The extent to which stories are fully estimated when added to the iteration backlog
	1.5.3	The extent to which stories are prioritized when added to the iteration backlog
2. Incremental development	2.4.1	The extent to which a product backlog is maintained
	2.4.2	The extent to which stories are fully estimated when added to the product backlog
	2.4.3	The extent to which stories are prioritized when added to the product backlog
3. Short delivery cycles	3.1.1	It is expected to develop improvements in products, services, processes or channels in iterations of 4 weeks or less
	3.1.2	The extent to which improvements in products, services, processes or channels is released every 4 weeks or less
5. Continuous feedback	5.1.1	The process defines a mechanism for the customers to provide feedback
6. Self-managing teams	6.1.1	Team members are expected to be involved in determining, planning and managing their day-to-day activities
	6.1.4	The extent to which team members hold each other accountable for the work to be completed
	6.1.5	The extent to which team members ensure they complete
	6.2.1	Team members are expected to demonstrate individual or collective ownership of the products, services or channels
	6.3.1	Performance expectations are agreed upon by the team and management
	6.4.1	The extent to which team members determine, plan and manage their day-to-day activities under reduced or no supervision from management
	6.5.1	The extent to which management supports the self-managing nature of the teams
7. Minimal documentation	7.1.1	Visual tools for maintaining documentation and tracking progress exist
8. High bandwidth communication	8.1.1	Teams comprise stakeholders from all organisational units relevant for the improvements in products, services, processes or channels

	8.1.2	In the absence of an on-site stakeholder, the stakeholder provides direct input via other means
	8.2.1	It is expected that teams allocate time for iteration planning
	8.2.2	It is expected that teams allocate time for retrospection (evaluation of the activities and results)
	8.2.3	It is expected that teams allocate time for daily progress tracking meetings
	8.2.4	The extent to which the time allocated to iteration planning meetings is utilized effectively
	8.2.5	The extent to which the time allocated to retrospection meetings is utilized effectively
	8.2.6	The extent to which the time allocated to daily progress tracking meetings is utilized effectively
	8.2.7	The extent to which the scheduled meetings take place as scheduled
	8.2.8	The extent to which the scheduled meetings begin and end on time
	8.3.2	The extent to which face-to-face communication prevails between the manager and team members
	8.4.1	The physical environment facilitates face-to-face communication and collaboration
11. Distribution of expertise	11.1.1	A scheme is defined for appropriate team composition based on requisite expertise
	11.2.1	The extent to which team members have the requisite expertise to complete the tasks assigned to them
	11.2.2	The extent to which the tasks assigned to the team members match their expertise
	11.2.3	The extent to which the team effectively completes
	11.2.4	The extent to which team members are capable of supporting each other in performing their tasks
	11.2.5	The extent to which teams do not rely on knowledge external to their teams
13. Culture	*13.1*	*The extent to which the broader organisational environment is aligned with the agile way of working*
	13.2	*Shared agile principles and values are the basis for the work of management and teams*
	13.3	*The extent to which management and teams create an atmosphere that promotes taking initiative (e.g. experimenting with minimum viable products)*

In step 2 to 6 of the template analysis, a table was created that vertically showed the different themes in the left column and the keywords per theme in the next columns, distinguishing between the Essent and Energiedirect.nl case. Furthermore, the frequency by which themes appear in the data was tallied, and these outcomes were depicted in additional columns (Silverman, 2010).

To minimize bias effects, the coding of the interview transcripts has been performed by an independent expert in the field of agile (Josje van Beek). The outcomes of these coding activities have then been double checked by another independent expert in the field of agile (Edwin Burgers).

The transcripts of the ten Essent interviews and eight Energiedirect.nl interviews have also been analysed quantitatively by using ATLAS.ti, the CAQDAS (computer aided

qualitative data analysis software) tool which is most used by academics (Silver & Lewins, 2014). Complementary to the coding of the transcripts, this word count was deployed to create additional insights into the relevance of specific concepts.

3.2.8.5.1 Feedback

The summarized analysis of all different sources (focused interviews, direct observations, physical artefacts, documentation, and measurements) have been integrated per case. These outcomes were discussed with four of the interviewees individually, who are the respective managers of the Essent, Energiedirect.nl, Eneco and Nuon departments. Their feedback has been taken into account, as to cover operationalisation 3 of Yin's design tests. The report, being the concept text of the respective parts of Chapter 4, was provided to the four interviewees as to check it on completeness and correctness. Next, individual face-to-face meetings were planned to discuss their feedback. This resulted in some minor adjustments in the factual information about the organigrams and organisational genesis.

3.3 Conclusion and discussion

The steps presented in the 'research onion' framework of Saunders et al. (2015) offered a structured approach that has effectively facilitated our research design. Based on our ontological and epistemological convictions and our research questions, a research approach was chosen that is based on interpretivism. A deductive research approach was used to create a conceptual model and hypotheses, by combining existing theories about multichannel management and agile. Next, the constructs of the AMM model have been operationalised to ensure clarity of definitions and facilitate the independence of the researcher.

Subsequently, three alternative research strategies were considered: the experiment, case study and survey. Based on this assessment the case study and survey strategies were selected as a multiple, cross-sectional research approach. This seemed the most suitable to control the research process, generate findings that are representative for the whole population, and qualitatively check these findings using multiple cases.

Next, a model has been developed for operationalization of our conceptual model. Then, with respect to the survey strategy, a suitable sampling frame and sample were identified by using existing sources. Subsequently, a self-administered questionnaire technique was selected. The AMM model measures were then translated into questions, for which only minor adaptations were needed. Finally, the questionnaire has been tested using structured interviews and a trial survey. This resulted in some adaptations in the order and wording of the questions, thus finalizing the questionnaire for usage in our survey.

Subsequently, based on multiple criteria, four organisations were selected to serve as a case study. The AMM model has been deployed as a basis for the interviews and data collection in the case study strategy.

Based on our decisions regarding research approaches and techniques, Chapter 3 has presented and in-depth description of all design elements of our survey and case studies. Based on these designs, Chapter 4 presents the implementation of the survey and our statistical analysis of the survey results, aimed at quantitative validation of the AMM. Next, Chapter 5 describes how the original AMM model was deployed in our case studies and what results this generated.

Chapter 4: survey

Based on the 74 indicators, a survey was performed that generated 606 responses. By using a three-tier approach of factor analysis, regression analysis and validation it was discovered that three factors within the agile way of working have significant relationships with customer performance. These outcomes corroborate a subset of the results of our four case studies. This chapter describes the data analysis process and the interpretation of the results, and it proposes topics for future research.

4.1. Introduction

As described in Chapter 3, a tri-angulation research approach would be deployed for which the 74 indicators served as a basis. First, a survey was held as to enable a quantitatively validation of the indicators. Next, as proposed by Saunders et al. (2015), Lee et al. (2012), Yin (2013) and Silverman (2011), the 74 indicators have been applied in four case studies for corroboration and deeper understanding of the findings from the survey.

Based on the survey responses, this chapter discusses the data analysis of the response and the interpretation of the results.

4.2 Research

As to ensure a structured and objective data analysis process, the step-by-step approach has been deployed as described by Saunders et al. (2015). This approach comprised the following three phases: processing the data, exploring and describing the data, and examining relationships and differences using statistical analysis. Each of these phases consisted of three steps, as is shown in Figure 12 below.

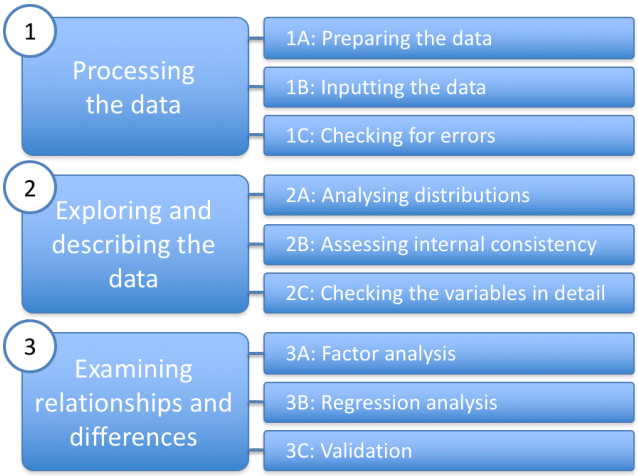

Figure 12: The three phases of our data analysis process

Each of the steps within these three phases are discussed in more detail below, beginning with phase 1.

4.2.1 Phase 1: Processing the data

The survey was administered using the Qualtrics online survey platform. This tool is deployed by approximately 2,000 universities worldwide (as stated on htpps://www.qualtrics.com) and is provided by Nyenrode Business University. After closure of the survey, the collected data were exported from Qualtrics using its standard facility and loaded into the IBM SPSS Statistics software package (version 24). SPSS is one of the most used packages (Muenchen, 2017).

The total number of responses was 983. As described earlier, the total actual sample size consisted of 3,952 eligible cases. Of these cases 609 proved unreachable. This resulted in an active response rate of 983/(3,952-609)=29.4%, which is at an acceptable level (Saunders et al., 2015; Nulty, 2008). In checking the responses on completeness and correctness, 377 of the 983 responses (38.4%) contained errors or empty fields to some degree. According to Lee et al. (2012) this is an average error and abandon rate for surveys longer than 20 questions. Based on their protocol, the strictest option was selected to consider these responses entirely as missing data, thus preventing wrong assumptions. The exclusion of these data resulted in a net data set of 606 usable responses, which is fully available for replication purposes.

4.2.2 Phase 2: Exploring and describing the data

In exploring the data, the first step was to check skewness using stem-and-leaf plots. The distribution of variables showed a normal distribution (Gravetter & Wallnau, 2014) as the skewness and kurtosis values lied well between the acceptable limits of -2 and +2 (see Appendix 4.1 for the values per indicator). The only exception was the variable indicating the size of an organisation in terms of number of employees, where some large organisations could be considered as outliers. Its skewness value is 10.46.

Next, the exogenous factors were checked in more detail. These background characteristics show no unusual patterns, except for the skewness in the 'Size' variable, as mentioned above (see Appendix 4.2 for more details):

- Market focus:
    - Aimed at businesses and organisations: 56.9%
    - Aimed at consumers: 13.9%
    - Aimed at both: 29.2%
- Size:
    - Range: from 1 to 200,000 employees
    - Mode: 10 employees
    - Median: 120 employees
    - Average: 2,949.26 employees
- Channel scope:
    - The proportion of customers using multiple channels in their interaction with the organisation:
        - Range: from 5% to 100%
        - Mode: 75%
        - Median: 70%
        - Average: 65.47%
    - The number of different channels the organisation deploys for its target segments

- Range: from 1 to 31 channels
- Mode: 4 channels
- Median: 5 channels
- Average: 6.21 channels

As to be discussed in section 4.2.3.2, none of the four exogenous factors showed a significant relationship with the dependent variable 'Customer performance'. Thus, the skewness of the 'Size' variable proved an irrelevant issue.

The follow-up step was to assess each of the tactic scales and 'Customer performance' scales on their internal consistency. For this purpose, Cronbach's alpha was used, measuring the reliability based on the number of items in the questionnaire, the average covariance of the items, and the spread of the sum score. Although opinions differ on what is an acceptable level of reliability, many academics adhere to the Nunnally and Bernstein (1994) rule stating that a Cronbach's alpha value lower than 0.5 is unacceptable. Table 27 below shows the values for each of the twelve AMM tactics and the Customer Performance variable.

Table 27

Cronbach's alpha values of the AMM tactics and Customer Performance

Variable	Cronbach's alpha
1. Iterative progression	.85
2. Incremental development	.79
3. Short delivery cycles	.67
4. Evolutionary requirements	.78
5. Continuous feedback	.67
6. Self-managing teams	.82
7. Minimal documentation	.58
8. High bandwidth communication	.88
9. Retrospection	.85
10. Client driven iterations	.78
11. Distribution of expertise	.73
12. Adherence to standards	.48
Customer Performance	.90

As can be seen in Table 4.1 (and in Appendix 4.3 for more details) the items within the 'Customer performance' variable showed the highest Cronbach's alpha score: a value of 0.90, which is an excellent level. The Cronbach's alpha scores of the tactics were acceptable to good, except for tactic 12 'Adherence to standards'. This tactic showed a Cronbach's alpha value of 0.48. It was checked whether removing indicators within tactic 12 would improve this score. However, as can be seen in Table 28, this was not the case and therefore tactic 12 was removed from the model.

Table 28

Impact on Cronbach's alpha of removing indicators from Tactic 12 – Adherence to standards

Indicator	Scale Mean if Item Deleted	Scale Vari-ance if Item Deleted	Correc-ted item: total cor-relation	Cron-bach's alpha if item deleted
Indicator: 12.1.1 – During each iteration a well-defined approach is used to estimate the amount of work to be done	6.25	3.25	.30	.38
Indicator: 12.1.2 - The extent to which the estimates for the amount of work to be done during each iteration are accurate	6.69	3.37	.30	.39
Indicator: 12.2.1 - It is expected that a mechanism is defined for decomposing the selected improvements in products. services or channels to be developed during the release	6.66	3.12	.30	.38

After eliminating tactic 12, all individual indicators within the tactics were checked in more detail. The resulting correlation matrix is shown in Appendix 4.4. Overall, the data showed a low variance, as the average scores and standard deviations on all scale items were quite the same. Furthermore, there seemed to be a slight to high correlation (Pearson's r) between all items and relatively high Cronbach's alphas. Moreover, using the exogenous factors as partitioning criteria as to test whether this would alter correlation and Cronbach's alpha values, the sub-segments of the data answered in quite the same way. The combination of these signs could indicate that the survey questions did not properly measure different things. For this reason, the decision was made to thoroughly explore discriminant relationships between the dependent and independent variables. How this was approached, is described in the section below.

4.2.3 Phase 3: Examining relationships and differences using statistical analysis

The data having been explored and described, the next step was to examine relationships and differences in more detail by using statistical analysis.

4.2.3.1 Misfit of data and AMM model

Initially, a Structural Equation Modelling (SEM) analysis was performed, as to examine whether the large and complex AMM model, consisting of 74 items, fits our data and should be accepted or rejected based on this fit (Byrne, 2010; Hair, Black, Babin, & Anderson, 2010; Hox, 2011). As is shown in Figure 13 below, The SEM model comprised all 74 items and their scales within the independent variables, as well as the 9 items and their scales within the dependent variable.

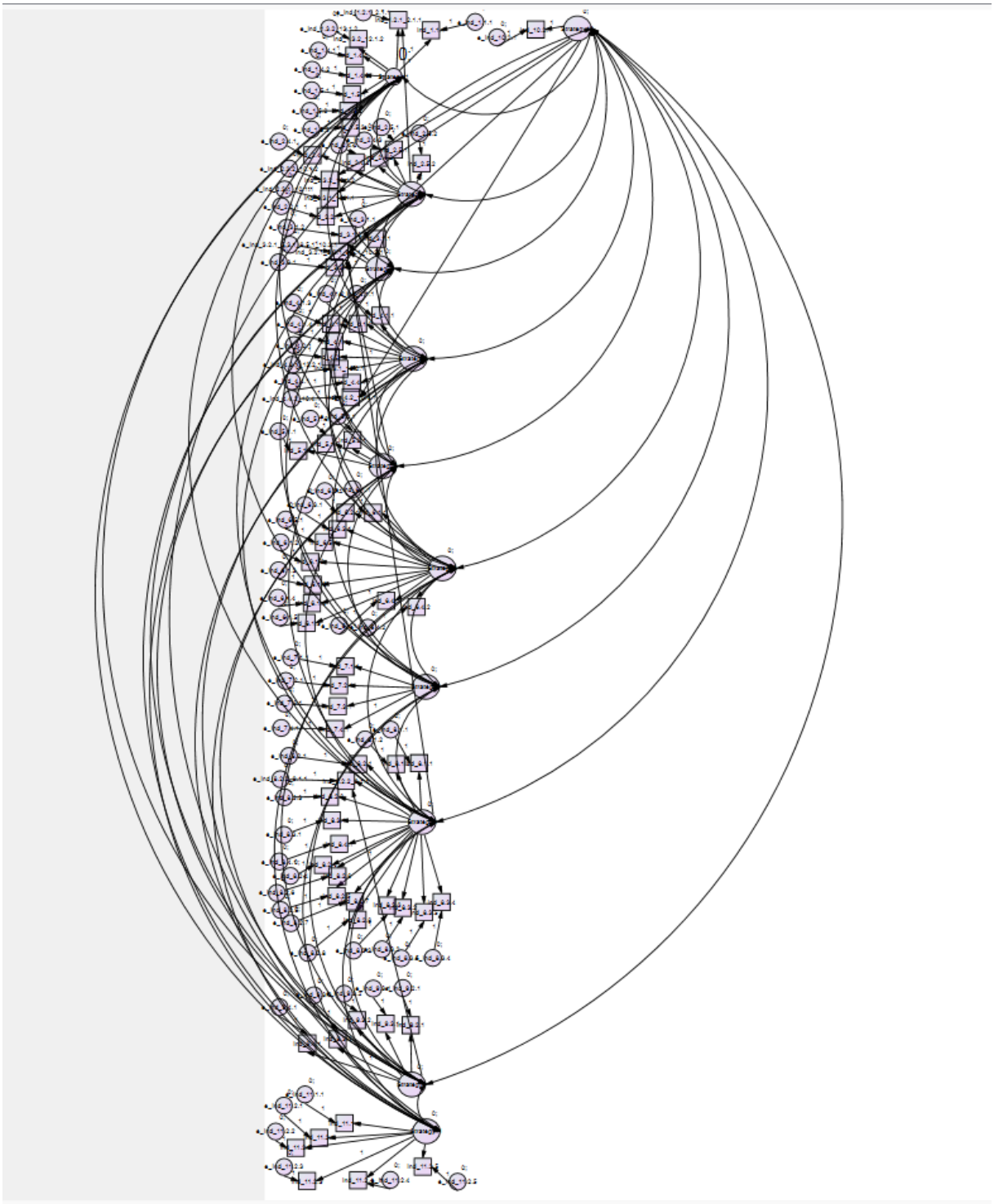

Figure 13: our SEM model as shown in SPSS Amos

Overall, this SEM analysis showed a misfit between the survey data and the framework of relationships between tactics and indicators, as proposed by the AMM model. The SEM results also showed a high correlation between most of the AMM tactics. Therefore, our conclusion was that the framework of tactics and indicators was not fit for follow-up testing with respect to their relationships with customer performance. As a consequence, our hypotheses could not be tested in a statistically sound way, as the basic prerequisites for a multiple regression analysis did not apply: the existence of AMM tactics could not be proven and therefore these tactics could not be tested. As demonstrated by the SEM

analysis, the relationships between the tactics and indicators were unstable, while the independent variables showed strong multicollinearity (Hox, 2011; Kline, 2011; Sekaran, 2003).

Therefore, based on the characteristics of our data set as described in section 4.2.2, and the guidelines provided by De Leeuw et al. (2008) and Lee et al. (2012), the most appropriate alternative was to deploy an explorative approach. A three-tier approach was selected in which the indicators were first grouped by means of a factor analysis. Next, the relationships of these factors with the independent 'Customer performance' variable were tested in a regression model.

This resulted in a new grouping of the relevant indicators. As a final step, this has been validated using a clean set of 200 unused respondents. The validation confirmed the statistical soundness of the new model.

The three-step analysis as summarized above, is described in more detail below.

4.2.3.2 Step 1: Factor analysis

According to the reviews of Hair et al. (2010), Arrindell and Van der Ende (1985), MacCallum, Widaman, Zhang and Hong (1999) and Velicer and Fava (1998), the minimum sample size for a factor analysis is 300. Furthermore, based on the reviews of Knofczynski and Mundfrom (2008) a sample size of 200 enables a good prediction level in a multiple linear regression analysis. Based on these starting points it was decided to split our sample of 606 into a test part of 406 respondents, aimed at the factor analysis and subsequent regression analysis, and a validation part of 200 respondents. For this purpose, an SPSS filter variable was established, enabling randomized allocation of the respondents to either the test group or the validation group.

As the AMM model comprised a large number of variables, the aim of the factor analysis was to explore whether these variables could be combined into a smaller number of variables which capture the essence of the larger set. In clustering similar variables into dimensions, this could identify latent variables. For this purpose, the best suitable extraction approach was the principal components analysis (PCA). PCA searches for groups or components with internal consistency, thus excluding multicollinearity, and facilitates reduction of the large number of items in our survey.

Varimax was selected as rotation method. PCA and varimax is the most commonly used combination, as it creates components as simple linear combinations of the observed variables, thus enabling causal modelling (Lee et al., 2012). In this analysis small coefficients (absolute output below 0.4) were suppressed, based on a rotation of 30 iterations, following the guidelines of Mori, Kuroda and Makino (2016).

Firstly, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was evaluated. The KMO measure indicates whether the original variables can be combined efficiently by measuring the relation between two variables if the effect of the remaining variables are eliminated. The KMO value was 0.89, which indicated a good adequacy to use the data in a factor analysis. The Bartlett's Test of Sphericity showed a significance of 0.00, indicating that PCA was relevant.

Next, the anti-image matrices were assessed. The anti-image covariance matrix showed that 76% of all non-diagonal cells had a value lower than 0.09, which was positive. The anti-image correlation values as well as the communality values were all above 0.5, which was also positive. Based on these covariance, correlation and communality scores,

the overall conclusion was that the data were suitable for a factor analysis and all indicators could be used (Mori et al., 2016).

Then, the total explained variance was reviewed, see Table 29 and Figure 14 below for the results.

Table 29

Results of the PCA

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	21,225	28,682	28,682	21,225	28,682	28,682	9,192	12,421	12,421
2	3,508	4,741	33,423	3,508	4,741	33,423	4,164	5,627	18,048
3	3,185	4,304	37,726	3,185	4,304	37,726	3,330	4,499	22,547
4	3,002	4,057	41,783	3,002	4,057	41,783	3,232	4,368	26,915
5	2,388	3,227	45,009	2,388	3,227	45,009	3,213	4,342	31,257
6	2,085	2,818	47,827	2,085	2,818	47,827	3,060	4,135	35,392
7	1,966	2,657	50,484	1,966	2,657	50,484	3,012	4,071	39,463
8	1,887	2,550	53,034	1,887	2,550	53,034	2,988	4,038	43,501
9	1,804	2,438	55,472	1,804	2,438	55,472	2,887	3,902	47,403
10	1,531	2,068	57,540	1,531	2,068	57,540	2,878	3,889	51,292
11	1,433	1,937	59,477	1,433	1,937	59,477	2,470	3,338	54,630
12	1,369	1,850	61,328	1,369	1,850	61,328	2,421	3,272	57,902
13	1,269	1,716	63,043	1,269	1,716	63,043	1,952	2,638	60,540
14	1,187	1,604	64,648	1,187	1,604	64,648	1,776	2,400	62,940
15	1,160	1,568	66,216	1,160	1,568	66,216	1,669	2,255	65,196
16	1,107	1,497	67,713	1,107	1,497	67,713	1,482	2,002	67,198
17	1,066	1,441	69,153	1,066	1,441	69,153	1,447	1,956	69,153
18	,990	1,338	70,492						
19	,964	1,303	71,795						
20	,958	1,294	73,089						
21	,875	1,182	74,271						
22	,862	1,165	75,436						
23	,821	1,110	76,545						
24	,797	1,077	77,622						
25	,756	1,021	78,643						
26	,740	1,000	79,643						
27	,702	,949	80,593						
28	,678	,917	81,509						
29	,618	,835	82,344						
30	,603	,814	83,159						
31	,578	,781	83,940						
32	,559	,755	84,695						
33	,539	,729	85,424						
34	,524	,708	86,132						
35	,520	,703	86,836						
36	,489	,661	87,497						
37	,481	,650	88,147						
38	,460	,622	88,770						

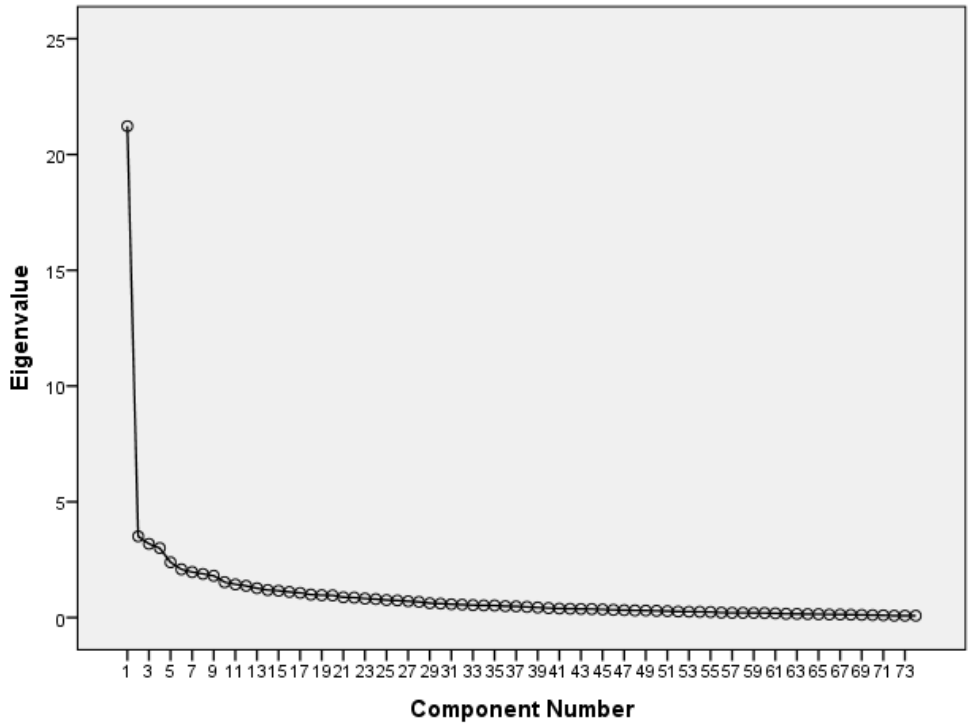

Figure 14: Scree plot of the PCA

Only components with eigenvalues above 1 were included (Mori et al., 2016) and this resulted in a factor solution comprising 17 factors (see Table 5.3). This was a large number, which meant in practice that it was difficult to give correct distinct interpretations to each of the factors. However, the process of choosing the correct number of factors is quite subjective, as it is a balance between explaining a maximum amount of the variance and minimizing the number of factors. A common approach for establishing a strong model is to aim for at least two thirds of the variance explained (Mori et al., 2016). This resulted in a model of 16 factors, explaining 67.2% of the variance.

As a follow-up step, interpretation and labelling was needed of the factors and their underlying indicators. For this purpose, an explorative iteration of the regression analysis was performed, as described below.

4.2.3.3 Step 2: Regression analysis

As to perform the regression analysis, the component scores were created in SPSS, calculating the dependent variable 'Customer performance' as an average of its nine indicators. This was a logical approach as their interrelationship is strong (Mori et al., 2016), which is shown in Table 30 below.

Table 30

Interrelationship of the nine items within the dependent Customer Performance variable

Correlations

Performance indicators		13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9
13.1: increased customer value perception of products and services	Pearson Correlation	1	,668**	,598**	,382**	,406**	,310**	,490**	,372**	,453**
	Sig. (2-tailed)		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	594	591	552	517	497	505	554	575	588
13.2: increased customer satisfaction about deliverance of products and services	Pearson Correlation	,668**	1	,583**	,544**	,423**	,434**	,418**	,531**	,438**
	Sig. (2-tailed)	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	594	549	520	494	508	551	578	585
13.3: increased customer satisfaction about customer service	Pearson Correlation	,598**	,583**	1	,465**	,528**	,334**	,558**	,419**	,544**
	Sig. (2-tailed)	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000
	N	552	549	552	488	473	479	518	537	549
13.4: increased preference in purchase intention	Pearson Correlation	,382**	,544**	,465**	1	,527**	,588**	,441**	,486**	,384**
	Sig. (2-tailed)	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000
	N	517	520	488	520	469	488	493	512	513
13.5: increased number of repeat purchases of customers	Pearson Correlation	,406**	,423**	,528**	,527**	1	,510**	,634**	,411**	,469**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000
	N	497	494	473	469	497	467	493	486	493
13.6: increased margin on revenues from products and services	Pearson Correlation	,310**	,434**	,334**	,588**	,510**	1	,509**	,439**	,341**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000
	N	505	508	479	488	467	508	495	505	501
13.7: increased customer value	Pearson Correlation	,490**	,418**	,558**	,441**	,634**	,509**	1	,430**	,481**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000
	N	554	551	518	493	493	495	554	541	550
13.8: increased number of achieved improvements in products, services, channels and processes	Pearson Correlation	,372**	,531**	,419**	,486**	,411**	,439**	,430**	1	,445**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000
	N	575	578	537	512	486	505	541	578	571
13.9: increased speed of achieving improvements in products, services, cahnnels and processes	Pearson Correlation	,453**	,438**	,544**	,384**	,469**	,341**	,481**	,445**	1
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	
	N	588	585	549	513	493	501	550	571	588

** *Correlation is significant at the 0.01 level (2-tailed).*

Next, the regression analysis was performed. As can be seen in Table 31 below, the significance was 0.00. This means there was at least 95% reliability to conclude the relations were significant, which is above the academic norm (Mori et al., 2016).

Table 31

ANOVA - Dependent variable: average score on the nine Customer Performance items, first iteration

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	73.023	16	4.564	18.962	0.000
Residual	71.725	298	0.241		
Total	144.748	314			

4.2.3.3.1 Exclusion of factors G, I, J, M and P

The 'Model summary' table in Appendix 4.5 shows the R^2 value was 0.50, which was an acceptable level. However, it also indicated that, although the components of the model were sufficiently explaining the variance of the dependent 'Customer performance' variable, there was still some error or there were other factors explaining its variance (Nunnally et al., 1994). The 'Coefficients' table in Appendix 4.5 shows that all components had a significant relationship with the dependent 'Customer performance' variable, excluding five factors showing significance values well above the norm of 0.05. This concerned:

- Factor G (significance level 0.11);
- Factor I (0.59);
- Factor J (0.93);
- Factor M (0.16);
- Factor P (0.83).

To double check whether factors G, I, J, M and P indeed had no significant relationship with the dependent 'Customer performance' variable, the regression analysis has been rerun with the four exogenous variables included in it. For this purpose, numerical dummy variables were created for the answers concerning the 'Market focus' variable (the answers being businesses and organisations, consumers, or both). The results showed that all four exogenous variables seemed to have no significant relationships, as they had a negligible impact on the R^2 value. Furthermore, it was reconfirmed that factors G, I, J, M and P had no significant relationships with the dependent variable.

For this reason, both the exogenous variables and factors G, I, J, M and P have been eliminated from the model. Subsequently, the regression analysis was rerun without these non-significant factors. The R^2 of 0.50 still remained at an acceptable level, and Table 32 below shows that significance remained at 0.00.

Table 32

ANOVA - Dependent variable: average score on the nine Customer Performance items, with exclusion of the non-significant factors

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	71.644	11	6.513	26.995	0.000
Residual	73.104	303	0.241		
Total	144.748	314			

As can be seen in Table 33 below, the significance levels of the eleven factors all stayed below the norm of 0.05 (Mori et al., 2016).

Table 33

Coefficients: average score on the nine Customer Performance items, with exclusion of the non-significant factors

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	8.449	.028		298.013	.000
REGR factor score A for analysis 1	.175	.029	.246	5.923	.000
REGR factor score B for analysis 1	.154	.031	.207	4.925	.000
REGR factor score C for analysis 1	.182	.027	.277	6.729	.000
REGR factor score D for analysis 1	.125	.028	.184	4.451	.000
REGR factor score E for analysis 1	.078	.031	.103	2.467	.014
REGR factor score 6 for analysis 1	.092	.029	.133	3.147	.002
REGR factor score H for analysis 1	.190	.028	.284	6.805	.000
REGR factor score K for analysis 1	.078	.028	.113	2.744	.006
REGR factor score L for analysis 1	.175	.030	.240	5.823	.000
REGR factor score N for analysis 1	.127	.029	.179	4.344	.000
REGR factor score O for analysis 1	.077	.028	.112	2.701	.007

4.2.3.3.2 Exclusion of factors B, C, E, H, K, L, O and three exogenous variables

Next, an interpretation of the factors and the factor loadings of each underlying indicator was done. As to make sure this interpretation was solid, the cut-off value for the individual indicators was set at 0.5, according to the instructions of Nunnally et al. (1994), Grice (2001), and Distefano, Zhu and Mindrila (2009). As can be seen in Appendix 4.6 the eleven factors now comprised 43 indicators. This structure was interpreted following the guidelines of Mori et al. (2016) and Cabrera-Nguyen (2010), retaining all 43 factors and assessing the logic and meaning of the grouping of the indicators per factor. Appendix 4.7 shows all details of the resulting designation of the groupings, of which Table 34 below presents a brief overview. The middle column of Table 4.8 shows our labelling of each factor, which aims to describe the common meaning of the indicators that constituting each factor.

Table 34

Interpretation of the factors and factor loadings

Factor number	Factor name: summary of the common meaning of the underlying indicators	Factor size: number of indicators grouped within the factor
A	Working in sprints: prioritizing, planning and monitoring	16
B	Evaluation of the approach	4
C	Face-to-face communication	4
D	Estimation of the required time	1
E	Making and complying with agreements	5
F	Deployment of expertise	3
H	Refining and reprioritizing improvements	2
K	Global design of improvements upfront	2
L	Autonomous management of activities	3
N	Multidisciplinary cooperation	2
O	Deployment of documentation tools	1

As can be seen in Appendix 5.11, the nine factors containing multiple indicators each showed a logical coherence of their underlying indicators. This offered a solid basis for proceeding to the next step in this regression analysis, which was to test the new model comprising the eleven factors as shown in Appendix 4.7 (Mori et al., 2016). The results showed an acceptable R^2 value of 0.47, while significance was 0.00 (see Table 35 below).

Table 35

ANOVA - Dependent variable: average score on the nine Customer Performance items, with the interpreted eleven factors (cut-off values for underlying indicators set at 0.5)

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	53.905	11	4.900	17.779	0.000
Residual	62.019	225	0.276		
Total	115.924	236			

As can be seen in Table 36 below, four of the eleven factors had a significant relationship with the dependent 'Customer performance' variable:

- Factor A (significance level 0.02);
- Factor D (0.04);
- Factor F (0.00);
- Factor N (0.00).

The other seven factors showed significance values well above the norm of 0.05:

- Factor B (significance level 0.06);
- Factor C (0.98);
- Factor E (0.10);
- Factor H (0.79);
- Factor K (0.20);
- Factor L (0.28);
- Factor O (0.20).

Table 36

Coefficients: average score on the nine Customer Performance items, with the interpreted eleven factors (cut-off values for the underlying indicators set at 0.5)

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.200	.199		31.150	.000
Factor A: Working in sprints: prioritizing, planning and monitoring	.010	.004	.192	2.321	.021
Factor B: Evaluation of the approach	.026	.014	.136	1.876	.062
Factor C: Face-to-face communication	.000	.015	.001	.020	.984
Factor D: Estimation of the required time	-0.087	.041	-0.127	-2.111	.036
Factor E: Make and comply with agreements	.023	.014	.114	1.650	.100
Factor F: Deployment of expertise	.064	.019	.229	3.310	.001
Factor H: Refine and reprioritize improvements	.007	.025	.017	.261	.794
Factor K: Global design of improvements upfront	.031	.024	.076	1.288	.199
Factor L: Autonomous management of activities	-0.021	.019	-0.072	-1.090	.277
Factor N: Multidisciplinary cooperation	.076	.022	.218	3.466	.001
Factor O: Deployment of documentation tools	.047	.037	.076	1.289	.199

Subsequently, it was tested whether the four exogenous variables would add predictive value to the model. The regression analysis was therefore rerun with the four exogenous variables included in it. The R^2 score increased slightly to 0.48 and three exogenous factors turned out to be non-significant, showing values well above 0.05. Only the 'Size' variable, indicating the number of employees within an organisation, was significant, showing a value of 0.04. Based on these results, factors B, C, E, H, K, L and O, as well as the three exogenous factors have been eliminated from the model.

4.2.3.3.3 Exclusion of factor D

Next, the regression analysis was run excluding the exogenous variables and excluding the seven non-significant factors. The model therefore consisted of only factors A, D, F and N. The R^2 value was at the acceptable level of 0.43. Table 37 below shows that significance was 0.00.

Table 37

ANOVA - Dependent variable: average score on the nine Customer Performance items, excluding the three non-significant exogenous variables and the non-significant factors

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	52.132	4	13.033	45.650	.000
Residual	70.518	247	.285		
Total	122.650	251			

As can be seen in Table 38 below, factors A, F and N were all significant with a value of 0.00. However, factor D showed a significance score of 0.25, well above the norm of 0.05.

Table 38

Coefficients: average score on the nine Customer Performance items, excluding the three non-significant exogenous variables and the non-significant factors

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.320	.170		37.160	.000
Factor A: Working in sprints: prioritizing, planning and monitoring	.016	.003	.314	5.162	.000
Factor D: Estimation of the required time	-0.045	.038	-0.065	-1.163	.246
Factor F: Deployment of expertise	.081	.017	.294	4.670	.000
Factor N: Multidisciplinary cooperation	.080	.019	.233	4.136	.000

It was then tested whether the addition of the exogenous variable 'Size', indicating the number of employees within an organisation, would influence the significance score of factor D. This increased the R^2 score slightly to 0.44 and the exogenous variable proved significant, showing a value of 0.03. However, the significance score of factor D was 0.32, well above the norm of 0.05. The definite conclusion was therefore that factor D should be removed from the model.

4.2.3.3.4 Confirmation of the final version of the model

As a last iteration, the regression analysis of the model was rerun excluding all non-significant factors and exogenous variables. The R^2 score showed an acceptable value of 0.43, and Table 39 below shows that significance was 0.00.

Table 39

ANOVA - Dependent variable: average score on the nine Customer Performance items for the final model, consisting of the confounding variable indicating the number of employees within an organisation, and factors A, F and N

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	52.132	4	13.033	45.650	.000
Residual	70.518	247	.285		
Total	122.650	251			

As can be seen in Table 40 below, the significance scores of factors A, F and N were all at 0.00, while the exogenous variable showed a score of 0.03.

Table 40

Coefficients: average score on the nine Customer Performance items for the final model, consisting of the exogenous variable indicating the number of employees within an organisation, and factors A, F and N

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.246	.165		37.836	.000
Factor A: Working in sprints: prioritizing, planning and monitoring	.015	.003	.290	4.978	.000
Factor F: Deployment of expertise	.078	.017	.282	4.651	.000
Factor N: Multidisciplinary cooperation	.081	.019	.237	4.224	.000
Indicator – exogenous variable 'Size': Number of employees within the organisation	4.133E-6	.000	.108	2.240	.026

Having completed all iterations of the regression analysis, the model resulting from the factor analysis, consisting of a large number of factors and exogenous variables, is thus reduced to a cleaned and final version. Having eliminated all non-significant factors, the resulting model consisted of three factors and one exogenous variable, while the R^2 score had decreased just slightly. This model therefore offered a solid basis for proceeding to the final phase, in which the model was to be validated.

4.2.3.4 Step 3: Validation

In this last phase, the MP model was checked for its error rate. In this validation test, the clean set of 200 respondents, as described in section 4.2.3.1, was used. For this purpose, a regression analysis was performed, identical to the analysis used in step 2 above. The model proved to be well significant, showing an R^2 value of 0.47, while significance was 0.00 (see Table 41 below).

Table 41

ANOVA - Dependent variable: average score on the nine Customer Performance items for the final model

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.521	4	6.380	25.582	.000
Residual	29.180	117	.249		
Total	54.701	121			

However, as can be seen in Table 42 below, the exogenous variable 'Size', indicating the number of employees within an organisation, proved non-significant, showing a significance value of 0.56.

Table 42

Coefficients: average score on the nine Customer Performance items for the final model

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.307	.239		26.339	.000
Factor A: Working in sprints: prioritizing, planning and monitoring	.011	.004	.206	2.546	.012
Factor F: Deployment of expertise	.055	.024	.202	2.335	.021
Factor N: Multidisciplinary cooperation	.148	.025	.454	5.958	.000
Indicator - Exogenous 'Size': Number of employees within the organisation	-1.459E-6	.000	-0.040	-0.582	.562

4.3 Results

Our conclusion of the three-tier approach of factor analysis, regression analysis and validation was that the final validation test showed evidence for the significant relationships of factor A, F, and N with the dependent 'Customer performance' variable. These factors and their relationships constitute the structure of our final model. As briefly indicated earlier, each of the three factors consists of multiple independent variables, items that are called indicators. Factor A 'Working in sprints: prioritizing, planning and monitoring' comprises sixteen indicators, factor F 'Deployment of expertise' comprises three indicators, and factor N 'Multidisciplinary cooperation' comprises two indicators. Table 43 presents the specification of each indicator and their significance value (factor loadings).

Table 43

Specification of the independent variables per factor of the MP model

Factors	Indicators			
	Num-ber	Description	Type	Signifi-cance value
Factor A - Working in sprints: prioritizing, planning and monitoring	1.4.2	The length of an iteration is 4 weeks or less	Effect-iveness	.713
	1.5.1	The extent to which an iteration backlog is maintained	Effect-iveness	.621
	1.5.2	The extent to which user stories are fully estimated when added to the iteration backlog	Effect-iveness	.520
	1.5.3	The extent to which user stories are prioritized when added to the iteration backlog	Effect-iveness	.747
	2.4.1	The extent to which a product backlog is maintained	Effect-iveness	.780
	2.4.2	The extent to which user stories are fully estimated when added to the product backlog	Effect-iveness	.701
	2.4.3	The extent to which user stories are prioritized when added to the product backlog	Effect-iveness	.624
	3.1.1	It is expected to develop improvements in channels in iterations of 4 weeks or less	Capa-bility	.584
	3.1.2	The extent to which improvements in channels is released every 4 weeks or less	Effect-iveness	.578
	8.2.1	It is expected that teams allocate time for iteration planning	Capa-bility	.608
	8.2.3	It is expected that teams allocate time for daily progress tracking meetings	Capa-bility	.593
	8.2.4	The extent to which the time allocated to iteration planning meetings is utilized effectively	Effect-iveness	.539
	8.2.5	The extent to which the time allocated to retrospection meetings is utilized effectively	Effect-iveness	.604
	8.2.6	The extent to which the time allocated to daily progress tracking meetings is utilized effectively	Effect-iveness	.591
	8.2.7	The extent to which the scheduled meetings take place as scheduled	Effect-iveness	.564
	8.2.8	The extent to which the scheduled meetings begin and end on time	Effect-iveness	.581
Factor F - Deployment of expertise	11.2.1	The extent to which team members have the requisite expertise to complete the tasks assigned to them	Effect-iveness	.688
	11.2.2	The extent to which the tasks assigned to the team members match their expertise	Capa-bility	.621
	11.2.4	The extent to which team members are capable of supporting each other in performing their tasks	Effect-iveness	.566
Factor N – Multidisci-plinary cooperation	8.1.1	Teams comprise stakeholders from all organisational units relevant for the improvements in channels	Capa-bility	.586
	8.1.2	In the absence of an on-site stakeholder, the stakeholder provides direct input via other means	Capa-bility	.569

As can be seen in Table 43, the three factors have a different clustering of indicators than the clustering in tactics as originally proposed by the AMM model. As Figure 15 below shows, the clustering of the three factors traverses the clustering of the tactics. Factor A is a mix of indicators linked to tactics 1, 2, 3 and 8. Factor F has a unilateral link with the relevant indicators of tactic 11. Factor N has a unilateral link with three relevant indicators of tactic 8, but the seven other relevant indicators of tactic 8 are linked to factor A. As the data analysis of the survey is statistically sound, our conclusion is to prefer the new three-factor-clustering of the MP model over the clustering in tactics as deployed within the original AMM model.

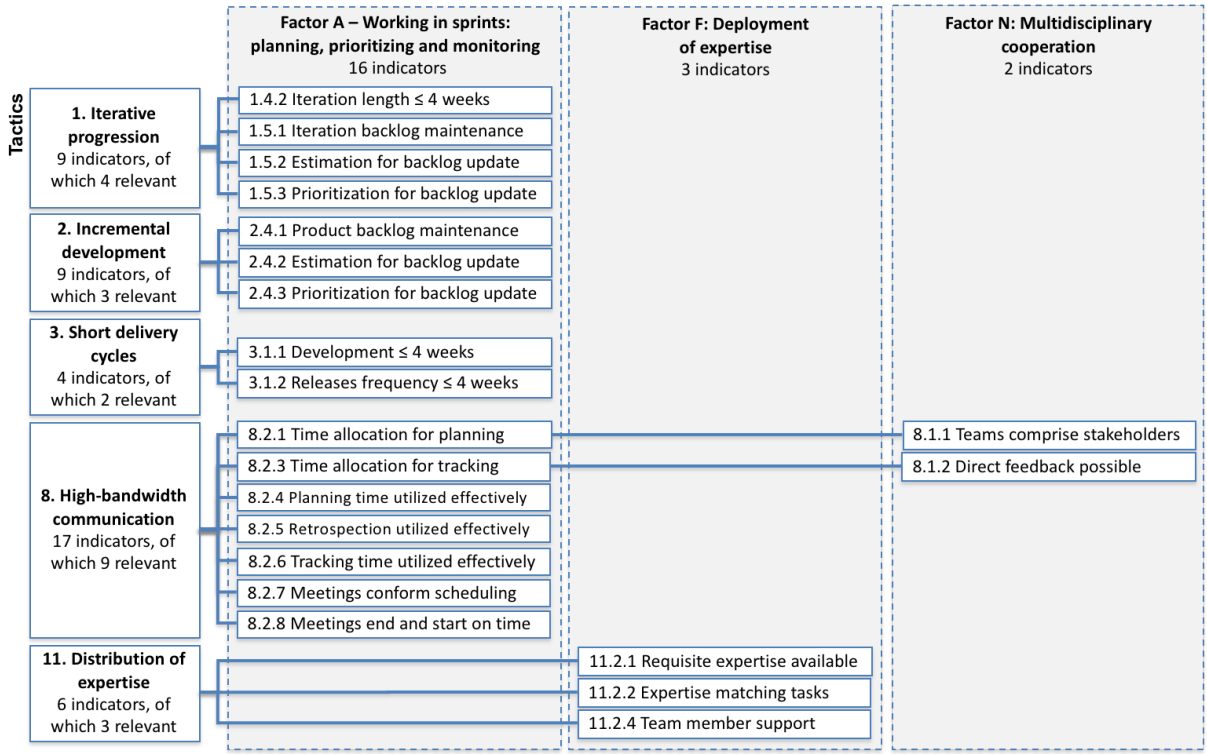

Figure 15: The clustering of the 21 agility indicators in the three validated factors

4.4 Conclusions and discussion

The survey had a good active response rate, resulting in 606 net responses, after elimination of incorrect and incomplete responses. Except for the exogenous variable 'Size', the data showed insignificant skewness. The Cronbach's alpha score was also at a good level, except for AMM tactic 12, which was therefore eliminated from the model. Next, a three-tier approach of factor analysis, regression analysis and validation was deployed to analyse the relationships within the data, and to develop our final model based on the results. The following section discusses these results.

4.4.1 Criticism of the original framework and proposed adaptations

The analysis and validation showed that a large part of the 74 indicators have no significant relationship with the dependent variable 'Customer performance'. Although the original OPS framework, from which the AMM model originates, was aimed at

measuring the level of agility within an organisation in relation to its performance (Soundararajan, 2013), a substantial portion of its variables seem irrelevant for predicting that performance. Based on our statistical analysis, 53 of the indicators have been eliminated. Overseeing these indicators our explanation is that, in the original OPS framework, all indicators been selected based on theory instead of empirical evidence. Apparently, there seems to be a discrepancy between theory and practice. More specifically, looking at the contents of the indicators, our conclusion is that the 53 eliminated indicators differ somewhat from the 21 identified indicators. For instance, the eliminated indicators of tactics 4, 5, 7, 10 and 12 concern specific techniques and tools as used by software development teams: evolutionary requirements, continuous feedback, minimal documentation, feature identification and adherence to standards. It seems that IT practice and marketing practice differ in this regard. The indicators of tactic 9 concern retrospection, which focuses on continuous improvement of the team processes on a meta level. Perhaps its effect on customer performance is too indirect to identify in our research approach. Finally, the indicators of tactic 6 concern the self-managing nature of teams, comprising aspects such as autonomy, empowerment and ownership. Our feeling is that this is very relevant, but perhaps the effect on customer performance is too indirect to identify in our research approach as well.

Moreover, the OPS framework made a distinction between 'Capability' indicators, measuring the facilitation of agility, and 'Effectiveness' indicators, measuring the resulting agility in practice. However, the present research found no proof of the relevance of this distinction. The original AMM model contained 74 indicators of which 28 were categorized as 'Capability' and 46 as 'Effectiveness', whereas the resulting model, as elucidated in Table 4.17, contains six and fifteen respectively. This means the share of the 'Effectiveness' indicators has increased from 62.2% to 71.4%, without this being explicable. In addition, there seems to be no logic in the consistency between the 'Capability' indicators and the 'Effectiveness' indicators. Based on this, it is proposed to eliminate this distinction.

Furthermore, the factor analysis showed that the grouping of the indicators within the tactics of the OPS framework strongly differs from the clustering of these indicators in latent factors, as based on the available data. However, there is no prove of whether this discrepancy is caused by flaws in the original OPS framework or by translating the OPS framework to marketing practice. Based on this insight, it is proposed to abandon the clustering of the OPS and use the grouping of our resulting model instead, as specified in Table 44 below.

Table 44

Grouping of the 74 indicators

Factor	**Indicators**	**Unstandardised coefficients**		**Standardised coefficients**		
		B	**Std. error**	**Beta**	**t**	**Sign.**
1. Multi-disciplinary cooperation	Two items: • Teams comprise stakeholders • Direct feedback possible	0.148	0.025	0.454	5.958	0.000
2. Working in sprints: prioritizing, planning and monitoring	Sixteen items: • Iteration length is ≤ 4 weeks • Expected to develop in iterations ≤ 4 weeks • Extent to which release frequency is ≤ 4 weeks • Iteration backlog maintenance	0.011	0.004	0.206	2.546	0.012

	• Estimation for iteration backlog update • Prioritization for iteration backlog update • Product backlog maintenance • Estimation for product backlog update • Prioritization for product backlog update • Time allocation for planning • Time allocation for tracking • Planning time utilized effectively • Retrospection utilized effectively • Tracking time utilized effectively • Meetings conform scheduling • Meetings end and start on time					
3. Deploy-ment of expertise	Three items: • Requisite expertise available • Expertise matching tasks • Team member support	0.055	0.024	0.202	2.355	0.021
Irrelevant	The remaining 53 of the 74 items	-	-	-	-	-

4.4.2 Interpretation of the relationships of the variables in the final model

Of the 74 independent items, only three factors containing a total of 21 items proved to have a significant relationship with the dependent variable 'Customer performance' (see Table 44 above). The indicators within factor 1 and 3 are each uniquely connected to the independent variable 'Extent of deploying organisational infrastructure'. Together, these indicators describe the prerequisite of working in teams that comprise all relevant stakeholders, with a full coverage of the necessary expertise to fulfil the team purpose, and with team members capable of supporting the other team members.

Factor 2 contains sixteen indicators of which seven are uniquely connected to the independent variable 'Extent of deploying organisational infrastructure'. Together, these indicators describe how the organisational infrastructure facilitates team consultation processes in the form of a planning meeting, progress tracking meeting (also called a 'standup' or 'daystart'), and retrospective meeting. These enable teams to allocate and effectively use time for planning, tracking and evaluating their activities.

The remaining nine indicators of factor 2 represent the independent variable 'Extent of deploying tools and methods'. These indicators describe the tools and methods the teams need to deploy. Firstly, these teams perform better if they apply a rhythm of working in sprints, which are fixed periods of maximum four weeks to complete certain activities. Secondly, to perform well in completing these activities, teams should prioritize, plan and monitor the activities by a disciplined deployment of agile techniques and tools, which consist of two sub categories. The first category comprises two 'artefacts' called the product backlog and sprint backlog. These enable the teams to visually prioritize their ideas for improvement and plan and monitor the associated activities.

The second category consists of the team meetings. One of these is the planning meeting, in which the team estimates the amount of time the activities cost and, based on this, what activities the team can perform in the next sprint. Another meeting is the progress tracking meeting. This is a frequent meeting in which the team monitors the progress of the activities during the sprint and is able to adjust the prioritization and planning of the activities. Finally, the retrospective meeting enables the teams to evaluate their way of working during the completed sprint and formulate improvements for the next sprint.

All the elements above considered, it is our conclusion that the three factors and their 21 underlying variables form a logic and consistent whole.

4.4.3 Additional analysis of excluded factors

As described earlier, the original AMM model contained twelve tactics that comprised 74 indicators in total. In the final MP model this was reduced to three factors that comprise 21 indicators in total. First, based on the Cronbach's alpha score in the factor analysis, tactic 12 and its three indicators (which concern adherence to standards in terms estimation and feature decomposition) were removed due to irrelevance. Next, based on the first iteration of the regression analysis, eleven factors remained, containing 43 indicators. Finally, based on the regression analysis and validation of this new model, three factors remained, containing 21 indicators.

