

# MASTER'S THESIS

**Agility meets German Bureaucracy:**

**A Constructive Approach of Implementing Agility in Public Sector Organizations**

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Mange tak!

Munich, May 15, 2020

A handwritten signature in black ink, appearing to read 'J. Lausewig', with a long horizontal flourish extending to the right.

# Abstract

This thesis examines challenges the adoption of agility in public sector organizations creates, as well as how these can be overcome. In academia, agility has predominantly been studied in the context of the private sector. The public sector, which is, however, subject to comparable pressures of an external environment characterized by volatility, uncertainty, complexity, and ambiguity (VUCA) has been greatly neglected with regards to this organizational paradigm. Studies within the sparse research field emphasize the barriers an agilization (i.e. the change towards agility) bears and question its feasibility. Therefore, the dual purpose of this thesis is to advance literature on agility in the public sector and to challenge the notion that public sector organizations cannot become agile. Focusing on the German public sector as an empirical setting, I conduct in-depth interviews with practitioners and consultants. Based on a grounded theory approach, I confirm the relevance of agility for public sector organizations and identify challenges – stemming from both the public sector’s system architecture and employees’ socialization – which impede agilization efforts. To address these challenges, I derive respective measures and develop a constructive approach on how the proposed changes should be implemented and how public sector organizations can become more agile.

*Keywords:* Agility, Public Sector Organization, Public Sector Change, Constructive Approach

# List of Abbreviations

CEO	Chief Executive Officer
EU	European Union
HR	Human Resources
ICT	Information and Communication Technology
IT	Information Technology
NPM	New Public Management
OAA	Online Access Act
OECD	Organization for Economic Co-operation and Development
PCI	Problem-Centered Interview
US	United States
VUCA	Volatile, Uncertain, Complex, and Ambiguous

# 1. Introduction

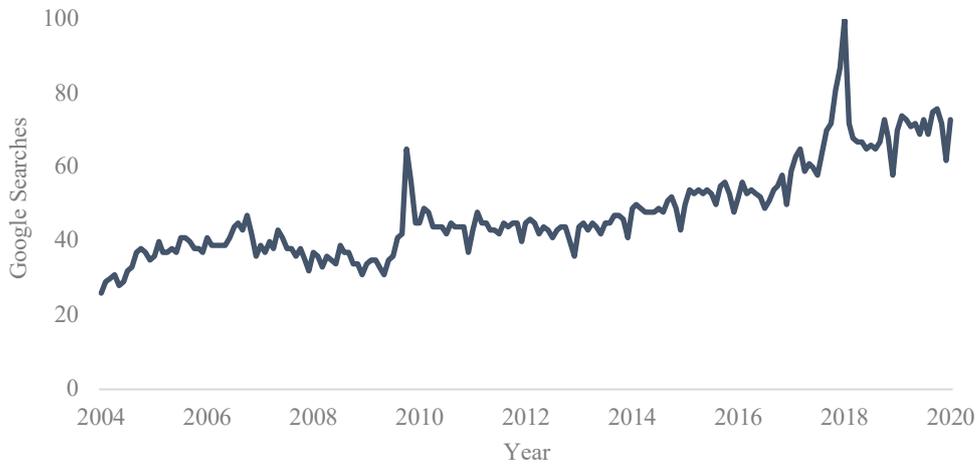
In this chapter, I present the contextual background of this thesis. Thereafter, I explain its underlying research purpose and introduce the research questions that I will address. Last, I provide an overview of how this thesis is structured.

## 1.1 Contextual Background

The increasingly digitalized and globalized environment of the 21<sup>st</sup> century is commonly described as VUCA – that is, volatile, uncertain, complex, and ambiguous (Bennett & Lemoine, 2014; Horney, Pasmore, & O’Shea, 2010). To compete and survive in a VUCA environment, agility is a strategic solution, numerous organizations have adopted or are striving towards. While no coherent definition of agility exists and the concept continues to evolve, it can be broadly described as an ability to quickly react to changes and to proactively encounter uncertainties by closely collaborating internally as well as with customers and third-party actors (van Oosterhout, Waarts, van Heck, & van Hillegersberg, 2006).