Although no guidelines are available for determining to what extent a reduction from 74 to 21 indicators implies a judgement of the quality of the original model, it is interesting to investigate in more detail what the relevance is of the factors that were eliminated.

Eight of the eleven factors have been excluded, based on their relationship with the dependent variable 'Customer performance' as an average of its nine indicators. Combining these nine indicators into an average score is a logical approach, as their interrelationship is strong. However, it also offers an opportunity for a drill-down to the level of each of the nine indicators individually. Therefore, an additional regression analysis has been performed on the eleven factors, but now in relation to each of the nine 'Customer performance' indicators individually. The results are shown in Table 45.

Table 45

Significance of the relationships between the eleven factors and the nine individual items within the independent 'Customer performance' variable

	A Working in sprints: prioritizing, planning and monitoring	B Evaluation of the approach	C Face-to-face communi-cation	D Estimation of the required time	E Making and complying with agreements	F Deployment of expertise	H Refining and reprioritizing improvements	J Global design of improve-ments upfront	L Autonomous management of activities	N Multi-disciplinary cooperation	O Deployment of documentation tools	Number of significant relationships
Value of the products and/or services as perceived by the customer	0,021	0,536	0,317	0,089	0,260	0,000	0,094	0,762	0,592	0,052	0,001	4
Customer satisfaction about the experience of products and/or services delivery	0,098	0,541	0,064	0,385	0,000	0,001	0,847	0,722	0,150	0,010	0,719	3
Customer satisfaction about the experience of customer service	0,155	0,078	0,695	0,272	0,900	0,000	0,836	0,263	0,169	0,021	0,023	3
Attitudinal customer loyalty: preference for the organization in customer's purchase intention	0,444	0,024	0,235	0,051	0,003	0,668	0,378	0,134	0,942	0,038	0,988	3
Behavioural customer loyalty: repurchase within a specified period	0,593	0,159	0,234	0,002	0,546	0,058	0,524	0,002	0,597	0,001	0,500	3
Gross margin generated from the product and/or service revenues	0,839	0,042	0,714	0,036	0,010	0,690	0,687	0,269	0,570	0,000	0,997	4
Customer value: net profit attributed to the entire future relationship with a customer	0,002	0,063	0,258	0,011	0,063	0,004	0,072	0,018	0,777	0,003	0,215	5
Number of realized improvements in products, services, channels or customer process	0,023	0,055	0,012	0,334	0,945	0,029	0,276	0,361	0,740	0,043	0,497	4
Speed of realizing improvements in products, services, channels or customer process	0,001	0,005	0,410	0,014	0,001	0,298	0,217	0,727	0,003	0,003	0,000	7
Number of significant relationships	4	3	1	4	4	5	0	2	1	9	3	

Table 44 shows that of all 99 possible relations, 36 relations proved significant. From the 'Customer performance' indicator perspective, the indicator 'Speed of realizing improvements' showed the largest number of significant relationships, namely with seven of the eleven factors. The 'Customer lifetime value' indicator showed five significant relationships, while the remaining seven indicators each showed three or four. This is shown in the rightmost column of Table 44.

The factor perspective is shown in the bottom row of Table 45. Of the three factors in the final model, factor N 'Multidisciplinary cooperation', showed a significant relationship with all nine individual 'Customer performance' indicators. Factor F 'Deployment of expertise', showed five significant relationships, and factor A 'Working in sprints' showed four. This reconfirmed their relevance.

Of the eliminated factors, factor H 'Refining and reprioritizing improvements' showed no relationships. However, factors B, C, D, E, J, L and O all showed one or more significant relationships with the nine individual 'Customer performance' indicators. Factor D 'Estimation of the required time' and factor E 'Making and complying with agreements' both showed four significant relationships. The other factors showed between one and three significant relationships. This means that these seven factors do seem to have partial relevance, mainly for the speed of realizing improvements, as shown in the penultimate row of Table 44.

Although this additional analysis generated useful nuanced insights into the relevance of the eliminated factors, our conclusion is that this offered insufficient support for reintroducing these factors in the validated MP model. Therefore, our final MP model remains unaltered, consisting of the three factors as shown in Figure 15 above.

4.4.4 Recommendations for future research

Based on our findings, a comment should be made about possible additional research. The four exogenous variables (market focus; number of employees; proportion of customers using multiple channels; number of channels deployed by the organisation), as identified in our literature research, have not shown to significantly influence the relationship between the three factors and the dependent variable in our final model. However, referring to Hume's induction problem (Hume, 1993), this is not a guarantee that no other exogenous variables exist. For future research, it could be interesting to investigate the relevance of additional exogenous factors in more detail.

Chapter 5: case studies

Based on the 74 indicators, four case studies have been performed at organisations deploying multichannel strategies. Following the research approach as described in Chapter 3, this chapter presents the identification of the relevant elements of the relationship between the agile way of working and customer performance in daily practice. Based on the outcomes of this approach, the chapter describes why the indicators of tactics 6, 8 and 11 seem to be most important within that relationship. Finally, managerial implications and suggestions for future research have been formulated.

5.1 Results

As discussed in Chapter 4, a survey has preceded our case studies. In considering the qualitative research as a means to confirm and supplement the outcomes of the quantitative research, it would have been a logical option to limit our case study to the factors resulting from the prior data analysis. However, an alternative option was to deploy the 74 indicators in full, as it would enable us to double check our conclusions. This last option had our preference.

Based on this starting point, the case study results are presented below in a linear-analytic structure, which is the most commonly used format (Yin, 2013). The results are discussed in four sections. The first section focuses on the Essent case, and the second section focuses on the Energiedirect.nl case. The third section presents the results from the small case studies at Nuon and Eneco. Finally, the fourth section presents the cross-case analysis by discussing the integrated outcomes of all four cases.

5.1.1 Essent case

The results of the Essent case study are discussed in six parts. First, the background of the organisation is presented. Next, the outcomes per information source are described, being focused interviews, direct observations and physical artefacts, documentation, and measurements. Finally, the results of the integrated analysis of all information sources are elucidated.

5.1.1.1 Background

The case study of Essent focuses on the organisational unit responsible that markets Essent electricity and gas on the Dutch consumer market. With a total of 7,794,075 private households in 2017, this market has an estimated annual volume of 391.17 petajoule, generating € 12.76 billion in consumer spending on energy (CBS, ECN, PBL and RVO, 2017).

From the business model perspective, the value chain in the Dutch consumer energy market is composed of five different parts. The first part is formed by the producers that generate gas and electricity. The second part represents all organisations involved in trading energy between the different buyers and sellers. The grid operators that transport the gas and electricity through their networks, form the third part. The fourth

part consists of the measurement organisations that gauge the actual energy. Finally, the suppliers who distribute the gas and electricity to the consumers, constitute the fifth part of the value chain. As a supplier, the Essent organisation belongs to this last category. Figure 16 shows that, together with Eneco and Nuon, Essent is the largest of the three dominant suppliers, having an estimated combined market share of 78% (CBS et al., 2017).

Figure 16: The suppliers in the Dutch consumer energy market in 2017

The genesis of Essent is originally driven by the liberalization of the Dutch energy market in 2004. Until that moment, the energy market was serviced fully by public companies on the city, region or province level. In anticipation of the fundamental change in 2004, these state-owned organisations chose to join forces. In 1999 this resulted in the founding of Essent, which was a merger of PNEM/MEGA (an earlier merger of the energy suppliers Heerlen, Maastricht, Limagas, PLEM, PNEM and RNH) and EDON (an earlier merger of the energy suppliers IJsselmij and EGD). In 2005 Essent is split up in a network part, the grid operator named Enexis, and a distributor part, which continues under the name of Essent. In 2009 the owners of Essent (the provinces and municipalities of Limburg, Brabant, Overijssel, Drenthe and Groningen) decided to sell their interests to RWE in Germany. In 2016, RWE decided to transfer Essent to its subsidiary Innogy and then split off Innogy through an initial public offering. Currently, the Essent Formula Management department is part of Innogy Consumer NL (see Figure 17 below).

[As requested by Innogy, the contents of this figure are hidden]

Figure 17: Organisational chart of Innogy Consumer NL as per 1 September 2017

The Essent Formula Management department is responsible for all marketing and sales activities of Essent branded electricity, gas and associated services in the Dutch consumer market. During the case study period, this department consisted of four

teams, under the hierarchical responsibility of a so-called brand lead. The department has designed its organisational structure so that each of the four teams focuses on a specific phase of the customer journey. All teams are composed in a multidisciplinary way, which means that they have been designed to comprise all expertise required to fulfil the team's purpose. The department employs 35 persons in total (see Chapter 3).

The different specialists cooperate within their teams on a permanent basis. The teams are functionally managed by a Product Owner who is responsible for prioritization and planning. Besides working in these teams, all team members are part of a so-called chapter. This chapter is headed by a chapter lead, who is hierarchically responsible for the chapter members. The chapter lead focuses on activities concerning the professional development of chapter members, and is responsible for the appraisal and rewarding process. The department also includes an agile coach who, by various interventions such as training and coaching, supports the teams in improving their deployment of the agile way of working.

5.1.1.2 Outcomes of source 1: focused interviews

The frequencies of the indicators have been tallied by coding the transcripts of the ten focused interviews (see Appendix 5.1). The resulting frequencies are presented per 'tactic' of the AMM model in Appendix 5.2, while Table 46 below presents these frequencies in descending order.

Table 46

Tallied scores for the Essent case – in descending order

Indicator		Frequency	Percentage of total	Cumulative percentage
8.1.1	Teams comprise stakeholders from all organisational units relevant for the improvements in products, services, processes or channels	43	7%	7%
6.5.1	The extent to which management supports the self-managing nature of the teams	38	6%	12%
6.3.1	Performance expectations are agreed upon by the team and management	36	5%	18%
8.4.1	The physical environment facilitates face-to-face communication and collaboration	35	5%	23%
11.1.1	A scheme is defined for appropriate team composition based on requisite expertise	35	5%	28%
11.2.4	The extent to which team members are capable of supporting each other in performing their tasks	33	5%	33%
1.2.1	It is expected to estimate the time required to complete each story and feature	28	4%	38%
8.2.5	The extent to which the time allocated to retrospection meetings is utilized effectively	26	4%	42%
13.2	Shared agile principles and values are the basis for the work of management and teams	25	4%	45%
6.4.1	The extent to which team members determine, plan and manage their day-to-day activities under reduced or no supervision from management	24	4%	49%
11.2.1	The extent to which team members have the requisite expertise to complete the tasks assigned to them	24	4%	53%
1.4.2	The length of an iteration is 4 weeks or less	21	3%	56%
8.2.6	The extent to which the time allocated to daily progress tracking meetings is utilized effectively	21	3%	59%
11.2.5	The extent to which teams do not rely on knowledge external to their teams	20	3%	62%
3.1.2	The extent to which improvements in products, services, processes or channels is released every 4 weeks or less	19	3%	65%
5.1.1	The process defines a mechanism for the customers to provide feedback	18	3%	68%
7.1.1	Visual tools for maintaining documentation and tracking progress exist	16	2%	70%
6.1.5	The extent to which team members ensure they complete the work they are accountable for	16	2%	73%
2.4.3	The extent to which stories are prioritized when added to the product backlog	14	2%	75%
6.1.1	Team members are expected to be involved in determining, planning and managing their day-to-day activities	13	2%	77%
1.5.3	The extent to which stories are prioritized when added to the iteration backlog	13	2%	79%
13.3	The extent to which management and teams create an atmosphere that promotes taking initiative (e.g. experimenting with minimum viable products)	13	2%	81%
13.1	The extent to which the broader organizational environment is aligned with the agile way of working	12	2%	82%
1.5.1	The extent to which an iteration backlog is maintained	12	2%	84%
6.1.4	The extent to which team members hold each other accountable for the work to be completed	12	2%	86%
8.2.4	The extent to which the time allocated to iteration planning meetings is utilized effectively	11	2%	88%
2.4.1	The extent to which a product backlog is maintained	10	2%	89%
8.1.2	In the absence of an on-site stakeholder, the stakeholder provides direct input via other means	10	2%	91%
8.2.1	It is expected that teams allocate time for iteration planning	8	1%	92%
8.2.3	It is expected that teams allocate time for daily progress tracking meetings	8	1%	93%
8.3.2	The extent to which face-to-face communication prevails between the manager and team members	8	1%	94%
3.1.1	It is expected to develop improvements in products, services, processes or channels in iterations of 4 weeks or less	7	1%	95%
6.2.1	Team members are expected to demonstrate individual or collective ownership of the products, services or channels	6	1%	96%
8.2.8	The extent to which the scheduled meetings begin and end on time	5	1%	97%
11.2.3	The extent to which the team effectively completes the work they have committed to	5	1%	98%
8.2.2	It is expected that teams allocate time for retrospection (evaluation of the activities and results)	5	1%	99%
1.5.2	The extent to which stories are fully estimated when added to the iteration backlog	4	1%	99%
11.2.2	The extent to which the tasks assigned to the team members match their expertise	3	0%	100%
8.2.7	The extent to which the scheduled meetings take place as scheduled	2	0%	100%
2.4.2	The extent to which stories are fully estimated when added to the product backlog	0	0%	100%

Based on the data in Appendices 5.1 and 5.2 and Table 46, four analyses have been performed, being a quantitative analysis of the tactics, individual indicators and wording, and a qualitative verbatim analysis. The results of these analyses are presented below.

5.1.1.2.1 Quantitative analysis of tactics and indicators

The final coding template (see Chapter 3) consisted of six categories comprising 40 indicators. These categories are constituted by the original tactics of the AMM model and one additional category. This additional category is a result of the theory building as enabled by the template analysis method. The independent coders have autonomously created this new category based on their theoretical and practical knowledge, as they were unable to assign certain passages to the existing categories.

In total, the 40 indicators have been tallied 659 times in 10 interviews. As a first step in the analysis, it is relevant to see how the tally frequencies per category compare. See Table 47 for the details of this analysis at the category level.

Table 47

Tally frequency per category for the Essent case (n=10)

Category (AMMM Strategy or added based on theory building)	**Number of indicators**	**Tally frequency**	**Average frequency per indicator**	**Frequency as percentage of total**
1. Iterative progression	5	72	14	11%
2. Incremental development	3	26	9	4%
3. Short delivery cycles	2	26	13	4%
5. Continuous feedback	1	18	18	3%
6. Self-managing teams	7	145	21	22%
7. Minimal documentation	1	16	16	2%
8. High bandwidth communication	12	186	16	28%
11. Distribution of expertise	6	120	20	18%
13. Culture	*3*	*50*	*17*	*8%*
TOTAL	**40**	**659**	**16**	**100%**

As can be seen in Table 47, the number of indicators per category differ between one and twelve. As to be able to make a quantitative comparison of the importance of the categories as a whole, it was therefore needed to asses both the total tally frequency as the average tally frequency per indicator. Based on these criteria, three categories proved relatively notable. Category 8, 'High bandwidth communication', scored the highest total frequency and an average frequency per indicator that is just below average. Category 6, 'Self-managing teams', scored the second highest total frequency and the highest average frequency per indicator. Finally, category 11, 'Distribution of expertise', scored the third highest total frequency and the second highest average frequency per indicator. Together, these three categories represent 68% of the total tally frequency, while their joint 25 indicators constitute 34% of the total number of indicators the AMM model comprises, thus generating a disproportionate share.

In addition to the assessment of the categories as a whole, it was useful to analyse the results at the individual indicator level. Assessing the distribution of the frequencies, the results showed that the top-5 indicators make up 28% of the total. For the top-10 this share was 49%, and for the top-20 this is 77%. Table 46 presents the details per indicator.

As was presented in Table 47, the average frequency of all 40 indicators is 16, which means that sixteen of the top-20 of indicators as shown in Table 46 all score above average. Table 46 also showed that category 6, 8 and 11 are relatively important. The 25 indicators of these three categories constitute 63% of all indicators, but appear five times in the top-5 (representing a share of 100%), eight times in the top-10 (80%) and thirteen times in the top-20 (65%), as presented in Table 46.

Our qualitative interpretation of this quantitative analysis is that some respondents think synchronous face-to-face communication is important for customer performance. Working together in their own office space allows team members to interact directly and work visually, which increases the speed and quality of their work and its results. This effect seems to be amplified if teams are facilitated by a manager who applies servant leadership. The resulting freedom seems to allow teams to focus on what is most valued by customers. These respondents think that deploying short iterative cycles enables them to adapt to what customers value, without making large waterfall investments in time and money. In other words: this makes teams more flexible. Finally, some respondents indicate that the speed and quality of their work increases the more the team has expertise on board that is required for achieving the team's purpose. It seems useful for teams to strive for becoming a 'mini-enterprise' that can operate independently from the rest of the organisation.

The spontaneous feedback of the two agility experts who coded the transcripts and checked the coding (see Chapter 3), was that they could not make a clear distinction between some indicators. Therefore, their advice was to cluster the following indicators (see Appendix 3.1 for the specifications per indicator):

- 1.4.2, 3.1.1 and 3.1.2;
- 1.5.1 and 2.4.1;
- 1.5.3 and 2.4.3;
- 8.2.1 and 8.2.4;
- 8.2.3 and 8.2.6;
- 8.1.1 and 8.1.2.

This integration of indicators would alter the tally scores as presented in Table 46 and 47. The total number of indicators would decrease to 33, changing the total average frequency per indicator to 20.0. The average frequency per indicator would also increase for category 8. This would become 20.7, making it the highest average. The newly integrated indicator 8.1.1 would have a frequency of 53, enhancing its current position of number 1 indicator overall. The newly integrated indicator 1.4.2 would have a frequency of 47, making it the number 2 indicator overall. The newly integrated indicators 8.2.3 (frequency: 29) and 1.5.3 (27) would both get a top-10 position. Finally, the newly integrated indicators 1.5.1 (22) and 8.2.1 (19) would both get a top-15 position.

This reflection by the two independent experts nuanced the analysis in a valuable way. The large amount of specific indicators of the AMM model generated detailed insights. However, the drawback of this focus on details was that this could lead to loss of the larger overarching image, as it resulted in lower tally frequencies per indicator. The refinement by the two experts stressed the importance of the practices within the AMM model behind the multitude of indicators, namely concepts such as working in short iterations, prioritization through deployment of backlogs, planning and daily progress meetings, multidisciplinary cooperation in small teams, and the end-to-end coverage of expertise within a team.

5.1.1.2.2 Quantitative analysis of wording

In addition to the analyses above, ATLAS.ti has been used to perform a quantitative analysis of the transcripts on the wording level. A word count has been applied to all ten transcripts of the Essent case, which comprise a total of 13,722 words, of which 1,815 different words. Irrelevant words such as articles, prepositions, conjunctions, pronouns etcetera, have been ignored, which means the focus was on nouns and verbs. Duplication has been checked and corrected where applicable (e.g. kanban, board, kanban board), and combinations have been made for synonyms (e.g. standup, daystart), related

meanings (e.g. prioritizing, prioritization), and singular and plural (e.g. team, teams). The results are displayed in Table 48 below.

The goal of this analysis was to determine to what extent certain concepts could be identified that relate to the AMM tactics, thus indicating their relative importance.

Table 48

Top-50 word count of interview transcripts Essent case (listed in descending order of frequency; n=10)

	Word	Count	Percentage of total count (13,722)	Cumulative percentage of total count	Share of top-50	Cumulative share of top-50
1	team(s)	206	2%	2%	14%	14%
2	meeting(s)/dialogue(s)/consultation	106	1%	2%	7%	22%
3	management/manager(s)/coordinator(s)/team lead(s)/leader/leadersh	79	1%	3%	5%	27%
4	sprint(s)/iteration(s)	65	0%	3%	4%	32%
5	agile	60	0%	4%	4%	36%
6	improve(s)/improvement	42	0%	4%	3%	39%
7	goal(s)/purpose	40	0%	4%	3%	41%
8	po(s)/product owner	40	0%	5%	3%	44%
9	prioritization/priority(ies)/prioritizing	35	0%	5%	2%	47%
10	chapter(s)	35	0%	5%	2%	49%
11	daystart(s)/standup(s)/weekstart(s)	35	0%	5%	2%	51%
12	role(s)/function(s)	34	0%	6%	2%	54%
13	planning	33	0%	6%	2%	56%
14	perform(s/ed)/performing/performance	33	0%	6%	2%	58%
15	activity(ies)/task(s)	31	0%	6%	2%	60%
16	expertise/expert(s)/knowledge/skills	29	0%	7%	2%	62%
17	jira/trello/kanban board	29	0%	7%	2%	64%
18	customer(s)	28	0%	7%	2%	66%
19	space(s)/room(s)/office(s)	28	0%	7%	2%	68%
20	department(s)/tribe	25	0%	7%	2%	70%
21	result(s)	24	0%	8%	2%	72%
22	speed/(quick(ly)	22	0%	8%	2%	73%
23	end-to-end	22	0%	8%	2%	75%
24	specialist(s)/specialism(s)	22	0%	8%	2%	76%
25	indicator(s)/kpi(s)	22	0%	8%	2%	78%
26	backlog	21	0%	8%	1%	79%
27	cooperate(s)/cooperation	20	0%	8%	1%	81%
28	albert	18	0%	9%	1%	82%
29	focus(ing)	17	0%	9%	1%	83%
30	communication/communicate/alignment	16	0%	9%	1%	84%
31	approach	16	0%	9%	1%	85%
32	process(es)	16	0%	9%	1%	86%
33	organization	15	0%	9%	1%	87%
34	length/duration	15	0%	9%	1%	88%
35	responsibility(ies)	14	0%	9%	1%	89%
36	innogy	13	0%	10%	1%	90%
37	results	13	0%	10%	1%	91%
38	project(s)	12	0%	10%	1%	92%
39	multidisciplinary	12	0%	10%	1%	93%
40	products	12	0%	10%	1%	94%
41	capacity/availability	12	0%	10%	1%	95%
42	experiment(s)/experimentation/mvp/minimum viable product	11	0%	10%	1%	95%
43	stories	10	0%	10%	1%	96%
44	freedom/autonomy/trust	9	0%	10%	1%	97%
45	overarching/integral	9	0%	10%	1%	97%
46	mindset	9	0%	10%	1%	98%
47	scrum	8	0%	10%	1%	98%
48	strategy	8	0%	10%	1%	99%
49	retrospective	8	0%	10%	1%	100%
50	tool(s)/tooling/toolkit	7	0%	11%	0%	100%

In looking at the word count in Table 48, judging by the number 1 position, it became clear that working in a 'team' is apparently an important practice. Furthermore, the concept of 'meeting' (and the specific forms of daystart, standup, weekstart, planning, retrospective) were mentioned very frequently. 'Manager' related words (including 'product owner') were also used often. The same applied to the 'sprint' concept, with a

number 4 position. Together, these four concepts constitute 41% of the top-50. In addition, 'goals'/'purpose', 'prioritization', 'focus', 'backlog' and 'kanban' were used often, making up 10% of the top-50. Another important cluster is constituted by 'expertise', 'specialism', 'multidisciplinary', 'capacity' and 'end-to-end', representing 6.6% of the top-50. Moreover, the cluster of 'mindset', 'freedom' and 'experiment' make up 2% of the top- 50. Other relevant words are 'chapter' (2%), 'office' (2%), 'stories' (1%) and 'tooling' (1%).

In conclusion, the quantitative analysis of the wording shows that the interviewees frequently mention concepts that play a central role in an agile way of working, with the concept of 'teams' being the most important.

5.1.1.2.3 Verbatim analysis

The quantitative analyses of the coded transcripts generated insights into what aspects the respondents perceive as relevant or irrelevant in relationship to customer performance. However, the respondents mostly discussed these relationships in an indirect manner. Therefore, it was also useful to look at verbatim answers related directly to the initial question: in the perception of the interviewees, what way are the different elements of the agile way of working influencing your formula's level of customer performance? These answers make the relationship between agile factors and customer performance explicit. Based on this criterion, 30 passages have been identified in which respondents mentioned this relationship specifically. The selected quotes, and their interpretation, are presented in Appendix 5.3.

Based on the analysis of the interview transcripts, it could be concluded that all ten respondents explicitly mention a positive relationship of the agile way of working in general with customer performance. They all had multiple quotes on this topic, except for respondent 3 who had only one. Six respondents mentioned the agile way of working 'as a whole', which could be seen as the most important quotes as these implicitly comprise multiple sub-factors.

As for the additional quotes, the respondents both agreed and differed in what they see as important positive factors within that relationship. The number of respondents who identified these factors were as follows:

- Four respondents: the practice of working in sprints;
- Three respondents:
    - the practice of multidisciplinary cooperation (two of them identified this multiple times, of which one respondent said it to be the most important factor overall);
    - the end-to-end coverage of requisite expertise within a team;
- Two respondents:
    - a mindset based on principles and values;
    - servant leadership;
    - physical setting;
- One respondent:
    - definition of roles and responsibilities;
    - team size;
    - customer feedback.

One respondent saw no, or only a weak, relationship between customer performance and agile artefacts and tooling. The respondents differed about the role meetings play in their perception: one sees a positive relationship and three saw a negative relationship. In addition, one respondent was critical about the 'chapter lead' role she performed, as this lead to a matrix structure with a bureaucratic governance. However, she did not link this

explicitly to performance. In summary, the results of the analysis are presented in Table 49.

Table 49

Quotes presenting a direct relationship between agile factors and customer performance - Essent (+: positive relationship; O: non-existent or weak relationship; -/-: negative relationship); n=10

Item / Respondent	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Agile way of working as a whole			+	+	+		+		+	+
Working in sprints	+ (3x)					+	+	+		
Multidisciplinary cooperation	+ (2x)	+ (2x)						+		
End-to-end coverage of requisite expertise	+				+	+				
Mindset based on principles and values	+	+								
Servant leadership	+	+								
Physical setting						+		+		
Definition of roles and responsibilities	+									
Team size						+				
Customer feedback	+									
Artefacts/tooling	O (3x)									
Meetings				+					-/-	-/-
Alignment with non-agile environment									-/-	

Our qualitative interpretation of the verbatim analysis is that some respondents think it is important teams operate flexibly in creating value for customers. To this end, working in short iterations instead of waterfall projects seems beneficial. The same applies to working in multidisciplinary teams that have all required expertise on board, which allows teams to operate independently from the rest of the organisation and thus gain speed.

In the sections above, the transcripts of the interviews have been assessed in three ways: a quantitative analysis of the indicators, a quantitative analysis of the wording, and a verbatim analysis of passages specifically related to customer performance. As to be able to draw preliminary conclusions, the next step was to analyse the outcomes of the additional sources. The section below elucidates the results of our direct observations and our assessment of the physical artefacts.

5.1.1.3 Outcomes of sources 2 and 3: direct observations and physical artefacts

As described in Chapter 3, a daystart, planning meeting and plenary retrospective meeting were attended, supplemented by a workplace visit to observe the deployment of agile artefacts and the physical setting of the teams.

5.1.1.3.1 Daystart

A daystart (also called 'daily standup') of the KO2 team was attended. This meeting takes place every Monday, Tuesday and Thursday morning from 09.00 to 09.15. The observation report and the related coding can be found in Appendix 5.4. The findings from this observation were that the team worked in sprints, and actively used an iteration backlog as well as a physical kanban board for tracking progress. The team also deployed user stories and prioritization to focus its activities. The meeting began and ended on time, and the team used the available time in an effective way by deploying the standard three-question format. The meeting took place in an open atmosphere and the team showed a self-organizing approach.

5.1.1.3.2 Retrospective/planning meeting

A combined retrospective/planning meeting of the KO3 team was attended. This meeting took place every two weeks at the beginning of a new sprint, between 09.30 and 11.30 am. The observation report and the related coding (see Appendix 5.4) offered the basis for several findings. The first one is that the team worked in sprints, and actively used both a product and iteration backlog, which facilitated the team in focusing on the team purpose. The team described its activities in a user story format and prioritized these. The PO applied servant leadership aspects so that the team could deploy self-organisation, for instance by independently aligning their activities and managing how team members took over each other's tasks during vacation. The PO and team communicated in an open atmosphere and this enabled them to directly discuss improvement opportunities in their way of working.

These improvement opportunities mainly concerned communication. The physical setting was inhibiting the team, as lack of a team room obstructed smooth face-to-face communication. The pitfall of the team was that it therefore used the JIRA tool as its communication platform instead. Furthermore, the way the team effectively deployed the retrospective and planning meeting, offered opportunities for improvement as the begin and end time was not being adhered to, and discussions took too long.

5.1.1.3.3 Plenary retrospective meeting

The plenary retrospective meeting that was attended, was a new initiative for a bimonthly gathering. By initiating this meeting the brand lead and agile coach showed the value they attached to retrospection, and they facilitated this well by creating an open atmosphere. The meeting lasted 22 minutes, shorter than planned. It was attended by all nineteen Essent formula employees who were in the office that day. During the session, the agile coach presented her evaluation of the agile way of working in the previous three months, allowing the attendees to ask questions about her findings (the contents of this evaluation are discussed in section 4.1.1.4). In addition to these contents, the questions of the attendees indicated that alignment of resources between

the teams and the end-to-end coverage of expertise within teams was an important issue in relation to customer performance (see Appendix 5.4).

5.1.1.3.4 Workplace visit

The results of the workplace visit have been captured in photographs and screenshots (see Appendix 5.5). From these images, it can be gathered that the physical setting of the Essent formula teams is restrictive to the agile way of working. Teams do not have proper team rooms, which inhibits their face-to-face communication and visual way of working.

The physical artefacts in the images show that the teams were actively using product and iteration backlogs (both physical and digital), kanban boards, user stories, and visualization.

5.1.1.4 Outcomes of source 4: documentation

[As requested by Innogy, the contents of the documentation and the corresponding conclusions are hidden]

It was impossible to double check the sources that have been used in the evaluation report. However, based on our experiences in the cooperation with Essent, our impression is that the data are relevant, correct and complete, and that the interpretation of the data is objective (Scott, 1990).

5.1.1.5 Outcomes of source 5: measurement

In addition to the measurements performed by Essent itself, the contact person was asked to score the indicators that collectively constitute the dependent 'Customer performance' variable in our conceptual model. The respondent was asked whether she saw changes in the indicators during the last six months ('strongly decreased', 'slightly decreased', 'remained the same', 'slightly increased', or 'strongly increased'). This was done twice, with an interval of six months, as to monitor possible development. Table 50 shows that, when comparing the indicator scores at the beginning and at the end of the pilot, the performance of the Essent formula has improved for seven of the eight relevant indicators, whereas one indicator remained unchanged.

Table 50

Essent scores for the 'Customer performance' indicators

Customer performance indicator	**Measurement 1 May 2017: start of pilot**	**Measurement 1 November 2017: end of pilot**
Value of the products and/or services as perceived by the customer	Remained the same	Strongly increased
Customer satisfaction about the experience of products and/or services delivery	Slightly decreased	Strongly increased
Customer satisfaction about the experience of customer service	Remained the same	Slightly increased

Attitudinal customer loyalty: preference for the organisation in customer's purchase intention	Slightly decreased	Remained the same
Behavioural customer loyalty: repurchase within a specified period	Slightly decreased	Strongly increased
Gross margin generated from the product and/or service revenues	Not applicable	Not applicable
Net profit attributed to the entire future relationship with a customer	Remained the same	Remained the same
Number of realized improvements in products, services, channels or customer processes	Remained the same	Strongly increased
Speed of realizing improvements in products, services, channels or customer process	Remained the same	Strongly increased

5.1.1.6 Interpretation of the integrated analyses

The results of the focused interviews (tallied indicators; quantitative analysis of wording; verbatim analysis), direct observations, physical artefacts, documentation, and measurements have been printed and laid side by side to create an integral overview. Next, the relevant aspects of each analysis have been highlighted and connected visually to identify clusters and thus determine which aspects the analyses had in common. Now weighing factors have been applied for the different analyses, all were considered equally important (Gordon & Langmaid, 1988; King & Brooks, 2016).

Integrating the results of the five information sources, generated five important insights. Firstly, the results showed a positive relationship between the agile way of working and customer performance. This relationship was mentioned unanimously by the interviewees, was confirmed in the evaluation of the pilot (e.g. shorter lead times, increased customer satisfaction, improved financial results) and was visible through the performance measurements.

The second insight this case study provided, was that the specific indicators differed strongly in their relative importance. The five most important indicators had a tally frequency of between 35 and 43, while the five least important indicators scored between 0 and 4. Of all 40 indicators, the top-10 represented 49% of the total tally frequency, and the top-20 represented 77%. The lower half of the 40 indicators mainly consisted of specific agile techniques and tools (which have been confirmed through observation), while the top-20 mainly consisted of agile principles and practices.

This distinction was confirmed by several interviewees, by saying they attached more value to an agile mindset based on the broader values and principles, than to the details of agile techniques and tools. Based on the different analyses of the interviews, it became clear that Essent regarded as the most important factors:

- working in multidisciplinary teams with an end-to-end coverage of expertise to become independent of knowledge outside the team;
- servant leadership that enables self-management within the teams;
- working in short iterations to allow for continuous prioritization;
- a physical environment that facilitates face-to-face and visual communication and collaboration.

Thirdly, although not tallied very frequently, the case study revealed that some aspects of the agile way of working either were ineffective or even inhibited customer performance. One example is the non-agile Innogy environment in which the Essent department operated, which slowed down the Essent teams. Another example is the

'chapter' approach for professionalizing expertise, which generated a bureaucratic matrix structure. *[As requested by Innogy, the rest of this paragraph is hidden]*.

Based on these preliminary conclusions, it was interesting to see what insights could be derived from the Energiedirect.nl case study, which is discussed below.

5.1.2 Energiedirect.nl case

The results of the Energiedirect.nl case study are discussed in six parts, as applied to the Essent case. First, the background of the organisation is presented. Next, the outcomes of each information source are described, being focused interviews, direct observations and physical artefacts, documentation, and measurements. Finally, the results of the integrated analysis of all information sources are elaborated.

5.1.2.1 Background

Energiedirect.nl was founded in 2002 as a stand-alone subsidiary of Essent as to anticipate the liberalization of the Dutch energy market. This tactic proved successful and resulted in a quick growth of the customer base, attracting consumers who switched from the traditional suppliers Essent, Eneco and Nuon. With a price fighter proposition, Energiedirect.nl profited fully from the transparency that digital media and comparison platforms such as gaslicht.com offer. Energiedirect.nl is also highly visible through large television and radio campaigns, and by sponsoring football club PSV. It is currently housed in the Innogy office and fully integrated into the Innogy organisation. Over the years, Energiedirect.nl's positioning has become more comparable to that of Essent, as Essent also needed to offer market conform pricing. The circumstances as described above, enabled, to a large extent, a *ceteris paribus* comparison between Essent and Energiedirect.nl.

Energiedirect.nl operates as a department within the Formula Management division, as does the Essent brand (see Chapter 3). During the case study period, the Energiedirect.nl department consisted of three teams, under the hierarchical responsibility of a so-called brand lead. Energiedirect.nl has designed its organisational structure based on expertise. It has three separate teams, each headed by a manager. Team 1 focuses on marketing communications, team 2 focuses on digital delivery and online presence, and team 3 focuses on marketing activation. The teams cooperate with each other on projects in a multidisciplinary way, sourcing its team members based on the expertise required for the specific projects. Where relevant, a customer journey manager is involved in the projects, as to monitor the uniformity of the customer experience throughout all channels. The approach of the Energiedirect.nl department as a whole is based on agile principles. The degree to which project teams deploy agile techniques varies from the full spectrum to selective. The department employs 23 persons (see Chapter 3).

5.1.2.2 Outcomes of source 1: focused interviews

Identical to the approach of the Essent case study, the transcripts of the eight focused interviews conducted at Energiedirect.nl have been coded by an independent expert and then double checked by another independent expert. The results of these activities are coded transcripts, which are presented in Appendix 5.9. And again, based on these results, the frequencies of the indicators have been tallied. These frequencies are

presented in Appendix 5.10, while Table 51 presents the frequencies in descending order. The analysis based on these appendices, is presented below.

Table 51

Tallied scores for the Energiedirect.nl case – in descending order (n=8)

Indicator		Frequency	Percentage of total	Cumulative percentage
6.5.1	The extent to which management supports the self-managing nature of the teams	52	9%	9%
11.2.5	The extent to which teams do not rely on knowledge external to their teams	43	7%	16%
8.4.1	The physical environment facilitates face-to-face communication and collaboration	40	7%	22%
8.1.1	Teams comprise stakeholders from all organisational units relevant for the improvements in products, services, processes or channels	38	6%	29%
6.4.1	The extent to which team members determine, plan and manage their day-to-day activities under reduced or no supervision from management	33	5%	34%
5.1.1	The process defines a mechanism for the customers to provide feedback	30	5%	39%
6.1.5	The extent to which team members ensure they complete the work they are accountable for	30	5%	44%
13.3	The extent to which management and teams create an atmosphere that promotes taking initiative (e.g. experimenting with minimum viable products)	29	5%	49%
13.2	Shared agile principles and values are the basis for the work of management and teams	25	4%	53%
11.1.1	A scheme is defined for appropriate team composition based on requisite expertise	21	3%	56%
8.2.5	The extent to which the time allocated to retrospection meetings is utilized effectively	19	3%	60%
6.3.1	Performance expectations are agreed upon by the team and management	17	3%	62%
1.4.2	The length of an iteration is 4 weeks or less	17	3%	65%
8.2.3	It is expected that teams allocate time for daily progress tracking meetings	16	3%	68%
7.1.1	Visual tools for maintaining documentation and tracking progress exist	15	2%	70%
6.1.4	The extent to which team members hold each other accountable for the work to be completed	15	2%	73%
1.2.1	It is expected to estimate the time required to complete each story and feature	14	2%	75%
11.2.3	The extent to which the team effectively completes the work they have committed to	13	2%	77%
3.1.1	It is expected to develop improvements in products, services, processes or channels in iterations of 4 weeks or less	12	2%	79%
6.2.1	Team members are expected to demonstrate individual or collective ownership of the products, services or channels	12	2%	81%
8.2.6	The extent to which the time allocated to daily progress tracking meetings is utilized effectively	10	2%	83%
1.5.3	The extent to which stories are prioritized when added to the iteration backlog	10	2%	85%
8.3.2	The extent to which face-to-face communication prevails between the manager and team members	9	1%	86%
8.2.2	It is expected that teams allocate time for retrospection (evaluation of the activities and results)	9	1%	88%
1.5.2	The extent to which stories are fully estimated when added to the iteration backlog	9	1%	89%
8.2.1	It is expected that teams allocate time for iteration planning	8	1%	90%
3.1.2	The extent to which improvements in products, services, processes or channels is released every 4 weeks or less	7	1%	92%
11.2.4	The extent to which team members are capable of supporting each other in performing their tasks	6	1%	93%
8.2.4	The extent to which the time allocated to iteration planning meetings is utilized effectively	6	1%	94%
8.1.2	In the absence of an on-site stakeholder, the stakeholder provides direct input via other means	6	1%	95%
11.2.1	The extent to which team members have the requisite expertise to complete the tasks assigned to them	5	1%	95%
2.4.3	The extent to which stories are prioritized when added to the product backlog	5	1%	96%
1.5.1	The extent to which an iteration backlog is maintained	5	1%	97%
13.1	The extent to which the broader organizational environment is aligned with the agile way of working	4	1%	98%
2.4.1	The extent to which a product backlog is maintained	4	1%	98%
2.4.2	The extent to which stories are fully estimated when added to the product backlog	4	1%	99%
8.2.7	The extent to which the scheduled meetings take place as scheduled	3	0%	100%
6.1.1	Team members are expected to be involved in determining, planning and managing their day-to-day activities	1	0%	100%
8.2.8	The extent to which the scheduled meetings begin and end on time	1	0%	100%
11.2.2	The extent to which the tasks assigned to the team members match their expertise	1	0%	100%

5.1.2.2.1 Quantitative analysis of categories and indicators

In total, the 40 indicators have been tallied 604 times in 8 interviews. As a first step in the analysis, it is interesting to see how the tally frequencies per category compare. See Table 52 below for the details of this analysis on the category level.

Table 52

Tally frequency per category for the Energiedirect.nl case (n=8)

Category (AMMM Strategy or added based on theory building)	Number of indicators	Tally frequency	Average frequency per indicator	Frequency as percentage of total
1. Iterative progression	5	55	11	9%
2. Incremental development	3	13	4	2%
3. Short delivery cycles	2	19	10	3%
5. Continuous feedback	1	30	30	5%
6. Self-managing teams	7	159	23	26%
7. Minimal documentation	1	15	15	2%
8. High bandwidth communication	12	165	14	27%
11. Distribution of expertise	6	90	15	15%
13. Culture	*3*	*58*	*19*	*10%*
TOTAL	**40**	**604**	**15**	**100%**

As can be seen in Table 52, four categories proved relatively notable. Category 8, 'High bandwidth communication', scored the highest total frequency and an average frequency per indicator just below average. Category 6, 'Self-managing teams', scored the second highest total frequency and the second highest average frequency per indicator. Category 11, 'Distribution of expertise', scored the third highest total frequency and an average frequency per indicator that is on par with the average. Category 5, 'Continuous feedback', comprises just one indicator and scored the highest frequency per indicator. Together, these four categories represent 73.5% of the total tally frequency, while their joint 26 indicators constitute 35.1% of the total number of indicators the AMM model comprises, thus generating a disproportionate share.

As was applied in the Essent case, the results were also analysed at the individual indicator level. Assessing the distribution of the frequencies, the results showed that the top-5 indicators make up 34% of the total. For the top-10 this is 57%, and for the top-20 this is 81%. Table 51 presents the details per indicator.

As was shown in Table 52, the average frequency of all 40 indicators is 15.1. This means that the top-15 of indicators, as shown in Table 51, score above average. Table 51 also showed that category 5, 6, 8 and 11 are relatively important. The indicators of these four categories constitute 65% of all 40 indicators, but appeared five times in the top-5 (a share of 100%), eight times in the top-10 (80%), and fourteen times in the top-20 (70%), as shown in Table 51.

Our qualitative interpretation of this quantitative analysis is that, comparable to the Essent case study, some respondents think synchronous face-to-face communication enables customer performance. Working together in their own office space allows team members to interact directly and work visually, thus increasing the speed and quality of their work and its results. Again, this effect seems to be strengthened by a manager who applies servant leadership to facilitate teams. The resulting freedom seems to allow teams to focus on what is most valued by customers. Furthermore, some respondents believe the speed and quality of their work increases as the team has more of the

expertise on board that is required for achieving the team's purpose. Again, it seems useful for teams to strive for becoming a 'mini-enterprise' that can operate independently from the rest of the organisation.

In the Essent case study, the experts suggested to combine logically related template indicators (see section 4.1.1.2.1). This would alter the tally scores as presented in Tables 51 and 52. The total number of indicators would decrease to 33, increasing the total average frequency per indicator to 18. The average frequency per indicator would also increase for category 8. This would become 18, the new average. The newly integrated indicator 8.1.1 would have a frequency of 44, thus making it the number 2 indicator overall. The newly integrated indicator 1.4.2 would have a frequency of 36, making it the number 5 indicator overall. The newly integrated indicators 8.2.3 (frequency: 26) would get a top-10 position. Finally, the newly integrated indicators 1.5.3 (15) and 8.2.1 (14) would both get a top-20 position.

This reflection by the two experts nuances the analysis in a valuable way. See the Essent case study for the interpretation of this reflection (section 5.1.1.2.1).

5.1.2.2.2 Quantitative analysis of wording

As has been done in the Essent case study, ATLAS.ti has been used to perform an additional quantitative analysis of the transcripts on the wording level. An identical approach has been applied for a word count of all eight transcripts of the Energiedirect.nl case, which comprise a total of 14,242 words, of which 1,884 different words. The results are displayed in Table 53 below.

Table 53

Top-50 word count of interview transcripts Energiedirect.nl case (listed in descending order of frequency; n=8)

	Word	Count	Percentage of total count (14,242)	Cumulative percentage of total count	Share of top-50	Cumulative share of top-50
1	team(s)	220	2%	2%	12%	12%
2	project(s)	118	1%	2%	6%	18%
3	energiedirect/ED	113	1%	3%	6%	24%
4	mt/management/manager(s)/lead(s)/leadership/coordinatc	102	1%	4%	6%	30%
5	essent	84	1%	4%	5%	35%
6	agile	58	0%	5%	3%	38%
7	fast/quick(ly)/rapid(ly)/speed/time-to-market	58	0%	5%	3%	41%
8	customer(s)	57	0%	6%	3%	44%
9	meeting(s)/consultation/dialogue(s)	54	0%	6%	3%	47%
10	experiment(s)/experimentation/minimum viable product	51	0%	6%	3%	50%
11	multidisciplinary	40	0%	7%	2%	52%
12	plan(s)/planning	39	0%	7%	2%	54%
13	space(s)/room(s)/office(s)/place	38	0%	7%	2%	56%
14	digital	37	0%	8%	2%	58%
15	member(s)/colleague(s)	37	0%	8%	2%	60%
16	together	36	0%	8%	2%	62%
17	perform(ance)	36	0%	8%	2%	64%
18	result(s)	34	0%	9%	2%	66%
19	role(s)/function(s)/job(s)	33	0%	9%	2%	68%
20	product owner(s)	32	0%	9%	2%	69%
21	expert(s)/expertise/knowledge/skills	32	0%	9%	2%	71%
22	people	31	0%	9%	2%	73%
23	communication/communicate/align	29	0%	10%	2%	74%
24	formula	28	0%	10%	2%	76%
25	innogy	28	0%	10%	2%	77%
26	department(s)	28	0%	10%	2%	79%
27	priority/priorities/prioritize	27	0%	10%	1%	80%
28	focus/focusing	26	0%	11%	1%	82%
29	organization	25	0%	11%	1%	83%
30	end-to-end/mandate	25	0%	11%	1%	84%
31	idea(s)	24	0%	11%	1%	86%
32	improve(s)/improvement	23	0%	11%	1%	87%
33	sprint(s)	22	0%	11%	1%	88%
34	chapter(s)	21	0%	12%	1%	89%
35	specialist(s)/specialism(s)	20	0%	12%	1%	90%
36	weekstart/daystart/standup	18	0%	12%	1%	91%
37	daily	16	0%	12%	1%	92%
38	cooperates(s)/cooperation	16	0%	12%	1%	93%
39	product	14	0%	12%	1%	94%
40	funnel	13	0%	12%	1%	95%
41	structure	13	0%	12%	1%	95%
42	permanent(ly)	13	0%	12%	1%	96%
43	culture/mindset	13	0%	13%	1%	97%
44	delivery	12	0%	13%	1%	97%
45	trello	12	0%	13%	1%	98%
46	journey	9	0%	13%	0%	98%
47	matrix	8	0%	13%	0%	99%
48	goals	7	0%	13%	0%	99%
49	proposition	7	0%	13%	0%	100%
50	action	6	0%	13%	0%	100%

When looking at the word count in Table 53, what is notable is that, compared to the Essent transcripts, the words Energiedirect/ED and Essent were mentioned very often, making up 11% of the top-50. An explanation could be that the Energiedirect.nl department has a strong identity and actively compares itself to Essent, which was acknowledged by Energiedirect.nl's brand lead. This set aside, judging by the number 1 and 2 positions, representing 18% of the top-50, it became clear that working in 'teams' on 'projects' is apparently an important practice. More general concepts, such as 'agile', 'speed' and 'experimentation' were mentioned very often: 9%. 'Manager' related words (including 'product owner') were also used often, scoring 7%. Another important cluster of words was constituted by 'expertise', 'specialism', 'multidisciplinary', and 'end-to-end': 5%. Furthermore, the concept of 'meeting' (and the specific forms of 'daystart',

'standup', 'weekstart') was mentioned frequently: 4%. In addition, the cluster of 'performance' and 'results' were used often: 3.79%. The same applied to 'prioritization' and 'focus'. Moreover, other relevant words are 'priority'/'focus' (3%), 'office' (2%), 'mindset' (1%), and 'Trello' (1%).

5.1.2.2.3 Verbatim analysis

As was done in the Essent case study, the coded transcripts have been analysed to identify passages which explicitly mention the relationship between agile factors and customer performance. Based on this criterion, 31 passages have been identified in which respondents mentioned this relationship specifically. The selected quotes, and their interpretation, are presented in Appendix 5.11.

Based on these quotes, it can be concluded in general that all eight respondents explicitly mentioned a positive relationship between the agile way of working and customer performance. They all had multiple quotes on this topic. Five respondents mentioned the agile way of working as a whole, and two mentioned this multiple times. These quotes could be regarded as the most important ones, as they implicitly comprise multiple sub-factors.

As for the additional quotes, the respondents both agreed and differed in what they consider important positive factors within that relationship. The number of respondents who identified these factors were as follows:

- Six respondents: physical setting;
- Five respondents: a mindset based on agile principles and values;
- Four respondents: multidisciplinary cooperation (one mentioned this twice and considered it to be the most important factor overall);
- Three respondents:
    - Working in sprints (two mentioned this multiple times);
    - Meeting structure (one mentioned this twice; one is negative about the amount of time the meetings cost);
- Two respondents:
    - Backlog prioritization (mentioned multiple times);
    - End-to-end coverage of requisite expertise within a team;
- One respondent:
    - Servant leadership;
    - Team size.

Four respondents explicitly saw a negative relationship for alignment of the agile way of working with the broader organisational environment. The summary of this analysis is presented in Table 54 below.

Table 54

Quotes presenting a direct relationship between agile factors and customer performance – Energiedirect.nl (+: positive relationship; O: non-existent or weak relationship; -/-: negative relationship); n=8

Item / Respondent	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Agile way of working as a whole	+ (2x)	+	+ (3x)	+	+			
Physical setting	+	+	+			+	+ (3x)	+(2x)
Mindset based on principles and values	+	+	+			+		+
Multidisciplinary cooperation		+	+				+ (2x)	+
Working in sprints				+			+ (3x)	+ (2x)
Meetings	-/-			+			+ (2x)	+
Backlog prioritization							+ (3x)	+ (2x)
End-to-end coverage of requisite expertise			+				+	
Servant leadership	+							
Team size							+	
Alignment with non-agile environment	-/-	-/-			-/-			-/-

Our qualitative interpretation of the verbatim analysis is that some respondents value the physical setting of their team space, allowing them to interact directly between team members and work visually. In comparison to the Essent case, respondents seem to think that an entrepreneurial culture is more important than the agile tools and techniques, thus considering the agile way of working as a means to an end. Furthermore, some respondents indicate that working in multidisciplinary teams that have all required expertise on board, allows teams to operate independently from the rest of the organisation and adapt flexibly to the wants and needs of their customers. Working in short iterations also seems beneficial in this respect.

The section above described our analysis of the focused interviews. The next section elucidates the results of our direct observations and our assessment of the physical artefacts.

5.1.2.3 Outcomes of sources 2 and 3: direct observations and physical artefacts

As described in Chapter 3, a weekstart, and two different retrospective meetings ('performance dialogues') were attended, supplemented by a workplace visit to observe the deployment of agile artefacts and the physical setting of the teams.

5.1.2.3.1 Weekstart

Energiedirect.nl held plenary weekstarts, involving all staff. This meeting took place every Tuesday morning from 09.00 to 09.30. The observation report and the related coding can be found in Appendix 5.12. The findings from this observation were that the teams and its members prioritize their goals to focus the activities. The time-boxed meeting began late but ended early, and the team used the available time in an effective way by deploying the standard check-in and three-question format. The meeting took place in an open atmosphere and the team showed a self-organizing approach.

5.1.2.3.2 Retrospective meetings: Online; Marketing & Sales

The retrospective meetings took place every Tuesday afternoon between 12.45 and 13.30 (Online) and between 14.00 and 14.45 (Marketing & Sales). The observation reports and the related coding (see Appendix 5.12) offer the basis for several findings. The first one is that both teams held this meeting in a strictly uniform way, in which preparation is required and a check-in, structured agenda, time-boxing, and check-out is deployed. Both teams actively used visual tools to monitor their performance, based on extensive customer feedback. Both teams also profoundly researched the root causes of both negative and positive performance gaps. Based on these insights, all team members then brainstormed in an open atmosphere about ideas for improvement. Next, they constructively challenged each other to sharpen the arguments and used this discussion to prioritize their ideas. Based on this prioritization, ideas were selected for deployment in the upcoming period. This prioritization was captured in a common backlog document.

The contents of both meetings confirmed that Energiedirect.nl was performing well: of all thirteen KPIs, twelve were above the MTP ('mid term planning') forecast, and one was slightly below. During the meetings, this prompted both teams to challenge themselves spontaneously in raising their targets.

5.1.2.3.3 Workplace visit

The results of the workplace visit have been captured in photographs and screenshots (see Appendix 5.13). From these visits, it could be gathered that the physical setting of the Energiedirect.nl formula teams was somewhat restrictive to the agile way of working. Team members of one team worked at one desk block, and the three teams were positioned in closely adjoining desk blocks. This setting facilitated transparency through quick and direct face-to-face communication. However, the teams did not have enough walls or boards to enable a fully visual way of working.

The physical artefacts showed that the teams did try to visualize as much as possible, and that product and sprint backlogs were being deployed actively. Furthermore, it became clear that management used visual communication to stress the importance they attached to agile values and principles (e.g. prioritization, experimentation, taking responsibility, multidisciplinary cooperation, customer feedback, continuous improvement).

5.1.2.4 Outcomes of source 4: documentation

[As requested by Innogy, the contents of the documentation and the corresponding conclusions are hidden]

5.1.2.5 Outcomes of source 5: measurements

Identical to the approach in the Essent case, the Energiedirect.nl contact person was asked to score the indicators that collectively constitute the independent 'Customer performance' variable in or conceptual model. Table 55 below shows that, when comparing the indicator scores at the beginning and at the end of the six-month period parallel to the Essent pilot, the performance of the Energiedirect.nl formula has improved for five of the nine relevant indicators. Four indicators remained unchanged, of which two score neutral ('Remained the same') and two score positive ('Slightly increased'). According to the respondent, the increase in the number and speed of improvements was mainly based on the agile way of working as deployed by the team Digital Delivery & Online presence in its 'sales funnel' project.

Table 55

Energiedirect.nl scores for the 'Customer performance' indicators

Customer performance indicator	**Measurement 1 May 2017**	**Measurement 1 November 2017**
Value of the products and/or services as perceived by the customer	Remained the same	Slightly increased
Customer satisfaction about the experience of products and/or services delivery	Slightly increased	Slightly increased
Customer satisfaction about the experience of customer service	Remained the same	Remained the same
Attitudinal customer loyalty: preference for the organisation in customer's purchase intention	Remained the same	Slightly increased
Behavioural customer loyalty: repurchase within a specified period	Remained the same	Remained the same
Gross margin generated from the product and/or service revenues	Remained the same	Slightly increased
Net profit attributed to the entire future relationship with a customer	Slightly increased	Slightly increased
Number of realized improvements in products, services, channels or customer processes	Remained the same	Strongly increased
Speed of realizing improvements in products, services, channels or customer process	Remained the same	Strongly increased

5.1.2.6 Interpretation of the integrated analyses

Integrating the results of the five information sources (see section 5.1.1.6 for our integration approach), generated insights that are quite comparable to those derived from the Essent case. Again, the results indicated a positive relationship between the agile way of working and customer performance. This relationship was mentioned unanimously by the interviewees, and was visible through the observation of performance dashboards and additional performance measurements.

The specific indicators again differed strongly in their relative importance. Of all 40 indicators, the top-5 represented 35.9% of the total tally frequency, while the top-10 represented 57% and the top-20 represented 81%. Again, the lower half of the 40 indicators mainly consisted of specific agile techniques and tools, while the top-20 mainly

consisted of agile principles and practices. This distinction was confirmed explicitly by several interviewees. Based on the different analyses of the interviews, it became clear that Energiedirect.nl resembled Essent in what factors were regarded as most important. These factors were: working in multidisciplinary teams with an end-to-end coverage of expertise to become independent of knowledge outside the team; servant leadership that enables self-management within the teams; working in short iterations to allow for continuous prioritization; a physical environment that facilitates face-to-face and visual communication and collaboration.

Finally, although not tallied frequently, the case study pointed out two possibly relevant additional factors. The first is an inhibiting aspect. The non-agile Innogy environment in which Energiedirect.nl operated, decelerated the speed the Energiedirect.nl teams strived for. The second was the potentially facilitating factor of having a mindset based on agile values and principles, but this cultural aspect is dismissed for further analysis as it was excluded from our conceptual model.

Having completed the analysis of the Essent and Energiedirect.nl cases, the Eneco and Nuon cases are discussed in the section below.

5.1.3 Additional cases: Eneco and Nuon

In addition to the two case studies at Essent and Energiedirect.nl, two smaller case studies have been performed at direct competitors Eneco and Nuon. For each case, this comprised a focused interview with someone overseeing the agile operation, and measurement of customer performance. The Eneco case will be discussed first.

5.1.3.1 Eneco

The outcomes of the Eneco case are presented below, in three parts. First, the background of Eneco is explained. Second, the focused interview and measurement are analysed. Finally, the interpretation of the results is discussed.

5.1.3.1.1 Background

Comparable to Essent's genesis, Eneco was founded in 1995 as a merger of municipal energy corporations, being Rotterdam, The Hague and Dordrecht. Between 2000 and 2003, Eneco then acquired the energy corporations of Gouda, Zeist and Utrecht. In 2011, Eneco divested its grid operator activities which were continued in the newly founded Stedin organisation. In that same year, it took over 'fighter brand' Oxxio, increasing its consumer base to 2.1 million customers. Currently, Eneco is owned by 53 municipalities which have offered Eneco for sale. Eneco sees renewable energy as a priority, with a 30% share in Greenchoice and large scale investments in biomass plants and wind farms.

In 2015, Eneco's consumer division started implementing agile in all marketing, sales, customer service and operations departments, while its IT departments were already deploying agile since 2010. Thus, compared to Essent, it has a relatively long experience with the agile way of working and is currently deploying it on a much larger scale. Eneco's goals for implementing agile are to attain more entrepreneurship among its employees, shorten the time-to-market, generate more value for the customer and improve customer satisfaction. Thus, Eneco expects to generate better results in terms of retaining and winning customers, and increasing their contribution margins.

5.1.3.1.2 Results of the focused interview and measurements

Based on the focused interview with Marije Teerling, manager customer experience management (see the coding in Appendix 5.15), it became clear that Eneco saw a strong relationship between its deployment of agile and the improvement of its customer performance. In the transcript, six passages refered to this relationship directly:

- 'The teams […] generated more and better results for our customers';
- '[…] we see teams deliver more results and in a faster way';
- 'I certainly think that the agile way of working we are deploying at Eneco has increased our performance for customers, and will further increase it';
- '[…] we are taking the next step as we see agile is strongly improving our performance, both internally as for our customers';
- 'Agile […] clearly improves your performance';
- 'Since 2015, we see a clear and positive break in the trend of customer satisfaction and in the number of customers we win, keep and grow'.

These improvements in Eneco's performance have been confirmed in a separate self-measurement, as performed by the interviewee. Table 56 below shows that the nine indicators of the Customer Performance variable have increased slightly or strongly for Eneco in the previous six months, except for the attitudinal customer loyalty.

Table 56

Eneco's self-measurement scores for the 'Customer performance' indicators in the preceding six-month period

Customer performance indicator	**Measurement 1 November 2017**
Value of the products and/or services as perceived by the customer	Slightly increased
Customer satisfaction about the experience of products and/or services delivery	Strongly increased
Customer satisfaction about the experience of customer service	Strongly increased
Attitudinal customer loyalty: preference for the organisation in customer's purchase intention	Remained the same
Behavioural customer loyalty: repurchase within a specified period	Slightly increased
Gross margin generated from the product and/or service revenues	Slightly increased
Net profit attributed to the entire future relationship with a customer	Slightly increased
Number of realized improvements in products, services, channels or customer processes	Strongly increased
Speed of realizing improvements in products, services, channels or customer process	Slightly increased

The transcript identified several aspects of agile the interviewee considered to be success factors. According to her, the most important factor was to 'work with multidisciplinary teams and that these teams are located in a dedicated, common team space' as 'multidisciplinary cooperation […] leads to better results'. She firmly believed the staffing of these multidisciplinary teams should cover the team's purpose end-to-end: '[…] it is extremely important that they have all expertise available within the team, as to prevent them becoming dependent on other teams or departments. Teams that do not comprise all required expertise are demonstrably delivering less work and also in a lower pace'.

Furthermore, she found it important to 'keep the teams together as long as possible, because we believe this makes them more effective'. Another important factor was to have the teams 'sit together permanently in a team room. This just improves their communication and cooperation significantly'.

Finally, the interviewee saw an entrepreneurial mindset as a conditional value that should be cultivated by management: 'In essence, it is a form of experimentation'.

Eneco deployed Scrum as a technique. The teams had to 'strictly adhere to working in sprints, with an interval of two weeks. This ensures acceleration of results in the short term'. The teams also used a backlog for prioritizing activities as this 'leads to more focus'. As for the other technical aspects, Eneco has adapted Scrum to a way of working that best suited Eneco's specific context. This mainly concerned the meeting structure. Daily stand-ups were deemed useful, but for practical reasons these were only held on Mondays, Tuesdays and Thursdays. And the frequency of review meetings has been lowered to once per month. The transcript included no explicit mention of a planning meeting, but it is to be expected that this is held at the start of every sprint.

However, although Eneco first implemented agile throughout its entire organisation, the interviewee was critical about the usefulness of agile for all activities: 'We have noted that agile works very well for renewing, what we call 'changing the business'. And that it works to a much lesser degree for 'running the business', where activities are repetitive and stable. In that case, it all just costs too much time and it brings too little added value. People are very operationally oriented there. Techniques as Lean, aimed at optimizing efficiency of operational processes, are much better suited for that purpose.'

5.1.3.1.3 Interpretation of the results

The analysis of the focused interview and measurement showed that Eneco saw a strong relationship between its deployment of agile and the performance improvement during the six prior months. According to the interviewee, the most important factor in this relationship was multidisciplinary cooperation. This should take place in dedicated teams with an end-to-end coverage of the required expertise, located in a permanent team room. Furthermore, working in sprints was seen as a prerequisite, while deployment of backlogs for prioritization purposes was considered to be a useful practice.

However, based on its relatively longstanding deployment of agile, Eneco has adapted the Scrum meeting structure and intended to use agile only for innovation and renewal purposes.

5.1.3.2 Nuon

The second of the smaller case studies concerned Nuon, of which the outcomes are discussed below.

5.1.3.2.1 Background

Comparable to Essent's and Eneco's genesis, Nuon was founded in 1994 as a merger of regional energy corporations, being PGEM, PEB Friesland, ZGN and VNB. In 1999 it then acquired the energy corporations ENW, ENR and Gamog. In 2000, Nuon acquired installation company Feenstra, which is still a subsidiary. In 2009, Nuon divested its grid operator activities which were continued in the newly founded Alliander organisation. In

that same year, the remaining company was acquired by Vatenfall, continuing the supplier activities under the Nuon brand name. It currently has a consumer base of approximately two million customers.

In 2015, to become more customer centric, Nuon merged its two organisational units that served the consumer market, Retail and Customers. Simultaneously, it started deploying agile in all customer facing activities, including marketing, sales and customer service. Thus, compared to Essent, it has a relatively long experience with the agile way of working and is currently deploying it on a much larger scale, as applies to Eneco. Nuon's goals for implementing agile were to become more customer centric, create more value for the customer, establish an entrepreneurial mindset, and shorten the time-to-market. Nuon expected this to generate improved commercial results.

5.1.3.2.2 Results of the focused interview and measurements

Based on the focused interview with Jolanda Bakker, director marketing operations (see the coding in Appendix 5.16), it became clear that Nuon saw a strong relationship between its deployment of agile and the improvement of its customer performance. In the transcript, five passages refer to this relationship directly:

- 'I clearly see that agile has strongly improved our performance';
- 'The switch to agile brought us a very large progression in terms of performance';
- 'The amount of work we do, and the speed with which we do it, has increased enormously. On average, projects now last two weeks instead of two. And we are able to complete small projects in one day […]. So, our time-to-market has shortened incredibly';
- 'We have become more data driven and work more fact based. […] we have ceased many of our activities as they proved ineffective.' […] 'And we make more, quicker and better choices based on this. Agile ensures a smarter and faster way of working';
- 'In terms of our external performance, the agile way of working has brought us a clear improvement. Since 2015, our moving average NPS scores have increased from around -40 to +20. And, due to this improvement, our sales and retention results have increased strongly as well'.

These improvements in Nuon's performance were confirmed in a separate self-measurement, as performed by the interviewee. Table 57 below shows that all nine indicators of the Customer Performance variable have increased slightly or strongly for Nuon in the previous six months.

Table 57

Nuon's self-measurement scores for the 'Customer performance' indicators in the preceding six-month period

Customer performance indicator	**Measurement 1 November 2017**
Value of the products and/or services as perceived by the customer	Slightly increased
Customer satisfaction about the experience of products and/or services delivery	Strongly increased
Customer satisfaction about the experience of customer service	Strongly increased
Attitudinal customer loyalty: preference for the organisation in customer's purchase intention	Slightly increased
Behavioural customer loyalty: repurchase within a specified period	Strongly increased
Gross margin generated from the product and/or service revenues	Slightly increased

Net profit attributed to the entire future relationship with a customer	Slightly increased
Number of realized improvements in products, services, channels or customer processes	Strongly increased
Speed of realizing improvements in products, services, channels or customer process	Strongly increased

The transcript identified several aspects of agile the interviewee considered as success factors. Firstly, she believed that creating the proper agile context and mindset was more important than deploying specific techniques and tools: 'For me, it is much more about the principles. […] Teams should see themselves as independent companies and we should give them freedom to act like one. […] I am really enjoying the entrepreneurial vibe you can sense here, and that is a direct result from the agile way of working'. Furthermore, the attitude of employees seemed important to her: 'Instead of marketing knowledge and agile skills, I am particularly keen on entrepreneurship, proactivity, creativity, eagerness to learn, and so forth'. This also required a different management approach: 'As a manager, I try not to interfere with the contents of the work teams are carrying out. I try to focus on the form and on removing impediments'.

According to her, the most important principle 'is working with small, dedicated multidisciplinary teams' as it is 'important to cut away all handovers, by placing all involved in a multidisciplinary team'. These teams should also have end-to-end responsibility and expertise: 'I think that working with head-to-tail teams with dedicated members is really important. […] They have the required capacity, so they don't have to lobby for it at other departments', and 'All five teams have an end-to-end responsibility for their specific phase, with a matching expertise. I find that extremely important. It is all about the common responsibility team members feel from their different disciplines to get things done as quickly as possible'.

Furthermore, the physical environment should enable the teams to work and communicate face–to-face: 'I strongly believe that having a constant close presence gives an invaluable impulse to how teams collaborate and consult. Each team works on one block. […] The team members constantly have quick consultations and this shortened our 'switching time' incredibly.'

Another important factor for the interviewee was experimentation, based on customer feedback: 'We are just listening to our customer more and in a better way, we want to work outside-in as much as possible. […] And we are also testing a lot more than we used to do, we are continuously busy with adapting and innovating things'. The teams 'act very fast and directly in their go-to-market, as they are monitoring everything and quickly adjust things when necessary'.

As mentioned earlier, the interviewee was critical about techniques and tools: 'Personally, I don't like agile very much, because I dislike rules'. However, she did see that some of these tools and techniques effectively facilitated the performance of her teams. Besides the stand-up and review meetings, this mainly concerned working in sprints and backlog prioritization: 'Of course, as we use Scrum, all five teams work in sprints. That is another key success factor to me. And people really like it. […] They all prioritize their activities based on value for the customer'. She added that 'working in sprints, prioritizing the backlog based on value for the customer, and refraining from planning too long ahead just are very smart things to do if you want to improve performance'.

The interviewee also indicated she actively used the backlogs herself: 'One thing I regret is that we no longer have physical kanban boards, as all teams are now working in Jira. […] for me as a manager this has unfortunately added a threshold'. According to her, the

backlog prioritization has increased the focus of the teams: 'The scope per team became very small and clear, and the team members became highly dedicated. […] They have a clear goal, they have clear priorities'. However, 'The only pitfall is that they tend to focus too much on the short term and forget about the longer term'.

Another thing the interviewee was critical about was the fact that the Nuon environment is slowing her teams down: 'other departments within Nuon do not work agile yet, and this makes cooperating with them quite difficult'.

5.1.3.2.3 Interpretation of the results

The analysis of the focused interview and measurement showed that Nuon sees a strong relationship between its deployment of agile and the performance improvement during the six prior months. This was confirmed by strongly improved NPS scores, as well as by the sales and retention results. According to the interviewee, the most important factor in this relationship was working in small, dedicated, multidisciplinary teams with end-to-end coverage of responsibilities and expertise, located in a permanent team room.

The interviewee was critical about focusing too much on the deployment of techniques and tools, and advocated to focus more on agile values and principles. However, she did confirm the added value of working in sprints, backlog prioritization, and the stand-up and review meetings. Lastly, the interviewee saw a decelerating effect of the broader Nuon organisation, working in a non-agile way.

The analysis above completes the discussion of the results of the four case studies at Essent, Energiedirect.nl, Eneco and Nuon. Next, our cross-case conclusions will be discussed in the sections below.

5.2 Conclusions and discussion

By deploying a triangulation approach and case study protocol (Yin, 2013), the structured techniques of the template analysis (King et al., 2016; Groenland et al., 2010), independent coders, and a quantification of the analysis, our impression was that the insights from the four case studies sufficiently meet the criteria of validity and reliability (see Chapter 3 for the elucidation of our specific application of Yin's design tests). From this starting point, it was relevant to determine what cross-case inferences can be drawn from the present research. The following section discusses these results.

5.2.1 AMM tactics 6, 8 and 11 seem most relevant

Based on the results of the separate case studies at Essent, Energiedirect.nl, Eneco and Nuon, several overarching conclusions could be gathered. First of all, as confirmed by interviews, direct observations, physical artefacts, documentation and measurements, all four cases showed a positive relationship between the agile way of working in general and the independent variable of Customer Performance, in the perception of the organisation. Many interviewees indicated that 'the agile way of working as a whole' was the basis for this relationship.

However, some of the twelve tactics within the AMM model seemed to be more relevant within this relationship than others. Of all twelve tactics, four have not been identified in the multiple sources at all:

- 4: Evolutionary requirements;
- 9: Retrospection;
- 10: Client-driven operations;
- 12: Adherence to standards.

This does not necessarily mean that these four tactics are totally irrelevant in general, but they did not apply to any of the present four cases and were also not identified in our surevey. The other eight tactics within the AMM model did seem to be relevant to some extent, and are discussed below.

5.2.1.1 The three most relevant tactics of the AMM model: 6, 8 and 11

Based on the frequency by which the indicators constituting the tactics have been mentioned in the interviews and documentation, tactics 6 (Self-managing teams), 8 (High-bandwidth communication) and 11 (Distribution of expertise) seemed most important. Together, the indicators of these three tactics constitute 34% of all indicators of the AMM model, but in the cross-case tally frequencies these had a share of 76.6%. They also accounted for a disproportionate share of 100% of the top-5, 80% of the top-10 and 65% of the top-20 (see Appendix 5.17). Furthermore, these three tactics dominated in the verbatim analyses of the interviews of all four cases.

As is elucidated in Appendix 3.1, tactic 11 of the AMM model concerns the starting point of working in teams with a specific architecture. This architecture assumes multidisciplinary collaboration, with an end-to-end coverage of the required expertise for completing the tasks associated with the team purpose. Thus, team members should be capable of supporting each other in performing their tasks, which results in a team that is independent of knowledge outside the team for achieving its goals. Although the existing literature is limited to the IT domain and is mainly conceptual by nature, several academic articles, conference papers and book chapters support the relevance of this tactic (Boehm & Turner, 2004; Cao & Ramesh, 2008; Cockburn, 2002; Highsmith, 2002; Shore & Warden, 2008).

As the cross-case ranking in Appendix 5.17 shows, the case studies pointed that out that the six indicators of tactic 11 are relatively important, holding positions 4, 6, 14, 18, 25 and 40. Three of its six indicators have also been identified in the survey (see Figure 18 below). These are:

- 11.2.1, measuring the disposal of team members with the requisite expertise to complete the tasks assigned to them;
- 11.2.2, measuring the match between the expertise of the team members and the tasks assigned to them;
- 11.2.4, measuring the capability of team members to support each other.

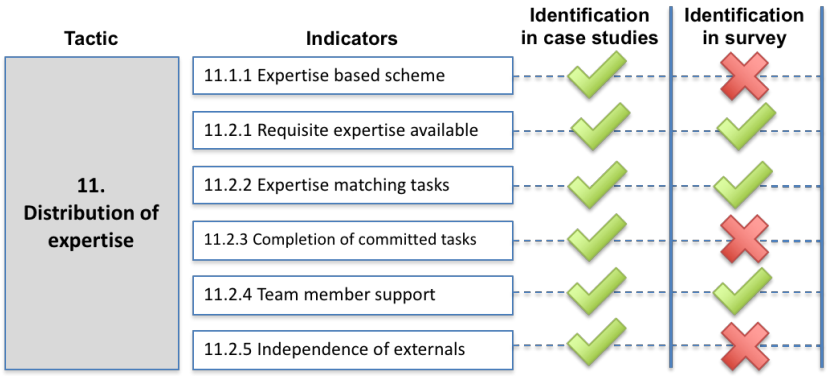

Figure 18: identification of the tactic 11 indicators in our case studies and survey

The second most important tactic is Tactic 6, concerning the self-management aspect of these teams. Its indicators measure the extent to which management supports and facilitates the fact that teams are autonomous in determining, planning, executing, tracking and managing their activities. By agreeing upon the prioritization of team goals and the associated performance expectations, management expects the team members to take individual and collective ownership of its activities and results. With this team empowerment, management aims to have team members hold each other accountable for completing the work they are responsible for. As was the case for tactic 11, the relevance is supported by conceptual literature from the IT domain (Cockburn, 2002; Karlstrom & Runeson, 2005; Koch, 2004; Larman, 2004; Poppendieck, 2003).

As the cross-case ranking in Appendix 5.17 shows, the case studies pointed that out that seven of the ten indicators of Tactic 6 were relevant. The importance of the seven identified indicators is relativley large. As the ranking in Appendix 4.25 shows, these seven indicators hold two top-5 positions, two top-10 positions, and three top-25 positions:

- Indicator 6.5.1, measuring the support of management for the self-managing nature of the teams, holds the number 1 position;
- Indicator 6.4.1, measuring the extent to which daily activities are being performed under reduced or absent supervision from management, holds the number 5 position;
- Indicator 6.3.1, measuring the extent to which performance expectations are agreed upon between management and teams, holds the number 7 position;
- Indicator 6.1.5, measuring the extent to which teams take responsibility to complete their tasks, holds the number 10 position;
- Indicator 6.1.4, measuring the extent to which team members hold each other accountable for completing their work, holds the number 19 position;
- Indicator 6.2.1, measuring the extent to which team members show individual or collective ownership of their work, holds the number 24 position;
- Indicator 6.1.1, measuring the involvement of team members in determining, planning and managing their daily activities, holds the number 25 position.

However, as Figure 19 below shows, none of these seven indicators have been identified in the survey.

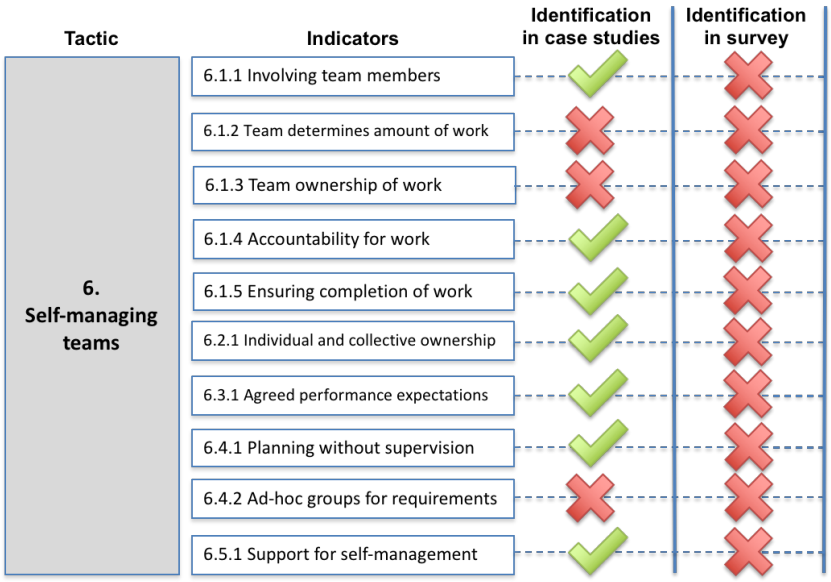

Figure 19: identification of the tactic 6 indicators in our case studies and survey

Thirdly, tactic 8 concerns the way these teams communicate and collaborate. It partly overlaps with tactic 11, in the sense that it presumes that teams comprise stakeholders from al organisational units involved with designing, building, or operating the products, services or channels the team is responsible for. Thus, these stakeholders can provide their input directly. Furthermore, the intent is to have the teams work in a physical environment that facilitates face-to-face communication, as this synchronous form of communication is the preferred way of collaborating. This communication approach becomes manifest in specific meetings for iteration planning, daily progress tracking, and retrospection. Again, the relevance is supported by conceptual literature from the IT domain (Boehm et al., 2004; Cockburn, 2002; Highsmith, 2002; Koch, 2004; Larman, 2004; Petersen & Wohlin, 2009; Poppendieck, 2003; Reifer, 2002; Shore et al., 2008; Vidgen & Wang, 2009).

As the cross-case ranking in Appendix 5.17 shows, the case studies pointed that out that two of the Tactic 8 indicators hold a top-3 position, being 8.1.1 and 8.4.1. Indicator 8.1.1 measures the extent to which teams comprise stakeholders from all relevant organisational units, while indicator 8.4.1 measures the extent to which the physical environment facilitates face-to-face communication and collaboration.

Three other indicators hold a top-25 position. These indicators are 8.2.5, 8.2.6 and 8.2.3, all focusing on daily progress tracking meetings and retrospection meetings. The other identified indicators, being 8.2.4, 8.3.2, 8.1.2, 8.2.1, 8.2.2, 8.2.8 and 8.2.7, hold a position outside the top-25. These seven indicators also focus on planning meetings, daily progress tracking meetings and retrospection meetings, as well as on face-to-face communication.

As Figure 20 below shows, of the twelve Tactic 8 indicators that were identified in our case studies, nine were also identified in our survey.

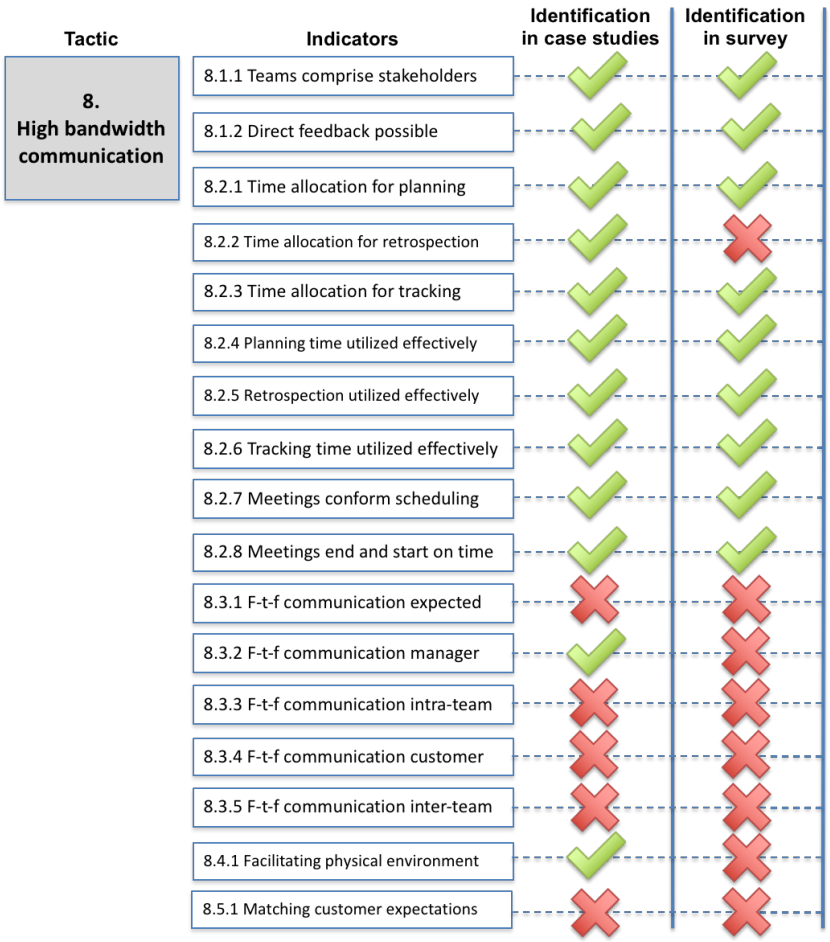

Figure 20: identification of the tactic 8 indicators in our case studies and survey

Besides tactics, 6, 8 and 11, tactics 1, 2, 3, 5 and 7 were also relevant, but to a lower extent. These five tactics will be discussed in the section below.

5.2.1.2 Tactics of the AMM model with lower relevance: 1, 2, 3, 5 and 7

The five remaining tactics of the AMM model are:

- 1: Iterative progression;
- 2: Incremental development;
- 3: Short delivery cycles;
- 5: Continuous feedback;
- 7: Minimal documentation.

These five tactics comprise 30 of the 74 indicators, or 40.5% of the AMM model. However, of the overall total tally frequencies, these five tactics scored a lower share of 23.4%. Of their 30 indicators, only twelve were identified as possibly relevant, based on the different sources used in the case studies. Still, of these twelve indicators, five were relatively more noteworthy than the other seven. The relevance of these five indicators is supported by conceptual literature (Shore et al., 2008; Boehm et al, 2004; Koch, 2004; Petersen et al., 2009; Vidgen et al., 2009; Karlstrom et al., 2005; Highsmith, 2002).

As Figure 21 below shows, five of the nine indicators constituting tactic 1, were identified in our case studies as being relevant for customer performance. Four of these five

indicators were also identified in our survey as having a positive relationship with customer performance.

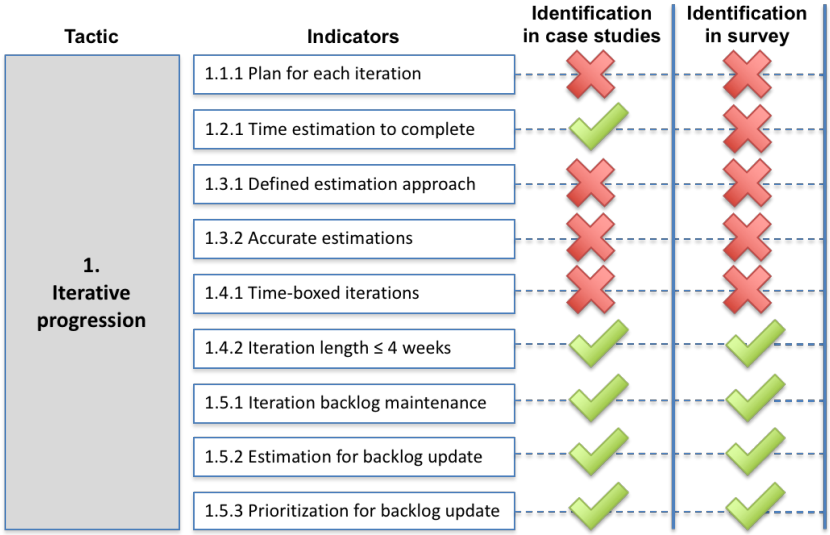

Figure 21: identification of the tactic 1 indicators in our case studies and survey

Three of the identified indicators of tactic 1 are medium important. Indicators 1.2.1, 1.4.2 and 1.5.3 respectively hold position 12, 15 and 21 in the cross-case ranking in Appendix 5.17. Together, these three indicators measure the practices of working in iterations of four weeks or less, and of estimating and prioritizing the activities within these iterations. The other two of these five indicators (1.5.1 and 1.5.2) measure the practice of maintaining an iteration backlog.

With regard to Tactic 2, Figure 22 below shows that four of its nine indicators were identified in our case studies. Of these four indicators, three were also identified in our survey. The four identified indicators, being 2.11, 2.4.1, 2.4.2 and 2.4.3, measure the practices of maintaining a product backlog, and of estimating and prioritizing user stories when added to the product backlog.

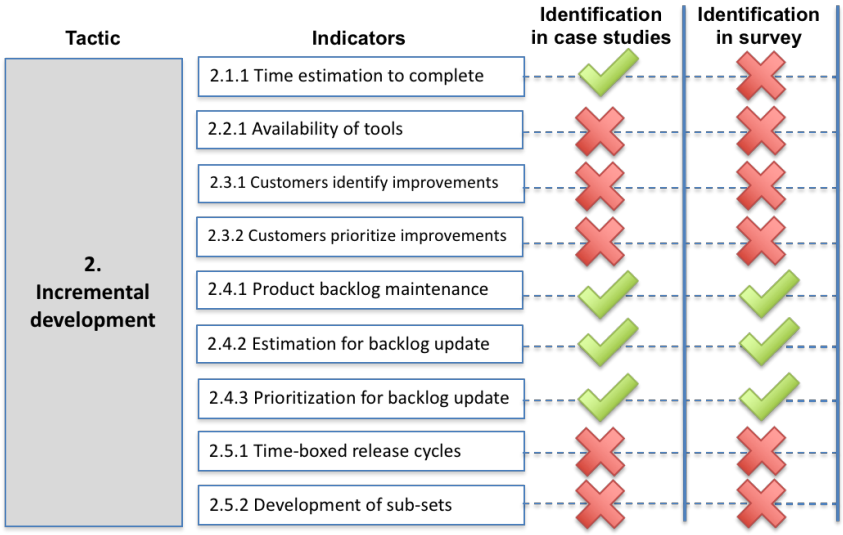

Figure 22: identification of the tactic 2 indicators in our case studies and survey

As Figure 23 below shows, two of the four indicators that constitute tactic 3 were identified in both our case studies and our survey as being relevant. Indicators 3.1.1 and 3.1.2, which both hold a top-25 position. These indicators measure the practice of aiming to work in iterations and generate releases in four weeks or less.

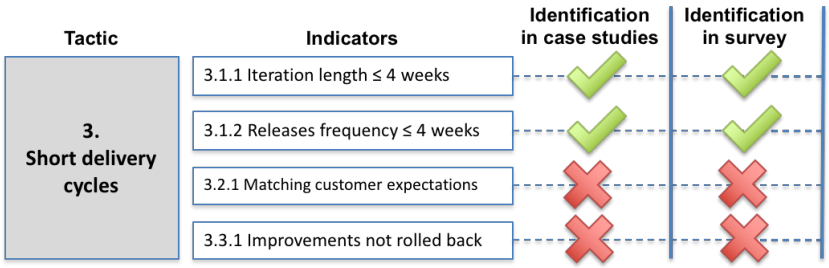

Figure 23: identification of the tactic 3 indicators in our case studies and survey

As shown in Figure 24 below, only one of the four indicators constituting tactic 5 has been identified in the case studies. However, this indicator has not been identified in the survey.

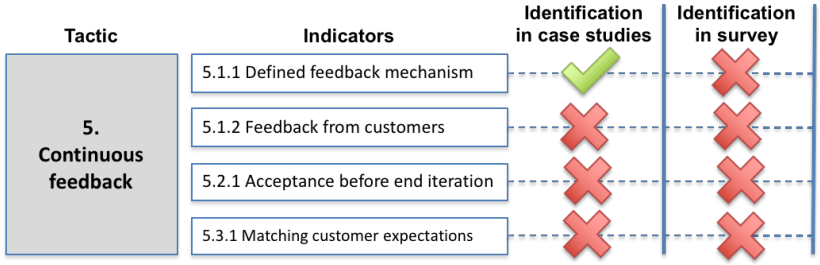

Figure 24: identification of the tactic 5 indicators in our case studies and survey

As shown in Figure 25 below, only one of the four indicators constituting tactic 5 have been identified in the case studies, while none have been identified in the survey.

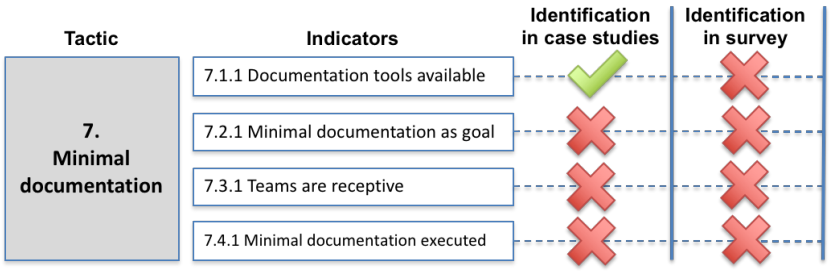

Figure 25: identification of the tactic 7 indicators in our case studies and survey

In conclusion, tactics 1, 2 and 3 seem medium relevant, based on the results of our case studies. What these tactics have in common is that they focus on different aspects of the iterative nature of processes: working in sprints, prioritisation, and time-boxing. As discussed earlier, tactics 6, 8 and 11 seem most relevant. A subset of the indicators constituting tactics, 1, 2, 3, 8 and 11 were also identified in our survey.

In total, 38 of the 74 indicators have been identified in the analysis of our case study results. As can be seen in Figures 17 to 24, all 21 indicators that have been identified in the analysis of our survey results, were also identified in the analysis of our case study results. However, this does not apply the other way around: the additional 17 indicators that have been identified in the analysis of our case study results have not been identified in the analysis of our survey results. An explanation for this could be that our survey population consisted of organisations from multiple industries, while our case studies focused solely on the energy sector as to create ceteris paribus circumstances. These circumstances may have enabled us to identify more relationships than was possible in the wider setup of our survey.

5.2.2 Agile values and principles seem to play an important role

Originally, the techniques and tools as used in the agile way of working are all based on, or were meant as facilitators for, the four values and twelve principles as described in the Agile Manifesto (Beck et al., 2001). The authors of the manifesto state that their manifesto is 'a set of values based on trust and respect for each other' and is aimed at 'promoting organisational models based on people and collaboration', thus 'building the types of organisational communities in which we would want to work'. However, the four case studies showed that sometimes the tools and techniques no longer seemed to be considered as means to an end, but became an aim in itself. In this way, the instrumental connection with the underlying values and principles could get lost.

In our interpretation, the intangible factors of culture and leadership seem to play an important role here as they facilitate an agile 'mindset'. The relative importance of tactics 6, 8 and 11 could be interpreted as a symptom of this issue. Appendix 5.17, presenting the ranking of the cross-case tally scores, shows that the lower half of the 40 indicators mainly consisted of specific agile techniques and tools, while the top-20 mainly consisted of agile principles and practices. Many interviewees acknowledged this as they feel their organisation overly focused on the deployment of agile techniques and tools, while the focus should be on the agile values and principles.

5.2.3 Need for additional research

As to meet the *ceteris paribus* conditions as much as possible, the case studies have been performed within organisations that market gas and electricity in the Dutch consumer market. Therefore, the conclusions of these case studies are limited to this particular sector, and they cannot be projected to other sectors without additional research.

However, the four organisations also have in common that they serve large volumes of customer with relatively simple service propositions through multichannel strategies. This could mean that the case study results are relevant for organisations showing comparable characteristics, such as in the banking, insurance, telecom, and airline sectors. Obviously, it would require additional research to determine this similarity.

Chapter 6: conclusions and discussion

Based on the results of our literature reviews, case studies and survey, this chapter elucidates our conclusion that a relationship exists between the agile way of working and customer performance within multichannel strategies. This relationship is determined by 21 indicators, uniquely constituting two independent variables. The chapter also describes how these indicators offer opportunities for managers to improve customer performance. Finally, the chapter presents our recommendations for future research.

6.1. Introduction: summary of our research approach

As was determined in Chapter 1, based on our literature research, challenges for companies using more than one channel as part of their marketing strategy have become increasingly complex. The majority of their customers has become accustomed to using various communication and distribution channels at different stages of their orientation, buying and usage cycles. These multichannel customers increasingly demand a seamlessly integrated experience for the different channels they can use when buying from a supplier.

Furthermore, it is expected that multichannel strategies can enhance the revenues of organisations. This expectation is based on three assumptions (Kumar et al., 2005; Weinberg et al., 2007; Li et al., 2015; Herhausen et al., 2015):

- an increased number of channels and their alignment could enable organisations to reach more prospects and convert these prospects into customers more effectively;
- the improved customer experience could increase customer satisfaction, which leads to more loyal customers and therefore retention;
- the improved customer experience could increase the buying frequency and volume of customers, resulting in a higher contribution margin per period.

However, the complexity of multichannel strategies is significantly larger as compared to single/separate channel strategies. Many organisations are struggling with this complexity and need to adapt their channel strategy execution as to maintain or improve their performance when deploying multichannel strategies. With this need as a starting point, the management problem is:

What can enable practitioners in achieving
successful multichannel strategy execution?

Although little empirical evidence is available, our literature research identified five enablers for multichannel strategy execution. These enablers are strategy alignment, culture, organisational structure, customer insight deployment, and the agile way of working. Our research has focused on the agile way of working. Thus, as four of the five enablers were excluded from our research, the question as formulated for the management problem above is partly addressed and answered in this study. The focus of our research was aimed at determining to which extent there is a relationship between the agile way of working and customer performance within the setting of multichannel strategies, and, if so, what specific elements constitute this relationship.

6.1.1 Conceptual model

Looking at the agile way of working at a higher abstraction level, the available literature suggested that its essence revolves around organisational learning. As for organisational learning, Senge (1990: 256-257; Senge et al., 1992a, 1992b) has identified three elements constituting organisational learning. These three elements have been selected to serve as the three independent variables in our conceptual model. The three elements are:

- Goals: the governing concepts for defining what an organisation seeks to accomplish and how it intends to operate;
- Tools and methods: the practical means an organisation deploys for performing its activities and monitoring progress;
- Organisational infrastructure: the roles, communication and structure within an organisation that determine how resources are allocated.

The model used in our research states that the agile way of working is a specific form of organisational learning, which increases the speed, volume and perceived value of improvements in channels for customers. As a result of the improved fit between expected and perceived channel experiences, customers become more satisfied. Ultimately, this customer satisfaction generates more value of the customer through more customer loyalty and higher contribution margins. These concepts are constituting parts of the dependent variable 'Customer performance', which comprises nine items in total, as described in section 3.2.6.8 (Slater et al., 1995; Parasuraman et al., 1988a; EFQM, 2013).

Thus, our conceptual model has been formulated as follows (see Figure 26):

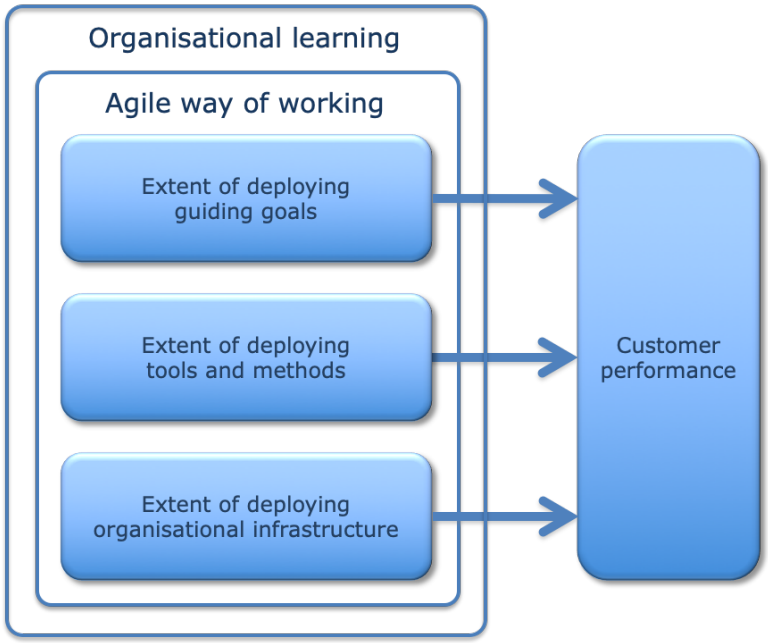

Figure 26: Conceptual model

The section below describes how the conceptual model has been operationalised and deployed in our empirical research.

6.1.2 Operationalisation and empirical research

As the foundation of the agile way of working is formed by agile values and principles (Beck et al., 2001), our goal was to select an existing and theoretically sound model which comprises these agile values and principles, and which could serve as the operationalisation for the three independent variables in our conceptual model. Therefore, as the in-depth analysis in Chapter 3 showed, the currently available models have been inventoried and assessed, resulting in 74 indicators representing our three independent variables in a unique way. An iterative investigation, using both factor and regression analysis, resulted in 21 indicators that collectively constitute elements of the agile way of working and have a relationship with the dependent variable which was operationalised using the definitions of the EFQM (2013).

After the quantitative study, a qualitative study was performed in which all 74 theoretically relevant items (see sections 3.2.6.4, 3.2.6.5 and Appendix 3.1) were studied in four case studies. The closing section of Chapter 5 presents the detailed discussion of our inferences, as based on the cross-case study results.

Based on these outcomes, and the underlying literature reviews, our research questions can now be answered. This chapter presents the conclusions based on all of our research. The subsequent sections will discuss our conclusions and their limitations, present the managerial implications, reflect on our research approach, and offer suggestions for future research.

6.2 Answering our research questions

In this section, the conclusions of our research and their implications for our research questions are elucidated. As described in Chapter 1, our research questions were formulated as follows:

1. *Within the setting of executing multichannel strategies, to which extent is there a relationship between the agile way of working and customer performance?*
2. *If this relationship exists, what specific elements constitute this relationship?*

As only a subset of all elements of the agile way of working proved relevant, answering our research questions is a nuanced matter, as it provides a differentiated picture. The first of our research questions is discussed in the section below, while the second is discussed in the subsequent section.

6.2.1 Research question 1: support for a partially positive relationship between the agile way of working and customer performance

The first research question focuses on the existence of a relationship between the agile way of working and customer performance within multichannel strategies. As confirmed by interviews, direct observations, physical artefacts, documentation and measurements within our case studies, participants in all four cases experience a positive relationship between the agile way of working in general with the dependent variable 'Customer performance'. Many interviewees indicate that 'the agile way of working as a whole' is the basis for this relationship. See Chapter 5 for an in-depth discussion of the analysis.

In addition, the data analysis of our survey showed that for 21 of the 74 indicators of the agile way of working, as presented in detail in Appendix 3.1 and discussed in detail in Chapter 4, the respondents believe that these indicators have a positive relationship with

the dependent variable 'Customer performance'. These 21 indicators were also confirmed by the results of our case studies. Therefore, our answer to the first research question is that certain elements of the agile way of working seem to have a positive relationship with customer performance within multichannel strategies.

This conclusion logically leads to the second research question, as is discussed below.

6.2.2 Research question 2: two variables constitute the relationship between the agile way of working and customer performance

Our second research question focused on the specific variables that constitute the relationship between the agile way of working and customer performance within multichannel strategies. Our literature review on the theory of organisational learning, as discussed in section 2.4, suggested that this relationship consisted of three variables, as proposed by Senge (1990, 1992a, 1992b). Further literature research suggested that the three independent variables uniquely comprised 74 indicators (see section 3.2.6). As discussed in more detail in sections 4.2.3.1 and 4.1, the validated factor and regression analysis of the survey data resulted in a subset of 21 relevant indicators, uniquely constituting two independent variables (see Figure 27). As discussed in detail in section 5.2, these indicators were also identified in our case studies as being medium to highly relevant.

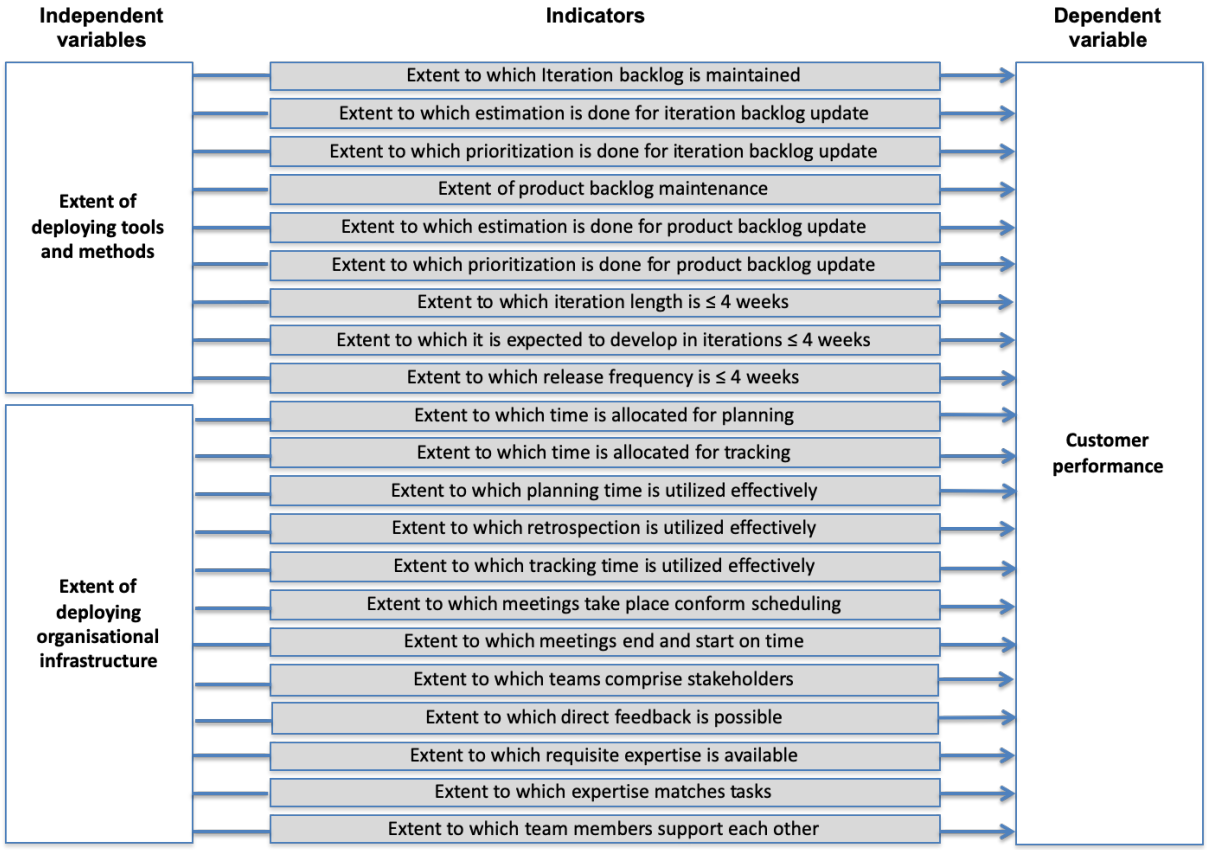

Figure 27: The 21 identified indicators as linked to the two independent variables and the dependent variable

As presented in Figure 27, the answer to our second research question is that the relationship is constituted by 21 indicators, of which the definitions can be found in Appendix 3.1. This means that of the original 74 indicators, as identified in the literature, 53 items seem irrelevant. None of the 74 indicators that represent the independent variable 'Guiding goals' were shown to have a relationship with customer performance and therefore have to be considered irrelevant. Therefore, in the perception of the case study participants and survey respondents the relationship between the agile way of working and customer performance consists of two independent variables, namely the extent of deploying tools and methods, and the extent of deploying organisational infrastructure.

Having answered our two research questions, our research problem will now be addressed in the section below.

6.2.3 Addressing our research problem

In Chapter 1, our research problem was formulated as follows:

> *To determine empirically whether there is a relationship between the agile way of working and customer performance within a multichannel strategy setting, and what specific elements constitute this relationship.*

As discussed in section 6.2.1 and 6.2.2, based on the results of our survey and case studies, there seems to be a relationship between the agile way of working and customer performance. This relationship consists of two independent variables that uniquely comprise 21 indicators in total. The 21 relevant indicators can be divided further into three groups, based on the fact that the indicators within a group behave in the same way in how they influence customer performance. The criterion for this is their standardised beta coefficient (with significance below 0.05): the degree of change in the dependent variable for every unit of change in the independent variable. Table 58 shows this grouping based on our factor and regression analyses as presented in Chapter 4.

Table 58

Grouping of the 74 indicators

Factor	**Indicators**	**Unstandardised coefficients**		**Standardised coefficients**		
		B	**Std. error**	**Beta**	**t**	**Sign.**
1. Multi-disciplinary cooperation	Two items: • Teams comprise stakeholders • Direct feedback possible	0.148	0.025	0.454	5.958	0.000
2. Working in sprints: prioritizing, planning and monitoring	Sixteen items: • Iteration length is ≤ 4 weeks • Expected to develop in iterations ≤ 4 weeks • Extent to which release frequency is ≤ 4 weeks • Iteration backlog maintenance • Estimation for iteration backlog update • Prioritization for iteration backlog update	0.011	0.004	0.206	2.546	0.012

	• Product backlog maintenance • Estimation for product backlog update • Prioritization for product backlog update • Time allocation for planning • Time allocation for tracking • Planning time utilized effectively • Retrospection utilized effectively • Tracking time utilized effectively • Meetings conform scheduling • Meetings end and start on time					
3. Deploy-ment of expertise	Three items: • Requisite expertise available • Expertise matching tasks • Team member support	0.055	0.024	0.202	2.355	0.021
Irrelevant	The remaining 53 of the 74 items	-	-	-	-	-

As shown in Figure 26 above, the indicators of factor 1 and 3 are uniquely connected to the independent variable 'Extent of deploying organisational infrastructure'. Together, these two groups describe the prerequisite of working in teams that comprise all relevant stakeholders, with a full coverage of the necessary expertise to fulfil the team purpose, and with team members capable of supporting the other team members.