Fundamental elements of agility can be traced back to organizational system theories from the 1950s (Parsons, 1979). The concept gained, however, momentum 40 years later, when the manufacturing domain embraced agility as a mean to enhance companies’ competitiveness (Nagel & Dove, 1991). In the early 2000s, agile methods were then established and spread in the software development industry (Beck et al., 2001). Later, agile principles obtained increasing attention from other disciplines, resulting first, in the transfer of agile project management methods to the business world and shortly after, in the elevation of agility from a team to an organizational level (Gloger, 2017; Moran, 2015). Over the past years, agility has, thereby, become a buzzword many corporations aim to be associated with, a lucrative business model for consulting firms supporting agile transformations, and a popular research topic (Figure 1).

**Figure 1.** Worldwide Searches for ‘Agile’ on Google.com 2004-2020



*Note.* 100 indicates point of maximum interest, all other values are calculated in relation to the maximum (Google Trends, 2020).

Nevertheless, little focus is put on agility in the realm of public sector organizations and in academia the topic remains an underdeveloped field of research. Since the public sector is exposed to similar external developments and pressures as the private sector, it may be assumed that agility is also relevant for public sector organizations. And indeed, the majority of studies that do exist within this research area confirm that public sector organizations are ill-equipped to deal with the frequent and unpredictable changes of the 21<sup>st</sup> century (Dahmardeh & Pourshahabi, 2011; Liang, Kuusisto, & Kuusisto, 2018). Therefore, they are in need of enhancing their adaptability and flexibility.

Studies predominantly focus on the agile execution of information and communication technology (ICT) projects in the public sector (Nuottila, Aaltonen, & Kujala, 2016; Ribeiro & Domingues, 2018; Soe & Drechsler, 2018), and find that such projects can be a first place to implement agile methods, as well as to trigger an organizational transformation towards agility (Mergel, 2016; Organization for Economic Co-operation and Development (OECD), 2015). While transformation models of organizational agility for the public sector have been proposed (Liang et al., 2018; Mergel, 2016; Shah & Stephens, 2005), constructive approaches are still largely missing in the literature. Numerous scholars stress that the peculiarities of the public sector's current setup, namely its bureaucratic processes, policies, hierarchical structures, as well as organizational culture constitute barriers to agility, such that the feasibility of a transformation towards greater agility is questioned (Mergel,

Gong, & Bertot, 2018; Walsh, Bryson, & Lonti, 2002). More specifically, it is commonly argued that the public sector is too bureaucratic, rigid, hierarchical and slow, compared to the private sector, to become agile.

## 1.2 Problematization and Research Purpose

Shah and Stephens (2005) fittingly comment that “the topic of agility in government may seem at first like an oxymoron, but that is exactly what must occur for governments to continue to meet the dynamic needs of its citizens” (p. 295). Due to this apparent need, I set out to challenge the notion that the public sector’s unique peculiarities prohibit the change towards organizational agility and explore possibilities for public sector organizations to become more agile, despite the identified challenges. For this purpose, I address the following two research questions:

1. *Why is agility only being timidly adopted in public sector organizations?*
2. *How can public sector organizations become agile despite potential challenges and barriers?*

To provide answers to these research questions, this thesis is designed as an exploratory qualitative study. I conduct in-depth interviews with experts of a management consulting firm who have consulted public sector organizations on topics of agility, and practitioners working in various organizations of the German public sector. Since ICT projects can function as a trigger for the transformation towards organizational agility (Mergel, 2016), I focus on interviewees who have implemented or are carrying out digitalization projects in public sector organizations.

Germany’s public sector provides an interesting research setting as it is considered to have a highly bureaucratic administrative culture which was only modestly reformed over the past decades and has been little exposed to managerial theories originating from the private sector (Hammerschmid, Meyer, & Demmke, 2009; Schröter, 2009). As a result, the peculiarities of the public sector described above are, particularly, manifested in Germany, making it a demanding environment to implement agility and thus, a promising empirical setting to study the challenges an agilization (i.e. the change towards agility) bears. Following the method of grounded theory (Charmaz, 2006), I develop a constructive approach how these challenges can be overcome by synthesizing interviewees’ experiences on how agility has already been introduced in this setting.