Factor 2 contains sixteen indicators of which seven are uniquely connected to the independent variable 'Extent of deploying organisational infrastructure'. Together, these indicators describe how the organisational infrastructure facilitates team consultation processes in the form of a planning meeting, progress tracking meeting (also called a 'standup' or 'daystart'), and retrospective meeting. These enable teams to allocate and effectively use time for planning, tracking and evaluating their activities.

The remaining nine indicators of factor 2 represent the independent variable 'Extent of deploying tools and methods'. These indicators describe the tools and methods the teams need to deploy. Firstly, these teams perform better if they apply a rhythm of working in sprints, which are fixed periods of maximum four weeks to complete certain activities. Secondly, to perform well in completing these activities, teams should prioritize, plan and monitor the activities by a disciplined deployment of agile 'artefacts', being the product backlog and iteration backlog.

Having addressed our research problem and having answered our research questions, the next section now discusses to what extent limitations apply to the relevance of our conclusions as presented above.

6.3 Limitations of our conclusions

As discussed in Chapter 3, our philosophical position is that of interpretivism. This implies that the generalisability of our research is limited. This limitation is logical in our view as organisations and their specific circumstances seem to differ strongly, implying that no law-like generalisations can be made. For instance, organisations differ in their maturity

regarding the agile way of working in terms of knowledge and experience. This has not been taken into account.

Furthermore, the outcomes of our research have, for a large part, been based on the own perceptions of people within organisations about the agile way of working within their organisation. Obviously, this is not the same as judgment of their agile way of working by an independent external expert. The same applies to customer performance, which is, for a large part, not directly based on quantitative or qualitative feedback from customers themselves.

As also discussed in Chapter 3, four exogenous variables have been deployed to control the survey for specific respondent characteristics. These variables were market focus (targeting consumers, or businesses and organisations, or both), size (number of employees), and two aspects of channel scope (proportion of customers using multiple channels; number of channels deployed by the organisation). In the initial statistical analysis of the survey results, the size of the organisations showed skewness towards larger organisations. However, in the in-depth statistical analysis, none of the exogenous variables proved to have a significant relationship with the dependent variable 'Customer performance'. Nevertheless, as to exercise all caution, the aforementioned skewness could indicate that our inferences are more relevant for larger organisations and less relevant for smaller organisations. Moreover, referring to Hume's induction problem, this is not a guarantee that no other exogenous variables exist. For future research, it could be interesting to investigate the relevance of additional exogenous factors in more detail.

Furthermore, as discussed in Chapter, for *ceteris paribus* purposes, our case studies have been performed within organisations that market gas and electricity in the Dutch consumer market. Therefore, the conclusions based on the case studies are limited to this specific industry, and cannot be applied to other industries without additional research. However, the four organisations also have in common that they serve large volumes of customers with relatively simple service propositions within multichannel strategies. This could indicate that the case study results are relevant for organisations showing comparable characteristics, such as in the banking, insurance, telecom, and airline sectors. Obviously, it would require additional research to determine this similarity.

Finally, a statistical analysis has been performed as to check whether the 21 items in our MP model show interdependence. Although no interdependencies could be determined, this does not mean this can fully be ruled out.

Having discussed the limitations of our conclusions, the next section critically evaluates our research approach.

6.4 Reflection on our research approach

As discussed in Chapter 3, our research has deployed a deductive approach, based on the empirical cycle. This approach followed a sequence in which, as a starting point, the development of the conceptual model was iteratively combined with literature reviews. Next, an empirical research was started in which a survey was held to quantitatively validate the AMM model and, finally, four case studies were performed and.

The absence of an existing, academically accepted model for measuring agility outside the IT domain necessitated the development of a new model. Basically, this issue could be addressed in two alternative ways. Either an existing model from the IT domain could be selected and adapted, or a totally new model would need to be developed based on theory development. Although our preference was to choose the certainty of an existing

model, this proved infeasible due to a misfit of this model with our data. Therefore, an entirely new model has been developed, based on our survey and cases studies.

Still, it is useful to critically asses the OPS framework as well as our AMM and MP model. This assessment is discussed below.

6.4.1 Criticism of the OPS framework, AMM model and MP model

A possible drawback of the AMM model, as originally used as the starting point for our case studies and survey, is that it was quite comprehensive. As for the survey, the large number of indicators it comprised may have put off potential respondents, may have caused respondents dropping out during the survey, or may have hastened respondents who thus produced inaccurate answers. However, of all the theoretically sound models that were identified in our literature review, this comprehensive nature was comparable to that of the OPS framework, which formed the foundation of our AMM model.

The explanation for this is that the operationalisation of the agile values and principles is, to a large extent, dependent on measurable items such as agile techniques and tools. Furthermore, the wide variety of aspects within each agile value or principle necessitates a nuanced and detailed measurement, thus resulting in a large number of items.

However, the case study results point out that most interviewees feel their organisations tend to step into the pitfall of focusing too much on agile techniques and tools instead of on agile values and principles, while these interviewees would prefer the latter. This last issue can also be perceived as criticism on the currently available agility models, as these focus mainly on the deployment of agile techniques and tools.

Furthermore, our analysis showed that the grouping of the indicators in the tactics of the AMM model fundamentally differs from the clustering of these indicators in three factors, as based on the analysis of the available survey data and captured in our final MP model. However, there is no prove of whether this discrepancy is caused by flaws in the original OPS framework, or by adapting the OPS framework from IT to marketing practice.

Moreover, our analysis found no proof of the relevance for the distinction, as proposed by the original OPS framework, between 'Capability' indicators, measuring the facilitation of agility, and 'Effectiveness' indicators, measuring the resulting agility in practice. Based on this lack of proof, this distinction has been eliminated.

6.4.2 Scrutinizing researcher bias

As part of this reflection, a final remark needs to be made from a methodological perspective. First of all, with regard to the case studies and survey, three different forms of judgment have been deployed. The first form is our own judgment about the organisations in our case study and about the survey results. The second form is the judgment the organizations in our survey have made themselves about their own situation. The third form is the judgment the organizations in our survey have made themselves about their customers. All three forms of judgment are subject to bias, but it is infeasible to assess the bias that applies to the second and third form.

As for our own researcher bias, within the context of our study, the relevant forms of possible researcher bias were confirmation bias, the halo-effect, and question related bias (Saunders et al., 2015). *Confirmation bias* concerns the forming of a belief and using respondent information to confirm this belief, while dismissing information that

contradicts this belief. The *halo-effect* concerns the judgment of information from a certain perspective based on a single, positive attribute. *Question related bias*, concerns the tendency of the researcher to ask leading questions, and use a subjective wording and order for questions.

As discussed in Chapters 3, 4 and 5, all relevant procedures have been deployed in the design and execution of our research approach as to optimize validity and reliability. The subjective filtering and interpretation associated with confirmation bias and the halo-effect, has been eliminated as much as possible by triangulation of information sources, literally transcribing interviews, using independent coders, discussing the results with interviewees, and using explorative statistical analysis (Yin, 2013; Lee et al., 2012). The question related bias has been eliminated as much as possible by using a standardised, tested interview protocol, while the survey questionnaire has been used, discussed and adapted in a test panel (Yin, 2013; Singleton et al., 2017).

Nevertheless, in general, it seems impossible to rule out our own researcher bias completely. All things considered, the results of our current research approach should be interpreted with an appropriately critical view.

This final reflection completes the meta evaluation of our research approach. The next section discusses what the consequences of the results of our study are for the body of knowledge in marketing.

6.5 Consequences for the body of knowledge

Based on the results of our structured literature review as described in Chapter 1, it is interesting to determine how the results of our empirical study relate to the current body of knowledge in channel strategy.

First of all, Kabadayi et al. (2007), Valos (2008, 2009), Baumgartner et al. (2012) and Gregoriadis et al. (2012) stated that the complexity of multichannel strategies is significantly larger as compared to single/separate channel strategies. Moreover, they stated that many organisations are struggling with this complexity as they are applying classical single/separate channel strategy execution in situations where multichannel strategy execution is more appropriate. Based on the results of our case studies, these statements can be supported.

Secondly, the common view in literature is that, within multichannel strategies, iterative operational processes should serve as the basis for continuously improving performance (Payne et al., 2005; Rouzies et al., 2005; Kotler et al., 2006; Hughes, 2006; Valos, 2009). Although there is a rich body of academic literature on continuous improvement and iterative processes, little has been published on this subject as well as on the implementation of agile principles within the context of marketing. Currently, the agile way of working is gaining ground within marketing to create an adaptive operation that incrementally develops its strategy by experimenting, which is especially relevant for the dynamics and complexity of multichannel operations (Blank, 2013; de Swaan Arons et al., 2014). However, the available literature regarding the agile way of working is limited, mostly conceptual by nature, and focused on the IT domain. Based on our structured literature review, our study is the first to offer an inventory and assessment of all currently available agility models.

Furthermore, little is known about the agile way of working within the business domain, and especially within the marketing domain. Our study has empirically shown a relationship between the agile way of working and customer performance within multichannel strategies, and has identified the relevant elements of this relationship.

Thus, our study expands the body of knowledge by offering empirical insights within the marketing domain.

Moreover, many conceptual articles propose that successful multichannel strategy execution requires organisational structures to be reconfigured, as to facilitate internal cooperation (Rouzies et al., 2005; Rangaswamy et al., 2005; Kotler et al., 2006; Weinberg et al. 2007; Webb et al., 2007; Neslin et al., 2009; Van Bruggen et al., 2010). Although organisational structure has been kept out of scope in our study, this enabler has indirectly been identified in our empirical research in the form of the factor 'Multidisciplinary cooperation'. Thus, our study supports the theory as proposed in the articles above.

Finally, a practical contribution to the body of knowledge is the addition of our validated MP model (see section 6.7.4 below). To our knowledge, this is the first model enabling measurement of the agile way of working and its relationship with customer performance within marketing.

The discussion above is specifically focused on channel strategy. Additionally, it is interesting to broaden this scope and determine how the results of our empirical study relate to the current body of knowledge in marketing and organisational learning. First of all, our study has used the insights of Parasuraman et al. (1988a, 1988b, 1991, 1994). As expressed in their Gaps Model of Service Quality, organisational learning is aimed at optimisation of the match between customer expectations and customer perceptions of service experiences. This optimisation leads to customer satisfaction, thus improving value of the customer. The research on market orientation by Slater et al. (1995) also suggested that organisational learning is valuable to customers. According to them, organisational learning enables organisations to focus on understanding and satisfying the expressed and latent needs of their customers, thus improving their customer performance in terms of customer satisfaction. By operationalising our dependent variable 'Customer performance' based on customer satisfaction and the causes and consequences of customer satisfaction, our study has concretized these insights on organisational learning within the context of channel management.

Additionally, our study has used the insights of Senge (1990, 1994) on organisational learning. First of all, our conclusion was that the agile way of working is a specific form of organisational learning as it enables organisations to effectively use customer feedback for improving their value creation for customers. Moreover, the construction of our independent variables has been based on the three elements in Senge's model. The results of our empirical study indicated that one of these elements, 'Guiding goals' is irrelevant for customer performance in multichannel settings. However, the other two elements, being 'Methods and tools' and 'Organisational infrastructure', do seem to be partially relevant. The irrelevance of 'Guiding goals' could perhaps be explained by the instrumental nature of its operationalisation, which focused mainly on techniques and standardisation for formulating requirements and features. In our opinion, on the one hand, guiding goals should be aimed more at formulating the team purpose and translating this purpose into results that need to be achieved. On the other hand, guiding goals should also involve deployment of customer feedback for determining the relative value of deliverables and thus prioritisation of team activities.

The three theories above (Parasuraman et al., 1988a, 1988b, 1991, 1994; Slater et al., 1995; Senge, 1990, 1994) originate from an era in which the concept of multichannel management did not yet exist. Our study showed that these three classical theories could still be applied in a relevant way within the new context of multichannel management. In short, certain aspects of organisational learning enable organisations to achieve more improvements in channels, in a faster way, and perceived as more valuable by customers. This improves customer satisfaction, thus increasing value of the customer.

Furthermore, the inferences above could still be considered as singular statements that apply to multichannel strategies of, as far as it concerns our case studies, organisations within the consumer energy sector. However, in our opinion, more generic statements could be formulated from our findings as well. First of all, as only 21 of the 74 indicators have been identified, our conclusion is that the relevance of the agile way of working for marketing is quite limited. This raises the question whether the agile way of working is particularly relevant for the IT domain, where it originates from. If so, this might be explained by a more technical and complex nature of IT activities in comparison to marketing activities in general, which makes the agile techniques and tools more relevant for IT. An additional explanation could be that, in general, IT professionals perhaps have different character traits than marketing professionals. In any case, the relevance of the agile way of working for marketing should be assessed critically.

In our opinion, the relevance of the agile way of working for marketing is to be found less in agile techniques and tools, and more in the underlying agile values and principles. Within these agile values and principles, two clusters seem most important to us. The first cluster concerns team architecture and setting. Often, the responsibilities per channel are allocated to separated silos within the organisational structure. This fragmented setup impedes effective communication and cooperation, which are necessary to create a seamless customer journey. The speed and quality of this communication and cooperation could be improved by creating multidisciplinary teams, comprising all expertise necessary for achieving a certain customer related purpose. The experts concerned should be assigned to the teams as dedicated team members. Furthermore, the teams should have a mandated end-to-end responsibility for their customer related purpose. Finally, the teams should each have their own physical office space, so team members can cooperate and communicate directly and visually. Obviously, one could argue that this concept as a whole is not specifically connected to the agile way of working or organisational learning, as it could be applied regardless of the application of other values and principles.

The second cluster concerns customer feedback. First of all, teams should be driven by curiosity as to learn from customers. Based on this, teams should deploy relevant customer feedback sources and evaluate their output in a structured and short-cycled way. The insights the teams gather from this, enable these teams to get better at determining the expectations and perceived experiences of their customers. As a result, the teams can continuously improve the fit between these expectations and perceived experiences, thus increasing the relevance of their activities and deliverables. In our opinion, this improvement in value creation, caused by the first and second cluster as described above, not only applies to channels, but also to products, services and customer processes.

Based on these consequences for the body of knowledge, the next section discusses our recommendations for future research.

6.6 Recommendations for future research

Based on our findings, several recommendations should be made about additional research. Firstly, it is relevant to empirically research what relationship the four enablers that were excluded from our research, being strategy alignment, culture, organisational structure, and customer insight deployment, have with customer performance within multichannel strategies.

Moreover, the four exogenous variables, as discussed in section 6.3, have not shown to significantly influence the relationship between the independent and dependent variables. However, as discussed in Chapter 4, this is not a guarantee that no other exogenous

variables exist. Therefore, it is sensible to investigate in more detail the relevance of additional exogenous variables, e.g. share of online channels within the channel mix, revenue share of products versus services, and sector focus.

Furthermore, as discussed in section 6.3 about the limitations of our research relevance, additional research is needed to determine whether our inferences apply to both smaller and larger organisations. Furthermore, it is useful to determine whether the inferences apply to other sectors, outside the focus of our case studies, especially for organisations resembling those in our case studies (e.g. larger organisations in the banking, insurance, telecom, and airline sectors).

Our research has focused on multichannel strategy execution. However, it seems logical that the agile way of working could be applied to customer related activities in a broader scope than communication and distribution channels alone. Think of products, services and customer processes and the corresponding domains, such as marketing strategy, innovation, product management, and so forth. As it is still unclear how the agile way of working impacts customer performance in these adjacent domains individually or as a whole, this needs to be investigated.

In our research, the outcomes have largely been based on the perception that people in organisations have themselves about the deployment of the agile way of working and customer performance within their own organisation. For the additional research as described above, as well as for validation of our MP model, our recommendation is to use a different source of information as the basis for measurement. As discussed in section 6.2 the organisational deployment of the agile way of working could be judged by an independent external expert. As for the dependent customer performance variable, scoring its nine items could be based on quantitative or qualitative feedback from customers themselves. Furthermore, it is useful to perform an intervention study in which the most dominant aspects of the agile way of working are introduced after which it will be measured whether this factually influences customer performance.

As discussed earlier, our reflection on the literature and our empirical research is that the agile way of working is a concrete implementation of organisational learning. With this view as a starting point, the combination of our MP model and the 'Tools and methods' and 'Organisational infrastructure' elements within Senge's (1990 and 1994) architecture model, offers interesting opportunities for in-depth empirical research.

Furthermore, Parasuraman et al. (1988b: 35) also stress the importance of organisational learning. They state that the most important factor facilitating service quality are 'communication and control processes implemented in organisations to manage employees'. As depicted in their 5-gaps model, these processes are facilitated by sixteen 'organisational factors' of which multiple factors seem to show similarities with the items within our MP model and additional agile principles. Therefore, the customer performance items in our MP (or its combination with the Slater and Narver model, as described above) could be replaced by or complemented with the five dimensions of the SERVQUAL instrument, being the operationalisation of tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1991).

Thus, in our view, future research should not focus on the agile way of working specifically, but would have to integrate the underlying agile values and principles into the concept of organisational learning as to determine its impact on customer performance.

The original starting point for our research was a management issue: as customers are increasingly demanding a seamless journey across the different communication and distribution channels they use, managers are struggling with the complexity of multichannel strategy execution. It is therefore useful to determine what the

consequences of our conclusions are for practitioners in the marketing domain. These managerial implications are discussed in the next section.

6.7 Managerial implications

In Chapter 1 the management problem was formulated as follows:

What can enable practitioners in achieving successful multichannel strategy execution?

Based on the present research, this question can now be answered. Our focus has been on the agile way of working, and therefore the answer must be seen within this delimitation. Our inferences have several implications for practitioners within the marketing domain. These implications are based on three elements of our research, being the case studies, the survey, and the literature reviews. The implications of each of these three elements will be discussed below, starting with the case studies in the bottom of our research approach 'funnel' as discussed in Chapter 3 and shown in Figure 28 below, and going back upwards.

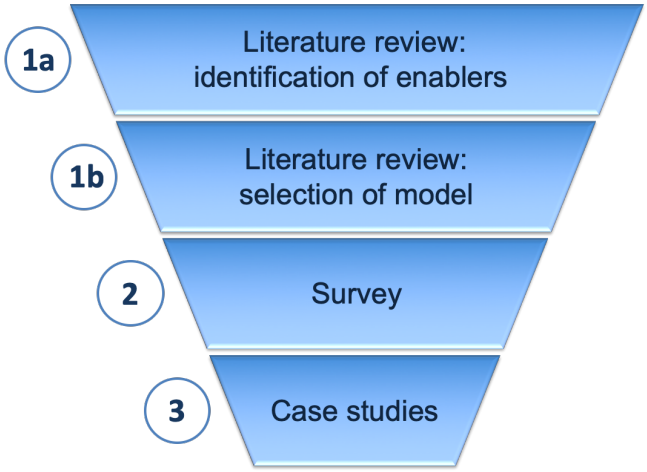

Figure 28: Our research approach 'funnel'

6.7.1 Managerial implications based on case study results

As will be discussed in section 6.7.2, the case studies corroborated the survey results. However, the case studies also generated additional outcomes that were not confirmed by the survey results. Still, although our study had academic purposes, these additional insights could be relevant for practitioners as they offer a broader view on managerial implications.

The first additional insight concerns the physical location. Working in a permanent team location seems to facilitate fast and clear communication and close cooperation between team members. If the team location enables team members to use its walls for visualization (e.g. kanban, sketching), this seems to improve communication and collaboration even further. Therefore, it is advisable for managers to experiment with new forms of office design.

The second additional insight concerns the role of agile values and principles. As described in Chapter 3, the techniques and tools used in the agile way of working are all based on, or are meant as facilitators for, the values and principles as described in the Agile Manifesto. However, the case studies show that sometimes the tools and techniques no longer seem to be considered as means to an end, but become an aim in itself. In this way, the instrumental connection with the underlying values and principles could get lost. In our interpretation, the intangible factors of culture and leadership seem to play an important role here as they facilitate an agile 'mindset'. Therefore, managers wanting to implement the agile way of working within their organisational unit, are advised to use the agile values and principles as a starting point. Thus, the techniques and tools are used specifically for the concrete implementation of the agile values and principles to match their specific organisational circumstances and goals, instead of the other way around.

The third additional insight concerns the self-management aspect of the teams. By deploying a servant leadership style, managers can support and facilitate teams in becoming autonomous in determining, planning, executing, tracking and managing their activities. By agreeing upon the prioritization of team goals and the associated performance expectations, and refraining from interference with the detailed contents of the associated activities, managers enable team members to take individual and collective ownership of team activities and results within their mandated responsibility. This team empowerment seems to help team members in holding each other accountable for completing the work they are responsible for.

Finally, managers should be critical about where to deploy the agile way of working and where not. Based on the Eneco case study, there is reason to expect that the agile way of working is effective in situations where renewal and innovation, flexibility, speed and effectiveness are needed, and is less effective in situations where repetitiveness, predictability and efficiency apply. If, based on this distinction, a hybrid organisation would develop, it seems relevant for managers to scrutinize the interaction of their agile teams with non-agile organisational units, as this could inhibit the customer performance of the agile teams. This is congruent with Stacey's view (1996). As depicted in his Stacey matrix, he distinguishes four situation: simple, complicated, complex and anarchy. He argues that agile-like approaches are best suited for complex situations. This is acknowledged by Rigby et al. (2018, p. 90): 'Not every function needs to be organized into agile teams; indeed, agile methods aren't well suited to some activities. Once you begin launching teams, however, you can't just leave the other parts of the business alone. If your newly agile units are constantly frustrated by bureaucratic procedures or a lack of collaboration between operations and innovation teams, sparks will fly from the organizational friction, leading to meltdowns and poor results. Changes are necessary to ensure that the functions that don't operate as agile
teams support the ones that do.'

In addition to the managerial implications based on the case study outcomes, the next section discusses the managerial implications based on the survey (see step 2 in Figure 6.2).

6.7.2 Managerial implications based on the survey

Based on our inferences from the survey results, as described in Chapter 4, experimenting with implementation of multidisciplinary teams offers managers a relevant opportunity for improving customer performance. Multidisciplinary cooperation could be considered the most important factor as it has both a significant relationship with the independent variable 'Customer performance' as a whole and with each of its nine

indicators individually. Moreover, multidisciplinary cooperation was identified as the most important factor in the case studies as well.

Next, in composing these multidisciplinary teams, it seems recommendable to include all expertise necessary for an end-to-end match with their cross-functional purpose. This full coverage of requisite expertise makes the teams independent of other organisational units in terms of prioritizing, planning and execution of their activities. Furthermore, it seems useful to compose these teams in such a way that they incorporate team members who are capable of supporting the other team members, as this enhances their mutual understanding of each other's specialism. This could also enable temporary replacement of each other's roles (e.g. vacations, illness) and thus further increase independence of other organisational units. This architecture as a whole could be tested in pilots, as to determine what suits the specific context of the practitioner's organisation best.

It also seems good practice to have these teams work in a rhythm of iterations, which are fixed periods of maximally four weeks to complete certain activities. To perform well in completing these activities, teams should prioritize, plan and monitor their activities constantly and use synchronous, face-to-face communication between team members. This communication can be facilitated by a disciplined deployment of agile techniques and tools, which consist of two groups. The first group contains so called 'artefacts': the product backlog and iteration backlog, which enable the teams to visually prioritize their ideas for improvement and plan and monitor the associated activities.

The second group consists of brief and frequent team meetings. One of these is the planning meeting, in which the team estimates the amount of time the activities cost. Based on this, the team can determine what activities it is able to perform in the next iteration. Another meeting is the progress tracking meeting. This is a daily meeting in which the team monitors the progress of the activities during the iteration and is able to adjust the prioritization and planning of the activities. Finally, the retrospective meeting enables the team to evaluate its way of working during the completed iteration and formulate improvements for the next iteration. The case studies showed these techniques and tooling worked well at Essent, and therefore managers could pilot-test the deployment of these techniques and tooling for the specific setting of their own organisation.

Finally, if aiming to improve a specific part of their customer performance, managers also have additional options to investigate. For instance, as to increase the speed at which teams realize improvements, managers could experiment with 32 different aspects in the form of indicators (see Table 4.18 and Appendix 4.6). Thus, they could implement these aspects one by one, as to empirically determine what works best for their specific goals and situation.

In addition to these managerial implications, as based on our inferences of the survey results, the next section discusses the managerial implications based on the literature reviews.

6.7.3 Managerial implications based on the literature reviews

In going another step further back up our research approach 'funnel', the literature research offers the broadest perspective on the managerial implications of the present research. Our literature research consisted of two parts:

- a literature review aimed at the identification of enablers for multichannel strategy execution (step 1a in Figure 6.2), as described in section 2.1;

- a literature review aimed at the selection of a theoretically sound model for measuring the agility level of multichannel strategy execution (step 1b in Figure 6.2), as described in section 3.2.6.

First, following the bottom-up order in our research approach 'funnel' (see Figure 27), the managerial implications of the model selection will be discussed below. Next, the managerial implications based on the identification of enablers will be elucidated.

6.7.3.1 Managerial implications based on the model selection

As for the selection of a theoretically sound model for measuring the agility of multichannel strategy execution, the available models all proved to originate from the IT domain. As the agile way of working originated from the IT domain in 2001 and has only relatively recently made the transition to the marketing domain, it seems logical that practitioners within the marketing domain can learn from the knowledge and experience of agile within the IT domain. Furthermore, as was mentioned multiple times by the interviewees in our case studies, a closer cooperation between marketing and IT seems to offer opportunities for performance improvement within both domains individually as well as in their combined or integrated activities.

The currently available models can be categorized in three schools of thought, being scaling models, models using hierarchical maturity levels, and models focusing on sub processes. The models within the first two schools of thought are significantly more complex than the models within the third school of thought. Furthermore, there is no academic evidence for the relationship between scaling levels or hierarchical maturity levels and organisational performance improvement. Therefore, it seems most useful for practitioners to take the third school of thought as a starting point when implementing the agile way of working. This means agile practices should be considered strictly as means to an end, and have to be tailored to the specific goals and needs of an organisation. Therefore, it is necessary to assess each sub process separately as to determine what can be improved, based on the agile values and principles.

Finally, the AMM model itself, which was adapted from the OPS framework based on our selection process, could offer interesting insights for practitioners. Of the twelve tactics the AMM model comprises, the indicators of tactics 4, 5, 7, 9, 10 and 12 have not been identified as relevant in the analyses of the case study and survey results. However, these indicators were identified by the author of the original OPS framework based on an academically substantiated literature research approach.

Therefore, these indicators, as described in detail in Appendix 2.7, could still offer interesting additional insights for practitioners. Firstly, it could be useful to refrain from what is called 'big design upfront', in which much time is invested in the initial development phase to determine the definitive architecture of improvements in distribution and communication channels. Instead, just-in-time refinement and prioritization of the requirements should be deployed for the design of these improvements. Secondly, these requirements should be identified and prioritized based on feedback and other forms of input that customers can provide, as much as feasible. And lastly, these requirements and designs should be captured using minimal, visual documentation. Avoiding extensive documentation saves time, and thus this allows team members to focus on the design, development, testing, implementation and maintenance activities for the channels. As advised earlier, these techniques could be tested in pilots as to determine what suits the specific context of the practitioner's organisation best.

This inventory of observations based on the model selection now being complete, the next section discusses the additional insights based on the identification of enablers.

6.7.3.2 Managerial implications based on the identification of enablers

As described in Chapter 1, the five enablers of multichannel strategy execution, as identified in academic literature, are:

- strategy alignment;
- culture;
- organisational structure;
- customer insight deployment;
- agile way of working.

Although the available literature is mostly conceptual by nature, and our research has focused on the agile way of working, the other four enablers could still offer relevant additional insights for practitioners.

Based on our literature research, a first insight is that it seems useful for practitioners within the marketing domain to align their multichannel strategy as much as possible with the overarching customer relationship management strategy and the overall business strategy. This alignment is expected to create a holistic strategy that could improve organisational performance.

As for the second enabler, culture, there seems to be a strong difference in 'mindsets' between the two organisational units that are important stakeholders for executing multichannel strategies, being marketing and sales. According to Kotler et al. (2006), as described in section 1.2.3, this seems to be caused mainly by the personality types of marketers and sales people. It is expected that communication about cultural values, using clear superordinate goals, and creating cross-functional teams could improve customer performance. Furthermore, managers could coordinate the creation of an atmosphere in which sharing information, joint planning, and development of a common vision, all facilitate collaboration between sales and marketing.

As for the third enabler, organisational structure, many academics state that most organisations are not well designed for providing their customers with an integrated experience across channels because hierarchical silos exist within their organisational architecture. These silos inhibit collaboration between the relevant internal stakeholders that are involved in the multichannel strategy execution. Therefore, it seems useful to reconfigure internal structures, as to facilitate internal coordination.

Although organisational structure has been kept out of scope in our study, this enabler has indirectly been identified in our empirical research. As discussed in section 6.2.3, 'Multidisciplinary cooperation' is one of the three factors that determine the relationship between the agile way of working and customer performance within multichannel strategies. Forming multidisciplinary teams with a shared team responsibility seems to be a practical solution for cross-silo collaboration. Thus, it effectively deals with the impediments associated with organisational structures.

Furthermore, regarding the fourth enabler, as described in section 1.2.5, for intensifying the use of customer insights, and consistently integrating these customer insights across channels. It is proposed that managers should develop customer centric methods for identifying data from various channels and analysing cross-channel customer behaviour to help the organisation make superior strategic and tactical choices.

Finally, regarding the agile way of working, our reflection is that this is a specific form of organisational learning. As described comprehensively in Chapter 2, Senge (1990, 1994) proposes a strategic architecture for building learning organisations, consisting of three elements. Based on our empirical research, practitioners are offered relevant opportunities for creating a facilitating context by deploying 'Tools and methods' and implementing an 'Organisational infrastructure'. Besides the items in our MP model, as described in sections 6.71 and 6.7.2, the literature on organisational learning could offer useful insights to managers into additional items that can be applied in their daily practice.

6.7.4 Towards a practical self-assessment

As to make the 21 indicators effectively usable for practitioners, our proposal is to visualize them in a so called 'radar' (or 'spider') format. The three groups of indicators could be named 'Multidisciplinary cooperation', 'Deployment of expertise' and 'Working in sprints: prioritising, planning and monitoring' as was the case in our factor analysis and was presented in section 6.2.3. This whole could be called the Multichannel Performance model (MP). As presented in Figure 29 below, the radar shows the 21 MP indicators and the three groups to which they are assigned. Based on the scale as used in our survey, each indicator can show a score between 1 and 5. The more the blue line, representing the scores, lies to the outer circle of the radar, the higher the agility of the organisation is, thus predicting a better customer performance within its multichannel strategy. Thus, the organisation gets a complete overview of all scores and can directly determine which indicators offer opportunities for improvement of its customer performance.

For these purposes, a standard questionnaire has been developed that managers can use themselves for assessing the agility of their organisation. This questionnaire is based on the 21 MP indicators and the corresponding questions from the survey. The contents of this self-assessment tool are presented in more detail in Appendix 6.2.

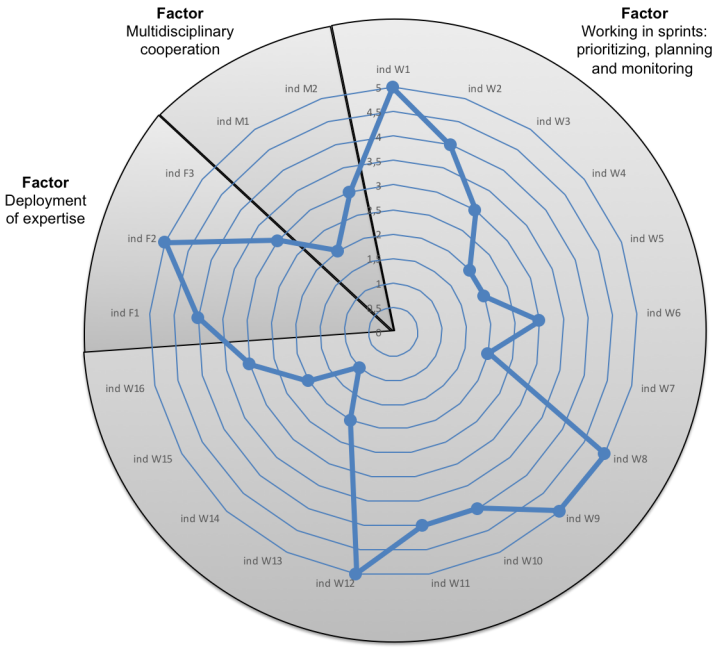

Figure 29: Example of an MP scoring for a fictitious organisation

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Lay summary

Introduction

Challenges for companies using more than one channel as part of their marketing strategy have become increasingly complex. The majority of their customers has become accustomed to using various communication and distribution channels at different stages of their orientation, buying and usage processes. These multichannel customers increasingly demand a seamlessly integrated experience for the different channels they can use when buying from a supplier. Furthermore, it is expected that multichannel strategies can enhance the revenues of organisations. However, the complexity of multichannel strategies is significantly larger compared to strategies in which an organisation uses only a single channel or deploys multiple channels that operate in a separated way. Many organisations are struggling with this complexity as they are applying the classical single/separate channel strategy execution to multichannel strategies.

As a result of this mismatch between multichannel strategies and single/separate channel strategy execution, organisations are risking a deterioration of their performance. Therefore, it is critical that organisations adopt a different form of this strategy execution. Although little empirical evidence is available, our literature research identified five enablers for multichannel strategy execution. These enablers are strategy alignment, culture, organisational structure, customer insight deployment, and the agile way of working. Our research has focused on the agile way of working, as little is known both theoretically and empirically about its application within the marketing domain. Therefore, our aim was to determine whether the agile way of working has a relationship with customer performance within multichannel strategies and, if so, what specific elements constitute this relationship.

Research

For these research purposes, theoretically sound model was needed to measure the agility level of the multichannel strategy execution. The conclusion was that such models only exist within the IT domain, where the agile way of working originates from. The review resulted in an overview of 52 currently available agility models which, despite being diverse in terms of approach and quality, could be categorized in three schools of thought. From the list of 52 models, based on specific criteria, five theoretically sound models were selected as potentially useful. Subsequently, an assessment of these five models was performed using additional criteria, as to identify a model that was suitable for adaptation to marketing practice. Based on this assessment, the Objectives-Principles-Strategies (OPS) framework was selected.

The structure of the OPS framework consisted of five concepts, called objectives, principles, tactics, practices and indicators. Therefore, it was described in detail how each of these concepts should be maintained, adapted or deleted to make the OPS framework suitable for marketing practice. This whole adaptation resulted in our Agile Marketing Maturity (AMM) model, which comprised twelve tactics. This AMM model then served as the foundation of our conceptual model, which comprised twelve hypotheses. These hypotheses described how the twelve corresponding tactics impact the dependent variable ‘Customer performance’. The measurability of this variable was operationalized in nine indicators, based on the EFQM Excellence framework. Furthermore, it was expected that factors outside the agile way of working might influence the customer

performance of the organisations in the present research. For this reason, exogenous variables were added to control the model. These are market focus, number of employees, number of channels deployed, and proportion of customers using multiple channels.

Based on our conceptual model, an empirical research was performed that consisted of two parts. The first part of the research concerned quantitative research, consisting of a large-scale survey. Next, as to corroborate these findings, the AMM model was applied in case studies, in which the theory has been qualitatively validated in daily practice.

Results and conclusions

In the first part, a questionnaire was developed based on the elements within the AMM model. Organisations could use this questionnaire as an online self-assessment, which generated 606 complete responses. First, these survey responses were statistically analysed using structural equation modelling. However, this analysis showed a misfit between the model and the data, thus impeding the confirmation or rejection of our hypotheses. Next, a three-tier approach of factor analysis, regression analysis and validation was applied. Thus, it was discovered that three factors have significant relationships with customer performance, as captured in our final Multichannel Performance (MP) model. These three factors are 'Multidisciplinary cooperation', 'Deployment of expertise', and 'Working in sprints: planning, prioritizing and monitoring'. The 21 indicators within these three factors were also identified in the case studies, although the case studies also identified indicators that were not confirmed by the survey results.

In the second part, four case studies have been performed at organisations deploying multichannel strategies. To allow for comparisons as much as possible, the respective marketing departments of Essent, Energiedirect.nl, Eneco and Nuon were selected, as their characteristics are quite identical. By using multiple sources of evidence (e.g. interviews, observations, documentation, measurements), the aim of this multi-case approach was to determine whether the 74 indicators of the relationship between the agile way of working and customer performance, as described in our AMM model, could be identified in daily practice. This was the case for 40 indicators, to varying degrees.

Based on these outcomes, our conclusions were that the agile way of working has a partial positive relationship with customer performance within multichannel strategies.

As our case studies have focused on the Dutch consumer energy market, care must be taken is using these conclusions in other sectors. More in general, although many precautions have been taken to assure the objectivity and quality of our inferences, it is impossible to rule out our own researcher bias completely. Therefore, the outcomes of our research should still be used with critical carefulness.

Managerial implications

Our inferences also have implications for practitioners within the marketing domain. First of all, experimenting with the implementation of multidisciplinary teams offers managers a relevant opportunity for improving customer performance. Next, in composing these multidisciplinary teams, it seems recommendable to include all expertise necessary for an end-to-end coverage of their cross-functional purpose, thus making them independent from other organisational units. Moreover, it is advisable to have these teams operate from a permanent team location as to facilitate the speed and quality of their

communication and cooperation. This architecture as a whole could be tested in pilots, as to determine what suits the specific context of the practitioner's organisation best.

It also seems good practice to have these teams work in a rhythm of iterations (also called 'sprints'), which are fixed periods of maximum four weeks to complete certain activities. To perform well in completing these activities, teams should prioritize, plan and monitor their activities constantly and use synchronous, face-to-face communication between team members. This communication can be facilitated by a disciplined deployment of agile techniques and tools, which consist of two groups. The first group contains 'artefacts' called the product backlog and iteration backlog, which enable the teams to visually prioritize their ideas for improvement and plan and monitor the associated activities.

The second group consists of brief and frequent team meetings. One of these is the planning meeting, in which the team estimates the amount of time the activities cost. Based on this, the team can determine which activities it is able to perform in the next iteration. Another meeting is the progress tracking meeting (also called 'daystart' or 'standup'). This is a daily meeting in which the team monitors the progress of the activities during the iteration and is able to adjust the prioritization and planning of the activities. Finally, the retrospective meeting enables the teams to evaluate their way of working during the completed iteration and formulate improvements for the next iteration. Again, these techniques and tooling as a whole could be tested in pilots.

As to make our MP model effectively usable for practitioners, its indicators were visualized in a so called 'radar' (or 'spider') format. Thus, the organisation gets a complete overview of all scores and can directly determine which indicators offer opportunities for improvement of its customer performance. For these purposes, a standard questionnaire has been developed that managers can use themselves for assessing the agility of their organisation. This questionnaire is based on the 21 MP indicators and the corresponding questions from the survey.

Samenvatting voor niet-wetenschappers

Inleiding

De uitdagingen voor bedrijven die meer dan één kanaal gebruiken als onderdeel van hun marketingstrategie, zijn steeds complexer geworden. De meerderheid van hun klanten is gewend geraakt aan het gebruik van verschillende communicatie- en distributiekanalen in verschillende stadia van hun oriëntatie-, aankoop- en gebruiksprocessen. Deze multichannel-klanten eisen steeds meer een naadloos geïntegreerde ervaring voor de verschillende kanalen die ze kunnen gebruiken bij het kopen bij een leverancier. Daarnaast is de verwachting dat multichannel strategieën de omzet van organisaties kunnen verhogen. De complexiteit van multichannel strategieën is echter aanzienlijk groter in vergelijking met strategieën waarbij een organisatie slechts één kanaal gebruikt, of meerdere kanalen gebruikt die gescheiden opereren. Veel organisaties worstelen met deze complexiteit, omdat ze de klassieke uitvoering van mono/gescheiden kanaal strategieën toepassen op multichannel strategieën.

Als gevolg van deze mismatch tussen multichannel strategieën en de uitvoering van mono/gescheiden kanaal strategieën riskeren organisaties een verslechtering van hun prestaties. Daarom is het van cruciaal belang dat organisaties een andere vorm van uitvoering van deze strategie adopteren. Hoewel er weinig empirisch bewijsmateriaal beschikbaar is, identificeerde ons literatuuronderzoek vijf 'enablers' voor de uitvoering van multichannel strategieën. Deze 'enablers' zijn strategie afstemming, cultuur, organisatiestructuur, gebruik van klantinzichten, en de agile manier van werken. Ons onderzoek heeft zich gericht op de agile manier van werken, omdat er zowel theoretisch als empirisch weinig bekend is over de toepassing ervan binnen het marketingdomein. Ons doel was daarom om te bepalen of de agile manier van werken binnen multichannel strategieën een relatie heeft met prestaties voor klanten en, zo ja, welke specifieke elementen deze relatie vormen.

Onderzoek

Voor onze onderzoeksdoeleinden was een theoretisch onderbouwd meetmodel nodig om het agility niveau van de uitvoering van de multichannel strategie te bepalen. De conclusie was dat dergelijke modellen alleen bestaan binnen het IT domein, waar de agile manier van werken oorspronkelijk vandaan komt. Ons literatuuronderzoek resulteerde in een overzicht van 52 momenteel beschikbare agility meetmodellen die, ondanks dat ze zeer divers zijn qua aanpak en kwaliteit, in drie stromingen konden worden onderverdeeld. Uit de lijst van 52 modellen werden op basis van specifieke criteria vijf theoretisch correcte modellen geselecteerd als mogelijk bruikbaar. Vervolgens werd een nadere analyse van deze vijf modellen uitgevoerd met behulp van aanvullende criteria, om een model te identificeren dat geschikt was voor aanpassing naar de marketing praktijk. Op basis van onze beoordeling werd het Objectives-Principles-Strategies (OPS) framework geselecteerd.

De structuur van het OPS framework bestond uit vijf concepten, genaamd doelstellingen, principes, tactieken, praktijken en indicatoren. Daarom werd in detail beschreven hoe elk van deze concepten moest worden behouden, aangepast of verwijderd om het OPS framework geschikt te maken voor de marketing praktijk. De gehele aanpassing resulteerde in ons Agile Marketing Maturity (AMM) model, dat uit twaalf tactieken bestond. Dit AMM model diende vervolgens als de basis van ons conceptuele model, dat twaalf hypothesen omvatte. Deze hypothesen beschrijven hoe de twaalf

overeenkomstige tactieken de afhankelijke variabele 'Klantprestaties' beïnvloeden. De meetbaarheid van deze variabele werd geoperationaliseerd in negen indicatoren, gebaseerd op het EFQM Excellence framework. Verder was onze verwachting dat factoren buiten de agile werkwijze de klantprestaties van de organisaties in dit onderzoek zouden kunnen beïnvloeden. Om deze reden zijn exogene variabelen toegevoegd om het model te controleren. Dit betrof marktfocus, aantal werknemers, aantal gebruikte kanalen en het aandeel klanten dat meerdere kanalen gebruikt.

Op basis van ons conceptuele model werd een empirisch onderzoek uitgevoerd dat uit twee delen bestond. Het eerste deel van het onderzoek betrof het toepassen van het AMM model in een kwantitatief onderzoek, bestaande uit een grootschalige survey. Vervolgens, ter bevestiging van deze bevindingen, zijn case studies uitgevoerd waarin de theorie kwalitatief is gevalideerd in de dagelijkse praktijk.

Resultaten en conclusies

In het eerste deel van ons empirische onderzoek is een vragenlijst ontwikkeld op basis van de elementen binnen het AMM model. Organisaties konden deze vragenlijst gebruiken als een online zelfevaluatie, die 606 volledige responses opleverde. Deze responses zijn aanvankelijk statistisch geanalyseerd met behulp van structural equation modelling. Deze uitkomsten van deze analyse toonde echter aan dat er sprake was van een misfit tussen het model en de gegevens, waardoor de bevestiging of verwerping van onze hypothesen onmogelijk bleek. Vervolgens werd een drieledige benadering van factoranalyse, regressieanalyse en validatie toegepast. Zo werd ontdekt dat drie factoren een significante relatie hebben met klantprestaties, zoals vastgelegd in ons uiteindelijke Multichannel Performance (MP) model. Deze drie factoren zijn 'Multidisciplinaire samenwerking', 'Inzet van expertise' en 'Werken in sprints: plannen, prioriteren en monitoren'. De 21 indicatoren binnen deze drie factoren werden ook geïdentificeerd in de case studies, hoewel de case studies ook indicatoren identificeerden die niet werden bevestigd door de survey resultaten.

In het tweede deel zijn vier casestudy's uitgevoerd bij organisaties die multichannel strategieën toepassen. Om zoveel als mogelijk vergelijkingen te kunnen maken, zijn de marketingafdelingen van respectievelijk Essent, Energiedirect.nl, Eneco en Nuon geselecteerd, omdat hun kenmerken behoorlijk identiek zijn. Door het gebruik van meerdere bronnen van bewijs (zoals interviews, observaties, documentatie, metingen), was het doel van deze multi-case aanpak om te bepalen of de 74 indicatoren van de relatie tussen de agile manier van werken en klantprestaties, zoals beschreven in onze AMM model, konden worden vastgesteld in de dagelijkse praktijk. Dit bleek het geval voor 40 indicatoren, in verschillende mate.

Op basis van deze uitkomsten was onze conclusie dat de agile manier van werken een gedeeltelijke positieve relatie heeft met klantprestaties binnen multichannel strategieën.

Aangezien onze casestudy's zich hebben gericht op de Nederlandse energiemarkt voor consumenten, moet voorzichtigheid worden betracht bij het gebruiken van deze conclusies binnen andere sectoren. Meer in het algemeen, is het onmogelijk om onze eigen ‘researcher bias’ volledig uit te sluiten, hoewel er veel voorzorgsmaatregelen zijn genomen om de objectiviteit en de kwaliteit van onze conclusies te bewaken. Daarom moeten de uitkomsten van ons onderzoek met kritische zorgvuldigheid worden gebruikt.

Management implicaties

Onze conclusies hebben ook implicaties voor managers binnen het marketing domein. Ten eerste biedt het experimenteren met de implementatie van multidisciplinaire teams hen een relevante mogelijkheid om de klantprestaties te verbeteren. Ook lijkt het bij het samenstellen van deze multidisciplinaire teams aan te bevelen om daarin alle expertise op te nemen die nodig is voor een end-to-end afdekking van hun cross-functionele doel, waardoor ze onafhankelijk worden van andere organisatie eenheden. Bovendien is het raadzaam om deze teams vanuit een permanente teamlocatie te laten werken om de snelheid en kwaliteit van hun communicatie en samenwerking te verbeteren. Deze architectuur als geheel kan in pilots worden getest, om te bepalen wat het beste past bij de specifieke context van de eigen organisatie.

Het lijkt ook nuttig om deze teams te laten werken in een ritme van iteraties (ook wel ‘sprints’ genoemd), die een vaste doorlooptijd van maximaal vier weken hebben om bepaalde activiteiten te voltooien. Om goed te presteren bij het voltooien van deze activiteiten, moeten teams hun activiteiten voortdurend prioriteren, plannen en monitoren. De hiervoor benodigde synchrone, face-to-face communicatie tussen teamleden kan mogelijk worden gemaakt door een gedisciplineerde inzet van agile technieken en hulpmiddelen, die uit twee groepen bestaan. De eerste groep bevat 'artefacten', de product backlog en iteratie backlog, waardoor de teams hun ideeën voor verbetering visueel kunnen prioriteren en de bijbehorende activiteiten kunnen plannen en controleren.

De tweede groep bestaat uit korte en frequente teambesprekingen. Een daarvan is de planningsvergadering, waarin het team de tijd schat die de activiteiten kosten. Op basis hiervan kan het team bepalen welke activiteiten het in de volgende iteratie kan uitvoeren. Een andere bespreking is de voortgangsbijeenkomst (ook wel ‘dagstart’ of ‘standup’ genoemd). Dit is een dagelijkse bespreking waarin het team de voortgang van de activiteiten tijdens de iteratie bewaakt en in staat is om de prioriteiten en planning van de activiteiten aan te passen. Ten slotte stelt de ‘retrospective’ bespreking de teams in staat om hun manier van werken tijdens de voltooide iteratie te evalueren en verbeteringen voor de volgende iteratie te formuleren. Ook deze technieken en gereedschappen als geheel kunnen in pilots worden getest.

Om ons MP model effectief bruikbaar te maken voor managers, werden de indicatoren gevisualiseerd in een zogenaamd 'radar'- (of 'spider'-) format. De organisatie krijgt zo een compleet overzicht van alle scores en kan direct bepalen welke indicatoren mogelijkheden bieden voor verbetering van haar klantprestaties. Voor deze doeleinden is een standaard vragenlijst ontwikkeld die managers als self-assessment kunnen gebruiken om de wendbaarheid van hun organisatie te beoordelen. Deze vragenlijst is gebaseerd op de 21 MP indicatoren en de bijbehorende vragen uit de survey.

Appendices

Appendix 3.1: Assessment results of the OPS framework

Tactic	Practice	Indicator	Type	Assessment for application in marketing practice
1. Iterative pro-gression	1.1 Planning	1.1.1 It is expected to plan for each iteration	Capability	Maintain
	1.2 Estimation authority	1.2.1 It is expected to estimate the time required to complete each story and feature	Capability	Adapt: change 'feature' into 'improvement in channels' (NB: also used for 2.1.1)
	1.3 Estimation	1.3.1 During each iteration a well defined approach is used to estimate the amount of work to be done	Capability	Maintain (NB: also used for 12.1.1)
		1.3.2 The extent to which the estimates for the amount of work to be done during each iteration are accurate	Effectiveness	Maintain (NB: also used for 12.1.2)
	1.4 Iteration length	1.4.1 The extent to which iterations are time-boxed	Effectiveness	Maintain
		1.4.2 The length of an iteration is 4 weeks or less	Effectiveness	Maintain
	1.5 Requirements management for iterations	1.5.1 The extent to which an iteration backlog is maintained	Effectiveness	Maintain
		1.5.2 The extent to which stories are fully estimated when added to the iteration backlog	Effectiveness	Maintain
		1.5.3 The extent to which stories are prioritized when added to the iteration backlog	Effectiveness	Maintain
2. Incre-mental develop-ment	2.1 Estimation authority	2.1.1 It is expected to estimate the time required to complete each story and feature	Capability	Adapt: replace 'feature' by 'improvement in channels' (NB: also used for 1.2.1)
	2.2 Requirements management	2.2.1 Tools are available for managing the features and stories	Capability	Adapt: replace 'features' replace 'improvements in channels'
	2.3 Identifying and prioritizing the features	2.3.1 Customers are expected to be involved in identifying the features	Capability	Adapt: replace 'features' by 'improvements in channels' (NB: also used for 10.1.1)
		2.3.2 Customers are expected to establish the priorities of the features	Capability	Adapt: replace 'features' by 'improvements in channels' (NB: also used for 10.1.2)
	2.4 Requirements management for releases	2.4.1 The extent to which a product backlog is maintained	Effectiveness	Maintain
		2.4.2 The extent to which stories are fully estimated when added to the product backlog	Effectiveness	Maintain

		2.4.3 The extent to which stories are prioritized when added to the product backlog	Effectiveness	Maintain
	2.5 Time-boxing releases	2.5.1 The extent to which release cycles are time-boxed	Effectiveness	Maintain
		2.5.2 The extent to which only a subset of the identified features are developed during a release cycle	Effectiveness	Adapt: replace 'features' by 'improvements in channels'
3. Short delivery cycles	3.1 Development timeframes	3.1.1 It is expected to develop products in iterations of 4 weeks or less	Capability	Adapt: replace 'products' by 'improvements in channels'
		3.1.2 The extent to which software is released every 4 weeks or less	Effectiveness	Adapt: replace 'software' by 'improvements in channels'
	3.2 Customer satisfaction	3.2.1 The extent to which the product developed so far is in sync with customers' expectations	Effectiveness	Adapt: replace 'products' by 'improvements in channels' (NB: also used for 5.3.1, 8.5.1 and 10.3.1)
	3.3 Roll-backs	3.3.1 The extent to which the deployments are not rolled back	Effectiveness	Adapt: replace 'deployments' by 'improvements in channels'
4. Evolu-tionary require-ments	4.1 Minimal 'big design upfront' (BDUF)	4.1.1 It is expected to only identify high level features upfront	Capability	Adapt: replace 'features' by 'improvements in channels'
		4.1.2 It is expected to follow an evolutionary approach to architecting the system instead of creating the architecture upfront	Capability	Adapt: replace 'system' by 'channels'
		4.1.3 The extent to which only the high level features are identified upfront	Effectiveness	Adapt: replace 'features' by 'improvements in channels'
		4.1.4 The extent to which the requirements are allowed to evolve over time	Effectiveness	Maintain
	4.2 Just-in-time (JIT) refinement	4.2.1 It is expected that the requirements be determined and refined just-in-time	Capability	Maintain
	4.3 Feature decomposition	4.3.1 It is expected that a mechanism is defined for decomposing the selected features to be developed during the release	Capability	Adapt: replace 'features' by 'improvements in channels' (NB: also used for 12.2.1)
	4.4 Requirements reprioritization	4.4.1 The extent to which features are reprioritized when new features are identified	Effectiveness	Adapt: replace 'features' by 'improvements in channels'
		4.4.2 The extent to which changes requested by customers are accommodated	Effectiveness	Maintain (NB: also used for 10.4.1)
5. Conti-nuous feedback	5.1 Customer feedback	5.1.1 The process defines a mechanism for the customers to provide feedback	Capability	Maintain
		5.1.2 The extent to which customers provide feedback to the development team	Effectiveness	Adapt: replace 'to the development team' by 'about the improvements in channels'
	5.2 Customer acceptance	5.2.1 It is expected that acceptance testing occurs before the end of an iteration	Capability	Adapt: replace 'testing' by 'of the improvements in channels'

	5.3 Customer satisfaction	5.3.1 The extent to which the product developed so far is in sync with customers' expectations	Effectiveness	Adapt: replace 'products' by 'improvements in channels' (NB: also used for 3.2.1, 8.5.1 and 10.3.1)
Refact-oring	Various (three in total)	Various (thirteen in total)	Capability and effectiveness	Delete: refactoring is a specific software development activity and irrelevant for marketing practice
Test-first deve-lopment	Various (four in total)	Various (five in total)	Capability and effectiveness	Delete: test-first development is a specific software development activity and irrelevant for marketing practice
6. Self-managing teams	6.1 Team empowerment	6.1.1 Team members are expected to be involved in determining, planning and managing their day-to-day activities	Capability	Maintain
		6.1.2 The extent to which team members determine the amount of work to be done	Effectiveness	Maintain
		6.1.3 The extent to which team members take ownership of work items	Effectiveness	Maintain
		6.1.4 The extent to which team members hold each other accountable for the work to be completed	Effectiveness	Maintain
		6.1.5 The extent to which team members ensure they complete the work they are accountable for	Effectiveness	Maintain
	6.2 Ownership	6.2.1 Team members are expected to demonstrate individual or collective code ownership	Capability	Adapt: replace 'code ownership' by 'ownership of the channels'
	6.3 Performance expectations	6.3.1 Performance expectations are agreed upon by the team and management	Capability	Maintain
	6.4 Autonomy	6.4.1 The extent to which team members determine, plan and manage their day-to-day activities under reduced or no supervision from management	Effectiveness	Maintain
		6.4.2 The extent to which developers form ad-hoc groups to determine and refine requirements just-in-time	Effectiveness	Adapt: replace 'developers' by 'team members'
	6.5 Management support	6.5.1 The extent to which management supports the self-managing nature of the teams	Effectiveness	Maintain
Conti-nuous in-tegration	Various (six in total)	Various (twenty in total)	Capability and effectiveness	Delete: continuous integration is a specific software development activity and irrelevant for marketing practice

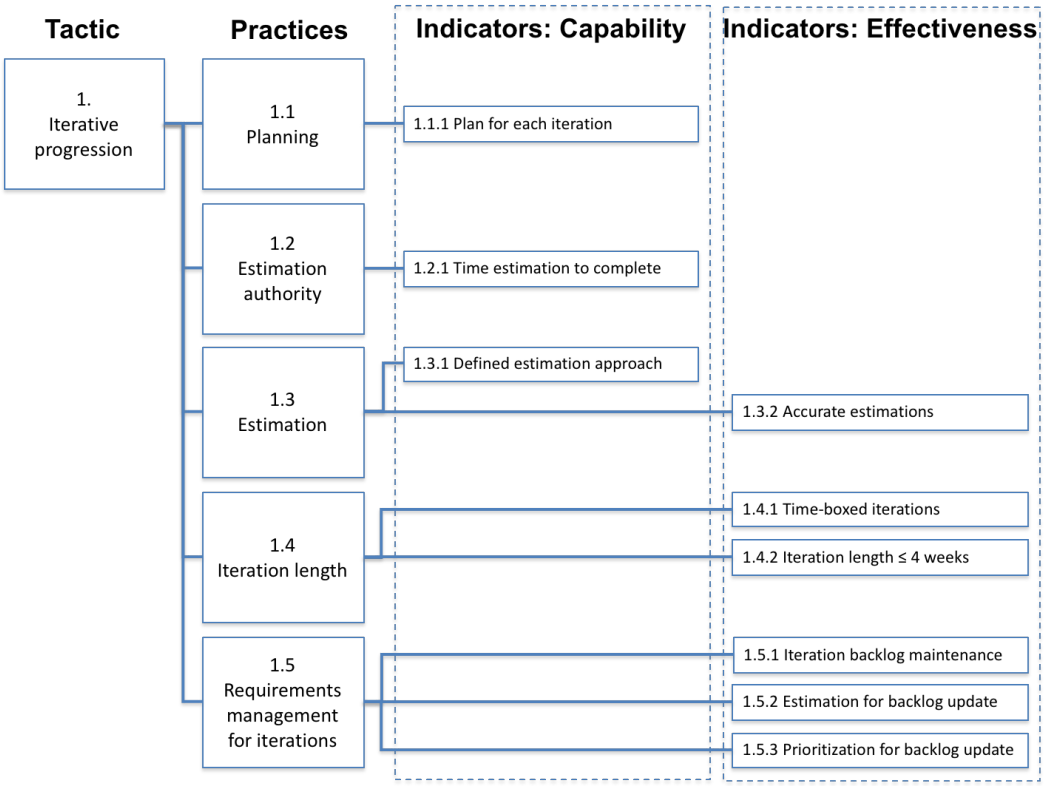
7. Minimal documen-tation	7.1 Tool support	7.1.1 Visual tools for maintaining documentation and tracking progress exist	Capability	Maintain
	7.2 Process support	7.2.1 It is expected that minimal documentation is maintained	Capability	Maintain
	7.3 Buy-in	7.3.1 Teams are receptive to maintaining minimal documentation	Capability	Maintain
	7.4 Maintaining documentation	7.4.1 The extent to which minimal documenting is executed by the teams	Effectiveness	Maintain
8. High-bandwidth communi-cation	8.1 On-site customers	8.1.1 Teams comprise stakeholders from all organisational units using the product	Capability	Adapt: replace 'using the product' by 'relevant for the improvements in channels'
		8.1.2 In the absence of an on-site stakeholder, the stakeholder provides direct input via other means	Capability	Maintain
	8.2 Scheduling	8.2.1 It is expected that teams allocate time for iteration planning	Capability	Maintain
		8.2.2 It is expected that teams allocate time for retrospection (evaluation of the activities and results)	Capability	Maintain (NB: also used for 9.1.1)
		8.2.3 It is expected that teams allocate time for daily progress tracking meetings	Capability	Maintain
		8.2.4 The extent to which the time allocated to iteration planning meetings is utilized effectively	Effectiveness	Maintain
		8.2.5 The extent to which the time allocated to retrospection meetings is utilized effectively	Effectiveness	Maintain
		8.2.6 The extent to which the time allocated to daily progress tracking meetings is utilized effectively	Effectiveness	Maintain
		8.2.7 The extent to which the scheduled meetings take place as scheduled	Effectiveness	Maintain
		8.2.8 The extent to which the scheduled meetings begin and end on time	Effectiveness	Maintain
	8.3 Inter-/intra-team communi-cation	8.3.1 It is expected that team members communicate and collaborate face-to-face with colleagues in- and outside the team	Capability	Maintain
		8.3.2 The extent to which face-to-face communication prevails between the manager/scrum master and the developers and testers	Effectiveness	Adapt: replace 'manager/scrum master and the developers and testers' by 'manager and team members' as these specific titles do not necessarily apply to marketing teams

		8.3.3 The extent to which face-to-face communication prevails among the developers	Effectiveness	Adapt: replace 'developers' by 'team members' as this specific title does not necessarily apply to marketing teams
		8.3.4 The extent to which direct communication prevails between the external customer/user and the development team	Effectiveness	Adapt: delete 'development' as this specific characterization does not necessarily apply to marketing teams
		8.3.5 The extent to which face-to-face communication prevails between the different teams	Effectiveness	Maintain
	8.4 Physical environment	8.4.1 The physical environment facilitates face-to-face communication and collaboration	Capability	Maintain
	8.5 Customer satisfaction	8.5.1 The extent to which the product developed so far is in sync with customers' expectations	Effectiveness	Adapt: replace 'products' by 'improvements in channels' (NB: also used for 3.2.1, 5.3.1, and 10.3.1)
9. Retro-spection	9.1 Support for retrospection	9.1.1 It is expected that teams allocate time for retrospection (evaluation of the activities and results)	Capability	Maintain (NB: also used for 8.2.2)
	9.2 Tool support for retrospection	9.2.1 The extent to which tools are available for recording the outcomes of the retrospective meetings (evaluation of the activities and results)	Capability	Maintain
	9.3 Process outcomes for retrospection	9.3.1 The extent to which practices that worked well were identified for future use	Effectiveness	Maintain
		9.3.2 The extent to which practices that did not yield the expected results were identified for discontinuation	Effectiveness	Maintain
		9.3.3 The extent to which practices were identified that may better suit the team's needs	Effectiveness	Maintain
	9.4 Retrospective goals	9.4.1 The extent to which the established retrospective goals were met	Effectiveness	Maintain
10. Client-driven iterations	10.1 Identifying and prioritizing features	10.1.1 Customers are expected to be involved in identifying the features	Capability	Adapt: replace 'features' by 'improvements in channels' (NB: also used for 2.3.1)
		10.1.2 Customers are expected to establish the priorities of the features	Capability	Adapt: replace 'features' by 'improvements in channels' (NB: also used for 2.3.2)
	10.2 Requirements prioritization	10.2.1 The extent to which customers establish the priorities of the features	Effectiveness	Adapt: replace 'features' by 'improvements in channels'

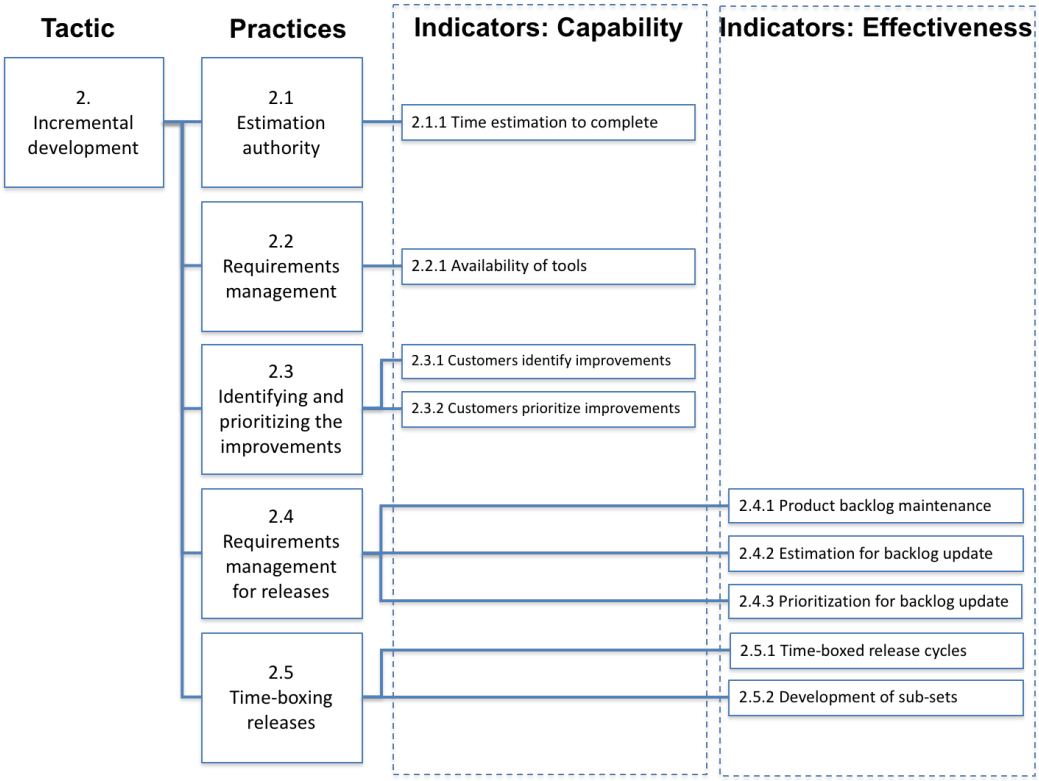
	10.3 Customer satisfaction	10.3.1 The extent to which the product developed so far is in sync with customers' expectations	Effectiveness	Adapt: replace 'products' by 'improvements in channels' (NB: also used for 3.2.1, 5.3.1 and 8.5.1)
	10.4 Customer requests	10.4.1 The extent to which changes requested by customers are accommodated	Effectiveness	Maintain (NB: also used for 4.4.2)
11. Distribu-tion of expertise	11.1 Appropriate team composition	11.1.1 A scheme is defined for appropriate team composition based on requisite expertise	Capability	Maintain
	11.2 Process outcomes for distribution of expertise	11.2.1 The extent to which team members have the requisite expertise to complete the tasks assigned to them	Effectiveness	Maintain
		11.2.2 The extent to which the tasks assigned to the team members match their expertise	Effectiveness	Maintain
		11.2.3 The extent to which the team effectively completes the work they have committed to	Effectiveness	Maintain
		11.2.4 The extent to which team members are capable of supporting each other in performing their tasks	Effectiveness	Maintain
		11.2.5 The extent to which teams do not rely on knowledge external to their teams	Effectiveness	Maintain
Configu-ration manage-ment	Various (three in total)	Various (seven in total)	Capability and effectiveness	Delete: configuration management is a specific software development activity and irrelevant for marketing practice
12. Adherence to standards	12.1 Estimation	12.1.1 During each iteration a well-defined approach is used to estimate the amount of work to be done	Capability	Maintain (NB: also used for 1.3.1)
		12.1.2 The extent to which the estimates for the amount of work to be done during each iteration are accurate	Effectiveness	Maintain (NB: also used for 1.3.2)
	12.2 Feature decomposition	12.2.1 It is expected that a mechanism is defined for decomposing the selected features to be developed during the release	Capability	Adapt: replace 'features' by 'improvements in channels' (NB: also used for 4.3.1)
	12.3 Coding standards	Various (four in total)	Capability and effectiveness	Delete: coding standards are a specific software development artefact and irrelevant for marketing practice

Appendix 3.2: practices and indicators per tactic

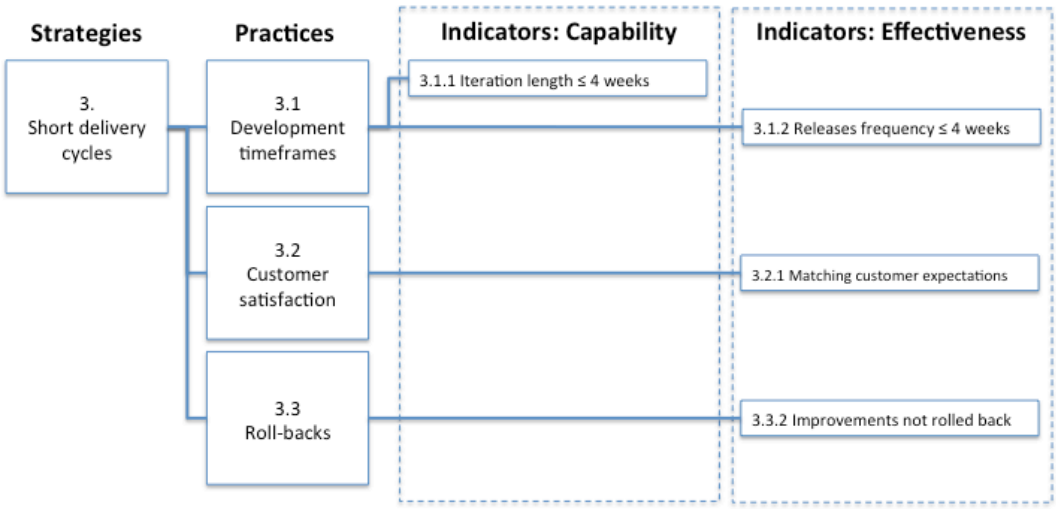
Tactic 1 – Iterative progression



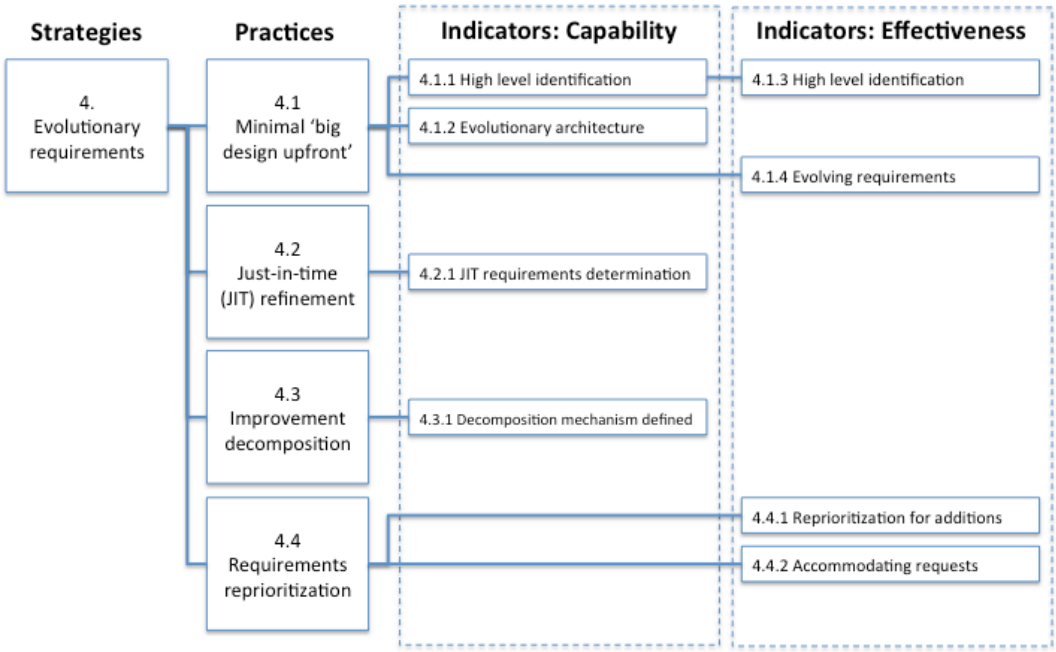
Tactic 2 – Incremental development



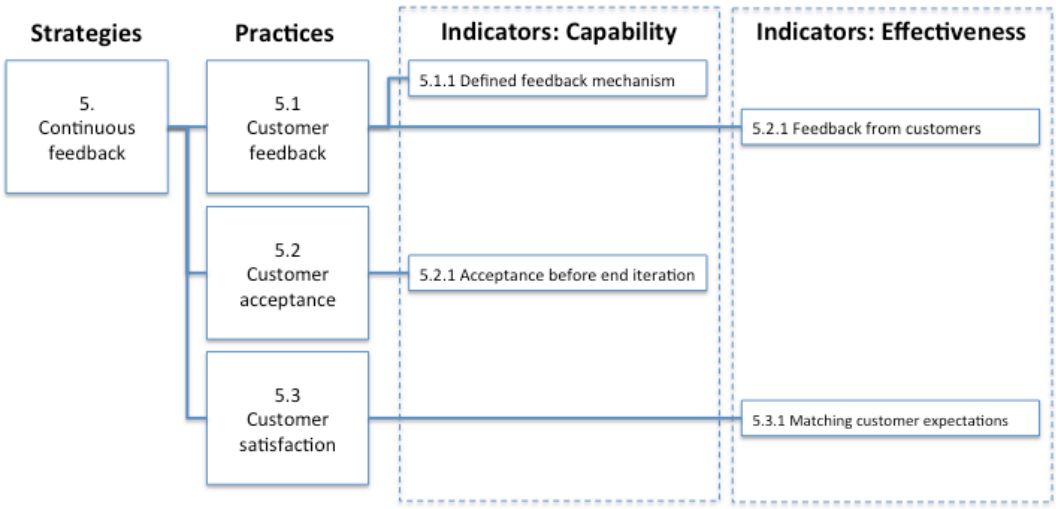
Tactic 3 – Short delivery cycles



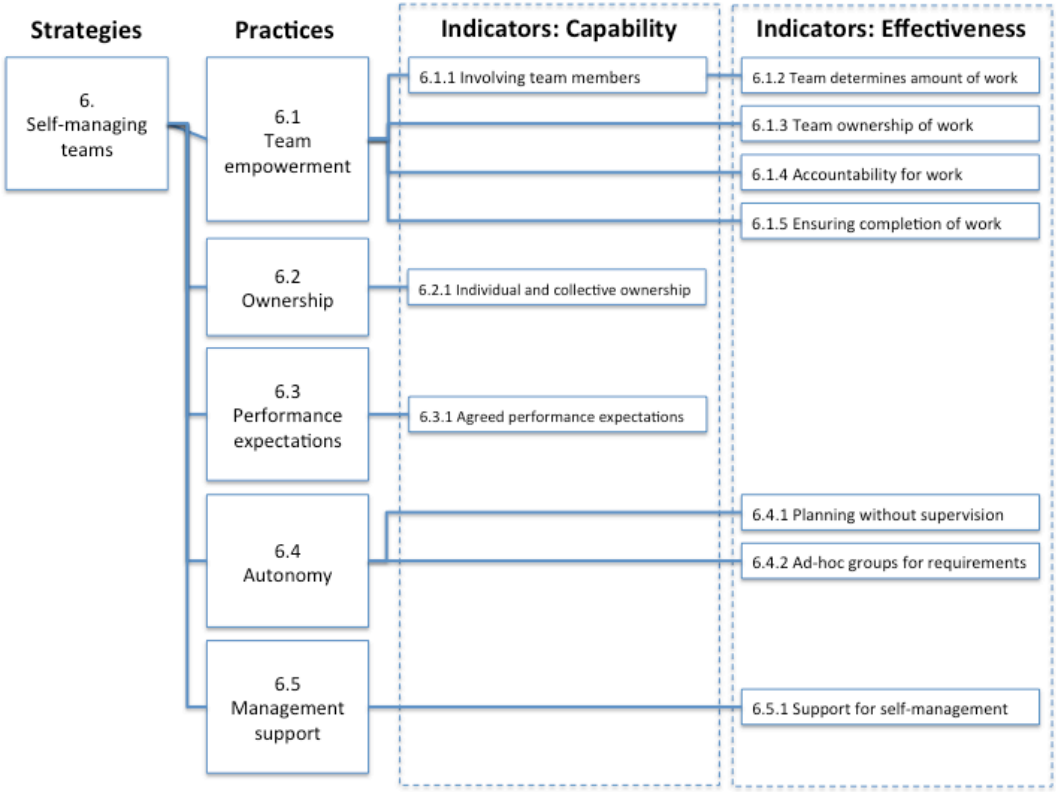
Tactic 4 – Evolutionary requirements



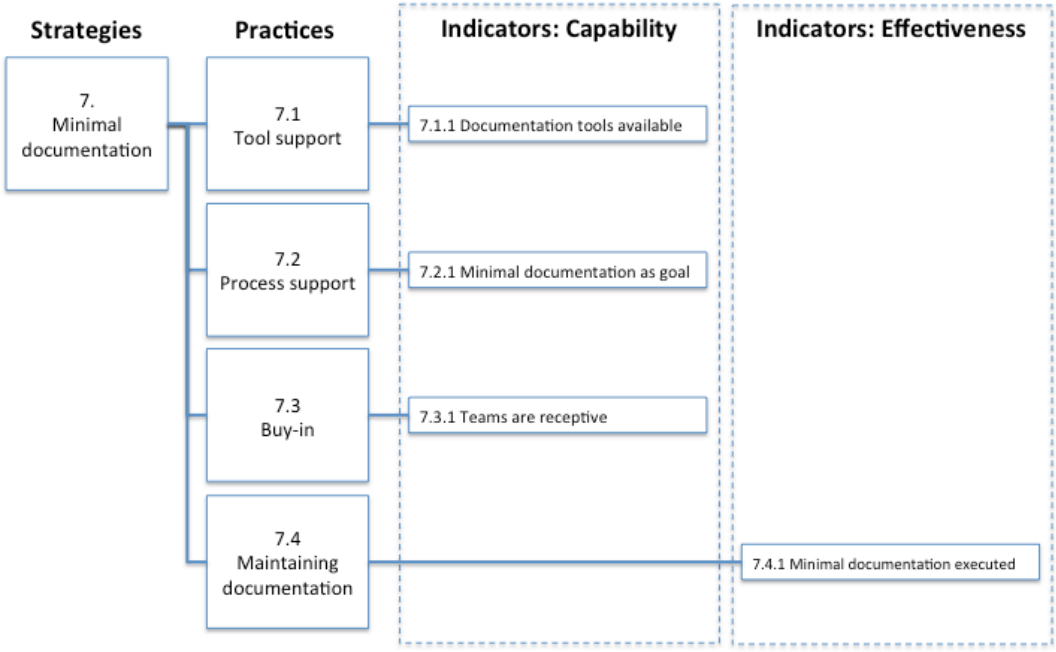
Tactic 5 – Continuous feedback



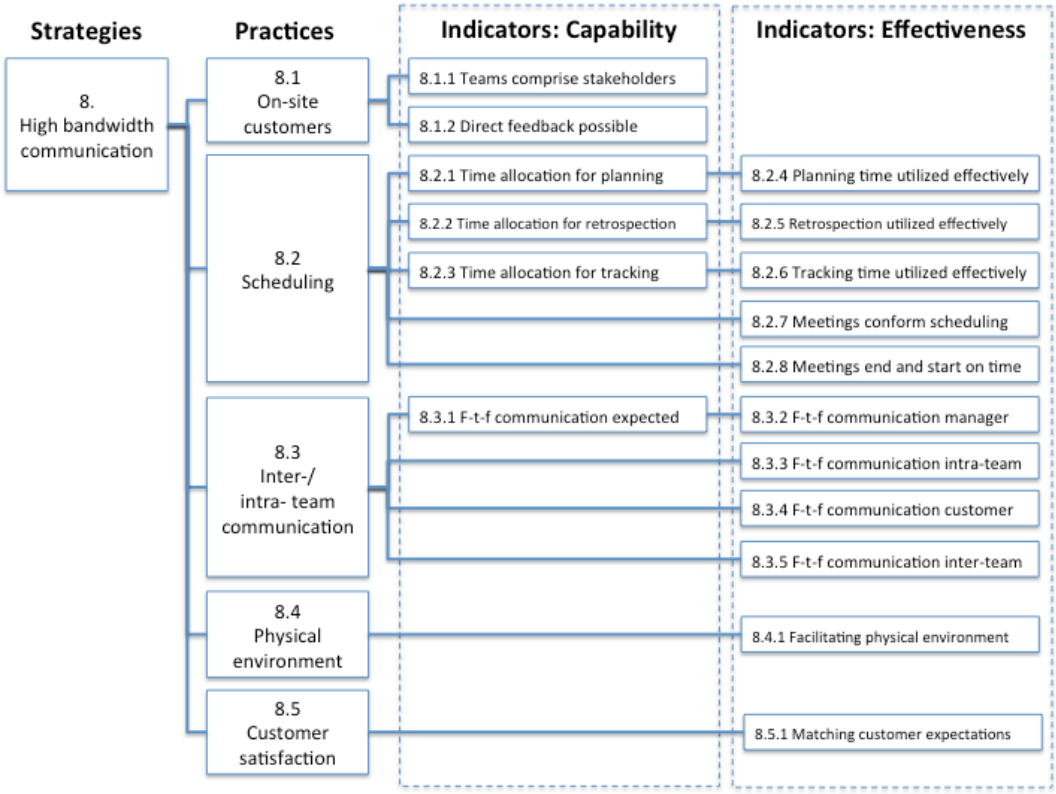
Tactic 6 – Self-managing teams



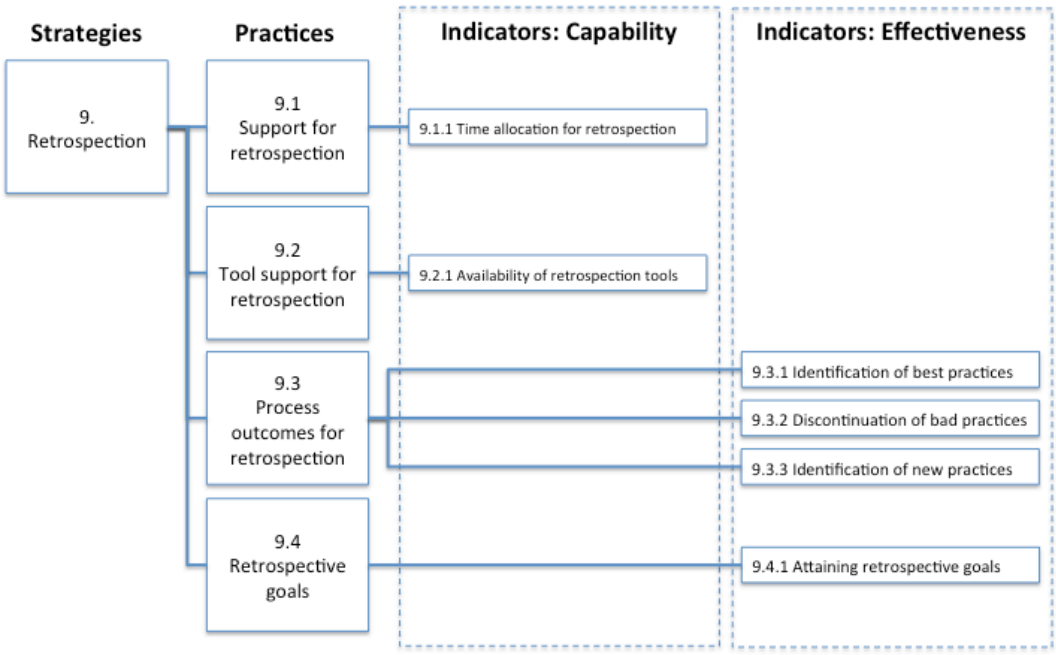
Tactic 7 – Minimal documentation



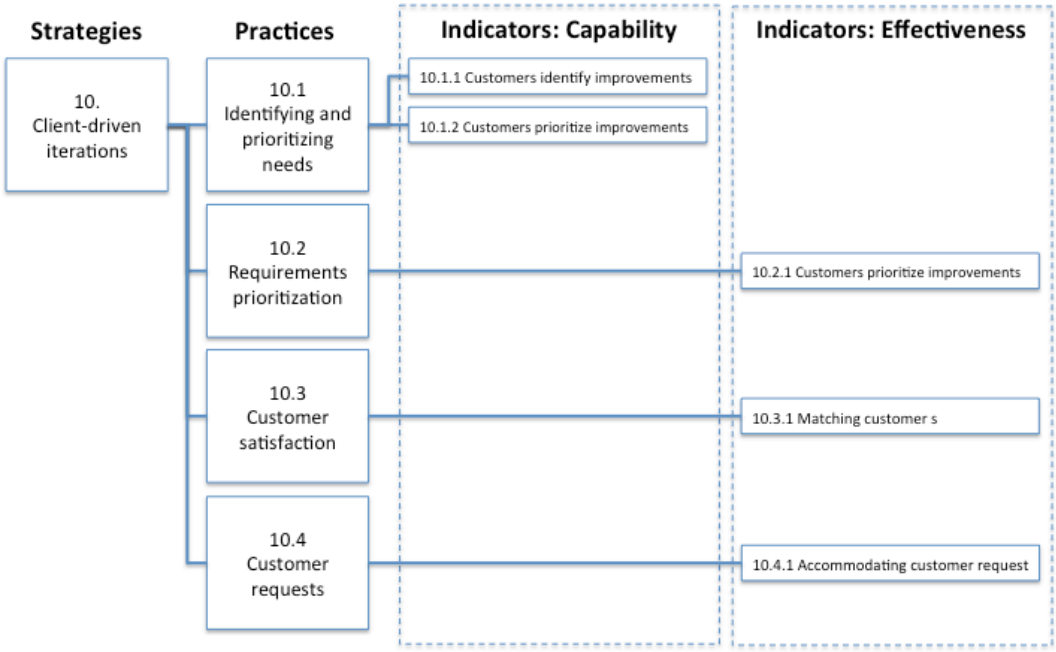
Tactic 8 – High bandwidth communication



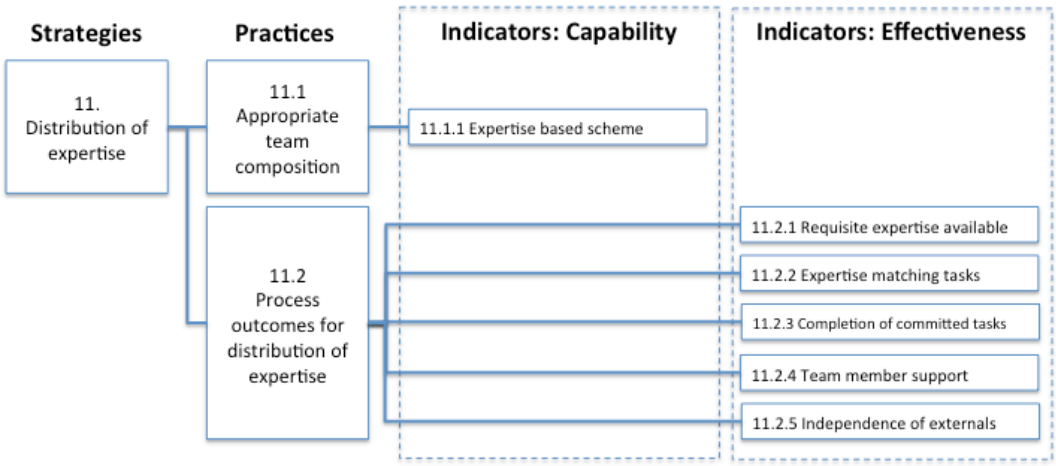
Tactic 9 – Retrospection



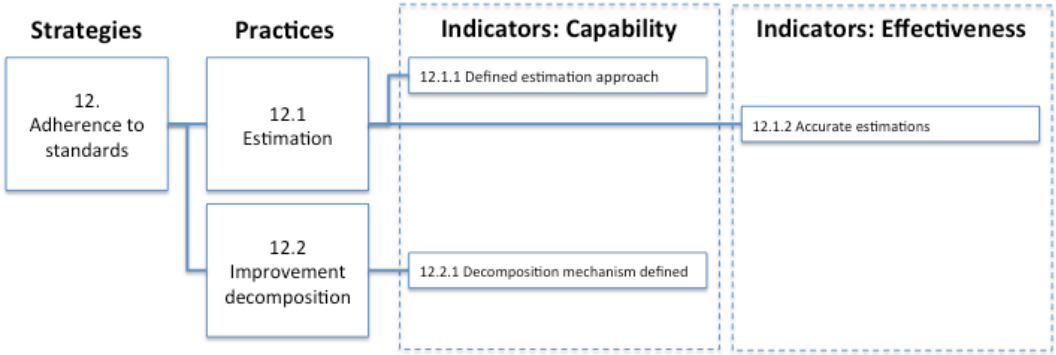
Tactic 10 – Client-driven iterations



Tactic 11 – Distribution of expertise



Tactic 12 – Adherence to standards



Appendix 3.2: survey

Welkom bij het Agility Assessment. In de hierna volgende vragen vind je stellingen over de facilitering en effectiviteit van agile binnen jouw organisatie. Daarbij dien je aan te geven in hoeverre je het daar mee (on)eens bent. Gemiddeld duurt dit tussen de tien en vijftien minuten.

Op basis hiervan wordt de assessment score berekend die je na afronding van de vragen te zien krijgt. Deze score wordt vanzelfsprekend geheel vertrouwelijk en anoniem gebruikt voor wetenschappelijk onderzoek. Als je de uitgebreide onderzoeksresultaten en benchmark wilt ontvangen dan kun je na afloop eventueel jouw e-mail adres invullen.

Communicatie
Geef aan in hoeverre je het met onderstaande stellingen (on)eens bent: Geheel mee oneens (1); Mee oneens (2); Neutraal (3); Mee eens (4); Geheel mee eens (5); Niet van toepassing (6)

	1	2	3	4	5	6
Onze teams zijn samengesteld uit betrokkenen vanuit alle organisatie onderdelen die relevant zijn voor de verbeteringen aan producten, diensten, kanalen of processen.	o	o	o	o	o	o
Als een betrokkene vanuit een organisatie onderdeel dat relevant is voor de verbeteringen aan producten, diensten, kanalen of processen geen onderdeel kan vormen van het ontwikkelteam dan is deze wel altijd direct beschikbaar om te overleggen.	o	o	o	o	o	o
Onze teams dienen voorafgaand aan een ontwikkelcyclus tijd te alloceren aan het gezamenlijk prioriteren van de te ontwikkelen verbeteringen aan producten, diensten, kanalen of processen.	o	o	o	o	o	o
Onze teams dienen voorafgaand aan een ontwikkelcyclus tijd te alloceren aan het gezamenlijk plannen van de activiteiten binnen de ontwikkelcyclus.	o	o	o	o	o	o
Onze teams dienen dagelijks tijd te alloceren aan het gezamenlijk overleggen over de voortgang van de activiteiten binnen de ontwikkelcyclus.	o	o	o	o	o	o
Onze medewerkers dienen binnen en tussen teams face-to-face te communiceren en samenwerken met hun collega's.	o	o	o	o	o	o
Onze teams werken in een fysieke omgeving die hun faciliteert in het face-to-face communiceren en samenwerken.	o	o	o	o	o	o
De tijd die voorafgaand aan een ontwikkelcyclus is gealloceerd aan het gezamenlijk prioriteren van de te ontwikkelen verbeteringen aan onze producten, diensten, kanalen of processen wordt door onze teams op een effectieve manier besteed.	o	o	o	o	o	o
De tijd die voorafgaand aan een ontwikkelcyclus is gealloceerd aan het gezamenlijk plannen van de activiteiten binnen de ontwikkelcyclus wordt door onze teams op een effectieve manier besteed.	o	o	o	o	o	o
De tijd die dagelijks is gealloceerd aan het gezamenlijk overleggen over de voortgang van de activiteiten binnen een ontwikkelcyclus wordt door onze teams op een effectieve manier besteed.	o	o	o	o	o	o
De tijd die aan het einde van een ontwikkelcyclus is gealloceerd aan het gezamenlijk evalueren van de activiteiten en resultaten van de afgeronde ontwikkelcyclus wordt door onze teams op een effectieve manier besteed.	o	o	o	o	o	o
De overleggen van onze teams voor het prioriteren, plannen en evalueren vinden volgens schema plaats.	o	o	o	o	o	o
De overleggen van onze teams voor het prioriteren, plannen en evalueren beginnen en eindigen op tijd.	o	o	o	o	o	o
Er is binnen onze organisatie voornamelijk sprake van face-to-face communicatie tussen de medewerkers binnen een team.	o	o	o	o	o	o
Er is binnen onze organisatie voornamelijk sprake van face-to-face communicatie tussen een team en zijn opdrachtgever.	o	o	o	o	o	o
Er is binnen onze organisatie voornamelijk sprake van face-to-face communicatie tussen de verschillende teams onderling.	o	o	o	o	o	o
Er is binnen onze organisatie voornamelijk sprake van directe communicatie tussen de teams en onze klanten.	o	o	o	o	o	o

Documentatie

	1	2	3	4	5	6
Wij stellen onze teams hulpmiddelen ter beschikking voor het onderhouden van documentatie over hun activiteiten en de resultaten daarvan.	o	o	o	o	o	o
Onze teams dienen een zo beperkt mogelijke documentatie bij te houden over hun activiteiten en de resultaten daarvan.	o	o	o	o	o	o
Onze teams staan ontvankelijk tegenover het bijhouden van een zo beperkt mogelijke documentatie over hun activiteiten en de resultaten daarvan.	o	o	o	o	o	o
Onze teams houden een zo beperkt mogelijke documentatie bij over hun activiteiten en de resultaten daarvan.	o	o	o	o	o	o

Kennis

	1	2	3	4	5	6
Wij hebben een aanpak gedefinieerd voor het optimaal samenstellen van teams op basis van de noodzakelijke expertise.	o	o	o	o	o	o
Onze teamleden beschikken over de noodzakelijke expertise om de aan hun toegewezen taken te kunnen voltooien.	o	o	o	o	o	o
De taken die zijn toegewezen aan onze teamleden komen overeen met hun expertise.	o	o	o	o	o	o
Onze teams voltooien het werk waaraan zij zich hebben gecommitteerd op een effectieve manier.	o	o	o	o	o	o
Onze teamleden zijn in staat om elkaar te helpen in het uitvoeren van hun taken.	o	o	o	o	o	o
Onze teams zijn niet afhankelijk van kennis die buiten het team aanwezig is.	o	o	o	o	o	o

Ontwikkelaanpak

	1	2	3	4	5	6
Onze teams hebben hulpmiddelen ter beschikking voor het inhoudelijk vastleggen van de verbeteringen aan onze producten, diensten, kanalen of processen en de daarbij behorende 'user stories' (eenvoudige beschrijving van de vereisten vanuit klant perspectief).	o	o	o	o	o	o
Onze teams houden een 'product backlog' (visueel overzicht van in toekomstige ontwikkelcycli te realiseren verbeteringen aan producten, diensten, kanalen of processen) bij.	o	o	o	o	o	o
Onze teams prioriteren de te realiseren verbeteringen aan onze producten, diensten, kanalen of processen als ze deze toevoegen aan de 'product backlog'.	o	o	o	o	o	o
Onze teams hebben de te realiseren verbeteringen aan onze producten, diensten, kanalen of processen die de hoogste prioriteit hebben altijd vertaald naar 'user stories' voordat ze deze toevoegen aan de 'product backlog'.	o	o	o	o	o	o

Bepaling van vereisten

	1	2	3	4	5	6
Onze teams dienen een duidelijk gedefinieerde aanpak te gebruiken om de verbeteringen aan onze producten, diensten, kanalen of processen door te vertalen naar 'user stories'.	o	o	o	o	o	o
Onze teams dienen vooraf alleen globaal de kenmerken van de verbeteringen aan onze producten, diensten, kanalen of processen vast te stellen.	o	o	o	o	o	o
Onze teams dienen een evolutionaire aanpak te volgen in het ontwerpen van de verbeteringen aan onze producten, diensten, kanalen of processen in plaats van dit vooraf al volledig te ontwerpen.	o	o	o	o	o	o
Onze teams dienen de vereisten ('requirements') voor de te ontwikkelen verbeteringen aan onze producten, diensten, kanalen of processen op het laatst mogelijke moment ('just-in-time') te bepalen en verfijnen.	o	o	o	o	o	o
Onze teams herprioriteren de verbetermogelijkheden voor onze producten, diensten, kanalen of processen zodra nieuwe verbetermogelijkheden worden geïdentificeerd.	o	o	o	o	o	o
Onze teams stellen vooraf alleen globaal de kenmerken van de verbeteringen aan onze producten, diensten, kanalen of processen vast.	o	o	o	o	o	o
Onze teams werken met vereisten ('requirements') voor de te ontwikkelen verbeteringen aan onze producten, diensten, kanalen of processen die mogen evolueren op basis van voortschrijdende inzichten.	o	o	o	o	o	o

Team sturing

	1	2	3	4	5	6
Onze teams dienen zelf hun dagelijkse activiteiten te bepalen, plannen en sturen.	o	o	o	o	o	o
Onze medewerkers dienen binnen een team individueel of collectief eigenaarschap te tonen voor de door hun ontwikkelde verbeteringen aan producten, diensten, kanalen of processen.	o	o	o	o	o	o
Onze teams hebben afspraken over hun prestaties vastgelegd met het management.	o	o	o	o	o	o
Ons management ondersteunt het zelforganiserende karakter van de teams.	o	o	o	o	o	o
Onze teams bepalen zelf de hoeveelheid werk die ze gaan uitvoeren.	o	o	o	o	o	o
Onze teamleden tonen eigenaarschap voor de aan hen toegewezen taken.	o	o	o	o	o	o
Onze teamleden houden elkaar verantwoordelijk voor de taken die zij dienen te voltooien.	o	o	o	o	o	o
Onze teamleden zorgen er voor dat zij de taken voltooien waarvoor zij verantwoordelijk worden gehouden.	o	o	o	o	o	o
Onze teams bepalen, plannen en sturen zelf hun dagelijkse activiteiten, zonder of onder minimale supervisie van het management.	o	o	o	o	o	o
Onze teamleden vormen ad-hoc groepen voor het op het laatst mogelijke moment ('just-in-time') bepalen en verfijnen van de vereisten voor de te ontwikkelen verbeteringen aan onze producten, diensten, kanalen en processen.	o	o	o	o	o	o

Planning

	1	2	3	4	5	6
Onze teams dienen een planning te maken voor iedere ontwikkelcyclus.	o	o	o	o	o	o
Onze teams dienen de tijd in te schatten die benodigd is voor iedere verbetering aan onze producten, diensten, kanalen of processen en de daarbij behorende 'user stories'.	o	o	o	o	o	o
Onze teams blijken accurate schattingen te doen voor de hoeveelheid werk die ze tijdens een ontwikkelcyclus kunnen afronden.	o	o	o	o	o	o
Onze ontwikkelcycli zijn 'time-boxed'.	o	o	o	o	o	o
Onze ontwikkelcycli duren 4 weken of korter.	o	o	o	o	o	o
Onze teams houden een 'ontwikkelcyclus backlog' bij van de tijdens een ontwikkelcyclus uit te voeren activiteiten.	o	o	o	o	o	o
Onze teams prioriteren de 'user stories' als ze deze toevoegen aan de 'ontwikkelcyclus backlog'.	o	o	o	o	o	o
Onze teams hebben de benodigde werkzaamheden voor de 'user stories' volledig ingeschat voordat ze deze toevoegen aan de 'ontwikkelcyclus backlog'.	o	o	o	o	o	o

Feedback

	1	2	3	4	5	6
Binnen onze processen is een mechanisme aanwezig waarmee klanten feedback kunnen geven op de door ons ontwikkelde verbeteringen aan producten, diensten, kanalen of processen.	o	o	o	o	o	o
Onze teams dienen de in een cyclus ontwikkelde verbeteringen aan producten, diensten, kanalen of processen voor het einde van de cyclus te laten accepteren door hun opdrachtgever.	o	o	o	o	o	o
De doorlooptijd van de cyclus waarin wij verbeteringen aan producten, diensten, kanalen of processen lanceren is time-boxed.	o	o	o	o	o	o
Onze klanten geven feedback op de door ons ontwikkelde verbeteringen aan producten, diensten, kanalen of processen.	o	o	o	o	o	o
Gedurende een lanceercyclus ontwikkelen teams slechts een deel van de geidentificeerde verbeteringen aan producten, diensten, kanalen of processen.	o	o	o	o	o	o

Evaluatie

	1	2	3	4	5	6
Onze teams dienen aan het einde van een ontwikkelcyclus tijd te alloceren aan het gezamenlijk evalueren van de activiteiten en resultaten van de afgeronde ontwikkelcyclus.	o	o	o	o	o	o
Wij stellen onze teams hulpmiddelen ter beschikking voor het vastleggen van de uitkomsten van de evaluatie aan het einde van een ontwikkelcyclus.	o	o	o	o	o	o
Onze teams hebben tijdens hun evaluatie meetings aan het einde van hun ontwikkelcycli aanpakken geïdentificeerd die goed werkten en dus in de toekomst gebruikt dienen te worden. Onze teams hebben tijdens hun evaluatie meetings aan het einde van hun ontwikkelcycli aanpakken geïdentificeerd die niet voldeden aan de verwachtingen en dus stopgezet dienden te worden.	o	o	o	o	o	o
Onze teams hebben tijdens hun evaluatie meetings aan het einde van hun ontwikkelcycli aanpakken geïdentificeerd die wellicht beter zouden kunnen aansluiten bij de behoeften van de teams.	o	o	o	o	o	o
Onze teams hebben de doelen die ze tijdens hun evaluatie meetings aan het einde van hun ontwikkelcycli hebben vastgesteld daarna ook daadwerkelijk gerealiseerd.	o	o	o	o	o	o
Onze teams dienen aan het einde van een ontwikkelcyclus tijd te alloceren aan het gezamenlijk evalueren van de activiteiten en resultaten van de afgeronde ontwikkelcyclus.	o	o	o	o	o	o

Rol van de klant

	1	2	3	4	5	6
Onze teams dienen input van klanten te gebruiken voor het vaststellen van verbetermogelijkheden voor onze producten, diensten, kanalen of processen.	o	o	o	o	o	o
Onze teams dienen input van klanten te gebruiken voor het prioriteren van de verbetermogelijkheden voor onze producten, diensten, kanalen of processen.	o	o	o	o	o	o
Onze klanten leveren input voor het prioriteren van de verbetermogelijkheden voor onze producten, diensten, kanalen of processen.	o	o	o	o	o	o
Tot nu toe voldoen de door onze gerealiseerde verbeteringen aan onze producten, diensten, kanalen of processen aan de verwachtingen van onze klanten.	o	o	o	o	o	o
De tot nu toe door onze klanten kenbaar gemaakte wensen voor verbeteringen aan onze producten, diensten, kanalen of processen zijn reeds gerealiseerd of zullen op korte termijn gerealiseerd zijn.	o	o	o	o	o	o

Ontwikkelingsduur

	1	2	3	4	5	6
Onze teams dienen de verbeteringen aan producten, diensten, kanalen of processen in korte cycli (maximaal 4 weken) te realiseren.	o	o	o	o	o	o
Wij leveren in korte cycli (maximaal 4 weken) verbeteringen aan onze producten, diensten, kanalen of processen op aan onze klanten.	o	o	o	o	o	o
De opgeleverde verbeteringen aan onze producten, diensten, kanalen of processen zijn niet teruggedraaid.	o	o	o	o	o	o

Prestaties

In de afgelopen 12 maanden ... sterk gedaald (1); licht gedaald (2); gelijk gebleven (3); licht gestegen (4); sterk gestegen (5); niet van toepassing (6)

	1	2	3	4	5	6
is de waarde van onze producten en diensten in de perceptie van onze klanten	o	o	o	o	o	o
is de tevredenheid van onze klanten over hun ervaringen met de levering van onze producten en diensten	o	o	o	o	o	o
is de tevredenheid van onze klanten over hun ervaringen met onze klantenservice	o	o	o	o	o	o
is bij een koopintentie van klanten de voorkeur voor onze organisatie	o	o	o	o	o	o
zijn de herhalingsaankopen van klanten bij onze organisatie	o	o	o	o	o	o
is de marge op de inkomsten uit onze producten en diensten	o	o	o	o	o	o
is onze klantwaarde	o	o	o	o	o	o
is het aantal verbeteringen in producten, diensten, kanalen of processen dat onze organisaties heeft gerealiseerd	o	o	o	o	o	o
is de snelheid waarmee onze organisatie verbeteringen in producten, diensten, kanalen of processen heeft gerealiseerd	o	o	o	o	o	o

In welke branche is jouw organisatie actief?

_____

Op welk soort markt richt jouw organisatie zich?

o Zakelijk (1)
o Consumenten (2)
o Beide (3)

Hoeveel personen zijn er werkzaam in jouw organisatie?