In summary, the underlying purpose of this thesis is twofold: its theoretical purpose is to advance sparse literature on the topic of agility in public sector organizations and to challenge the notion that the public sector's unique peculiarities prohibit the change towards greater organizational agility. Furthermore, I aim to unravel that agility is similarly relevant for public sector organizations as it is for private sector organizations, and that an agilization of the former creates value. The practical purpose of this thesis is to develop a constructive approach on how public sector organizations can become more agile, as well as how such a change can be implemented.

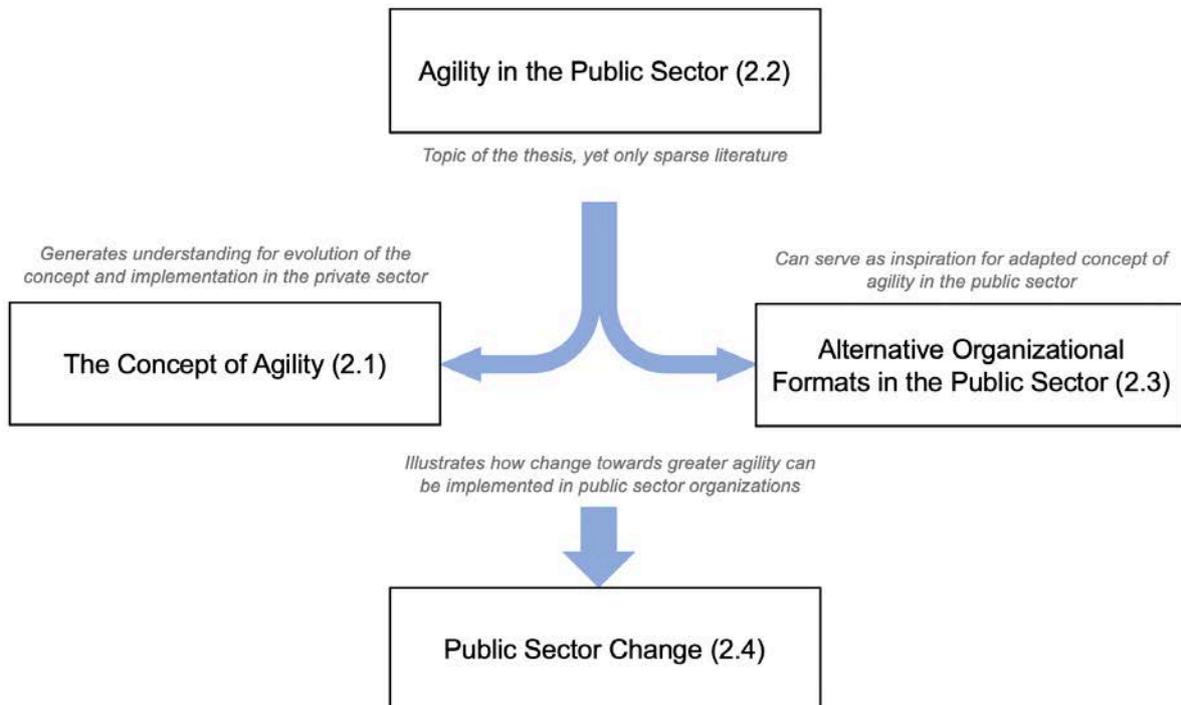
### 1.3 Outline of the Thesis

This thesis is structured into seven main chapters. In the following, I review literature relevant for this thesis and draw several interim conclusions that guide the adopted research process. In the next chapter, I describe the research setting. Afterward, I introduce my underlying philosophy of science and specify the research design utilized to conduct the analysis. In the subsequent chapter, I present the findings of my analysis. Based upon that, I provide answers to the two research questions and discuss my empirical findings against the reviewed literature. In the last chapter, I summarize the study, list implications for both academics and practitioners, and describe the limitations of this thesis.