_____

Hoeveel van jouw klanten gebruiken meerdere kanalen voor hun contacten met jouw organisatie? Geef een schatting van het percentage. [schuifbare knop]

0 10 20 30 40 50 60 70 80 90 100

Hoeveel verschillende kanalen zet jouw organisatie in voor haar belangrijkste doelgroep? [schuifbare knop]

0 3 6 9 12 15 18 21 24 27 30

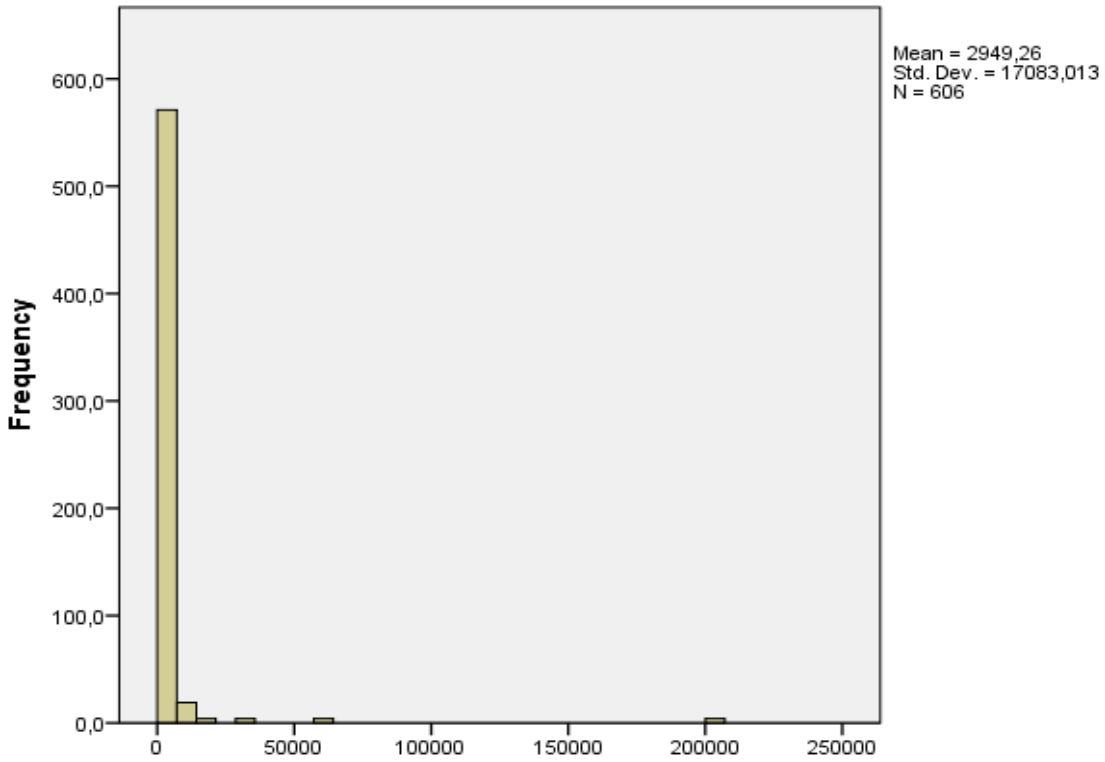
Appendix 4.1: descriptive statistics of the individual indicators

Indicator	N	Mini-mum	Maxi-mum	Mean	Standard Deviation	Skewness		Kurtosis	
						Value	Std. error	Value	Std. error
1.3.1 and 12.1.1	594	1	5	3.56	1.128	-0.409	0.100	-0.827	0.200
1.1.1	599	1	5	3.41	1.084	-0.374	0.100	-0.749	0.199
1.2.1 and 2.1.1	595	1	5	3.52	1.017	-0.462	0.100	-0.582	0.200
1.3.2 and 12.1.2	594	1	5	3.11	1.101	-0.007	0.100	-0.855	0.200
1.4.1	582	1	5	3.12	1.171	0.039	0.101	-0.986	0.202
1.4.2	572	1	5	3.13	1.315	0.000	0.102	-1.213	0.204
1.5.1	573	1	5	3.10	1.296	-0.047	0.102	-1.172	0.204
1.5.2	573	1	5	2.91	1.189	0.060	0.102	-1.050	0.204
1.5.3	580	1	5	3.01	1.243	-0.022	0.101	-1.126	0.203
2.2.1	590	1	5	3.23	1.119	-0.146	0.101	-0.990	0.201
2.3.1 and 10.1.1	593	1	5	3.72	1.048	-0.690	0.100	-0.127	0.200
2.3.2 and 10.1.2	597	1	5	3.82	1.011	-0.855	0.100	0.207	0.200
2.4.1	586	1	5	3.15	1.225	-0.096	0.101	-1.097	0.202
2.4.2	582	1	5	2.93	1.153	0.043	0.101	-0.941	0.202
2.4.3	584	1	5	3.10	1.188	-0.050	0.101	-1.044	0.202
2.5.1	589	1	5	3.30	1.086	-0.255	0.101	-0.749	0.201
2.5.2	591	1	5	3.50	1.084	-0.470	0.101	-0.475	0.201
3.1.1	582	1	5	3.23	1.189	-0.136	0.101	-1.043	0.202
3.1.2	581	1	5	3.00	1.122	0.081	0.101	-0.894	0.202
3.2.1 and 5.3.1 and 8.5.1 and 10.3.1	595	1	5	3.40	0.977	-0.364	0.100	-0.460	0.200
3.3.1	573	1	5	3.22	1.030	-0.284	0.102	-0.629	0.204
4.1.1	592	1	5	3.45	1.025	-0.430	0.100	-0.691	0.201
4.1.2	583	1	5	3.52	1.053	-0.473	0.101	-0.628	0.202
4.1.3	597	1	5	3.52	0.967	-0.417	0.100	-0.418	0.200
4.1.4	592	1	5	3.54	1.027	-0.420	0.100	-0.623	0.201
4.2.1	585	1	5	3.37	1.076	-0.254	0.101	-0.795	0.202
4.3.1 and 12.2.1	585	1	5	3.16	1.189	-0.083	0.101	-1.077	0.202
4.4.1	592	1	5	3.43	1.043	-0.304	0.100	-0.689	0.201
4.4.2 and 10.4.1	594	1	5	3.29	0.964	-0.184	0.100	-0.656	0.200
5.1.1	588	1	5	3.15	1.179	-0.104	0.101	-1.088	0.201
5.1.2	593	1	5	3.53	1.059	-0.484	0.100	-0.450	0.200
5.2.1	588	1	5	3.43	1.106	-0.244	0.101	-1.019	0.201
6.1.1	602	1	5	3.92	1.001	-0.937	0.100	0.344	0.199
6.2.1	606	1	5	4.01	0.940	-0.808	0.099	0.151	0.198
6.3.1	606	1	5	3.59	1.091	-0.455	0.099	-0.637	0.198
6.5.1	601	1	5	3.65	1.029	-0.566	0.100	-0.271	0.199
6.1.2	604	1	5	3.52	1.063	-0.514	0.099	-0.399	0.199
6.1.3	603	1	5	3.58	1.053	-0.487	0.100	-0.519	0.199
6.1.4	605	1	5	3.51	1.032	-0.269	0.099	-0.779	0.198
6.1.5	603	1	5	3.64	0.970	-0.454	0.100	-0.374	0.199
6.4.1	605	1	5	3.63	1.057	-0.598	0.099	-0.288	0.198
6.4.2	603	1	5	3.34	1.120	-0.204	0.100	-0.824	0.199
7.1.1	597	1	5	3.47	1.130	-0.570	0.100	-0.432	0.200

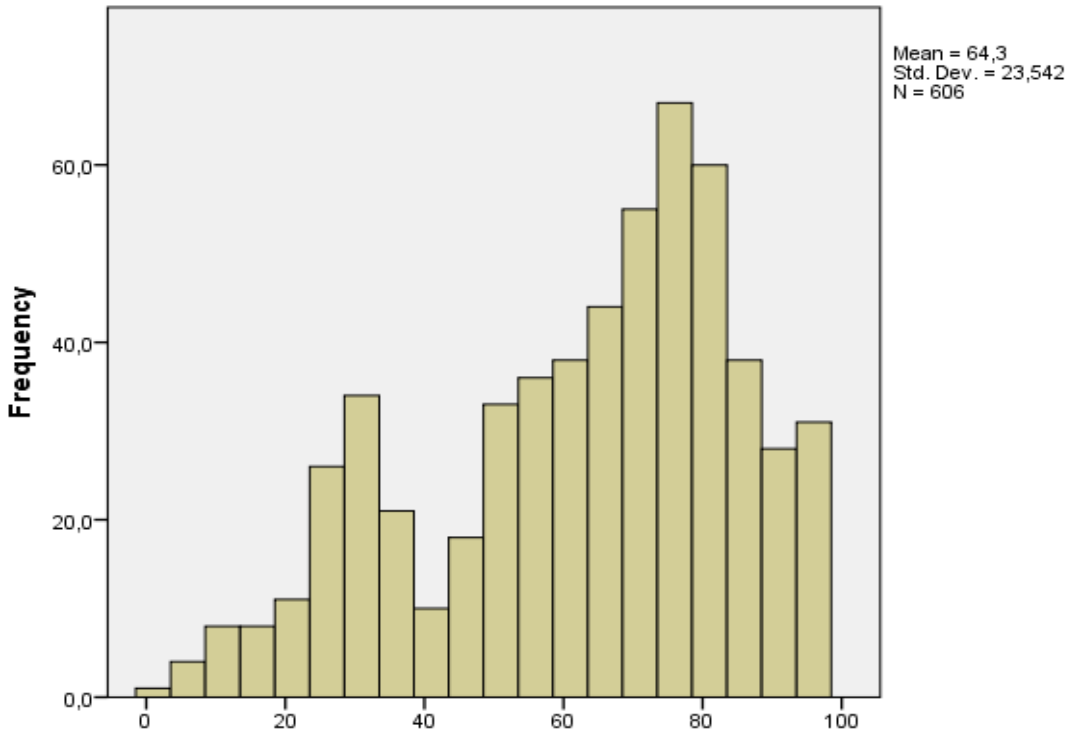
7.2.1	601	1	6	3.33	1.085	-0.247	0.100	-0.897	0.199
7.3.1	599	1	5	3.55	0.971	-0.486	0.100	-0.299	0.199
7.4.1	601	1	5	3.42	1.010	-0.391	0.100	-0.651	0.199
8.1.1	606	1	5	3.43	1.249	-0.346	0.099	-1.137	0.198
8.1.2	606	1	5	3.53	1.113	-0.405	0.099	-0.831	0.198
8.2.1	590	1	5	3.65	1.113	-0.561	0.101	-0.607	0.201
8.2.2 and 9.1.1	591	1	5	3.61	1.084	-0.586	0.101	-0.400	0.201
8.2.3	590	1	5	3.39	1.261	-0.345	0.101	-1.023	0.201
8.3.1	599	1	5	3.54	1.173	-0.322	0.100	-0.944	0.199
8.4.1	596	1	5	3.55	1.149	-0.363	0.100	-0.884	0.200
8.2.4	591	1	5	3.34	1.085	-0.104	0.101	-0.923	0.201
8.2.6	587	1	5	3.28	1.093	-0.149	0.101	-0.788	0.201
8.2.5	589	1	5	3.15	1.096	-0.039	0.101	-0.747	0.201
8.2.7	602	1	5	3.33	1.186	-0.081	0.100	-1.051	0.199
8.2.8	603	1	5	3.38	1.139	-0.083	0.100	-1.171	0.199
8.3.3	602	1	5	3.53	1.117	-0.324	0.100	-0.935	0.199
8.3.2	602	1	5	3.29	1.179	-0.089	0.100	-1.028	0.199
8.3.5	596	1	5	3.25	1.082	-0.026	0.100	-0.910	0.200
8.3.4	591	1	5	3.32	1.188	-0.257	0.101	-0.903	0.201
9.2.1	590	1	5	3.43	1.076	-0.491	0.101	-0.494	0.201
9.3.1	590	1	5	3.27	1.076	-0.276	0.101	-0.679	0.201
9.3.2	593	1	5	3.21	1.033	-0.128	0.100	-0.697	0.200
9.3.3	591	1	5	3.26	1.089	-0.176	0.101	-0.733	0.201
9.4.1	590	1	5	3.17	1.091	-0.154	0.101	-0.705	0.201
10.2.1	598	1	5	3.58	1.070	-0.518	0.100	-0.465	0.200
11.1.1	605	1	5	3.20	1.170	-0.036	0.099	-1.032	0.198
11.2.1	606	1	5	3.59	1.043	-0.602	0.099	-0.215	0.198
11.2.2	603	1	5	3.71	0.929	-0.586	0.100	0.062	0.199
11.2.3	605	1	5	3.45	1.015	-0.296	0.099	-0.597	0.198
11.2.4	603	1	5	3.73	0.941	-0.537	0.100	-0.199	0.199
11.2.5	602	1	5	3.13	1.104	-0.006	0.100	-0.935	0.199
P13.1	594	6	10	8.57	0.939	-0.381	0.100	-0.153	0.200
P13.2	594	6	10	8.48	0.917	-0.225	0.100	-0.485	0.200
P13.3	552	6	10	8.47	0.871	-0.049	0.104	-0.606	0.208
P13.4	520	6	10	8.42	0.831	-0.126	0.107	-0.035	0.214
P13.5	497	6	10	8.41	0.843	-0.108	0.110	0.117	0.219
P13.6	508	6	10	8.33	0.947	-0.232	0.108	-0.341	0.216
P13.7	554	1	10	8.51	0.994	-1.038	0.104	5.130	0.207
P13.8	578	6	10	8.72	0.839	-0.369	0.102	0.060	0.203
P13.9	588	6	10	8.51	1.000	-0.458	0.101	-0.125	0.201
Average of P13.1 to P13.9	435	6.56	10.00	8.48	0.689	-0.134	0.117	-0.145	0.234
C1.1	606	1	200,000	2,949.26	17,083.013	10.456	0.099	116.074	0.198
C1.2	606	1	100	64.30	23.542	-0.527	0.099	-0.570	0.198
C1.3	606	0	31	6.18	4.924	2.383	0.099	7.417	0.198

Appendix 4.2: Distribution graphs of exogenous factors

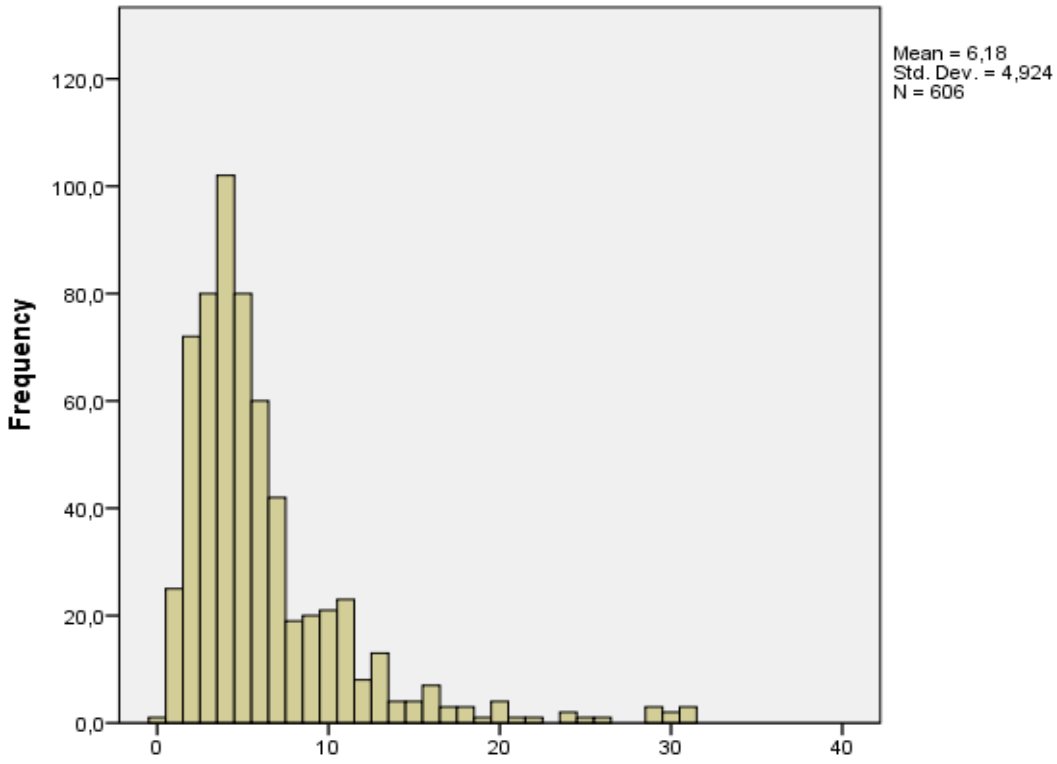
Indicator – Size: number of employees of the organisation



Indicator – Channel scope: percentage of customers using multiple channels



Indicator - Channel scope: number of channels deployed by the organisation



Appendix 4.3: Cronbach's alpha scores of the measurement scales

Tactic 1. Iterative Progression, indicator 1.1.1 to 1.5.3

Case Processing Summary

		N	%
Cases	Valid	537	88.6
	Excluded[a]	69	11.4
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.854	9

Tactic 2. Incremental development, indicator 2.1.1 to 2.5.2

Case Processing Summary

		N	%
Cases	Valid	546	90.1
	Excluded[a]	60	9.9
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.785	9

Tactic 3. Short delivery cycles, indicator 3.1.1 to 3.3.2

Case Processing Summary

		N	%
Cases	Valid	560	92.4
	Excluded[a]	46	7.6
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.674	4

Tactic 4. Evolutionary requirements, indicator 4.1.1 to 4.4.2

Case Processing Summary

		N	%
Cases	Valid	558	92.1
	Excluded[a]	48	7.9
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.773	8

Tactic 5. Continuous feedback, indicator 5.1.1 to 5.3.1
Case Processing Summary

		N	%
Cases	Valid	574	94.7
	Excluded[a]	32	5.3
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.670	4

Tactic 6. Self-managing teams, indicator 6.1.1 to 6.5.1
Case Processing Summary

		N	%
Cases	Valid	589	97.2
	Excluded[a]	17	2.8
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.823	10

Tactic 7. Minimal documentation, indicator 7.1.1 to 7.4.1
Case Processing Summary

		N	%
Cases	Valid	584	96.4
	Excluded[a]	22	3.6
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.576	4

Tactic 8. High bandwidth communication, indicator 8.1.1 to 8.5.1
Case Processing Summary

		N	%
Cases	Valid	511	84.3
	Excluded[a]	95	15.7
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.884	17

Tactic 9. Retrospection, indicator 9.1.1 to 9.4.1

Case Processing Summary

		N	%
Cases	Valid	564	93.1
	Excluded[a]	42	6.9
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.848	6

Tactic 10. Client driven iterations, indicator 10.1.1 to 10.4.1

Case Processing Summary

		N	%
Cases	Valid	585	96.5
	Excluded[a]	21	3.5
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.775	5

Tactic 11. Distribution of expertise, indicator 11.1.1 to 11.2.5

Case Processing Summary

		N	%
Cases	Valid	594	98.0
	Excluded[a]	12	2.0
	Total	606	100.0

[a]Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
0.725	6

Tactic 12. Adherence to standards, indicator 12.1.1 to 12.2.1

Case Processing Summary

		N	%
Cases	Valid	574	94.7
	Excluded[a]	32	5.3
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.482	3

Customer Performance, indicator 13.1 to 13.9

Case Processing Summary

		N	%
Cases	Valid	435	71.8
	Excluded[a]	171	28.2
	Total	606	100.0

[a]*Listwise deletion based on all variables in the procedure.*

Reliability Statistics

Cronbach's Alpha	N of Items
0.902	9

Appendix 4.4: Correlations between indicators

Indicators		1.3.1 and 12.1.1	1.1.1	1.2.1 and 2.1.1	1.3.2 and 12.1.2	1.4.1	1.4.2	1.5.1	1.5.2	1.5.3	2.2.1	2.3.1 and 10.1.1	2.3.2 and 10.1.2	2.4.1	2.4.2	2.4.3	2.5.1	2.5.2	3.1.1	3.1.2	3.2.1 and 5.3.1 and 8.5.1 and 10.3.1	3.3.1	4.1.1	4.1.2
1.3.1 and 12.1.1	Pearson Correlation	1	,200**	,320**	,233**	,394**	,296**	,363**	,292**	,244**	,378**	,248**	,150**	,290**	,244**	,412**	,129**	,203**	,211**	,314**	,130**	,205**	,151**	,251**
	Sig. (2-tailed)		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,002	0,000	0,000	0,000
	N	594	589	586	584	573	562	564	564	570	584	584	587	576	572	575	577	579	572	572	585	563	582	574
1.1.1	Pearson Correlation	,200**	1	,329**	,293**	,220**	,247**	,246**	,245**	,322**	,184**	,286**	,288**	,239**	,228**	,160**	,316**	,346**	,188**	,141**	,116**	,244**	,145**	,155**
	Sig. (2-tailed)	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,005	0,000	0,000	0,000
	N	589	599	592	593	579	571	570	570	579	585	590	596	586	581	581	585	587	581	578	594	572	589	579
1.2.1 and 2.1.1	Pearson Correlation	,320**	,329**	1	,322**	,342**	,202**	,394**	,363**	,304**	,251**	,312**	,246**	,218**	,181**	,288**	,252**	,179**	,100*	,162**	0,073	,235**	,195**	,275**
	Sig. (2-tailed)	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,016	0,000	0,075	0,000	0,000	0,000
	N	586	592	595	589	579	569	570	573	575	585	590	592	582	579	581	584	583	577	578	590	568	585	579
1.3.2 and 12.1.2	Pearson Correlation	,233**	,293**	,322**	1	,334**	,443**	,303**	,429**	,501**	,184**	0,002	,173**	,439**	,498**	,314**	,384**	,240**	,255**	,316**	,226**	,179**	,320**	,169**
	Sig. (2-tailed)	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,964	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	584	593	589	594	576	568	568	567	576	580	589	593	582	578	579	582	583	578	575	591	569	585	574
1.4.1	Pearson Correlation	,394**	,220**	,342**	,334**	1	,488**	,601**	,525**	,369**	,387**	,216**	0,062	,363**	,376**	,478**	,146**	,190**	,235**	,365**	,148**	,292**	,253**	,264**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,138	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	573	579	579	576	582	564	569	569	570	572	577	580	571	568	574	571	572	570	574	577	564	574	566
1.4.2	Pearson Correlation	,296**	,247**	,202**	,443**	,488**	1	,527**	,437**	,644**	,274**	,128**	,169**	,576**	,550**	,426**	,267**	,339**	,484**	,357**	,152**	,318**	,269**	,156**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	562	571	569	568	564	572	560	559	570	562	565	571	569	570	562	568	565	568	562	569	562	567	559
1.5.1	Pearson Correlation	,363**	,246**	,394**	,303**	,601**	,527**	1	,632**	,579**	,440**	,155**	,095*	,468**	,434**	,620**	,225**	,214**	,293**	,466**	0,059	,329**	,185**	,194**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,023	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,161	0,000	0,000	0,000
	N	564	570	570	568	569	560	573	564	566	567	569	570	564	563	568	564	564	563	569	570	558	567	561
1.5.2	Pearson Correlation	,292**	,245**	,363**	,429**	,525**	,437**	,632**	1	,559**	,276**	,183**	,139**	,392**	,489**	,550**	,248**	,235**	,325**	,530**	,157**	,296**	,176**	,228**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	564	570	573	567	569	559	564	573	565	566	568	570	565	563	567	566	564	561	568	568	558	566	564
1.5.3	Pearson Correlation	,244**	,322**	,304**	,501**	,369**	,644**	,579**	,559**	1	,258**	,144**	,223**	,624**	,616**	,496**	,362**	,319**	,459**	,385**	,196**	,358**	,188**	,100*
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,018
	N	570	579	575	576	570	570	566	565	580	569	574	579	575	572	570	573	573	574	571	577	570	576	563
2.2.1	Pearson Correlation	,378**	,184**	,251**	,184**	,387**	,274**	,440**	,276**	,258**	1	,250**	0,049	,357**	,218**	,457**	,122**	0,030	,218**	,344**	,092*	,271**	,174**	,194**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,242	0,000	0,000	0,000	0,003	0,476	0,000	0,000	0,027	0,000	0,000	0,000
	N	584	585	585	580	572	562	567	566	569	590	581	583	576	572	574	575	575	570	572	583	562	581	576
2.3.1 and 10.1.1	Pearson Correlation	,248**	,286**	,312**	0,002	,216**	,128**	,155**	,183**	,144**	,250**	1	,466**	,133**	,121**	,317**	,149**	,262**	,252**	,212**	,318**	,395**	,212**	,180**
	Sig. (2-tailed)	0,000	0,000	0,000	0,964	0,000	0,002	0,000	0,000	0,001	0,000		0,000	0,001	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	584	590	590	589	577	565	569	568	574	581	593	590	578	575	579	580	581	575	577	588	566	584	574
2.3.2 and 10.1.2	Pearson Correlation	,150**	,288**	,246**	,173**	0,062	,169**	,095*	,139**	,223**	0,049	,466**	1	,245**	,224**	,193**	,308**	,344**	,347**	,223**	,482**	,310**	,123**	,156**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,138	0,000	0,023	0,001	0,000	0,242	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000
	N	587	596	592	593	580	571	570	570	579	583	590	597	584	581	581	585	586	581	578	594	572	588	577
2.4.1	Pearson Correlation	,290**	,239**	,218**	,439**	,363**	,576**	,468**	,392**	,624**	,357**	,133**	,245**	1	,641**	,533**	,309**	,217**	,462**	,343**	,172**	,359**	,155**	,120**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004
	N	576	586	582	582	571	569	564	565	575	576	578	584	586	579	575	576	574	576	571	582	567	581	571
2.4.2	Pearson Correlation	,244**	,228**	,181**	,498**	,376**	,550**	,434**	,489**	,616**	,218**	,121**	,224**	,641**	1	,559**	,338**	,265**	,397**	,392**	,308**	,348**	,263**	,189**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	572	581	579	578	568	570	563	563	572	572	575	581	579	582	572	574	571	575	569	579	565	577	569
2.4.3	Pearson Correlation	,412**	,160**	,288**	,314**	,478**	,426**	,620**	,550**	,496**	,457**	,317**	,193**	,533**	,559**	1	,223**	,189**	,299**	,546**	,176**	,335**	,241**	,218**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	575	581	581	579	574	562	568	567	570	574	579	581	575	572	584	572	572	570	575	579	564	577	569
2.5.1	Pearson Correlation	,129**	,316**	,252**	,384**	,146**	,267**	,225**	,248**	,362**	,122**	,149**	,308**	,309**	,338**	,223**	1	,468**	,268**	,230**	,326**	,297**	,234**	,217**
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	577	585	584	582	571	568	564	566	573	575	580	585	576	574	572	589	586	573	572	583	566	580	571
2.5.2	Pearson Correlation	,203**	,346**	,179**	,240**	,190**	,339**	,214**	,235**	,319**	0,030	,262**	,344**	,217**	,265**	,189**	,468**	1	,187**	,172**	,426**	,249**	,136**	,141**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,476	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,001
	N	579	587	583	583	572	565	564	564	573	575	581	586	574	571	572	586	591	574	572	584	566	581	571
3.1.1	Pearson Correlation	,211**	,188**	,100*	,255**	,235**	,484**	,293**	,325**	,459**	,218**	,252**	,347**	,462**	,397**	,299**	,268**	,187**	1	,409**	,201**	,412**	,134**	,130**
	Sig. (2-tailed)	0,000	0,000	0,016	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,001	0,002
	N	572	581	577	578	570	568	563	561	574	570	575	581	576	575	570	573	574	582	571	579	569	576	566
3.1.2	Pearson Correlation	,314**	,141**	,162**	,316**	,365**	,357**	,466**	,530**	,385**	,344**	,212**	,223**	,343**	,392**	,546**	,230**	,172**	,409**	1	,198**	,383**	,176**	,193**
	Sig. (2-tailed)	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000
	N	572	578	578	575	574	562	569	568	571	572	577	578	571	569	575	572	572	571	581	576	567	575	566
3.2.1 and 5.3.1 and 8.5.1 and 10.3.1	Pearson Correlation	,130**	,116**	0,073	,226**	,148**	,152**	0,059	,157**	,196**	,092*	,318**	,482**	,172**	,308**	,176**	,326**	,426**	,201**	,198**	1	,405**	,143**	,150**
	Sig. (2-tailed)	0,002	0,005	0,075	0,000	0,000	0,000	0,161	0,000	0,000	0,027	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,001	0,000
	N	585	594	590	591	577	569	570	568	577	583	588	594	582	579	579	583	584	579	576	595	570	586	575
3.3.1	Pearson Correlation	,205**	,244**	,235**	,179**	,292**	,318**	,329**	,296**	,358**	,271**	,395**	,310**	,359**	,348**	,335**	,297**	,249**	,412**	,383**	,405**	1	,268**	,193**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000
	N	563	572	568	569	564	562	558	558	570	562	566	572	567	565	564	566	566	569	567	570	573	568	557
4.1.1	Pearson Correlation	,151**	,145**	,195**	,320**	,253**	,269**	,185**	,176**	,188**	,174**	,212**	,123**	,155**	,263**	,241**	,234**	,136**	,134**	,176**	,143**	,268**	1	,284**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,001	0,001	0,000	0,001	0,000		0,000
	N	582	589	585	585	574	567	567	566	576	581	584	588	581	577	577	580	581	576	575	586	568	592	578
4.1.2	Pearson Correlation	,251**	,155**	,275**	,169**	,264**	,156**	,194**	,228**	,100*	,194**	,180**	,156**	,120**	,189**	,218**	,217**	,141**	,130**	,193**	,150**	,193**	,284**	1
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,018	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,001	0,002	0,000	0,000	0,000	0,000	
	N	574	579	579	574	566	559	561	564	563	576	574	577	571	569	569	571	571	566	566	575	557	578	583
4.1.3	Pearson Correlation	,104*	,130**	,115**	,248**	,198**	,204**	,140**	,224**	,192**	,125**	,187**	,116**	,133**	,246**	,199**	,266**	,186**	,239**	,188**	,182**	,273**	,491**	,272**
	Sig. (2-tailed)	0,012	0,002	0,005	0,000	0,000	0,000	0,001	0,000	0,000	0,003	0,000	0,005	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	585	593	589	589	578	571	571	570	580	584	588	592	584	581	581	584	586	580	579	590	572	592	580
4.1.4	Pearson Correlation	,196**	,215**	,232**	,259**	,362**	,222**	,376**	,314**	,214**	,377**	,134**	,120**	,263**	,269**	,378**	,223**	,149**	,206**	,296**	,133**	,163**	,117**	,432**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,005	0,000
	N	580	587	585	583	575	566	570	567	572	579	583	586	577	576	578	578	580	575	575	584	566	584	580
4.2.1	Pearson Correlation	,193**	,232**	,113**	,388**	,221**	,287**	,204**	,219**	,324**	,087*	,130**	,203**	,242**	,326**	,175**	,269**	,271**	,341**	,230**	,261**	,252**	,408**	,337**
	Sig. (2-tailed)	0,000	0,000	0,007	0,000	0,000	0,000	0,000	0,000	0,000	0,037	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	573	581	576	577	565	561	561	559	567	572	575	579	573	571	569	571	573	570	566	577	559	580	572
4.3.1 and 12.2.1	Pearson Correlation	,239**	,306**	,376**	,233**	,455**	,294**	,430**	,442**	,348**	,289**	,312**	,180**	,321**	,450**	,501**	,208**	,158**	,209**	,262**	,163**	,278**	,273**	,339**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	579	582	582	580	572	563	570	565	570	579	581	582	574	573	577	573	573	571	574	580	563	581	576
4.4.1	Pearson Correlation	,319**	,209**	,250**	,289**	,375**	,281**	,335**	,417**	,311**	,297**	,218**	,144**	,218**	,318**	,328**	,266**	,263**	,201**	,370**	,268**	,247**	,219**	,401**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	580	587	585	583	575	566	571	567	573	580	584	586	577	576	578	578	580	575	576	584	566	585	580
4.4.2 and 10.4.1	Pearson Correlation	,211**	,118**	,123**	,187**	,235**	,108**	,139**	,217**	,111**	,209**	,312**	,297**	,135**	,216**	,264**	,235**	,227**	,231**	,330**	,435**	,271**	,126**	,255**
	Sig. (2-tailed)	0,000	0,004	0,003	0,000	0,000	0,010	0,001	0,000	0,008	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000
	N	585	591	591	588	578	566	572	569	575	584	589	591	580	576	580	581	582	577	577	591	567	584	575
5.1.1	Pearson Correlation	,099*	,284**	,203**	,335**	,273**	,395**	,248**	,312**	,371**	,191**	,263**	,213**	,276**	,454**	,249**	,452**	,418**	,216**	,226**	,336**	,360**	,286**	,155**
	Sig. (2-tailed)	0,017	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	576	584	581	582	570	566	566	565	574	572	579	584	574	571	573	584	584	572	572	582	566	580	569
5.1.2	Pearson Correlation	,210**	,223**	,307**	,219**	,344**	,227**	,242**	,355**	,204**	,184**	,371**	,222**	,166**	,233**	,255**	,355**	,407**	,154**	,251**	,290**	,258**	,190**	,260**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	581	588	586	585	576	565	569	568	573	577	584	587	576	572	576	585	587	574	576	585	566	582	574
5.2.1	Pearson Correlation	,137**	,256**	,334**	,118**	,254**	,158**	,241**	,240**	,170**	,225**	,417**	,281**	,145**	,180**	,230**	,368**	,360**	,229**	,174**	,264**	,252**	,210**	,255**
	Sig. (2-tailed)	0,001	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	579	585	584	581	577	564	569	569	572	575	582	584	574	571	576	580	582	573	577	582	565	577	569
6.1.1	Pearson Correlation	,216**	,230**	,264**	,135**	,223**	,179**	,200**	,229**	,234**	,189**	,325**	,197**	,201**	,169**	,216**	,182**	,183**	,217**	,112**	,181**	,271**	,232**	,204**
	Sig. (2-tailed)	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,007	0,000	0,000	0,000	0,000
	N	590	595	592	591	579	570	572	571	579	587	591	594	583	580	582	586	588	579	580	592	571	591	581
6.2.1	Pearson Correlation	,294**	,158**	,370**	,161**	,276**	,176**	,298**	,236**	,183**	,234**	,323**	,299**	,198**	,138**	,227**	,213**	,221**	,179**	,188**	,210**	,155**	,112**	,209**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,007	0,000
	N	594	599	595	594	582	572	573	573	580	590	593	597	586	582	584	589	591	582	581	595	573	592	583
6.3.1	Pearson Correlation	,168**	,175**	,160**	,385**	,178**	,148**	,142**	,172**	,268**	,088*	0,047	,218**	,261**	,232**	,138**	,323**	,132**	,093*	,170**	,245**	,088*	,211**	,130**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,032	0,251	0,000	0,000	0,000	0,001	0,000	0,001	0,026	0,000	0,000	0,035	0,000	0,002
	N	594	599	595	594	582	572	573	573	580	590	593	597	586	582	584	589	591	582	581	595	573	592	583
6.5.1	Pearson Correlation	,347**	,131**	,203**	,250**	,350**	,229**	,198**	,270**	,191**	,280**	,296**	,135**	,185**	,206**	,253**	,198**	,165**	,184**	,197**	,220**	,195**	,263**	,294**
	Sig. (2-tailed)	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	589	594	590	589	577	567	568	568	575	585	588	592	581	577	579	584	586	577	576	590	570	587	578
6.1.2	Pearson Correlation	,236**	,218**	,228**	,374**	,266**	,349**	,247**	,323**	,293**	,123**	,123**	,138**	,273**	,360**	,215**	,233**	,253**	,156**	,213**	,297**	,228**	,134**	,244**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,003	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000
	N	592	597	593	592	580	570	571	571	578	588	591	595	584	580	582	587	589	580	579	593	571	590	581

Indicators		1.3.1 and 12.1.1	1.1.1	1.2.1 and 2.1.1	1.3.2 and 12.1.2	1.4.1	1.4.2	1.5.1	1.5.2	1.5.3	2.2.1	2.3.1 and 10.1.1	2.3.2 and 10.1.2	2.4.1	2.4.2	2.4.3	2.5.1	2.5.2	3.1.1	3.1.2	3.2.1 and 5.3.1 and 8.5.1 and 10.3.1	3.3.1	4.1.1	4.1.2
6.1.3	Pearson Correlation	,235**	,210**	,284**	,334**	,455**	,275**	,353**	,369**	,259**	,221**	,279**	,120**	,212**	,271**	,338**	,187**	,205**	,169**	,316**	,245**	,269**	,258**	,294**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	596	592	591	579	571	573	570	577	587	590	594	583	581	581	586	588	581	578	592	570	589	583
6.1.4	Pearson Correlation	,226**	,298**	,215**	,466**	,349**	,384**	,297**	,314**	,376**	,180**	,258**	,254**	,356**	,434**	,306**	,335**	,289**	,356**	,320**	,291**	,337**	,260**	,215**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	593	598	594	593	581	571	573	572	580	590	593	596	585	581	583	588	590	581	581	594	572	592	582
6.1.5	Pearson Correlation	,316**	,187**	,317**	,282**	,426**	,267**	,303**	,377**	,245**	,216**	,349**	,160**	,185**	,269**	,353**	,223**	,214**	,264**	,436**	,251**	,332**	,276**	,318**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	596	592	591	579	571	573	570	577	587	590	594	583	581	581	586	588	581	578	592	570	589	583
6.4.1	Pearson Correlation	,258**	,183**	,194**	,379**	,262**	,310**	,250**	,279**	,344**	,150**	,195**	,187**	,272**	,317**	,253**	,243**	,296**	,276**	,280**	,360**	,304**	,133**	,142**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,001
	N	593	598	594	593	581	571	573	572	580	590	593	596	585	581	583	588	590	581	581	594	572	592	582
6.4.2	Pearson Correlation	,128**	,145**	,159**	,246**	,244**	,174**	,191**	,335**	,195**	,096*	,099*	0,064	,133**	,245**	,200**	,240**	,239**	,153**	,320**	,215**	,167**	,144**	,277**
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,019	0,016	0,120	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	594	596	592	591	579	569	570	570	577	590	590	594	583	579	581	586	588	579	578	592	570	591	583
7.1.1	Pearson Correlation	,307**	,157**	,173**	,088*	,215**	,162**	,149**	,126**	,130**	,424**	,319**	,097*	,146**	,174**	,237**	,179**	,173**	,232**	,147**	,240**	,271**	,271**	,236**
	Sig. (2-tailed)	0,000	0,000	0,000	0,033	0,000	0,000	0,000	0,003	0,002	0,000	0,000	0,019	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	590	592	590	588	577	566	568	568	574	586	588	591	580	576	579	581	582	576	577	589	568	585	576
7.2.1	Pearson Correlation	,153**	0,013	,082*	,288**	,101*	,177**	,128**	,154**	,213**	,138**	0,066	,091*	,281**	,235**	,167**	,164**	0,071	,188**	,207**	,196**	,227**	,205**	,192**
	Sig. (2-tailed)	0,000	0,752	0,045	0,000	0,015	0,000	0,002	0,000	0,000	0,001	0,110	0,026	0,000	0,000	0,000	0,000	0,086	0,000	0,000	0,000	0,000	0,000	0,000
	N	589	595	593	590	578	571	569	571	576	587	589	593	586	581	580	588	586	578	577	591	569	589	581
7.3.1	Pearson Correlation	,110**	0,053	-0,036	0,028	,093*	0,037	0,031	0,021	0,070	,112**	,132**	-0,047	-0,002	0,027	0,072	0,005	-0,001	0,045	,109**	0,020	,088*	,125**	0,029
	Sig. (2-tailed)	0,007	0,199	0,390	0,494	0,026	0,378	0,466	0,617	0,091	0,007	0,001	0,259	0,967	0,511	0,085	0,896	0,986	0,282	0,009	0,627	0,037	0,002	0,485
	N	587	592	588	588	578	567	570	569	575	583	586	590	580	575	578	582	584	575	574	588	568	585	576
7.4.1	Pearson Correlation	,120**	-0,056	-0,003	,161**	0,064	0,082	0,010	0,062	0,012	,110**	-0,047	-0,025	0,061	,103*	0,033	0,039	-0,034	,091*	,085*	,085*	,100*	,129**	,102*
	Sig. (2-tailed)	0,003	0,171	0,948	0,000	0,125	0,051	0,813	0,137	0,779	0,008	0,253	0,546	0,141	0,013	0,428	0,344	0,413	0,028	0,042	0,039	0,017	0,002	0,014
	N	589	594	592	589	577	571	569	571	576	587	588	592	584	580	579	587	586	577	576	590	568	587	580
8.1.1	Pearson Correlation	,255**	,166**	,202**	,195**	,140**	0,078	,169**	,189**	,145**	,325**	,250**	,230**	,203**	,214**	,270**	,222**	,174**	,144**	,247**	,251**	,173**	,124**	,305**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,001	0,064	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000
	N	594	599	595	594	582	572	573	573	580	590	593	597	586	582	584	589	591	582	581	595	573	592	583
8.1.2	Pearson Correlation	,251**	,228**	,125**	,213**	,175**	,139**	,095*	,136**	,109**	,205**	,245**	,214**	,188**	,179**	,166**	,275**	,280**	,192**	,185**	,217**	,237**	,222**	,139**
	Sig. (2-tailed)	0,000	0,000	0,002	0,000	0,000	0,001	0,022	0,001	0,009	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001
	N	594	599	595	594	582	572	573	573	580	590	593	597	586	582	584	589	591	582	581	595	573	592	583
8.2.1	Pearson Correlation	,407**	,274**	,246**	,380**	,317**	,427**	,327**	,313**	,424**	,287**	,159**	,203**	,470**	,463**	,353**	,246**	,150**	,288**	,245**	,192**	,310**	,260**	,201**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	584	590	584	585	571	563	562	562	571	578	582	588	578	573	573	577	578	573	570	586	564	584	572
8.2.2 and 9.1.1	Pearson Correlation	,380**	,220**	,357**	,191**	,392**	,304**	,385**	,422**	,235**	,282**	,365**	,282**	,262**	,271**	,366**	,200**	,310**	,266**	,238**	,232**	,249**	,140**	,259**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000
	N	579	586	584	582	574	563	566	566	571	575	582	585	573	570	573	581	584	572	574	583	564	580	572
8.2.3	Pearson Correlation	,351**	,135**	,226**	,298**	,418**	,365**	,464**	,409**	,331**	,288**	0,024	0,072	,361**	,344**	,388**	,169**	0,071	,257**	,352**	,101*	,175**	,181**	,247**
	Sig. (2-tailed)	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,570	0,079	0,000	0,000	0,000	0,000	0,090	0,000	0,000	0,015	0,000	0,000	0,000
	N	584	588	587	584	574	562	565	565	570	580	585	587	576	572	576	577	578	572	573	585	563	583	575
8.3.1	Pearson Correlation	,256**	,242**	,230**	,288**	,318**	,339**	,327**	,266**	,356**	,300**	,198**	,177**	,394**	,356**	,345**	,229**	,200**	,147**	,236**	,235**	,310**	,265**	,238**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	587	593	590	589	577	567	568	568	575	583	588	592	581	577	579	584	585	577	576	590	568	588	578
8.4.1	Pearson Correlation	,265**	,167**	,237**	,255**	,228**	,211**	,203**	,258**	,195**	,130**	,115**	,114**	,217**	,248**	,261**	,205**	,248**	,179**	,226**	,203**	,206**	,160**	,267**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,006	0,006	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	584	589	585	584	572	562	563	563	570	580	583	587	576	572	574	579	581	572	571	586	565	582	573
8.2.4	Pearson Correlation	,243**	,158**	,155**	,452**	,271**	,407**	,253**	,286**	,385**	,234**	,128**	,167**	,432**	,482**	,314**	,250**	,219**	,387**	,297**	,209**	,281**	,201**	,171**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	581	587	582	582	569	560	562	560	568	579	580	585	574	570	571	577	579	570	568	586	561	583	572
8.2.6	Pearson Correlation	,347**	,169**	,251**	,304**	,436**	,340**	,413**	,404**	,301**	,346**	,198**	,142**	,321**	,387**	,443**	,253**	,186**	,275**	,483**	,186**	,298**	,167**	,306**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	578	581	577	576	567	556	561	558	565	580	575	579	571	566	572	571	573	567	566	579	558	579	572
8.2.5	Pearson Correlation	,299**	,214**	,203**	,525**	,320**	,413**	,335**	,363**	,378**	,311**	,177**	,118**	,470**	,495**	,371**	,322**	,185**	,286**	,335**	,239**	,306**	,194**	,232**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	579	586	580	580	569	562	561	561	571	575	578	583	575	570	570	575	577	569	567	581	563	583	572
8.2.7	Pearson Correlation	,388**	,235**	,362**	,279**	,456**	,304**	,491**	,392**	,322**	,455**	,232**	,170**	,394**	,364**	,502**	,153**	,167**	,228**	,356**	,167**	,261**	,148**	,168**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	590	596	592	591	579	570	571	571	578	586	590	594	583	579	581	586	588	579	578	592	570	590	581
8.2.8	Pearson Correlation	,149**	,192**	,197**	,409**	,356**	,404**	,323**	,277**	,409**	,219**	,155**	,203**	,471**	,509**	,339**	,255**	,166**	,265**	,252**	,289**	,258**	,213**	,188**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	596	592	591	579	569	570	570	577	587	590	594	583	579	581	586	588	579	578	592	570	589	580
8.3.3	Pearson Correlation	,185**	,177**	,228**	,211**	,272**	,199**	,173**	,197**	,190**	,178**	,175**	,129**	,182**	,197**	,287**	,146**	,167**	,120**	,212**	,204**	,169**	,176**	,251**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000
	N	590	595	591	590	578	568	569	569	576	586	589	593	582	578	580	585	587	578	577	591	569	588	579
8.3.2	Pearson Correlation	,094*	,109**	,104*	,413**	,193**	,124**	0,051	0,063	,100*	,082*	0,062	,108**	,179**	,240**	,116**	,230**	,115**	,104*	,106*	,209**	0,075	,200**	,183**
	Sig. (2-tailed)	0,022	0,008	0,012	0,000	0,000	0,003	0,224	0,132	0,017	0,046	0,130	0,008	0,000	0,000	0,005	0,000	0,005	0,012	0,011	0,000	0,074	0,000	0,000
	N	590	595	591	590	578	568	571	569	576	588	589	593	582	578	580	585	587	578	577	594	569	588	579
8.3.5	Pearson Correlation	,177**	,134**	,150**	,185**	,232**	,087*	,104*	,171**	,085*	,202**	,154**	0,071	,107*	,134**	,185**	,160**	,091*	,112**	,149**	,183**	,135**	,146**	,237**
	Sig. (2-tailed)	0,000	0,001	0,000	0,000	0,000	0,039	0,013	0,000	0,043	0,000	0,000	0,085	0,010	0,001	0,000	0,000	0,028	0,007	0,000	0,000	0,001	0,000	0,000
	N	584	589	585	584	572	563	566	563	572	583	583	587	578	573	574	579	581	574	571	587	564	582	573
8.3.4	Pearson Correlation	,106*	,206**	0,036	,307**	,148**	0,048	-0,059	0,004	0,056	,086*	,168**	,140**	,124**	,166**	,105*	,162**	,219**	-0,031	0,080	,260**	,090*	,141**	,138**
	Sig. (2-tailed)	0,010	0,000	0,380	0,000	0,000	0,255	0,161	0,933	0,183	0,039	0,000	0,001	0,003	0,000	0,012	0,000	0,000	0,456	0,056	0,000	0,032	0,001	0,001
	N	581	587	582	582	570	560	561	561	569	578	580	585	575	570	572	574	576	574	571	583	567	577	569
9.2.1	Pearson Correlation	,144**	,249**	,146**	,396**	,181**	,373**	,300**	,310**	,397**	,153**	,172**	,330**	,383**	,374**	,317**	,439**	,416**	,289**	,266**	,317**	,251**	,177**	,120**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004
	N	582	589	584	585	571	564	563	563	572	578	583	588	576	573	573	578	580	573	571	586	565	583	572
9.3.1	Pearson Correlation	,232**	,190**	,218**	,280**	,438**	,304**	,386**	,477**	,288**	,243**	,318**	,226**	,278**	,350**	,420**	,288**	,334**	,259**	,423**	,295**	,249**	,159**	,216**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	581	588	587	584	577	564	568	568	572	577	586	587	578	574	579	577	579	574	576	585	565	581	572
9.3.2	Pearson Correlation	,216**	,299**	,171**	,446**	,340**	,438**	,351**	,342**	,422**	,224**	,211**	,238**	,395**	,462**	,338**	,360**	,405**	,353**	,341**	,355**	,359**	,281**	,167**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	581	589	586	586	575	568	567	567	576	577	585	589	580	578	578	582	582	577	575	587	569	584	573
9.3.3	Pearson Correlation	,277**	,251**	,337**	,295**	,469**	,346**	,476**	,535**	,375**	,279**	,332**	,171**	,330**	,371**	,444**	,252**	,284**	,308**	,435**	,204**	,337**	,200**	,234**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	579	586	584	582	571	563	566	566	569	575	583	585	573	573	574	578	580	572	571	583	562	580	575
9.4.1	Pearson Correlation	,160**	,310**	,188**	,476**	,298**	,370**	,253**	,366**	,428**	,176**	,295**	,320**	,345**	,505**	,297**	,375**	,313**	,377**	,392**	,423**	,359**	,240**	,168**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	580	589	584	585	571	566	565	562	572	577	584	588	576	576	573	577	579	576	571	586	564	581	572
10.2.1	Pearson Correlation	,208**	,097*	,293**	,272**	,204**	,152**	,229**	,261**	,195**	,099*	,423**	,497**	,208**	,250**	,366**	,312**	,316**	,196**	,350**	,394**	,238**	,158**	,177**
	Sig. (2-tailed)	0,000	0,017	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,017	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	589	595	595	592	582	570	573	573	578	585	593	595	583	580	584	585	586	580	581	593	571	588	579
11.1.1	Pearson Correlation	,312**	,185**	,195**	,206**	,330**	,177**	,270**	,256**	,178**	,282**	,205**	,097*	,189**	,202**	,242**	,131**	,199**	,150**	,306**	,169**	,188**	0,076	,177**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,018	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,066	0,000
	N	593	598	594	594	581	571	573	572	579	589	592	596	586	581	584	588	590	581	580	594	572	591	582
11.2.1	Pearson Correlation	,294**	,305**	,266**	,293**	,287**	,354**	,216**	,250**	,300**	,288**	,286**	,218**	,235**	,191**	,187**	,333**	,336**	,254**	,188**	,267**	,355**	,278**	,192**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	594	599	595	594	582	572	573	573	580	590	593	597	586	582	584	589	591	582	581	595	573	592	583
11.2.2	Pearson Correlation	,447**	,181**	,312**	,267**	,368**	,251**	,290**	,301**	,229**	,307**	,296**	,183**	,232**	,154**	,259**	,168**	,246**	,187**	,282**	,186**	,231**	,161**	,273**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	596	592	591	579	569	570	570	577	587	590	594	583	579	581	586	588	579	578	592	570	589	580
11.2.3	Pearson Correlation	,303**	,290**	,217**	,550**	,294**	,351**	,256**	,314**	,341**	,243**	,100*	,229**	,328**	,402**	,251**	,333**	,298**	,299**	,284**	,267**	,262**	,266**	,248**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,015	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	593	598	594	593	581	571	572	572	579	589	592	596	585	581	583	588	590	581	580	594	572	591	582
11.2.4	Pearson Correlation	,284**	,199**	,356**	,280**	,380**	,214**	,245**	,289**	,208**	,355**	,351**	,134**	,209**	,213**	,265**	,223**	,213**	,178**	,218**	,211**	,289**	,261**	,306**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	596	592	591	579	569	570	570	577	587	590	594	583	579	581	586	588	579	578	592	570	589	580
11.2.5	Pearson Correlation	,154**	0,074	,105*	,383**	,192**	,267**	,123**	,205**	,210**	0,078	-,141**	0,023	,185**	,203**	0,050	,199**	,180**	,209**	,197**	,157**	0,053	,104*	,183**
	Sig. (2-tailed)	0,000	0,072	0,011	0,000	0,000	0,000	0,003	0,000	0,000	0,060	0,001	0,584	0,000	0,000	0,228	0,000	0,000	0,000	0,000	0,000	0,209	0,012	0,000
	N	590	595	591	590	578	571	571	569	576	586	589	593	582	581	580	585	587	581	577	591	569	588	581