## 2. Literature Review

In this chapter, I review academic literature relevant for this thesis. Since literature on agility in the public sector is still sparse, this thesis has an interdisciplinary character and draws on four strands of research, namely: (1) the concept of agility, specifically its history, evolution and reasons for adoption as an organizational model in private sector organizations; (2) the few studies on agility in the public sector; (3) theories of organizational forms in the public sector that could represent alternatives to agility; and (4) change management in public sector organizations (Figure 2). These strands are relevant as they collectively provide a basis to examine why agility is only being timidly adopted by public sector organizations and how they may change towards greater agility.

**Figure 2.** Overview of reviewed Literature Strands



To collect suitable literature, I deployed a two-fold research strategy: first, I searched online libraries and Google Scholar with keywords characteristic of the four literature strands, e.g. ‘organizational agility’ for the first strand. Second, I utilized a snowballing technique and traced relevant sources referenced in the literature I was reviewing to explore related studies (Easterby-Smith, 2018).

The remaining chapter is structured into five subchapters: in the first four, I present a review of the listed literature strands. In the last, I close with an interim resume to synthesize the main points arising from the reviewed literature and to refine the positioning of this thesis in academia.

## 2.1 The Concept of Agility

In this subchapter, I focus on literature studying the concept of agility in the private sector. It is organized in three sections: in the first, I summarize studies from the domains of agile manufacturing and agile software development to explain the concept’s origin and evolution. In the second, I present

reasons why agility has become attractive for the business domain and define organizational agility. In the last, I review literature on agility maturity models and agile transformations to illustrate how organizations can become agile.

### 2.1.1 Origin and Evolution of the Concept

While agility is commonly associated with the software and ICT industries, fundamental elements of the concept already date back to the 1950s. Parsons (1979) argued that social systems need to organize themselves in a way that enables them to respond to four pressures originating from the external environment, namely, goal-attainment, adaptation, integration, and latency – short GAIL. Until 1991, these elements were further advanced and integrated into the concept of agility, which scholars then advocated as a strategic solution to re-establish the US' manufacturing sector's global competitiveness (Nagel & Dove, 1991). Manufacturing corporations faced pressures to change such as increasing customer demands and technological advancements (Yusuf, Sarhadi, & Gunasekaran, 1999). To cope with these changes, the flexibility and speed of organizations were regarded key, and constitute the main pillars of agile manufacturing. Nagel and Dove (1991) envisioned agile manufacturers to develop new products quickly, adapt to customer needs, flexibly change production systems and, thereby, increase speed to market. To attain agility, organizations' major resources, namely, technology, managerial techniques, and workforce should be combined "into a coordinated, interdependent system" (p. 8). More specifically, free flows of information, organizing in cross-functional teams, as well as increasing training and investment in human capital were identified as tools to advance these resources.

The concept of agile manufacturing can, therefore, be described as having aspirations to function as a holistic concept. Nevertheless, scholars criticize it as lacking integration with managerial theories and insufficiently considering organizations' differences and cultures (Burgess, 1994; Crocitto & Youssef, 2003; Yusuf et al., 1999). Burgess (1994) argues that the introduction of agility constitutes a paradigm shift from traditional manufacturing, since it demands a radical break with prevailing managerial values, workforce attitudes, and organizational processes. To become agile, the author finds that "existing business forms [need] to become less rigid" (p. 32) and organizations should focus on reforming barriers of agility by means of change management processes.