Indicators		4.1.3	4.1.4	4.2.1	4.3.1 and 12.2.1	4.4.1	4.4.2 and 10.4.1	5.1.1	5.1.2	5.2.1	6.1.1	6.2.1	6.3.1	6.5.1	6.1.2	6.1.3	6.1.4	6.1.5	6.4.1	6.4.2	7.1.1	7.2.1	7.3.1	7.4.1	8.1.1
1.3.1 and 12.1.1	Pearson Correlation	,104**	,196**	,193**	,239**	,319**	,211**	,099*	,210**	,137**	,216**	,294**	,168**	,347**	,236**	,235**	,226**	,316**	,258**	,128**	,307**	,153**	,110**	,120**	,255**
	Sig. (2-tailed)	0,012	0,000	0,000	0,000	0,000	0,000	0,017	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,007	0,003	0,000
	N	585	580	573	579	580	585	576	581	579	590	594	594	589	592	591	593	591	593	594	590	589	587	589	594
1.1.1	Pearson Correlation	,130**	,215**	,232**	,306**	,209**	,118**	,284**	,223**	,256**	,230**	,158**	,175**	,131**	,218**	,210**	,298**	,187**	,183**	,145**	,157**	0,013	0,053	-0,056	,166**
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,752	0,199	0,171	0,000
	N	593	587	581	582	587	591	584	588	585	595	599	599	594	597	596	598	596	598	596	592	595	592	594	599
1.2.1 and 2.1.1	Pearson Correlation	,115**	,232**	,113**	,376**	,250**	,123**	,203**	,307**	,334**	,264**	,370**	,160**	,203**	,228**	,284**	,215**	,317**	,194**	,159**	,173**	,082*	-0,036	-0,003	,202**
	Sig. (2-tailed)	0,005	0,000	0,007	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,045	0,390	0,948	0,000
	N	589	585	576	582	585	591	581	586	584	592	595	595	590	593	592	594	592	594	592	590	593	588	592	595
1.3.2 and 12.1.2	Pearson Correlation	,248**	,259**	,388**	,233**	,289**	,187**	,335**	,219**	,118**	,135**	,161**	,385**	,250**	,374**	,334**	,466**	,282**	,379**	,246**	,088*	,288**	0,028	,161**	,195**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,033	0,000	0,494	0,000	0,000
	N	589	583	577	580	583	588	582	585	581	591	594	594	589	592	591	593	591	593	591	588	590	588	589	594
1.4.1	Pearson Correlation	,198**	,362**	,221**	,455**	,375**	,235**	,273**	,344**	,254**	,223**	,276**	,178**	,350**	,266**	,455**	,349**	,426**	,262**	,244**	,215**	,101*	,093*	0,064	,140**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,015	0,026	0,125	0,001
	N	578	575	565	572	575	578	570	576	577	579	582	582	577	580	579	581	579	581	579	577	578	578	577	582
1.4.2	Pearson Correlation	,204**	,222**	,287**	,294**	,281**	,108**	,395**	,227**	,158**	,179**	,176**	,148**	,229**	,349**	,275**	,384**	,267**	,310**	,174**	,162**	,177**	0,037	0,082	0,078
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,010	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,378	0,051	0,064
	N	571	566	561	563	566	566	566	565	564	570	572	572	567	570	571	571	571	571	569	566	571	567	571	572
1.5.1	Pearson Correlation	,140**	,376**	,204**	,430**	,335**	,139**	,248**	,242**	,241**	,200**	,298**	,142**	,198**	,247**	,353**	,297**	,303**	,250**	,191**	,149**	,128**	0,031	0,010	,169**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,466	0,813	0,000
	N	571	570	561	570	571	572	566	569	569	572	573	573	568	571	573	573	573	573	570	568	569	570	569	573
1.5.2	Pearson Correlation	,224**	,314**	,219**	,442**	,417**	,217**	,312**	,355**	,240**	,229**	,236**	,172**	,270**	,323**	,369**	,314**	,377**	,279**	,335**	,126**	,154**	0,021	0,062	,189**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,617	0,137	0,000
	N	570	567	559	565	567	569	565	568	569	571	573	573	568	571	570	572	570	572	570	568	571	569	571	573
1.5.3	Pearson Correlation	,192**	,214**	,324**	,348**	,311**	,111**	,371**	,204**	,170**	,234**	,183**	,268**	,191**	,293**	,259**	,376**	,245**	,344**	,195**	,130**	,213**	0,070	0,012	,145**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,008	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,091	0,779	0,000
	N	580	572	567	570	573	575	574	573	572	579	580	580	575	578	577	580	577	580	577	574	576	575	576	580
2.2.1	Pearson Correlation	,125**	,377**	,087*	,289**	,297**	,209**	,191**	,184**	,225**	,189**	,234**	,088*	,280**	,123**	,221**	,180**	,216**	,150**	,096*	,424**	,138**	,112**	,110**	,325**
	Sig. (2-tailed)	0,003	0,000	0,037	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,032	0,000	0,003	0,000	0,000	0,000	0,000	0,019	0,000	0,001	0,007	0,008	0,000
	N	584	579	572	579	580	584	572	577	575	587	590	590	585	588	587	590	587	590	590	586	587	583	587	590
2.3.1 and 10.1.1	Pearson Correlation	,187**	,134**	,130**	,312**	,218**	,312**	,263**	,371**	,417**	,325**	,323**	0,047	,296**	,123**	,279**	,258**	,349**	,195**	,099*	,319**	0,066	,132**	-0,047	,250**
	Sig. (2-tailed)	0,000	0,001	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,251	0,000	0,003	0,000	0,000	0,000	0,000	0,016	0,000	0,110	0,001	0,253	0,000
	N	588	583	575	581	584	589	579	584	582	591	593	593	588	591	590	593	590	593	590	588	589	586	588	593
2.3.2 and 10.1.2	Pearson Correlation	,116**	,120**	,203**	,180**	,144**	,297**	,213**	,222**	,281**	,197**	,299**	,218**	,135**	,138**	,120**	,254**	,160**	,187**	,064*	,097*	,091*	-0,047	-0,025	,230**
	Sig. (2-tailed)	0,005	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,001	0,003	0,000	0,000	0,000	0,120	0,019	0,026	0,259	0,546	0,000
	N	592	586	579	582	586	591	584	587	584	594	597	597	592	595	594	596	594	596	594	591	593	590	592	597
2.4.1	Pearson Correlation	,133**	,263**	,242**	,321**	,218**	,135**	,276**	,166**	,145**	,201**	,198**	,261**	,185**	,273**	,212**	,356**	,185**	,272**	,133**	,146**	,281**	-0,002	0,061	,203**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,967	0,141	0,000
	N	584	577	573	574	577	580	574	576	574	583	586	586	581	584	583	585	583	585	583	580	586	580	584	586
2.4.2	Pearson Correlation	,246**	,269**	,326**	,450**	,318**	,216**	,454**	,233**	,180**	,169**	,138**	,232**	,206**	,360**	,271**	,434**	,269**	,317**	,245**	,174**	,235**	0,027	,103*	,214**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,511	0,013	0,000
	N	581	576	571	573	576	576	571	572	571	580	582	582	577	580	581	581	581	581	581	579	576	581	575	580
2.4.3	Pearson Correlation	,199**	,378**	,175**	,501**	,328**	,264**	,249**	,255**	,230**	,216**	,227**	,138**	,253**	,215**	,338**	,306**	,353**	,253**	,200**	,237**	,167**	0,072	0,033	,270**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,085	0,428	0,000
	N	581	578	569	577	578	580	573	576	576	582	584	584	579	582	581	583	581	583	581	579	580	578	579	584
2.5.1	Pearson Correlation	,266**	,223**	,269**	,208**	,266**	,235**	,452**	,355**	,368**	,182**	,213**	,323**	,198**	,233**	,187**	,335**	,223**	,243**	,240**	,179**	,164**	0,005	0,039	,222**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,896	0,344	0,000
	N	584	578	571	573	578	581	584	585	580	586	589	589	584	587	586	588	586	588	586	581	588	582	587	589
2.5.2	Pearson Correlation	,186**	,149**	,271**	,158**	,263**	,227**	,418**	,407**	,360**	,183**	,221**	,132**	,165**	,253**	,205**	,289**	,214**	,296**	,239**	,173**	0,071	-0,001	-0,034	,174**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,086	0,986	0,413	0,000
	N	586	580	573	573	580	582	584	587	582	588	591	591	586	589	588	590	588	590	588	582	586	584	586	591
3.1.1	Pearson Correlation	,239**	,206**	,341**	,209**	,201**	,231**	,216**	,154**	,229**	,217**	,179**	,093*	,184**	,156**	,169**	,356**	,264**	,276**	,153**	,232**	,188**	0,045	,091*	,144**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,026	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,282	0,028	0,000
	N	580	575	570	571	575	577	572	574	573	579	582	582	577	580	581	581	581	581	579	576	578	575	577	582
3.1.2	Pearson Correlation	,188**	,296**	,230**	,262**	,370**	,330**	,226**	,251**	,174**	,112**	,188**	,170**	,197**	,213**	,316**	,320**	,436**	,280**	,320**	,147**	,207**	,109**	,085*	,247**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,007	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,009	0,042	0,000
	N	579	575	566	574	576	577	572	576	577	580	581	581	576	579	578	581	578	581	578	577	577	574	576	581
3.2.1 and 5.3.1 and 8.5.1 and 10.3.1	Pearson Correlation	,182**	,133**	,261**	,163**	,268**	,435**	,336**	,290**	,264**	,181**	,210**	,245**	,220**	,297**	,245**	,291**	,251**	,360**	,215**	,240**	,196**	0,020	,085*	,251**
	Sig. (2-tailed)	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,627	0,039	0,000
	N	590	584	577	580	584	591	582	585	582	592	595	595	590	593	592	594	592	594	592	589	591	588	590	595
3.3.1	Pearson Correlation	,273**	,163**	,252**	,278**	,247**	,271**	,360**	,258**	,252**	,271**	,155**	,088*	,195**	,228**	,269**	,337**	,332**	,304**	,167**	,271**	,227**	,088*	,100*	,173**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,035	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,037	0,017	0,000
	N	572	566	559	563	566	567	566	566	565	571	573	573	570	571	570	572	570	572	570	568	569	568	568	573
4.1.1	Pearson Correlation	,491**	,117**	,408**	,273**	,219**	,126**	,286**	,190**	,210**	,232**	,112**	,211**	,263**	,134**	,258**	,260**	,276**	,133**	,144**	,271**	,205**	,125**	,129**	,124**
	Sig. (2-tailed)	0,000	0,005	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,007	0,000	0,000	0,001	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,002	0,002	0,003
	N	592	584	580	581	585	584	580	582	577	591	592	592	587	590	589	592	589	592	591	585	589	585	587	592
4.1.2	Pearson Correlation	,272**	,432**	,337**	,339**	,401**	,255**	,155**	,260**	,255**	,204**	,209**	,130**	,294**	,244**	,294**	,215**	,318**	,142**	,277**	,236**	,192**	0,029	,102*	,305**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,485	0,014	0,000
	N	580	580	572	576	580	575	569	574	569	581	583	583	578	581	583	582	583	582	583	576	581	576	580	583
4.1.3	Pearson Correlation	1	,291**	,444**	,176**	,312**	,223**	,258**	,219**	,171**	,246**	,100*	,191**	,247**	,220**	,253**	,250**	,282**	,263**	,242**	,176**	,274**	,190**	,246**	,115**
	Sig. (2-tailed)		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,015	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005
	N	597	589	584	583	590	588	584	587	582	596	597	597	592	595	594	597	594	597	594	588	592	590	592	597
4.1.4	Pearson Correlation	,291**	1	,283**	,351**	,462**	,208**	,213**	,181**	,258**	,146**	,209**	,095*	,288**	,213**	,260**	,213**	,256**	,230**	,274**	,165**	,193**	0,071	,142**	,291**
	Sig. (2-tailed)	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,020	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,088	0,001	0,000
	N	589	592	578	582	589	584	578	583	578	590	592	592	587	590	592	591	592	591	589	583	587	585	587	592
4.2.1	Pearson Correlation	,444**	,283**	1	,233**	,333**	,180**	,238**	,193**	,171**	,264**	,190**	,201**	,247**	,387**	,279**	,315**	,280**	,333**	,248**	,188**	,328**	,115**	,180**	,180**
	Sig. (2-tailed)	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,006	0,000	0,000
	N	584	578	585	573	580	575	573	575	569	584	585	585	580	583	584	585	584	585	582	576	581	579	580	585
4.3.1 and 12.2.1	Pearson Correlation	,176**	,351**	,233**	1	,328**	,164**	,346**	,257**	,330**	,251**	,259**	,159**	,220**	,211**	,378**	,309**	,304**	,189**	,212**	,150**	0,078	-0,032	-0,014	,246**
	Sig. (2-tailed)	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,062	0,441	0,737	0,000
	N	583	582	573	585	583	581	574	577	574	584	585	585	580	583	585	585	585	585	585	582	581	579	580	585
4.4.1	Pearson Correlation	,312**	,462**	,333**	,328**	1	,306**	,281**	,292**	,326**	,246**	,301**	,185**	,356**	,319**	,413**	,302**	,366**	,297**	,427**	,217**	,181**	,147**	,110**	,211**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,008	0,000
	N	590	589	580	583	592	584	579	583	578	591	592	592	587	590	592	592	592	592	589	583	587	585	587	592
4.4.2 and 10.4.1	Pearson Correlation	,223**	,208**	,180**	,164**	,306**	1	,193**	,325**	,277**	,101*	,212**	,208**	,285**	,164**	,398**	,311**	,355**	,199**	,263**	,259**	,192**	0,068	0,074	,268**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,014	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,102	0,073	0,000
	N	588	584	575	581	584	594	580	585	583	591	594	594	589	592	591	593	591	593	591	589	590	587	589	594
5.1.1	Pearson Correlation	,258**	,213**	,238**	,346**	,281**	,193**	1	,409**	,289**	,307**	,187**	,164**	,212**	,211**	,237**	,323**	,226**	,270**	,249**	,172**	,161**	0,058	0,003	,188**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,159	0,937	0,000
	N	584	578	573	574	579	580	588	584	578	586	588	588	583	586	585	587	585	587	585	580	584	582	584	588
5.1.2	Pearson Correlation	,219**	,181**	,193**	,257**	,292**	,325**	,409**	1	,432**	,261**	,245**	,105*	,321**	,238**	,372**	,249**	,405**	,227**	,306**	,159**	,152**	0,079	0,065	,285**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,010	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,055	0,113	0,000
	N	587	583	575	577	583	585	584	593	587	590	593	593	588	591	590	592	590	592	590	584	588	587	588	593
5.2.1	Pearson Correlation	,171**	,258**	,171**	,330**	,326**	,277**	,289**	,432**	1	,245**	,330**	,153**	,202**	,155**	,285**	,245**	,334**	,171**	,225**	,198**	,129**	,114**	0,012	,249**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,006	0,774	0,000
	N	582	578	569	574	578	583	578	587	588	585	588	588	583	586	585	587	585	587	585	582	583	581	583	588
6.1.1	Pearson Correlation	,246**	,146**	,264**	,251**	,246**	,101*	,307**	,261**	,245**	1	,320**	,110**	,253**	,272**	,250**	,244**	,256**	,366**	,114**	,240**	,174**	,199**	-0,004	,184**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,014	0,000	0,000	0,000		0,000	0,007	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,000	0,000	0,000	0,920	0,000
	N	596	590	584	584	591	591	586	590	585	602	602	602	597	600	599	602	599	602	599	593	597	595	597	602
6.2.1	Pearson Correlation	,100*	,209**	,190**	,259**	,301**	,212**	,187**	,245**	,330**	,320**	1	,254**	,285**	,245**	,339**	,229**	,377**	,234**	,259**	,226**	,155**	,133**	,116**	,168**
	Sig. (2-tailed)	0,015	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,004	0,000
	N	597	592	585	585	592	594	588	593	588	602	606	606	601	604	603	605	603	605	603	597	601	599	601	606
6.3.1	Pearson Correlation	,191**	,095*	,201**	,159**	,185**	,208**	,164**	,105*	,153**	,110**	,254**	1	,283**	,154**	,263**	,426**	,227**	,248**	,124**	,084*	,133**	0,001	,091*	,101*
	Sig. (2-tailed)	0,000	0,020	0,000	0,000	0,000	0,000	0,000	0,010	0,000	0,007	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,040	0,001	0,983	0,025	0,013
	N	597	592	585	585	592	594	588	593	588	602	606	606	601	604	603	605	603	605	603	597	601	599	601	606
6.5.1	Pearson Correlation	,247**	,288**	,247**	,220**	,356**	,285**	,212**	,321**	,202**	,253**	,285**	,283**	1	,313**	,358**	,345**	,477**	,293**	,273**	,314**	,202**	,139**	,080*	,284**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,050	0,000
	N	592	587	580	580	587	589	583	588	583	597	601	601	601	599	598	600	598	600	598	592	596	594	596	601
6.1.2	Pearson Correlation	,220**	,213**	,387**	,211**	,319**	,164**	,211**	,238**	,155**	,272**	,245**	,154**	,313**	1	,314**	,389**	,312**	,527**	,354**	,180**	,238**	0,061	,123**	,202**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,135	0,003	0,000
	N	595	590	583	583	590	592	586	591	586	600	604	604	599	604	601	603	601	603	601	597	599	597	599	604

Indicators		4.1.3	4.1.4	4.2.1	4.3.1 and 12.2.1	4.4.1	4.4.2 and 10.4.1	5.1.1	5.1.2	5.2.1	6.1.1	6.2.1	6.3.1	6.5.1	6.1.2	6.1.3	6.1.4	6.1.5	6.4.1	6.4.2	7.1.1	7.2.1	7.3.1	7.4.1	8.1.1
6.1.3	Pearson Correlation	,253**	,260**	,279**	,378**	,413**	,398**	,237**	,372**	,285**	,250**	,339**	,263**	,358**	,314**	1	,505**	,643**	,289**	,346**	,195**	,162**	,164**	0,061	,232**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,133	0,000
	N	594	592	584	585	592	591	585	590	585	599	603	603	598	601	603	602	603	602	600	594	598	596	598	603
6.1.4	Pearson Correlation	,250**	,213**	,315**	,309**	,302**	,311**	,323**	,249**	,245**	,244**	,229**	,426**	,345**	,389**	,505**	1	,550**	,494**	,251**	,212**	,240**	,119**	,093*	,194**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,004	0,022	0,000
	N	597	591	585	585	592	593	587	592	587	602	605	605	600	603	602	605	602	605	602	596	600	598	600	605
6.1.5	Pearson Correlation	,282**	,256**	,280**	,304**	,366**	,355**	,226**	,405**	,334**	,256**	,377**	,227**	,477**	,312**	,643**	,550**	1	,368**	,370**	,265**	,173**	,156**	0,050	,237**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,226	0,000
	N	594	592	584	585	592	591	585	590	585	599	603	603	598	601	603	602	603	602	600	594	598	596	598	603
6.4.1	Pearson Correlation	,263**	,230**	,333**	,189**	,297**	,199**	,270**	,227**	,171**	,366**	,234**	,248**	,293**	,527**	,289**	,494**	,368**	1	,284**	,192**	,287**	,147**	,195**	,140**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,001
	N	597	591	585	585	592	593	587	592	587	602	605	605	600	603	602	605	602	605	602	596	600	598	600	605
6.4.2	Pearson Correlation	,242**	,274**	,248**	,212**	,427**	,263**	,249**	,306**	,225**	,114**	,259**	,124**	,273**	,354**	,346**	,251**	,370**	,284**	1	,168**	,190**	,126**	,160**	,249**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,002	0,000	0,000
	N	594	589	582	585	589	591	585	590	585	599	603	603	598	601	600	602	600	602	603	596	598	596	598	603
7.1.1	Pearson Correlation	,176**	,165**	,188**	,150**	,217**	,259**	,172**	,159**	,198**	,240**	,226**	,084*	,314**	,180**	,195**	,212**	,265**	,192**	,168**	1	,174**	,132**	,086*	,359**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,040	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,001	0,036	0,000
	N	588	583	576	582	583	589	580	584	582	593	597	597	592	597	594	596	594	596	596	597	593	590	592	597
7.2.1	Pearson Correlation	,274**	,193**	,328**	0,078	,181**	,192**	,161**	,152**	,129**	,174**	,155**	,133**	,202**	,238**	,162**	,240**	,173**	,287**	,190**	,174**	1	,290**	,488**	,186**
	Sig. (2-tailed)	0,000	0,000	0,000	0,062	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000
	N	592	587	581	581	587	590	584	588	583	597	601	601	596	599	598	600	598	600	598	593	601	594	599	601
7.3.1	Pearson Correlation	,190**	0,071	,115**	-0,032	,147**	0,068	0,058	0,079	,114**	,199**	,133**	0,001	,139**	0,061	,164**	,119**	,156**	,147**	,126**	,132**	,290**	1	,393**	0,058
	Sig. (2-tailed)	0,000	0,088	0,006	0,441	0,000	0,102	0,159	0,055	0,006	0,000	0,001	0,983	0,001	0,135	0,000	0,004	0,000	0,000	0,002	0,001	0,000		0,000	0,156
	N	590	585	579	579	585	587	582	587	581	595	599	599	594	597	596	598	596	598	596	590	594	599	594	599
7.4.1	Pearson Correlation	,246**	,142**	,180**	-0,014	,110**	0,074	0,003	0,065	0,012	-0,004	,116**	,091*	,080*	,123**	0,061	,093*	0,050	,195**	,160**	,086*	,488**	,393**	1	0,070
	Sig. (2-tailed)	0,000	0,001	0,000	0,737	0,008	0,073	0,937	0,113	0,774	0,920	0,004	0,025	0,050	0,003	0,133	0,022	0,226	0,000	0,000	0,036	0,000	0,000		0,088
	N	592	587	580	580	587	589	584	588	583	597	601	601	596	599	598	600	598	600	598	592	599	594	601	601
8.1.1	Pearson Correlation	,115**	,291**	,180**	,246**	,211**	,268**	,188**	,285**	,249**	,184**	,168**	,101*	,284**	,202**	,232**	,194**	,237**	,140**	,249**	,359**	,186**	0,058	0,070	1
	Sig. (2-tailed)	0,005	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,013	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,156	0,088	
	N	597	592	585	585	592	594	588	593	588	602	606	606	601	604	603	605	603	605	603	597	601	599	601	606
8.1.2	Pearson Correlation	,176**	,144**	,285**	,150**	,169**	,200**	,152**	,241**	,221**	,236**	,177**	,132**	,212**	,224**	,215**	,235**	,219**	,212**	,144**	,270**	,196**	,101*	,119**	,495**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,014	0,004	0,000
	N	597	592	585	585	592	594	588	593	588	602	606	606	601	604	603	605	603	605	603	597	601	599	601	606
8.2.1	Pearson Correlation	,200**	,173**	,291**	,313**	,218**	,172**	,280**	,117**	,120**	,204**	,218**	,270**	,275**	,339**	,231**	,304**	,235**	,315**	,107**	,235**	,159**	0,066	0,072	,215**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,009	0,000	0,000	0,113	0,083	0,000
	N	584	578	572	576	578	583	576	579	576	586	590	590	585	588	587	589	587	589	589	585	587	583	585	590
8.2.2 and 9.1.1	Pearson Correlation	,127**	,163**	,159**	,338**	,285**	,188**	,217**	,410**	,360**	,202**	,404**	,196**	,223**	,191**	,370**	,290**	,363**	,240**	,242**	,208**	0,064	-0,006	-0,004	,206**
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,122	0,889	0,930
	N	585	581	572	574	581	583	579	587	582	588	591	591	586	589	588	590	588	590	588	582	586	584	586	591
8.2.3	Pearson Correlation	,102*	,241**	,215**	,324**	,288**	,119**	,121**	,101*	,103*	,100*	,266**	,150**	,202**	,246**	,267**	,249**	,268**	,152**	,182**	,151**	,121**	-0,014	,105*	,223**
	Sig. (2-tailed)	0,014	0,000	0,000	0,000	0,000	0,004	0,004	0,015	0,013	0,016	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,731	0,011	0,000
	N	584	580	572	580	580	586	576	581	579	587	590	590	585	588	587	589	587	589	590	587	587	583	585	590
8.3.1	Pearson Correlation	,259**	,204**	,211**	,315**	,283**	,175**	,354**	,239**	,158**	,333**	,226**	,225**	,275**	,251**	,274**	,312**	,276**	,261**	,150**	,156**	,157**	0,056	,123**	,281**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,170	0,003	0,000
	N	591	586	580	580	586	589	583	587	582	596	599	599	594	597	596	598	596	598	596	591	596	592	594	599
8.4.1	Pearson Correlation	,174**	,197**	,203**	,284**	,183**	,288**	,169**	,234**	,238**	,261**	,202**	,144**	,191**	,219**	,340**	,299**	,322**	,224**	,190**	,208**	,144**	0,051	,082*	,318**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,215	0,046	0,000
	N	587	582	575	575	582	584	578	583	578	592	596	596	594	594	593	595	593	595	593	587	591	589	591	596
8.2.4	Pearson Correlation	,117**	,157**	,290**	,197**	,299**	,228**	,266**	,200**	,182**	,113**	,207**	,218**	,146**	,254**	,266**	,456**	,276**	,256**	,176**	,250**	,192**	,081*	,118**	,222**
	Sig. (2-tailed)	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,006	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,050	0,004	0,000
	N	585	579	572	574	579	583	576	580	575	587	591	591	586	590	588	590	588	590	590	584	586	584	586	591
8.2.6	Pearson Correlation	,233**	,215**	,217**	,342**	,349**	,316**	,271**	,319**	,234**	,203**	,257**	,123**	,271**	,264**	,418**	,348**	,411**	,202**	,220**	,330**	,168**	0,079	,097*	,383**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,056	0,019	0,000
	N	581	577	570	573	577	580	570	575	570	584	587	587	582	585	584	586	584	586	587	580	583	580	582	587
8.2.5	Pearson Correlation	,155**	,199**	,246**	,314**	,258**	,215**	,324**	,248**	,175**	,125**	,149**	,187**	,214**	,410**	,355**	,480**	,310**	,282**	,198**	,216**	,223**	0,016	,134**	,324**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,708	0,001	0,000
	N	584	578	572	573	578	580	575	578	573	586	589	589	584	587	586	588	586	588	588	581	585	584	584	589
8.2.7	Pearson Correlation	,098*	,264**	,186**	,450**	,290**	,195**	,229**	,205**	,157**	,162**	,196**	,096*	,164**	,215**	,283**	,259**	,229**	,164**	,142**	,229**	,111**	-0,023	0,019	,274**
	Sig. (2-tailed)	0,017	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,018	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,007	0,576	0,648	0,000
	N	594	589	583	582	589	591	586	590	585	599	602	602	597	600	599	601	599	601	599	593	598	595	598	602
8.2.8	Pearson Correlation	,141**	,159**	,222**	,294**	,237**	,219**	,374**	,172**	,153**	,188**	,141**	,209**	,212**	,193**	,208**	,316**	,136**	,191**	,145**	,138**	,151**	0,001	0,043	,254**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,001	0,000	0,981	0,297	0,000
	N	594	589	582	582	589	591	585	590	585	599	603	603	598	601	600	602	600	602	600	594	598	596	598	603
8.3.3	Pearson Correlation	,182**	,236**	,218**	,298**	,216**	,332**	,226**	,170**	,221**	,209**	,199**	0,079	,218**	,189**	,247**	,190**	,260**	,178**	,134**	,221**	,154**	,082*	,086*	,295**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,052	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,045	0,035	0,000
	N	593	588	581	581	588	590	584	589	584	598	602	602	597	600	599	601	599	601	599	593	597	595	597	602
8.3.2	Pearson Correlation	,170**	,182**	,249**	,139**	,122**	,232**	,198**	,098*	,177**	,170**	,106**	,261**	,152**	,155**	,191**	,315**	,225**	,243**	,161**	,173**	,216**	0,006	,103*	,210**
	Sig. (2-tailed)	0,000	0,000	0,000	0,001	0,003	0,000	0,000	0,017	0,000	0,000	0,009	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,886	0,011	0,000
	N	593	588	581	581	588	592	584	589	584	598	602	602	597	600	599	601	599	601	599	593	597	595	597	602
8.3.5	Pearson Correlation	,129**	,275**	,238**	,232**	,294**	,237**	,118**	,162**	,199**	,221**	,195**	0,045	,217**	,249**	,207**	,212**	,308**	,237**	,321**	,247**	,160**	,147**	,117**	,310**
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,000	0,005	0,000	0,000	0,000	0,000	0,278	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,000
	N	587	582	575	575	582	588	578	583	578	592	596	596	591	594	593	595	593	595	593	587	591	589	591	596
8.3.4	Pearson Correlation	,150**	,147**	,238**	,172**	,166**	,255**	,241**	,210**	,161**	,160**	,117**	,167**	,172**	,158**	,250**	,295**	,225**	,217**	,200**	,185**	,187**	,115**	,121**	,253**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,003	0,000
	N	582	578	570	573	578	582	573	578	575	587	591	591	589	589	588	590	588	590	588	584	586	584	586	591
9.2.1	Pearson Correlation	,127**	,144**	,302**	,228**	,222**	,179**	,359**	,211**	,242**	,104*	,229**	,383**	,194**	,286**	,212**	,402**	,249**	,311**	,210**	,106*	,115**	-0,045	0,025	,172**
	Sig. (2-tailed)	0,002	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,012	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,010	0,005	0,274	0,549	0,000
	N	585	579	572	576	579	583	577	581	578	587	590	590	585	588	587	589	587	589	589	584	585	583	585	590
9.3.1	Pearson Correlation	,115**	,222**	,157**	,348**	,300**	,375**	,348**	,508**	,374**	,180**	,350**	,201**	,318**	,270**	,437**	,348**	,482**	,261**	,354**	,210**	,137**	0,008	0,075	,263**
	Sig. (2-tailed)	0,005	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,847	0,071	0,000
	N	584	580	572	577	580	586	576	581	582	587	590	590	585	588	587	589	587	589	587	585	587	583	585	590
9.3.2	Pearson Correlation	,204**	,185**	,318**	,359**	,271**	,200**	,418**	,299**	,258**	,157**	,190**	,249**	,235**	,355**	,305**	,423**	,302**	,446**	,293**	,183**	,166**	0,027	,095*	,185**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,514	0,021	0,000
	N	588	582	575	577	582	585	581	583	580	590	593	593	588	591	590	592	590	592	590	585	589	586	588	593
9.3.3	Pearson Correlation	,163**	,220**	,192**	,418**	,355**	,298**	,299**	,354**	,346**	,206**	,286**	,125**	,259**	,320**	,456**	,357**	,433**	,306**	,424**	,251**	,127**	-0,008	0,049	,232**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,839	0,239	0,000
	N	585	584	574	578	584	583	577	582	577	588	591	591	586	589	591	590	591	590	588	582	586	584	586	591
9.4.1	Pearson Correlation	,302**	,218**	,328**	,335**	,353**	,329**	,433**	,284**	,259**	,117**	,162**	,284**	,241**	,388**	,363**	,479**	,346**	,410**	,310**	,154**	,172**	0,018	,094*	,219**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,667	0,023	0,000
	N	586	581	576	577	582	583	577	580	577	588	590	590	585	588	589	590	589	590	587	583	585	583	585	590
10.2.1	Pearson Correlation	,130**	,221**	,218**	,200**	,261**	,474**	,234**	,365**	,319**	,152**	,286**	,200**	,252**	,219**	,329**	,312**	,359**	,218**	,230**	,208**	,146**	0,040	-0,010	,261**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,330	0,814	0,000
	N	592	588	579	585	588	594	584	589	587	595	598	598	593	596	595	597	595	597	595	593	594	591	593	598
11.1.1	Pearson Correlation	,107**	,254**	0,071	,136**	,255**	,253**	,121**	,235**	,181**	,144**	,273**	,185**	,302**	,190**	,275**	,229**	,314**	,157**	,292**	,312**	,090*	,208**	,220**	,305**
	Sig. (2-tailed)	0,009	0,000	0,088	0,001	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,027	0,000	0,000	0,000
	N	596	591	585	585	591	593	588	593	587	601	605	605	600	603	602	604	602	604	602	596	600	599	600	605
11.2.1	Pearson Correlation	,181**	,152**	,148**	,231**	,237**	,184**	,337**	,299**	,201**	,323**	,212**	,170**	,276**	,249**	,232**	,253**	,276**	,316**	,137**	,269**	,135**	0,066	0,029	,224**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,001	0,107	0,477	0,000
	N	597	592	585	585	592	594	588	593	588	602	606	606	601	604	603	605	603	605	603	597	601	599	601	606
11.2.2	Pearson Correlation	,169**	,210**	,199**	,185**	,281**	,339**	,164**	,371**	,172**	,194**	,352**	,189**	,344**	,239**	,309**	,242**	,323**	,278**	,286**	,320**	,166**	0,036	0,080	,250**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,377	0,050	0,000
	N	594	589	582	582	589	591	585	590	585	599	603	603	598	601	600	602	600	602	600	594	598	596	598	603
11.2.3	Pearson Correlation	,307**	,226**	,276**	,213**	,269**	,287**	,316**	,184**	,150**	,171**	,224**	,355**	,262**	,270**	,350**	,494**	,335**	,331**	,221**	,230**	,176**	0,035	,110**	,208**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,395	0,007	0,000
	N	596	591	584	584	591	593	587	592	587	601	605	605	600	603	602	604	602	604	602	596	600	598	600	605
11.2.4	Pearson Correlation	,318**	,280**	,183**	,254**	,366**	,318**	,313**	,383**	,286**	,353**	,308**	,112**	,330**	,216**	,324**	,270**	,420**	,271**	,260**	,310**	,208**	,153**	,080*	,257**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,006	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,049	0,000
	N	594	589	582	582	589	591	585	590	585	599	603	603	598	601	600	602	600	602	600	594	598	596	598	603
11.2.5	Pearson Correlation	,165**	,187**	,228**	0,050	,177**	,133**	,092*	0,027	,082*	0,057	,150**	,273**	,083*	,255**	,146**	,207**	,107**	,204**	,246**	,136**	,217**	0,027	,177**	,122**
	Sig. (2-tailed)	0,000	0,000	0,000	0,233	0,000	0,001	0,026	0,509	0,047	0,161	0,000	0,000	0,043	0,000	0,000	0,000	0,009	0,000	0,000	0,001	0,000	0,517	0,000	0,003
	N	593	590	584	583	590	590	584	589	584	598	602	602	597	600	601	601	601	601	599	593	597	595	597	602

Indicators		8.1.2	8.2.1	8.2.2 and 9.1.1	8.2.3	8.3.1	8.4.1	8.2.4	8.2.6	8.2.5	8.2.7	8.2.8	8.3.3	8.3.2	8.3.5	8.3.4	9.2.1	9.3.1	9.3.2	9.3.3	9.4.1	10.2.1	11.1.1	11.2.1	11.2.2	11.2.3	11.2.4	11.2.5
1.3.1 and 12.1.1	Pearson Correlation	,251**	,407**	,380**	,351**	,256**	,265**	,243**	,347**	,299**	,388**	,149**	,185**	,094*	,177**	,106*	,144**	,232**	,216**	,277**	,160**	,208**	,312**	,294**	,447**	,303**	,284**	,154**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,022	0,000	0,010	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	594	584	579	584	587	584	581	578	579	590	591	590	590	584	581	582	581	581	579	580	589	593	594	591	593	591	590
1.1.1	Pearson Correlation	,228**	,274**	,220**	,135**	,242**	,167**	,158**	,169**	,214**	,235**	,192**	,177**	,109**	,134**	,206**	,249**	,190**	,299**	,251**	,310**	,097*	,185**	,305**	,181**	,290**	,199**	0,074
	Sig. (2-tailed)	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,008	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,017	0,000	0,000	0,000	0,000	0,000	0,072
	N	599	590	586	588	593	589	587	581	586	596	596	595	595	589	587	589	588	589	586	589	595	598	599	596	598	596	595
1.2.1 and 2.1.1	Pearson Correlation	,125**	,246**	,357**	,226**	,230**	,237**	,155**	,251**	,203**	,362**	,197**	,228**	,104*	,150**	0,036	,146**	,218**	,171**	,337**	,188**	,293**	,195**	,266**	,312**	,217**	,356**	,105*
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,012	0,000	0,380	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,011
	N	595	584	584	587	590	585	582	577	580	592	592	591	591	585	582	584	587	586	584	584	595	594	595	592	594	592	591
1.3.2 and 12.1.2	Pearson Correlation	,213**	,380**	,191**	,298**	,288**	,255**	,452**	,304**	,525**	,279**	,409**	,211**	,413**	,185**	,307**	,396**	,280**	,446**	,295**	,476**	,272**	,206**	,293**	,267**	,550**	,280**	,383**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	594	585	582	584	589	584	582	576	580	591	591	590	590	584	582	585	584	586	582	585	592	594	594	591	593	591	590
1.4.1	Pearson Correlation	,175**	,317**	,392**	,418**	,318**	,228**	,271**	,436**	,320**	,456**	,356**	,272**	,193**	,232**	,148**	,181**	,438**	,340**	,469**	,298**	,204**	,330**	,287**	,368**	,294**	,380**	,192**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	582	571	574	574	577	572	569	567	569	579	579	578	578	572	570	571	577	575	571	571	582	581	582	579	581	579	578
1.4.2	Pearson Correlation	,139**	,427**	,304**	,365**	,339**	,211**	,407**	,340**	,413**	,304**	,404**	,199**	,124**	,087*	0,048	,373**	,304**	,438**	,346**	,370**	,152**	,177**	,354**	,251**	,351**	,214**	,267**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,039	0,255	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	572	563	563	562	567	562	560	556	562	570	569	568	568	563	560	564	564	568	563	566	570	571	572	569	571	569	571
1.5.1	Pearson Correlation	,095*	,327**	,385**	,464**	,327**	,203**	,253**	,413**	,335**	,491**	,323**	,173**	0,051	,104*	-0,059	,300**	,386**	,351**	,476**	,253**	,229**	,270**	,216**	,290**	,256**	,245**	,123**
	Sig. (2-tailed)	0,022	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,224	0,013	0,161	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003
	N	573	562	566	565	568	563	562	561	561	571	570	569	571	566	561	563	568	567	566	565	573	573	573	570	572	570	571
1.5.2	Pearson Correlation	,136**	,313**	,422**	,409**	,266**	,258**	,286**	,404**	,363**	,392**	,277**	,197**	0,063	,171**	0,004	,310**	,477**	,342**	,535**	,366**	,261**	,256**	,250**	,301**	,314**	,289**	,205**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,132	0,000	0,933	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	573	562	566	565	568	563	560	558	561	571	570	569	569	563	561	563	568	567	566	562	573	572	573	570	572	570	569
1.5.3	Pearson Correlation	,109**	,424**	,235**	,331**	,356**	,195**	,385**	,301**	,378**	,322**	,409**	,190**	,100*	,085*	0,056	,397**	,288**	,422**	,375**	,428**	,195**	,178**	,300**	,229**	,341**	,208**	,210**
	Sig. (2-tailed)	0,009	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,017	0,043	0,183	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	580	571	571	570	575	570	568	565	571	578	577	576	576	572	569	572	572	576	569	572	578	579	580	577	579	577	576
2.2.1	Pearson Correlation	,205**	,287**	,282**	,288**	,300**	,130**	,234**	,346**	,311**	,455**	,219**	,178**	,082*	,202**	,086*	,153**	,243**	,224**	,279**	,176**	,099*	,282**	,288**	,307**	,243**	,355**	0,078
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,046	0,000	0,039	0,000	0,000	0,000	0,000	0,000	0,017	0,000	0,000	0,000	0,000	0,000	0,060
	N	590	578	575	580	583	580	579	580	575	586	587	586	588	583	578	578	577	577	575	577	585	589	590	587	589	587	586
2.3.1 and 10.1.1	Pearson Correlation	,245**	,159**	,365**	0,024	,198**	,115**	,128**	,198**	,177**	,232**	,155**	,175**	0,062	,154**	,168**	,172**	,318**	,211**	,332**	,295**	,423**	,205**	,286**	,296**	,100*	,351**	-,141**
	Sig. (2-tailed)	0,000	0,000	0,000	0,570	0,000	0,006	0,002	0,000	0,000	0,000	0,000	0,000	0,130	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,015	0,000	0,001
	N	593	582	582	585	588	583	580	575	578	590	590	589	589	583	580	583	586	585	583	584	593	592	593	590	592	590	589
2.3.2 and 10.1.2	Pearson Correlation	,214**	,203**	,282**	0,072	,177**	,114**	,167**	,142**	,118**	,170**	,203**	,129**	,108**	0,071	,140**	,330**	,226**	,238**	,171**	,320**	,497**	,097*	,218**	,183**	,229**	,134**	0,023
	Sig. (2-tailed)	0,000	0,000	0,000	0,079	0,000	0,006	0,000	0,001	0,004	0,000	0,000	0,002	0,008	0,085	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,018	0,000	0,000	0,000	0,001	0,584
	N	597	588	585	587	592	587	585	579	583	594	594	593	593	587	585	588	587	589	585	588	595	596	597	594	596	594	593
2.4.1	Pearson Correlation	,188**	,470**	,262**	,361**	,394**	,217**	,432**	,321**	,470**	,394**	,471**	,182**	,179**	,107*	,124**	,383**	,278**	,395**	,330**	,345**	,208**	,189**	,235**	,232**	,328**	,209**	,185**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,010	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	586	578	573	576	581	576	574	571	575	583	583	582	582	578	575	576	578	580	573	576	583	586	586	583	585	583	582
2.4.2	Pearson Correlation	,179**	,463**	,271**	,344**	,356**	,248**	,482**	,387**	,495**	,364**	,509**	,197**	,240**	,134**	,166**	,374**	,350**	,462**	,371**	,505**	,250**	,202**	,191**	,154**	,402**	,213**	,203**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	582	573	570	572	577	572	570	566	570	579	579	578	578	573	570	573	574	578	573	576	580	581	582	579	581	579	581
2.4.3	Pearson Correlation	,166**	,353**	,366**	,388**	,345**	,261**	,314**	,443**	,371**	,502**	,339**	,287**	,116**	,185**	,105*	,317**	,420**	,338**	,444**	,297**	,366**	,242**	,187**	,259**	,251**	,265**	0,050
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,000	0,012	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,228
	N	584	573	573	576	579	574	571	572	570	581	581	580	580	574	572	573	579	578	574	573	584	584	584	581	583	581	580
2.5.1	Pearson Correlation	,275**	,246**	,200**	,169**	,229**	,205**	,250**	,253**	,322**	,153**	,255**	,146**	,230**	,160**	,162**	,439**	,288**	,360**	,252**	,375**	,312**	,131**	,333**	,168**	,333**	,223**	,199**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000
	N	589	577	581	577	584	579	577	571	575	586	586	585	585	579	574	578	577	582	578	577	585	588	589	586	588	586	585
2.5.2	Pearson Correlation	,280**	,150**	,310**	0,071	,200**	,248**	,219**	,186**	,185**	,167**	,166**	,167**	,115**	,091*	,219**	,416**	,334**	,405**	,284**	,313**	,316**	,199**	,336**	,246**	,298**	,213**	,180**
	Sig. (2-tailed)	0,000	0,000	0,000	0,090	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,028	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	578	584	578	585	581	579	573	577	588	588	587	587	581	576	580	579	582	580	579	586	590	591	588	590	588	587
3.1.1	Pearson Correlation	,192**	,288**	,266**	,257**	,147**	,179**	,387**	,275**	,286**	,228**	,265**	,120**	,104*	,112**	-0,031	,289**	,259**	,353**	,308**	,377**	,196**	,150**	,254**	,187**	,299**	,178**	,209**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,012	0,007	0,456	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	582	573	572	572	577	572	570	567	569	579	579	578	578	574	574	573	574	577	572	576	580	581	582	579	581	579	581
3.1.2	Pearson Correlation	,185**	,245**	,238**	,352**	,236**	,226**	,297**	,483**	,335**	,356**	,252**	,212**	,106*	,149**	0,080	,266**	,423**	,341**	,435**	,392**	,350**	,306**	,188**	,282**	,284**	,218**	,197**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,011	0,000	0,056	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	581	570	574	573	576	571	568	566	567	578	578	577	577	571	571	571	576	575	571	571	581	580	581	578	580	578	577
3.2.1 and 5.3.1 and 8.5.1 and 10.3.1	Pearson Correlation	,217**	,192**	,232**	,101*	,235**	,203**	,209**	,186**	,239**	,167**	,289**	,204**	,209**	,183**	,260**	,317**	,295**	,355**	,204**	,423**	,394**	,169**	,267**	,186**	,267**	,211**	,157**
	Sig. (2-tailed)	0,000	0,000	0,000	0,015	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	595	586	583	585	590	586	586	579	581	592	592	591	594	587	583	586	585	587	583	586	593	594	595	592	594	592	591
3.3.1	Pearson Correlation	,237**	,310**	,249**	,175**	,310**	,206**	,281**	,298**	,306**	,261**	,258**	,169**	0,075	,135**	,090*	,251**	,249**	,359**	,337**	,359**	,238**	,188**	,355**	,231**	,262**	,289**	0,053
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,074	0,001	0,032	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,209
	N	573	564	564	563	568	565	561	558	563	570	570	569	569	564	567	565	565	569	562	564	571	572	573	570	572	570	569
4.1.1	Pearson Correlation	,222**	,260**	,140**	,181**	,265**	,160**	,201**	,167**	,194**	,148**	,213**	,176**	,200**	,146**	,141**	,177**	,159**	,281**	,200**	,240**	,158**	0,076	,278**	,161**	,266**	,261**	,104*
	Sig. (2-tailed)	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,066	0,000	0,000	0,000	0,000	0,012
	N	592	584	580	583	588	582	583	579	583	590	589	588	588	582	577	583	581	584	580	581	588	591	592	589	591	589	588
4.1.2	Pearson Correlation	,139**	,201**	,259**	,247**	,238**	,267**	,171**	,306**	,232**	,168**	,188**	,251**	,183**	,237**	,138**	,120**	,216**	,167**	,234**	,168**	,177**	,177**	,192**	,273**	,248**	,306**	,183**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	583	572	572	575	578	573	572	572	572	581	580	579	579	573	569	572	572	573	575	572	579	582	583	580	582	580	581
4.1.3	Pearson Correlation	,176**	,200**	,127**	,102*	,259**	,174**	,117**	,233**	,155**	,098*	,141**	,182**	,170**	,129**	,150**	,127**	,115**	,204**	,163**	,302**	,130**	,107**	,181**	,169**	,307**	,318**	,165**
	Sig. (2-tailed)	0,000	0,000	0,002	0,014	0,000	0,000	0,004	0,000	0,000	0,017	0,001	0,000	0,000	0,002	0,000	0,002	0,005	0,000	0,000	0,000	0,001	0,009	0,000	0,000	0,000	0,000	0,000
	N	597	584	585	584	591	587	585	581	584	594	594	593	593	587	582	585	584	588	585	586	592	596	597	594	596	594	593
4.1.4	Pearson Correlation	,144**	,173**	,163**	,241**	,204**	,197**	,157**	,215**	,199**	,264**	,159**	,236**	,182**	,275**	,147**	,144**	,222**	,185**	,220**	,218**	,221**	,254**	,152**	,210**	,226**	,280**	,187**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	592	578	581	580	586	582	579	577	578	589	589	588	588	582	578	579	580	582	584	581	588	591	592	589	591	589	590
4.2.1	Pearson Correlation	,285**	,291**	,159**	,215**	,211**	,203**	,290**	,217**	,246**	,186**	,222**	,218**	,249**	,238**	,238**	,302**	,157**	,318**	,192**	,328**	,218**	0,071	,148**	,199**	,276**	,183**	,228**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,088	0,000	0,000	0,000	0,000	0,000
	N	585	572	572	572	580	575	572	570	572	583	582	581	581	575	570	572	572	575	574	576	579	585	585	582	584	582	584
4.3.1 and 12.2.1	Pearson Correlation	,150**	,313**	,338**	,324**	,315**	,284**	,197**	,342**	,314**	,450**	,294**	,298**	,139**	,232**	,172**	,228**	,348**	,359**	,418**	,335**	,200**	,136**	,231**	,185**	,213**	,254**	0,050
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,233
	N	585	576	574	580	580	575	574	573	573	582	582	581	581	575	573	576	577	577	578	577	585	585	585	582	584	582	583
4.4.1	Pearson Correlation	,169**	,218**	,285**	,288**	,283**	,183**	,299**	,349**	,258**	,290**	,237**	,216**	,122**	,294**	,166**	,222**	,300**	,271**	,355**	,353**	,261**	,255**	,237**	,281**	,269**	,366**	,177**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	592	578	581	580	586	582	579	577	578	589	589	588	588	582	578	579	580	582	584	582	588	591	592	589	591	589	590
4.4.2 and 10.4.1	Pearson Correlation	,200**	,172**	,188**	,119**	,175**	,288**	,228**	,316**	,215**	,195**	,219**	,332**	,232**	,237**	,255**	,179**	,375**	,200**	,298**	,329**	,474**	,253**	,184**	,339**	,287**	,318**	,133**
	Sig. (2-tailed)	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001
	N	594	583	583	586	589	584	583	580	580	591	591	590	592	588	582	583	586	585	583	583	594	593	594	591	593	591	590
5.1.1	Pearson Correlation	,152**	,280**	,217**	,121**	,354**	,169**	,266**	,271**	,324**	,229**	,374**	,226**	,198**	,118**	,241**	,359**	,348**	,418**	,299**	,433**	,234**	,121**	,337**	,164**	,316**	,313**	,092*
	Sig. (2-tailed)	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,005	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,000	0,000	0,000	0,026
	N	588	576	579	576	583	578	576	570	575	586	585	584	584	578	573	577	576	581	577	577	584	588	588	585	587	585	584
5.1.2	Pearson Correlation	,241**	,117**	,410**	,101*	,239**	,234**	,200**	,319**	,248**	,205**	,172**	,170**	,098*	,162**	,210**	,211**	,508**	,299**	,354**	,284**	,365**	,235**	,299**	,371**	,184**	,383**	0,027
	Sig. (2-tailed)	0,000	0,005	0,000	0,015	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,017	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,509
	N	593	579	587	581	587	583	580	575	578	590	590	589	589	583	578	581	581	583	582	580	589	593	593	590	592	590	589
5.2.1	Pearson Correlation	,221**	,120**	,360**	,103*	,158**	,238**	,182**	,234**	,175**	,157**	,153**	,221**	,177**	,199**	,161**	,242**	,374**	,258**	,346**	,259**	,319**	,181**	,201**	,172**	,150**	,286**	,082*
	Sig. (2-tailed)	0,000	0,004	0,000	0,013	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,047
	N	588	576	582	579	582	578	575	570	573	585	585	584	584	578	575	578	582	580	577	577	587	587	588	585	587	585	584
6.1.1	Pearson Correlation	,236**	,204**	,202**	,100*	,333**	,261**	,113**	,203**	,125**	,162**	,188**	,209**	,170**	,221**	,160**	,104*	,180**	,157**	,206**	,117**	,152**	,144**	,323**	,194**	,171**	,353**	0,057
	Sig. (2-tailed)	0,000	0,000	0,000	0,016	0,000	0,000	0,006	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,012	0,000	0,000	0,000	0,005	0,000	0,000	0,000	0,000	0,000	0,000	0,161
	N	602	586	588	587	596	592	587	584	586	599	599	598	598	592	587	587	587	590	588	588	595	601	602	599	601	599	598
6.2.1	Pearson Correlation	,177**	,218**	,404**	,266**	,226**	,202**	,207**	,257**	,149**	,196**	,141**	,199**	,106**	,195**	,117**	,229**	,350**	,190**	,286**	,162**	,286**	,273**	,212**	,352**	,224**	,308**	,150**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,009	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	606	590	591	590	599	596	591	587	589	602	603	602	602	596	591	590	590	593	591	590	598	605	606	603	605	603	602
6.3.1	Pearson Correlation	,132**	,270**	,196**	,150**	,225**	,144**	,218**	,123**	,187**	,096*	,209**	0,079	,261**	0,045	,167**	,383**	,201**	,249**	,125**	,284**	,200**	,185**	,170**	,189**	,355**	,112**	,273**
	Sig. (2-tailed)	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,003	0,000	0,018	0,000	0,052	0,000	0,278	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,006	0,000
	N	606	590	591	590	599	596	591	587	589	602	603	602	602	596	591	590	590	593	591	590	598	605	606	603	605	603	602
6.5.1	Pearson Correlation	,212**	,275**	,223**	,202**	,275**	,191**	,146**	,271**	,214**	,164**	,212**	,218**	,152**	,217**	,172**	,194**	,318**	,235**	,259**	,241**	,252**	,302**	,276**	,344**	,262**	,330**	,083*
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,043
	N	601	585	586	585	594	594	586	582	584	597	598	597	597	591	589	585	585	588	586	585	593	600	601	598	600	598	597
6.1.2	Pearson Correlation	,224**	,339**	,191**	,246**	,251**	,219**	,254**	,264**	,410**	,215**	,193**	,189**	,155**	,249**	,158**	,286**	,270**	,355**	,320**	,388**	,219**	,190**	,249**	,239**	,270**	,216**	,255**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	604	588	589	588	597	594	590	585	587	600	601	600	600	594	589	588	588	591	589	588	596	603	604	601	603	601	600

Indicators		8.1.2	8.2.1	8.2.2 and 9.1.1	8.2.3	8.3.1	8.4.1	8.2.4	8.2.6	8.2.5	8.2.7	8.2.8	8.3.3	8.3.2	8.3.5	8.3.4	9.2.1	9.3.1	9.3.2	9.3.3	9.4.1	10.2.1	11.1.1	11.2.1	11.2.2	11.2.3	11.2.4	11.2.5
6.1.3	Pearson Correlation	,215**	,231**	,370**	,267**	,274**	,340**	,266**	,418**	,355**	,283**	,208**	,247**	,191**	,207**	,250**	,212**	,437**	,305**	,456**	,363**	,329**	,275**	,232**	,309**	,350**	,324**	,146**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	603	587	588	587	596	593	588	584	586	599	600	599	599	593	588	587	587	590	591	589	595	602	603	600	602	600	601
6.1.4	Pearson Correlation	,235**	,304**	,290**	,249**	,312**	,299**	,456**	,348**	,480**	,259**	,316**	,190**	,315**	,212**	,295**	,402**	,348**	,423**	,357**	,479**	,312**	,229**	,253**	,242**	,494**	,270**	,207**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	605	589	590	589	598	595	590	586	588	601	602	601	601	595	590	589	589	592	590	590	597	604	605	602	604	602	601
6.1.5	Pearson Correlation	,219**	,235**	,363**	,268**	,276**	,322**	,276**	,411**	,310**	,229**	,136**	,260**	,225**	,308**	,225**	,249**	,482**	,302**	,433**	,346**	,359**	,314**	,276**	,323**	,335**	,420**	,107**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,009
	N	603	587	588	587	596	593	588	584	586	599	600	599	599	593	588	587	587	590	591	589	595	602	603	600	602	600	601
6.4.1	Pearson Correlation	,212**	,315**	,240**	,152**	,261**	,224**	,256**	,202**	,282**	,164**	,191**	,178**	,243**	,237**	,217**	,311**	,261**	,446**	,306**	,410**	,218**	,157**	,316**	,278**	,331**	,271**	,204**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	605	589	590	589	598	595	590	586	588	601	602	601	601	595	590	589	589	592	590	590	597	604	605	602	604	602	601
6.4.2	Pearson Correlation	,144**	,107**	,242**	,181**	,150**	,190**	,176**	,220**	,198**	,142**	,145**	,134**	,161**	,321**	,200**	,210**	,354**	,293**	,424**	,310**	,230**	,292**	,137**	,286**	,221**	,260**	,246**
	Sig. (2-tailed)	0,000	0,009	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000
	N	603	589	588	590	596	593	590	587	588	599	600	599	599	593	588	589	587	590	588	587	595	602	603	600	602	600	599
7.1.1	Pearson Correlation	,270**	,235**	,208**	,151**	,156**	,208**	,250**	,330**	,216**	,229**	,138**	,221**	,173**	,247**	,185**	,106*	,210**	,183**	,251**	,154**	,208**	,312**	,269**	,320**	,230**	,310**	,136**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,010	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001
	N	597	585	582	587	591	587	584	580	581	593	594	593	593	587	584	584	585	585	582	583	593	596	597	594	596	594	593
7.2.1	Pearson Correlation	,196**	,159**	0,064	,121**	,157**	,144**	,192**	,168**	,223**	,111**	,151**	,154**	,216**	,160**	,187**	,115**	,137**	,166**	,127**	,172**	,146**	,090*	,135**	,166**	,176**	,208**	,217**
	Sig. (2-tailed)	0,000	0,000	0,122	0,003	0,000	0,000	0,000	0,000	0,000	0,007	0,000	0,000	0,000	0,000	0,000	0,005	0,001	0,000	0,002	0,000	0,000	0,027	0,001	0,000	0,000	0,000	0,000
	N	601	587	586	587	596	591	586	583	585	598	598	597	597	591	586	585	587	589	586	585	594	600	601	598	600	598	597
7.3.1	Pearson Correlation	,101*	0,066	-0,006	-0,014	0,056	0,051	,081*	0,079	0,016	-0,023	0,001	,082*	0,006	,147**	,115**	-0,045	0,008	0,027	-0,008	0,018	0,040	,208**	0,066	0,036	0,035	,153**	0,027
	Sig. (2-tailed)	0,014	0,113	0,889	0,731	0,170	0,215	0,050	0,056	0,708	0,576	0,981	0,045	0,886	0,000	0,005	0,274	0,847	0,514	0,839	0,667	0,330	0,000	0,107	0,377	0,395	0,000	0,517
	N	599	583	584	583	592	589	584	580	584	595	596	595	595	589	584	583	583	586	584	583	591	599	599	596	598	596	595
7.4.1	Pearson Correlation	,119**	0,072	-0,004	,105*	,123**	,082*	,118**	,097*	,134**	0,019	0,043	,086*	,103*	,117**	,121**	0,025	0,075	,095*	0,049	,094*	-0,010	,220**	0,029	0,080	,110**	,080*	,177**
	Sig. (2-tailed)	0,004	0,083	0,930	0,011	0,003	0,046	0,004	0,019	0,001	0,648	0,297	0,035	0,011	0,004	0,003	0,549	0,071	0,021	0,239	0,023	0,814	0,000	0,477	0,050	0,007	0,049	0,000
	N	601	585	586	585	594	591	586	582	584	598	598	597	597	591	586	585	585	588	586	585	593	600	601	598	600	598	597
8.1.1	Pearson Correlation	,495**	,215**	,206**	,223**	,281**	,318**	,222**	,383**	,324**	,274**	,254**	,295**	,210**	,310**	,253**	,172**	,263**	,185**	,232**	,219**	,261**	,305**	,224**	,250**	,208**	,257**	,122**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,003
	N	606	590	591	590	599	596	591	587	589	602	603	602	602	596	591	590	590	593	591	590	598	605	606	603	605	603	602
8.1.2	Pearson Correlation	1	,223**	,138**	,134**	,291**	,229**	,199**	,253**	,272**	,146**	,192**	,187**	,245**	,259**	,337**	,156**	,201**	,234**	,130**	,266**	,188**	,184**	,423**	,296**	,268**	,260**	,172**
	Sig. (2-tailed)		0,000	0,001	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	606	590	591	590	599	596	591	587	589	602	603	602	602	596	591	590	590	593	591	590	598	605	606	603	605	603	602
8.2.1	Pearson Correlation	,223**	1	,258**	,445**	,347**	,260**	,376**	,331**	,430**	,343**	,368**	,241**	,168**	,136**	,113**	,289**	,190**	,319**	,238**	,336**	,166**	,167**	,294**	,237**	,362**	,270**	,092*
	Sig. (2-tailed)	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,006	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,026
	N	590	590	577	583	585	580	581	574	580	587	587	586	586	580	578	583	580	581	577	580	587	589	590	587	589	587	586
8.2.2 and 9.1.1	Pearson Correlation	,138**	,258**	1	,323**	,184**	,204**	,278**	,331**	,244**	,341**	,173**	,134**	,101*	,093*	0,039	,367**	,504**	,353**	,487**	,256**	,280**	,232**	,251**	,322**	,196**	,225**	0,068
	Sig. (2-tailed)	0,001	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,015	0,025	0,344	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,098
	N	591	577	591	579	585	581	578	573	576	588	588	587	587	581	576	581	582	583	583	580	587	590	591	588	590	588	587
8.2.3	Pearson Correlation	,134**	,445**	,323**	1	,343**	,261**	,281**	,571**	,364**	,447**	,319**	,274**	,144**	,200**	0,001	,249**	,236**	,235**	,283**	,191**	,087*	,231**	,169**	,205**	,255**	,198**	,203**
	Sig. (2-tailed)	0,001	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,983	0,000	0,000	0,000	0,000	0,000	0,035	0,000	0,000	0,000	0,000	0,000	0,000
	N	590	583	579	590	586	580	581	576	578	588	587	586	586	580	577	581	583	581	579	579	590	589	590	587	589	587	586
8.3.1	Pearson Correlation	,291**	,347**	,184**	,343**	1	,418**	,326**	,412**	,485**	,371**	,440**	,403**	,323**	,261**	,327**	,244**	,252**	,315**	,226**	,318**	0,079	,250**	,380**	,265**	,354**	,312**	,118**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,056	0,000	0,000	0,000	0,000	0,000	0,004
	N	599	585	585	586	599	589	584	583	583	597	596	595	595	589	584	584	586	588	585	584	593	598	599	596	598	596	595
8.4.1	Pearson Correlation	,229**	,260**	,204**	,261**	,418**	1	,308**	,378**	,349**	,311**	,272**	,491**	,307**	,366**	,272**	,173**	,215**	,251**	,168**	,212**	,152**	,235**	,302**	,292**	,299**	,327**	,224**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	596	580	581	580	589	596	582	577	579	592	593	592	593	586	583	580	580	583	581	580	588	595	596	593	595	593	592
8.2.4	Pearson Correlation	,199**	,376**	,278**	,281**	,326**	,308**	1	,387**	,515**	,373**	,456**	,255**	,339**	,229**	,290**	,289**	,283**	,349**	,297**	,344**	,156**	,185**	,296**	,271**	,407**	,248**	,266**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	591	581	578	581	584	582	591	576	580	587	588	587	590	583	576	581	577	581	578	578	585	590	591	588	590	588	587
8.2.6	Pearson Correlation	,253**	,331**	,331**	,571**	,412**	,378**	,387**	1	,524**	,584**	,439**	,449**	,219**	,243**	,154**	,257**	,399**	,298**	,414**	,317**	,264**	,368**	,272**	,382**	,327**	,394**	,200**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	587	574	573	576	583	577	576	587	576	585	584	583	585	581	574	574	573	575	573	572	580	586	587	587	586	584	583
8.2.5	Pearson Correlation	,272**	,430**	,244**	,364**	,485**	,349**	,515**	,524**	1	,467**	,536**	,327**	,373**	,235**	,254**	,408**	,315**	,425**	,343**	,411**	,211**	,194**	,324**	,275**	,502**	,334**	,328**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	589	580	576	578	583	579	580	576	589	587	586	585	585	580	575	579	576	579	576	576	583	588	589	588	589	586	585
8.2.7	Pearson Correlation	,146**	,343**	,341**	,447**	,371**	,311**	,373**	,584**	,467**	1	,474**	,443**	,169**	,277**	,120**	,232**	,311**	,277**	,386**	,292**	,193**	,255**	,245**	,261**	,278**	,397**	,112**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,006
	N	602	587	588	588	597	592	587	585	587	602	599	598	598	592	587	587	588	590	588	587	595	601	602	599	602	599	598
8.2.8	Pearson Correlation	,192**	,368**	,173**	,319**	,440**	,272**	,456**	,439**	,536**	,474**	1	,411**	,345**	,204**	,257**	,322**	,238**	,322**	,218**	,371**	,158**	,137**	,274**	,214**	,380**	,279**	,176**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000
	N	603	587	588	587	596	593	588	584	586	599	603	599	599	593	588	587	587	590	588	587	595	602	603	600	602	600	599
8.3.3	Pearson Correlation	,187**	,241**	,134**	,274**	,403**	,491**	,255**	,449**	,327**	,443**	,411**	1	,355**	,478**	,293**	,127**	,234**	,204**	,176**	,214**	,152**	,200**	,207**	,291**	,234**	,408**	,148**
	Sig. (2-tailed)	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	602	586	587	586	595	592	587	583	585	598	599	602	598	592	587	586	586	589	587	586	594	601	602	599	601	599	598
8.3.2	Pearson Correlation	,245**	,168**	,101*	,144**	,323**	,307**	,339**	,219**	,373**	,169**	,345**	,355**	1	,431**	,543**	,172**	,179**	,243**	,137**	,238**	,168**	,178**	,195**	,172**	,356**	,232**	,305**
	Sig. (2-tailed)	0,000	0,000	0,015	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	602	586	587	586	595	593	590	585	585	598	599	598	602	594	587	586	586	589	587	586	594	601	602	599	601	599	598
8.3.5	Pearson Correlation	,259**	,136**	,093*	,200**	,261**	,366**	,229**	,243**	,235**	,277**	,204**	,478**	,431**	1	,401**	0,050	,189**	,217**	,180**	,196**	,129**	,243**	,210**	,243**	,196**	,317**	,230**
	Sig. (2-tailed)	0,000	0,001	0,025	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,230	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000
	N	596	580	581	580	589	586	583	581	580	592	593	592	594	596	582	580	580	584	581	580	588	595	596	593	595	593	592
8.3.4	Pearson Correlation	,337**	,113**	0,039	0,001	,327**	,272**	,290**	,154**	,254**	,120**	,257**	,293**	,543**	,401**	1	,152**	,186**	,243**	,141**	,303**	,184**	,152**	,226**	,181**	,266**	,204**	,131**
	Sig. (2-tailed)	0,000	0,006	0,344	0,983	0,000	0,000	0,000	0,000	0,000	0,004	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001
	N	591	578	576	577	584	583	576	574	575	587	588	587	587	582	591	578	577	578	576	578	585	590	591	588	590	588	587
9.2.1	Pearson Correlation	,156**	,289**	,367**	,249**	,244**	,173**	,289**	,257**	,408**	,232**	,322**	,127**	,172**	0,050	,152**	1	,428**	,521**	,373**	,458**	,288**	,098*	,226**	,155**	,249**	,176**	,199**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,230	0,000		0,000	0,000	0,000	0,000	0,000	0,018	0,000	0,000	0,000	0,000	0,000
	N	590	583	581	581	584	580	581	574	579	587	587	586	586	580	578	590	582	585	581	585	587	589	590	587	589	587	586
9.3.1	Pearson Correlation	,201**	,190**	,504**	,236**	,252**	,215**	,283**	,399**	,315**	,311**	,238**	,234**	,179**	,189**	,186**	,428**	1	,523**	,685**	,462**	,441**	,368**	,193**	,290**	,259**	,257**	,148**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	590	580	582	583	586	580	577	573	576	588	587	586	586	580	577	582	590	586	583	582	590	589	590	587	589	587	586
9.3.2	Pearson Correlation	,234**	,319**	,353**	,235**	,315**	,251**	,349**	,298**	,425**	,277**	,322**	,204**	,243**	,217**	,243**	,521**	,523**	1	,555**	,652**	,241**	,202**	,327**	,177**	,299**	,248**	,224**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	593	581	583	581	588	583	581	575	579	590	590	589	589	584	578	585	586	593	585	585	589	592	593	590	592	590	589
9.3.3	Pearson Correlation	,130**	,238**	,487**	,283**	,226**	,168**	,297**	,414**	,343**	,386**	,218**	,176**	,137**	,180**	,141**	,373**	,685**	,555**	1	,520**	,336**	,371**	,193**	,229**	,213**	,221**	,111**
	Sig. (2-tailed)	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,001	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,007
	N	591	577	583	579	585	581	578	573	576	588	588	587	587	581	576	581	583	585	591	583	587	590	591	588	590	588	589
9.4.1	Pearson Correlation	,266**	,336**	,256**	,191**	,318**	,212**	,344**	,317**	,411**	,292**	,371**	,214**	,238**	,196**	,303**	,458**	,462**	,652**	,520**	1	,273**	,198**	,303**	,180**	,370**	,218**	,165**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	590	580	580	579	584	580	578	572	576	587	587	586	586	580	578	585	582	585	583	590	587	589	590	587	589	587	589
10.2.1	Pearson Correlation	,188**	,166**	,280**	,087*	0,079	,152**	,156**	,264**	,211**	,193**	,158**	,152**	,168**	,129**	,184**	,288**	,441**	,241**	,336**	,273**	1	,215**	0,077	,240**	,238**	,252**	0,073
	Sig. (2-tailed)	0,000	0,000	0,000	0,035	0,056	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,061	0,000	0,000	0,000	0,076
	N	598	587	587	590	593	588	585	580	583	595	595	594	594	588	585	587	590	589	587	587	598	597	598	595	597	595	594
11.1.1	Pearson Correlation	,184**	,167**	,232**	,231**	,250**	,235**	,185**	,368**	,194**	,255**	,137**	,200**	,178**	,243**	,152**	,098*	,368**	,202**	,371**	,198**	,215**	1	,201**	,318**	,232**	,286**	,197**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,018	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000
	N	605	589	590	589	598	595	590	586	588	601	602	601	601	595	590	589	589	592	590	589	597	605	605	602	604	602	601
11.2.1	Pearson Correlation	,423**	,294**	,251**	,169**	,380**	,302**	,296**	,272**	,324**	,245**	,274**	,207**	,195**	,210**	,226**	,226**	,193**	,327**	,193**	,303**	0,077	,201**	1	,450**	,406**	,403**	,204**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,061	0,000		0,000	0,000	0,000	0,000
	N	606	590	591	590	599	596	591	587	589	602	603	602	602	596	591	590	590	593	591	590	598	605	606	603	605	603	602
11.2.2	Pearson Correlation	,296**	,237**	,322**	,205**	,265**	,292**	,271**	,382**	,275**	,261**	,214**	,291**	,172**	,243**	,181**	,155**	,290**	,177**	,229**	,180**	,240**	,318**	,450**	1	,419**	,433**	,231**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000	0,000
	N	603	587	588	587	596	593	588	587	588	599	600	599	599	593	588	587	587	590	588	587	595	602	603	603	602	600	599
11.2.3	Pearson Correlation	,268**	,362**	,196**	,255**	,354**	,299**	,407**	,327**	,502**	,278**	,380**	,234**	,356**	,196**	,266**	,249**	,259**	,299**	,213**	,370**	,238**	,232**	,406**	,419**	1	,353**	,363**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000	0,000
	N	605	589	590	589	598	595	590	586	589	602	602	601	601	595	590	589	589	592	590	589	597	604	605	602	605	602	601
11.2.4	Pearson Correlation	,260**	,270**	,225**	,198**	,312**	,327**	,248**	,394**	,334**	,397**	,279**	,408**	,232**	,317**	,204**	,176**	,257**	,248**	,221**	,218**	,252**	,286**	,403**	,433**	,353**	1	,198**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000
	N	603	587	588	587	596	593	588	584	586	599	600	599	599	593	588	587	587	590	588	587	595	602	603	600	602	603	599
11.2.5	Pearson Correlation	,172**	,092*	0,068	,203**	,118**	,224**	,266**	,200**	,328**	,112**	,176**	,148**	,305**	,230**	,131**	,199**	,148**	,224**	,111**	,165**	0,073	,197**	,204**	,231**	,363**	,198**	1
	Sig. (2-tailed)	0,000	0,026	0,098	0,000	0,004	0,000	0,000	0,000	0,000	0,006	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,007	0,000	0,076	0,000	0,000	0,000	0,000	0,000	
	N	602	586	587	586	595	592	587	583	585	598	599	598	598	592	587	586	586	589	589	589	594	601	602	599	601	599	602

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Appendix 4.5: Results of the first iteration of the regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.710[a]	0.504	0.478	0.49060

a. Predictors: (Constant), REGR factor score P for analysis 1, REGR factor score C for analysis 1, REGR factor score I for analysis 1, REGR factor score F for analysis 1, REGR factor score M for analysis 1, REGR factor score D for analysis 1, REGR factor score K for analysis 1, REGR factor score E for analysis 1, REGR factor score N for analysis 1, REGR factor score L for analysis 1, REGR factor score O for analysis 1, REGR factor score G for analysis 1, REGR factor score H for analysis 1, REGR factor score A for analysis 1, REGR factor score J for analysis 1, REGR factor score B for analysis 1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.023	16	4.564	18.962	0.000[b]
	Residual	71.725	298	0.241		
	Total	144.748	314			

a. Dependent Variable: average score on the nine Customer Performance variables
b. Predictors: (Constant), REGR factor score P for analysis 1, REGR factor score C for analysis 1, REGR factor score I for analysis 1, REGR factor score F for analysis 1, REGR factor score M for analysis 1, REGR factor score D for analysis 1, REGR factor score K for analysis 1, REGR factor score E for analysis 1, REGR factor score N for analysis 1, REGR factor score L for analysis 1, REGR factor score O for analysis 1, REGR factor score G for analysis 1, REGR factor score H for analysis 1, REGR factor score A for analysis 1, REGR factor score J for analysis 1, REGR factor score B for analysis 1

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	8.448	0.029		294.286	0.000
	REGR factor score A for analysis 1	0.172	0.030	0.242	5.735	0.000
	REGR factor score B for analysis 1	0.154	0.032	0.207	4.836	0.000
	REGR factor score C for analysis 1	0.183	0.027	0.278	6.763	0.000
	REGR factor score D for analysis 1	0.126	0.029	0.186	4.410	0.000
	REGR factor score E for analysis 1	0.080	0.032	0.106	2.519	0.012
	REGR factor score F for analysis 1	0.090	0.029	0.129	3.052	0.002
	REGR factor score G for analysis 1	0.047	0.029	0.068	1.611	0.108
	REGR factor score H for analysis 1	0.187	0.028	0.279	6.661	0.000
	REGR factor score I for analysis 1	-0.016	0.030	-0.022	-0.534	0.594
	REGR factor score J for analysis 1	-0.003	0.030	-0.004	-0.084	0.933
	REGR factor score K for analysis 1	0.080	0.029	0.117	2.803	0.005
	REGR factor score L for analysis 1	0.175	0.030	0.240	5.763	0.000
	REGR factor score M for analysis 1	-0.042	0.030	-0.059	-1.396	0.164
	REGR factor score N for analysis 1	0.129	0.029	0.182	4.385	0.000
	REGR factor score O for analysis 1	0.080	0.029	0.115	2.774	0.006
	REGR factor score P for analysis 1	-0.006	0.029	-0.009	-0.215	0.830

a. Dependent Variable: average score on the nine Customer Performance variables

Appendix 4.6: Indicators per factor

Rotated Component Matrix											
	Component										
	A	B	C	D	E	F	H	K	L	N	O
1.2.1 and 2.1.1				0,705							
1.3.2 and 12.1.2					0,637						
1.4.2	0,713										
1.5.1	0,621										
1.5.2	0,520										
1.5.3	0,747										
2.4.1	0,780										
2.4.2	0,701										
2.4.3	0,624										
3.1.1	0,584										
3.1.2	0,578										
4.1.1								0,638			
4.1.3								0,688			
4.1.4							0,684				
4.4.1							0,571				
6.1.1									0,539		
6.3.1					0,660						
6.1.2									0,700		
6.4.1									0,645		
7.1.1											0,596
8.1.1										0,586	
8.1.2										0,569	
8.2.1	0,608										
8.2.3	0,593										
8.4.1			0,700								
8.2.4	0,539										
8.2.6	0,591										
8.2.5	0,604										
8.2.7	0,564										
8.2.8	0,581										
8.3.3			0,766								
8.3.2			0,504		0,508						
8.3.5			0,598								
9.3.1		0,662									
9.3.2		0,700									
9.3.3		0,693									
9.4.1		0,673									
11.2.1						0,688					
11.2.2						0,621					
11.2.3					0,569						
11.2.4						0,566					
11.2.5					0,636						
COUNT	16	4	4	1	5	3	2	2	3	2	1

Appendix 4.7: Interpretation of the regression analysis

Factor A: Working in sprints: prioritizing, planning and monitoring

Indicator: number	Indicator: description	Indicator: type	Indicator: value
1.4.2	The length of an iteration is 4 weeks or less	Effectiveness	0.713
1.5.1	The extent to which an iteration backlog is maintained	Effectiveness	0.621
1.5.2	The extent to which stories are fully estimated when added to the iteration backlog	Effectiveness	0.520
1.5.3	The extent to which stories are prioritized when added to the iteration backlog	Effectiveness	0.747
2.4.1	The extent to which a product backlog is maintained	Effectiveness	0.780
2.4.2	The extent to which stories are fully estimated when added to the product backlog	Effectiveness	0.701
2.4.3	The extent to which stories are prioritized when added to the product backlog	Effectiveness	0.624
3.1.1	It is expected to develop improvements in products, services, processes or channels in iterations of 4 weeks or less	Capability	0.584
3.1.2	The extent to which improvements in products, services, processes or channels is released every 4 weeks or less	Effectiveness	0.578
8.2.1	It is expected that teams allocate time for iteration planning	Capability	0.608
8.2.3	It is expected that teams allocate time for daily progress tracking meetings	Capability	0.593
8.2.4	The extent to which the time allocated to iteration planning meetings is utilized effectively	Effectiveness	0.539
8.2.5	The extent to which the time allocated to retrospection meetings is utilized effectively	Effectiveness	0.604
8.2.6	The extent to which the time allocated to daily progress tracking meetings is utilized effectively	Effectiveness	0.591
8.2.7	The extent to which the scheduled meetings take place as scheduled	Effectiveness	0.564
8.2.8	The extent to which the scheduled meetings begin and end on time	Effectiveness	0.581

Factor B: Evaluation of the approach

Indicator: number	Indicator: description	Indicator: type	Indicator: value
9.3.1	The extent to which practices that worked well were identified for future use	Effectiveness	0.662
9.3.2	The extent to which practices that did not yield the expected results were identified for discontinuation	Effectiveness	0.700
9.3.3	The extent to which practices were identified that may better suit the team's needs	Effectiveness	0.693
9.4.1	The extent to which the established retrospective goals were met	Effectiveness	0.673

Factor C: Face-to-face communication

Indicator: number	Indicator: description	Indicator: type	Indicator: value
8.3.2	The extent to which face-to-face communication prevails between the manager and the team members	Effectiveness	0.504
8.3.3	The extent to which face-to-face communication prevails among the team members	Effectiveness	0.766
8.3.5	The extent to which face-to-face communication prevails between the different teams	Effectiveness	0.598
8.4.1	The physical environment facilitates face-to-face communication and collaboration	Effectiveness	0.700

Factor D: Estimation of the required time

Indicator: number	Indicator: description	Indicator: type	Indicator: value
1.2.1 and 2.1.1	It is expected to estimate the time required to complete each story and improvement in products, services, processes or channels	Capability	0.705

Factor E: Making and complying with agreements

Indicator: number	Indicator: description	Indicator: type	Indicator: value
1.3.2 and 12.1.2	The extent to which the estimates for the amount of work to be done during each iteration are accurate	Effectiveness	0.637
6.3.1	Customer Performance expectations are agreed upon by the team and management	Capability	0.660
11.2.3	The extent to which the team effectively completes the work they have committed to	Effectiveness	0.569
11.2.5	The extent to which teams do not rely on knowledge external to their teams	Effectiveness	0.636

Factor F: Deployment of expertise

Indicator: number	Indicator: description	Indicator: type	Indicator: value
11.2.1	The extent to which team members have the requisite expertise to complete the tasks assigned to them	Effectiveness	0.688
11.2.2	The extent to which the tasks assigned to the team members match their expertise	Capability	0.621
11.2.4	The extent to which team members are capable of supporting each other in performing their tasks	Effectiveness	0.566

Factor H: Refining and reprioritizing improvements

Indicator: number	Indicator: description	Indicator: type	Indicator: value
4.1.4	The extent to which the requirements are allowed to evolve over time	Effectiveness	0.684
4.4.1	The extent to which features are reprioritized when new features are identified	Effectiveness	0.571

Factor K: Global design of improvements upfront

Indicator: number	Indicator: description	Indicator: type	Indicator: value
4.1.1	It is expected to only identify high level improvements in products, services, processes or channels upfront	Capability	0.638
4.1.3	The extent to which only the high level improvements in products, services, processes or channels are identified upfront	Effectiveness	0.688

Factor L: Autonomous management of activities

Indicator: number	Indicator: description	Indicator: type	Indicator: value
6.1.1	Team members are expected to be involved in determining, planning and managing their day-to-day activities	Capability	0.539
6.1.2	The extent to which team members determine the amount of work to be done	Effectiveness	0.700
6.4.1	The extent to which team members determine, plan and manage their day-to-day activities under reduced or no supervision from management	Effectiveness	0.645

Factor N: Multidisciplinary cooperation

Indicator: number	Indicator: description	Indicator: type	Indicator: value
8.1.1	Teams also comprise stakeholders from all organisational units relevant for the improvements in products, services, processes or channels	Capability	0.586
8.1.2	In the absence of an on-site stakeholder, the stakeholder provides direct feedback via other means	Capability	0.569

Factor O:
Deployment of documentation tools

Indicator: number	Indicator: description	Indicator: type	Indicator: value
7.1.1	Tools for maintaining documentation exist	Capability	0.596

Appendix 5.1: Coded transcripts of the Essent case study

[As requested by Innogy, the contents of the interviews are hidden]

Appendix 5.2: Results: tallied scores for the Essent case

[As requested by Innogy, the contents of this table are hidden]

Appendix 5.3: quotes of Essent respondents showing a direct relationship between aspects of agile and customer performance

[As requested by Innogy, the contents of this table are hidden]

Appendix 5.4: observation reports Essent

[As requested by Innogy, the contents of these tables are hidden]

Appendix 5.5: photos and screenshots of artefacts and physical setting at Essent office

[As requested by Innogy, these contents are hidden]

Appendix 5.6: description of Essent's agile way of working

[As requested by Innogy, these contents are hidden]

Appendix 5.7: evaluation of Essent's agile way of working

[As requested by Innogy, these contents are hidden]

Appendix 5.8: team barometer Essent formula

[As requested by Innogy, these contents are hidden]

Appendix 5.9: Coded transcripts of the Energiedirect.nl case study

[As requested by Innogy, these contents are hidden]

Appendix 5.10: Results: tallied scores for the Energiedirect.nl case

[As requested by Innogy, the contents of these tables are hidden]

Appendix 5.11: quotes of Energiedirect.nl respondents showing a direct relationship between aspects of agile and customer performance

[As requested by Innogy, the contents of these tables are hidden]

Appendix 5.12: observation reports Energiedirect.nl

[As requested by Innogy, the contents of these tables are hidden]

Appendix 5.13: photos and screenshots of artefacts and physical setting at Energiedirect.nl office

[As requested by Innogy, these contents are hidden]

Appendix 5.14: team barometer Energiedirect.nl

[As requested by Innogy, these contents are hidden]

Appendix 5.15: focused interview Eneco

Eneco - Interview 1
Marije Teerling, manager customer experience management (interviewed on October 23rd, 2017)

Line nr	Transcript text	Code
1	I work for the Eneco Consumer division since 2014.	
2	Within Eneco Consumer, we deploy four brands to serve the	
3	consumer market.	
4	The Toon brand, which you probably know from our	
5	marketing campaigns for the smart thermostat, is aimed at	
6	added value services.	
7	As electricity and gas have become commodity products with	
8	consumer focusing strongly on price, we try to differentiate	
9	ourselves from competitors by offering added value through	
10	advanced solutions such as Toon.	
11	The second brand is, of course, Eneco which serves as our	
12	premium offering.	
13	The third brand is Oxxio, which is essentially our fighter	
14	proposition with which we can attack or defend the low-cost	
15	offerings in the consumer market and get favourable	
16	positions at the price comparison platforms.	
17	The last one is Woonenergie, which is specifically aimed at	
18	housing corporations.	
19	It cooperates with housing corporations in a partnership to	
20	serve a specific part of the rental market.	
21	The organisation behind these brands is actually quite simple.	
22	In consists of three organisational units.	
23	The first one is Commercie, within which all our sales and	
24	marketing activities take place.	
25	Thus, Commercie is aimed at retaining, winning and growing	
26	of customers.	
27	The second unit is Customer Service.	
28	This business unit operates the contact centre and the back	
29	office.	
30	So, it is responsible for all the operational affairs involving	
31	our customers, such as invoicing, connecting and	
32	disconnecting, problems, complaints, questions, and so forth.	
33	The aims of Customer Service concern high service levels,	
34	cost reduction, and customer satisfaction.	
35	And the third part is IT, which focuses on cost reduction as	
36	well, and on continuous improvement.	
37	In my role of manager for customer experience management,	
38	I am responsible for achieving an optimal customer	
39	satisfaction throughout the omnichannel customer journey of	
40	the consumers.	
41	This means that my teams overarch all customer facing	
42	activities of Commercie, Customer Service and IT.	
43	Well, enough introduction for now, let us take a look at agile.	
44	Within our Consumer division we started off with agile in	
45	2015.	
46	By that I mean in the business environment, because, at that	
47	moment, IT had then already been working in an agile way	
48	for many years.	

49	In 2015, the business wanted to find out whether agile would	
50	help us in achieving specific goals.	
51	These goals were to become faster, attain more	
52	entrepreneurship with our employees, generate more value	
53	for the customer and improve our customer satisfaction.	
54	Of course, we hoped that this would result in better results in	
55	terms of retaining, winning and growing customers.	
56	Anyhow, we decided to do an experiment.	
57	We started off with a pilot that involved four teams, so it was	
58	on quite a large scale already.	
59	And very quickly after the kick off, we saw it really took off.	
60	The teams showed a lot more energy, a better focus and	6.5.1
61	scope, far clearer assignments and, thus, they generated	atmosphere +
62	more and better results for our customers.	6.3.1 focus
63	Actually, the funny thing was that other teams learned about	+ customer
64	these successes and secretly decided to adopt the agile way	performance
65	of working as well.	
66	So, in only a few months time, we had about fifteen agile	
67	teams and this came as a total surprise to our board of	
68	directors.	
69	And it also involved quite a mismatch between the priorities	
70	of the teams and those of the board.	
71	But, instead of becoming angry, they decided to quickly	
72	adjust their priorities and goals and embrace the agile	
73	movement, despite pressure from their shareholders.	
74	I still find that a very courageous decision, which deserves a	
74	lot of respect.	
75	With that hurdle taken, it was time to think about a new	
76	organisational structure.	
77	Based on external advice, we have chosen a matrix structure.	
78	Our current structure is headed by so-called Brand Leads,	
79	who have the end responsibility for the four brands I	
80	mentioned earlier.	
81	These brand leads are steering the Product Owners.	
82	In short, a PO manages the backlog and ensures the	
83	realization of the activities it comprises.	1.5.1/2.4.1
84	This, of course, is done by the Customer Assignment teams.	backlog
85	Besides these two roles, we also have an Expert Lead role.	
86	An Expert Lead is responsible for developing a vision for his	
87	or her discipline.	
88	And he or she also the staffing, professional development,	
89	and the appraisal and rewarding.	8.2.2 develop
90	So, there is a split between the functional and hierarchical	specialisms
91	line responsibility.	
92	Well, to directly address your initial question: I certainly think	
93	that the agile way of working we are deploying at Eneco has	
94	increased our performance for customers, and will further	
95	increase it.	
96	Since 2015 we see a clear and positive break in the trend of	customer
97	customer satisfaction and in the number of customers we	performance
98	win, keep and grow.	5.1.1 feedback
99	And, as was the case during the pilot period, we see teams	
100	deliver more results and in a faster way.	
101	However, we do not really see a decrease in costs	
102	unfortunately.	6.1.5 speed
103		
104		

105	And, for me, one of the most important strengths of agile is	
106	that you work with multidisciplinary teams and that these	
107	teams are located in a dedicated, common team space.	8.1.1 multidiscp.
108	We also endeavour to keep the teams together as long as	+8.4.1 office
109	possible, because we believe this makes them more effective.	2.6 keep
110	For that matter, when we started deploying agile, our	together
111	conviction was that we should do this throughout the entire	
112	Eneco organisation.	
113	However, based on our experiences so far, I think you should	
114	approach this more nuanced.	
115	One of the reasons for this is that we have noticed that many	
116	people tend to see agile as an aim in itself, instead of as a	
117	tool that helps you achieve certain specific goals such as	
118	improving speed, value for the customer, etcetera.	13.2 principles
119	I have an overwhelming number of examples of people trying	
120	to apply the agile way of working in a forced manner in	
121	situations that need no or other solutions.	
122	Another reason is that we have noted that agile works very	
123	well for renewing, what we call 'changing the business'.	
124	And that it works to a much lesser degree for 'running the	Change versus
125	business', where activities are repetitive and stable.	running
126	In that case it all just costs too much time and I brings too	
127	little added value.	
127	People are very operationally oriented there.	
128	Techniques as Lean, aimed at optimizing efficiency of	
129	operational processes, are much better suited for that	
130	purpose.	
131	And working multidisciplinary doesn't work in operations as	
132	well, in my opinion.	
133	Indeed, you should just put all the same specialists together	
134	in one group.	
135	So, you just shouldn't tire the people within operations with	
136	agile, if you ask me.	
137	Agile is really meant for innovation, for situations that are	
138	new or unpredictable.	
139	By that I mean that you do not know for certain in advance	
140	what the outcome should or could be.	
141	Or what the input is, such as, for instance, customer demand.	
142	You have to be very quick and flexible there.	
143	In essence, it is a form of experimentation.	
144	So, within Eneco we are abandoning agile on certain terrains	13.3 experiment
145	now.	
146	This is mainly within operations.	
147	However, within marketing, sales, product management,	
148	digital etcetera, we are taking the next step as we see agile is	
149	strongly improving our performance, both internally as for	performance
150	our customers.	
151	For instance, within my customer journey teams I clearly see	
152	that the multidisciplinary cooperation between customer	
153	experience designers, marcom people and digital specialists	8.1.1 multidiscp.
154	leads to better results.	+ 11.2.1
155	And what we also learned is that, for multidisciplinary teams,	expertise
156	it is extremely important that they have all expertise	
157	available within the team as to prevent them becoming	
158	dependent on other teams or departments.	11.2.5 end-to-
159	Teams that do not comprise all required expertise are	end
160	demonstrably delivering less work and also in a lower pace.	

161 162	And their work is less appreciated by customers, if you look at their KPI performance.	8.1.1 (link to perform.)+6.1.5
163 164	Chain-teams just work very well, it enhances the agile effects even more.	5.1.1 feedback
165 166	What is probably also interesting for you to know, is that we have started out by using Scrum techniques by the book.	8.1.1 multidiscp.
167 168	By now, we have adapted this to an approach that works best in our specific context.	
169 170	For instance, most teams do their daily stand-up only three times per week.	
171	And operational teams only do a weekstart.	8.2.3+8.2.6
172 173	And we have lowered the frequency of the reviews to just once every month, as it cost us too much time.	progress meeting
174 175	In substantive respect, these reviews still need improvement as it is currently more a demo, a 'good news show'.	8.2.5
176 177 178	I don't know if you are familiar with the concept of Management Drives, but Eneco scores very high on yellow and orange.	
179 180	This means that people really like to present good achievements.	
181 182 183	However, what we did implement for all teams, including within operations, is that they sit together permanently in a team room.	
184 185	This just improves their communication and cooperation significantly.	8.4.1 office
186 187	And we also strictly adhere to working in sprints, with an interval of two weeks.	
188	This ensures acceleration of results in the short term.	1.4.2/3.1.1/
189 190	However, you do need some tricks to monitor the long-term perspective.	3.1.2 sprints 6.1.5 speed
191 192	And also to secure the interests overarching the teams, as to prevent an 'islands' effect.	6.3.1 focus
193 194 195	All in all, we are transforming in an organic way to a hybrid model that combines agile in certain organisational units with Lean in other units.	11.1.1 align
196	And we increasingly deploy agile in our own Eneco way.	
197 198 199	The agile manifesto is nice of course, but it has been written by experts and it is aimed at a solid base such as a standing IT department.	
200 201	And our challenge is that we need to deploy it in a situation in which not everyone involved is an expert.	
202 203	We, the management team, have an important role there and I think we could fulfil that in a better way.	
204	We are constantly working on that, though.	
205 206 207	We should create a culture in which people genuinely feel the freedom to experiment, knowing that failure is not a career limiting move.	13.2+6.5.1 values, atmosphere
208 209	Currently, people are still thinking far too little in terms of minimum viable products and semi-finished products.	
210 211	They still strive for complete, perfect products before showing it to the customer and that is slowing us down.	
212 213 214	So, we as a management team should communicate the agile principles and values more and better, as to create an agile mindset in the heads of our employees.	13.3 experiment
215 216 217	One of the questions we are also looking at, is whether we should create an operational centre somewhere within the agile organisation as to focus on uniformity and efficiency.	8.3.2 communic. 13.2 mindset

218 219 220 221 222 223 224 225	Something like a Lean team that ensures standardisation and minimal errors. And we are not very fond of the matrix structure, so we are constantly looking for a solution for that. So, in conclusion, I would say that agile is very well suited to develop chains as it clearly improves your performance. But once things are rolling, you should consider implementing more Lean elements to optimize the running business.	performance

Appendix 5.16: focused interview Nuon

Nuon - Interview 1
Jolanda Bakker, director marketing operations (interviewed on October 24th, 2017)

Line nr	Transcript text	Code
1	I work for Nuon for eleven years now and the first	
2	reorganisation I was actively involved in, was implemented	
3	about two years ago, in 2015.	
4	Before 2015, we had two organisational units that served the	
5	consumer market, namely Retail and Customers.	
6	These two units have been merged in 2015, while	
7	simultaneously transforming the organisation towards a	
8	customer centric one.	
9	This new organisation now consists of two units, namely	
10	Strategy and Operations, which is split up in the successive	
11	phases of the omnichannel customer journeys and special	
12	assignments.	
13	I am end-responsible for Operations, which comprises three	
14	main activities.	
15	These are customer service, sales, and marketing.	
16	The marketing activities are performed by 34 FTE.	
17	Directly after the reorganisation, we started deploying agile.	
18	My Marketing Operations unit works in eight, small teams and	
19	we are continuously improving our agile way of working.	
20	The switch to agile brought us a very large progression in	Performance
21	terms of performance.	
22	The scope per team became very small and clear and the	6.3.1 scope
23	team members became highly dedicated.	13.3 atmosph.
24	The team members constantly have quick consultations and	6.1.5 speed
25	this shortened our 'switching time' incredibly.	
26	They act very fast and directly in their go-to-market, as they	6.1.5+5.1.1
27	are monitoring everything and quickly adjust things when	feed-back
28	necessary.	+6.5.1
29	The amount of work we do, and the speed with which we do	experiment
30	it, has increased enormously.	6.1.5 speed +
31	On average, projects now last two weeks instead of two.	performance
32	And we are able to complete small projects in one day, for	1.4.2 iteration
33	instance if we want to influence the clicking behaviour of our	period
34	customers.	
35	So, our time-to-market has shortened incredibly.	
36	We have become more data driven and work more fact	6.1.5 speed +
37	based.	performance
38	And, as a result, we are able far better to work target group	5.1.1 feedback
39	driven.	
40	Nowadays, we can run very small campaigns because of our	
41	increased speed, making it specific for a very small group and	
42	sometimes even on an individual basis.	
43	And we are also testing a lot more than we used to do, we	6.5.1
44	are continuously busy with adapting and innovating things.	experiment
45	Based on the insights these new abilities rendered us, we	+5.1.1 feedback
46	have ceased many of our activities as they proved ineffective.	1.2.1 focus
47	We are just listening to our customer more and in a better	
48	way, we want to work outside-in as much as possible.	5.1.1 feedback
49	And we make more, quicker and better choices based on this.	

50	Agile ensures a smarter and faster way of working.	1.2.1 focus
51	In terms of our external performance, the agile way of	
52	working has brought us a clear improvement.	performance
53	Since 2015, our moving average NPS scores have increased	
54	from around -40 to +20.	
55	And, due to this improvement, our sales and retention results	performance
56	have increased strongly as well.	
57	So, logically, I am quite enthusiastic about the results agile is	
58	delivering us.	
59	But I am also very critical about it as some people tend to	
60	lose themselves in all the bureaucratic technicalities.	
61	For me, it is much more about the principles.	
62	And the most important one to me is working with small,	13.2 principles
63	dedicated multidisciplinary teams.	8.1.1
64	We have grouped expertise around customer journey phases.	multidiscpl.
65	So, a typical team comprises a product owner and one or	+2.6 dedicated
66	more marketers, content managers and database analysts.	
67	However, the challenge with working in multidisciplinary	
68	teams is how you can secure the functional expertise within	
69	their specialism.	
70	An agile coach only looks at the processes and at the general	8.2.2 develop
71	skills.	
72	The solution we have chosen is what Spotify calls chapters.	
73	We just call them expert groups.	
74	But what it has in common is that we have put the line	
74	responsibility in that group, for instance the appraisal and	
75	rewarding.	
76	But me and my colleagues experience this matrix structure as	
77	difficult, we are struggling with it very much.	
78	Maybe it is better to transfer the HR-like affairs to the PO and	
79	just have a separate learning group per expertise?	
80	Currently, the expert groups gather once every week to	
81	discuss the relevant developments in their discipline.	
82	Sorry, I am drifting off.	
83	Anyway, another success factor to me is that we have put all	
84	eight teams together as much as we could.	
85	I strongly believe that having a constant close presence gives	
86	an invaluable impulse to how teams collaborate and consult.	
87	Each team works on one block.	8.4.1 office
88	Our office building is built from a flex-working perspective	space
89	and teams are fully free to choose where they want to work,	
90	but they always choose the team block.	
91	As a consequence, it is packed here on Mondays and	
92	Tuesdays, it is really very crowded.	
93	This is because, as a result from the flex-working policy I	
94	mentioned, we only have 70% coverage of our staff capacity.	
95	To me, this is no problem.	
96	But I know the teams do experience this as an important	
97	impediment.	
98	So, everything is happening right here, on this office floor.	
99	And I am really enjoying the entrepreneurial vibe you can	
100	sense here, and that is a direct result from the agile way of	
101	working.	13.3
102	Of course, I am also looking to other aspects than I used to	atmosphere
103	when selecting new employees.	
104		
105		

106	Instead of marketing knowledge and agile skilss, I am	
107	particularly keen on entrepreneurship, proactivity, creativity,	
108	eagerness to learn, and so forth.	13.2 mindset
109	We need to change things because the customer behaviour is	
110	changing.	
111	And challenging the status quo simply asks for	
112	entrepreneurship.	
113	So, this means we increasingly employ 'red' people, according	
114	to the DISC classification.	
115	If someone prefers to optimize the current situation, I then	
116	advise him or her to switch to the departments where they	
117	are running the business and are deploying Lean.	
118	But, back to agile now!	
119	We use Scrum as a technique and in the beginning people	
120	were very rigid about that.	1.1/1.2/1.3
121	But we quickly discovered that using the same tooling for	Meetings and
122	each team did not work out well.	artefacts
123	So, we decided to let the teams free in their choices of what	
124	elements of the Scrum approach they would deploy.	
125	And what you see now is that all teams use the basics of the	
126	Scrum approach, and they differ in the details.	
127	For instance, they all hold a stand-up three times per week,	8.2.3/8.2.6
127	on Monday, Tuesday and Thursday.	progress
128	And they all prioritize their activities based on value for the	1.2 backlog
129	customer.	5.1.1 feedback
130	Another example is that some use a refinement, which I	8.2.1 planning
131	personally find nonsense, and others don't.	
132	In the beginning, most found reviews to be a bit scary, but	8.2.5
133	now they find it super fun.	
134	They showcase their results and are very proud of it, so it is	
135	actually a kind of demo.	
136	And here is something our management team can improve.	
137	It consists of twelve people, but only me and one other	8.3.2 communi-
138	attend reviews.	cate
139	As I already said, I have eight teams.	
140	Five of them are put together around customer journey	
141	phases, which are acquisition, loyalty, retention,	
142	prolongation, and win-back.	
143	All five teams have an end-to-end responsibility for their	6.5.1 self organ.
144	specific phase, with a matching expertise.	8.1.1 expertise
145	I find that extremely important.	
146	It is all about the common responsibility team members feel	13.3
147	from their different disciplines to get things done as quickly	atmosphere
148	as possible.	6.1.5 speed
149	Of course, as we use Scrum, all five teams work in sprints.	
150	That is another key success factor to me.	1.1 sprints
151	And people really like it.	
152	They have a clear goal, they have clear priorities and they	
153	have the required capacity, so they don't have to lobby for it	1.2.1 focus
154	at other departments.	6.1.4 depen-
155	The only pitfall is that they tend to focus too much on the	dencies
156	short term and forget about the longer term.	1.2.1 focus
157	Of my three special teams, one is responsible for partnerships	
158	and two focus on innovation and solutions.	
159	They work in a different rhythm than the other five teams,	
160	given the nature of their activities.	
161		

162	All eight teams do have in common that there is full	
163	transparency in how the team operates.	
164	This is pleasant for the team members as they can address	8.2.5 retro-
165	each other directly on how someone functions.	spection
166	One thing I regret is that we no longer have physical Kanban	
167	boards, as all teams are now working in JIRA.	7.1.1 tooling
168	It made it very easy for me to see what the status etcetera	
169	was.	
170	For a short period, we did both, but this proved to be a	
171	inefficient duplication of effort.	
172	JIRA offers the team the advantage that they can see the	
173	boards at any time and any place, but for me as a manager	
174	this has unfortunately added a threshold.	
175	As a manager, I try not to interfere with the contents of the	6.4.1 servant
176	work teams are carrying out.	leadership
177	I try to focus on the form and on removing impediments.	
178	So, for instance, I hold a weekly walk-in clinic during which	
179	POs can discuss their impediments with me.	
180	So, in summary, I think that working with head-to-tail teams	8.1.1 end-to-
181	with dedicated members is really important.	end
182	One person can only be part of one team simultaneously.	2.6 dedicated
183	It is also important to cut away all handovers, by placing all	
184	involved in a multidisciplinary team.	8.1.1/8.1.2
185	This ensures all redundant consultants, managers and	multi-
186	briefings disappear.	disciplinary
187	In this way, a team starts producing instead of discussing	
188	things in endless meetings.	
189	Furthermore, I am also quite enthusiastic about the review	8.2.10 balance
190	meetings we have.	
191	It is a special occasion to be sharp on quality and, at the	8.2.5 retro-
192	same time, celebrate successes and honour those involved.	spection
193	Personally, I don’t like agile very much as I dislike rules.	
194	However, I clearly see that agile has strongly improved our	
195	performance.	
196	Working in sprints, prioritizing the backlog based on value for	performance
197	the customer, and refraining from planning too long ahead	
198	just are very smart things to do if you want to improve	1.4.2 sprints
199	performance.	2.4.2+2.4.3
200	But that leads to another issue: other departments within	backlog prio
201	Nuon do not work agile yet and that makes cooperating with	1.2.1 short/long
202	them quite difficult.	term
203	However, sometimes we do pull people from other	13.1 aligned
204	departments into our sprints.	environment
205	And sometimes sprint rhythms just aren’t synchronised.	
206	An example is propositions, which are the responsibility of	
207	another department and thus out of our influence zone.	
208	They do not feel the pressure of daily operations, which	
209	results in a mismatch of their planning with ours.	
210	And another concern is that our management team needs to	13.2+6.5.1
211	cultivate entrepreneurship more.	values and
212	Teams should see themselves as independent companies and	atmosphere
213	we should give them freedom to act like one.	6.5.1 self organ.
214	For instance, their KPIs should be a drilldown of my KPI’s.	6.4.1 servant
215	But the rest of the Nuon organisation still works with 5-year	13.1 aligned
216	plans and often drops directives in the teams.Furthermore,	environment
217	about 60% of my employees are new and they like agile and	
218	entrepreneurship, but the rest finds it challenging.	

219 220 221 222 223 224	They still feel the need for substantive input from me, but I deliberately refrain from that. The management team also prefers to have substantive discussions, but I also refuse to do that. I just need to focus on managing away the world for the teams, nothing more and nothing less.	6.4.1 servant 6.4.1

Appendix 5.17: combined tally scores of the Essent and Energiedirect.nl cases

[As requested by Innogy, the contents of these tables are hidden]

Appendix 6.1: MP self-assessment tool

Factors	Indicators							
	Num-ber	Question	Score*				
Multidisci-plinary cooperation	M1	Our teams comprise stakeholders from all organisational units relevant for the improvements in channels	1	2	3	4	5
	M2	In the absence of an on-site stakeholder, this stakeholder provides direct input via other means	1	2	3	4	5
Deployment of expertise	D1	Our team members have the requisite expertise to complete the tasks assigned to them	1	2	3	4	5
	D2	The tasks assigned to our the team members match their expertise	1	2	3	4	5
	D3	Our team members are capable of supporting each other in performing their tasks	1	2	3	4	5
Working in sprints: prioritizing, planning and monitoring	W1	We expect teams to develop improvements in channels in iterations of 4 weeks or less	1	2	3	4	5
	W2	The length of our iterations is 4 weeks or less	1	2	3	4	5
	W3	Our improvements in channels are released every 4 weeks or less	1	2	3	4	5
	W4	We maintain a product backlog	1	2	3	4	5
	W5	Our user stories are fully estimated when added to the product backlog	1	2	3	4	5
	W6	Our user stories are prioritized when added to the product backlog	1	2	3	4	5
	W7	We maintain an iteration backlog	1	2	3	4	5
	W8	Our user stories are fully estimated when added to the iteration backlog	1	2	3	4	5
	W9	Our user stories are prioritized when added to the iteration backlog	1	2	3	4	5
	W10	It is expected that teams allocate time for iteration planning	1	2	3	4	5
	W11	We expect teams to allocate time for daily progress tracking meetings	1	2	3	4	5
	W12	Our time allocated to iteration planning meetings is utilized effectively	1	2	3	4	5
	W13	Our time allocated to retrospection meetings is utilized effectively	1	2	3	4	5
	W14	Our time allocated to daily progress tracking meetings is utilized effectively	1	2	3	4	5
	W15	Our scheduled meetings take place as scheduled	1	2	3	4	5
	W16	Our scheduled meetings begin and end on time	1	2	3	4	5

*
1. Strongly disagree;
2. Disagree;
3. Agree nor disagree;
4. Agree;
5. Strongly agree.

Appendix A: biography of the researcher

Mike Hoogveld Msc RM (1973) graduated in business administration at Nyenrode Business University in 1994 and in business economics at Vrije Universiteit Amsterdam in 1997. After two line management positions in marketing, he started a career as a consultant, focusing on organizational change related to customer and marketing issues. Mike has authored multiple publications on this subject.

His double blind peer reviewed publications in academic journals are:

- Hoogveld, M. & Koster, J.M.D. (2016). Measuring the Agility of Omnichannel Operations: an Agile Marketing Maturity Model. *SSRG International Journal of Economics and Management Studies (SSRG-IJEMS)* – 3(6) Nov-Dec.
- Hoogveld, M. & Koster, J.M.D. (2016). Implementing Omnichannel Strategies: The Success Factor of Agile Processes. *Advances in Management & Applied Economics*, 6(2), 25-38.

These two articles have served as the basis for chapters 1 and 2 of this thesis.

His management publications include the following books:

- Hoogveld, M. (2012). *Cross channel excellen*ce. Adfo Group (Dutch).
- Hoogveld, M. (2014). *The excellent customer journey experience.* Adfo Group (English).
- Hoogveld, M. (2014). *Dokter, ik heb last van klanten.* Adfo Group (Dutch).
- Hoogveld, M. (2016). *Agile Managen.* Van Duuren Management (Dutch).
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