With an increasing scholarly interest in manufacturing agility, numerous definitions emerged, yet a coherent conceptualization was missing. Contrasting various of these definitions, Yusuf et al. (1999) describe agility as:

The successful exploration of competitive bases (speed, flexibility, innovation proactivity, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in a fast-changing market environment. (p. 37)

As agile manufacturing remained more of a theoretical utopia than a practiced reality, Sharifi and Zhang (1999) developed a first conceptual model to illustrate what characterizes an agile organization and how agility can be attained. The model consists of agility drivers, i.e. changes requiring an enterprise to reconfigure its organizational setup; agility capabilities, namely responsiveness, competency, flexibility, and speed, enabling a response to the agility drivers; and agility providers, such as technology, innovation, people, and organization, that can be utilized as tools to attain the agility capabilities. The model's underlying reasoning is that the transformation towards agility requires "a strategic intent" (p. 12), and the authors propose how organizations can assess their current level of agility, as well as their individual agility need to develop an according transformation plan. This model was later reproduced in numerous studies to measure organizational agility, as well as to conceptualize implementation processes (Lin, Chiu, & Tseng, 2006; Tseng & Lin, 2011; van Oosterhout et al., 2006). Thus, Sharifi and Zhang's (1999) study was essential in broadening the scope of manufacturing agility towards a more holistic organizational approach. In fact, thereafter, scholars increasingly focus on the structural changes necessary to attain agility, by stressing the role of managerial commitment (Ramesh & Devadasan, 2007), HR practices and knowledge management (Vázquez-Bustelo, Avella, & Fernández, 2007).

In 2001, agility became celebrated in the realm of software development with the publishing of the Agile Manifesto (Beck et al., 2001). All in all, agile software development is to value "individuals and interactions over processes and tools; working software over comprehensive documentation; customer collaboration over contract negotiation; [and] responding to change over following a plan". Accordingly, twelve principles of how software should be developed are set out, whereof the satisfaction of the customer is the priority. Furthermore, the principles encourage cross-functional collaboration as well as the empowerment of teams, welcome continuous change and short periods of development, and stress the importance of team reflections.

Similar to agile manufacturing, agile software development triggered a transformation in its domain as numerous development methods inspired by the Manifesto were advanced, including eXtreme Programming, Scrum or Lean Software Development (Conboy, 2009; Moran, 2015). Concurrently, publications of scientific studies on the topic grew exponentially, and a variance of definitions of agile software development emerged (Dingsøy, Nerur, Balijepally, & Moe, 2012). Again, these definitions are differently nuanced and frequently not demarcated from related concepts such as lean or flexibility. To attain conceptual clarity, Conboy (2009) reviewed an extensive body of literature and defines agile methods of software development to be characterized by a:

Continual readiness [...] to rapidly and inherently create change, proactively or reactively embrace change, and learn from change while contributing to perceived customer value (economy, quality, and simplicity), through its collective components and relationships with its environment. (p. 340)

Comparing this definition to Yusuf et al.'s (1999), many similarities between agile software development and agile manufacturing can be found, namely a centrality of change, customer focus, importance of speed as well as the collaboration with external actors. Yet, one can observe an evolution of the concept, as agile software development is additionally characterized by the ability to both proactively and reactively adapt to change, as well as the notion of learning from past experiences.

Subsequently, agile software development methods such as Scrum and Kanban were adopted as frameworks of project management in the business domain to replace traditional waterfall approaches (Gloger, 2017; Moran, 2015). While the initial usage of agile methods in this context was largely confined to the team level, the interest of practitioners and scholars alike increasingly shifted to agility as an organizational concept, thus, how not only processes, but entire organizations can become agile (Wendler, 2013; Wendler & Stahlke, 2014).

### 2.1.2 Organizational Agility

The attractiveness of organizational agility in the business context can be explained by several developments. The 21<sup>st</sup> century is commonly described as to profoundly challenge organizations since their capabilities are exceeded by rapid advancements in IT, resulting in increased levels of

transparency and abundant data generation; rising global competition; and greater market fragmentation (Häusling & Kahl, 2018b; Lin et al., 2006; Tseng & Lin, 2011). At the same time, customers demand to be at the center of operations, with digital technologies empowering them to interact with organizations more directly, as well as to collect information on products and services before making a purchase decision (Alt-Simmons, 2015). These developments create complexities for organizations and are causing a “crisis of the traditional corporate model of organization based on vertical integration, and hierarchical, functional management” (Castells, 2010, p. 168) as it is deemed inadequate to deal with an increasingly fast-paced, interconnected, and uncertain external environment (Worley & Lawler, 2010). To remain competitive, organizations need to be able “to anticipate, adapt, and act on economic, technological, and social changes over time” (Pal & Lim, 2005, p. 12). Therefore, a shift “away from the bureaucratic and mechanistic administrative model” (p. 26) and towards organizational agility, comprising team-based structures, constant feedback loops, cross-departmental collaboration, and an overall willingness to change, is suggested.

Thus, similar to the reasons why agile manufacturing gained momentum, organizational agility is based on a need for organizations to remain competitive in an external environment characterized by change. Agility is evaluated as a strategic mean to enhance organizations’ adaptiveness, innovativeness, and to integrate fast-changing customer demands into their operations by “creat[ing] a fail-fast/succeed-sooner culture” (p. 20), capable of satisfying those. Accordingly, organizational agility is “advocated as the business paradigm of the 21<sup>st</sup> century” (Tseng & Lin, 2011, p. 3694).

Due to the growing interest in organizational agility and frequent usage of the terminology, numerous definitions of the concept exist, stressing singular elements to a greater or lesser extent (Weber, Fischer, & Eireiner, 2018; Wendler, 2013). For instance, Ganguly, Nilchiani and Farr (2009) underline the centrality of knowledge management for the attainment of agility, while Lin et al. (2006) emphasize the interaction of IT, human capital, and processes. Hence, similar to the conceptualizations of agile manufacturing and agile software development, no coherent definition of organizational agility is established. Based on their study of numerous private and public sector organizations, van Oosterhout et al. (2006) define it as:

The ability to sense highly uncertain external and internal changes, and respond to them reactively or proactively, based on innovation of the internal operational processes, involving the customer in exploration and exploitation activities, while leveraging capabilities of partners in the business network. (p. 66)

Commonalities with the conceptualizations of agile manufacturing and agile software development can be identified as customer centricity, facilitated adaptation to change, and collaboration with external partners also constitute core elements of organizational agility. Furthermore, the concept encompasses components of both reaction and proactiveness (Pal & Lim, 2005; Sushil, 2015). This means that agile organizations are not only able to adapt to external changes but are also capable of disrupting environments through innovations. However, an evolution of the concept can be depicted as the anticipation of uncertainties and unpredictability is emphasized to be a key capability of agile organizations (Ganguly et al., 2009; Wendler, 2014; Worley & Lawler, 2010).

### 2.1.3 Agility Maturity Models and Agile Transformations

The change towards organizational agility can be described to be transformational, as it “exhibit[s] a profound break with accepted patterns of organizational behavior and operation” (Osborne & Brown, 2005, p. 91) which alters the distribution of power, envisions novel decision-making processes and work structures, as well as advocates a new set of principles and values (Kleiner & Corrigan, 1989). Consequently, scholars agree that while changing towards organizational agility is a necessity for most organizations to remain competitive (Lin et al., 2006; Pal & Lim, 2005), it constitutes a long and challenging process (Worley & Lawler, 2010). This is due to the fact that the transition to agility is not a change process “from one stable state to another” (p. 201), but requires experimentation and flexibility.

With technology-giants such as Microsoft or Amazon having become prominent and successful embodiments of organizational agility, the concept gained increasing popularity and inspires numerous organizations to become agile (Teece, Peteraf, & Leih, 2016; Worley, Williams, & Lawler, 2014). Yet, Worley and Lawler (2010) find that most organizations describing themselves as agile, are in fact partially agile, and only few of them can be considered ‘fully agile’. However, this is not to say that all organizations need to become agile. Many scholars agree that organizations require different levels of agility and the attainment of ‘full’ organizational agility might not be a suitable objective for every business (Sharifi & Zhang, 1999; Wendler, 2014).

To attain (some degree of) organizational agility, the first step of most agility transformation models is the assessment of an organization’s initial level of agility (Sharifi & Zhang, 1999; van Oosterhout

et al., 2006; Wendler, 2014). Nevertheless, due to a lacking common conceptualization of organizational agility, appropriate methods and metrics of measurement are largely missing, making an accurate assessment challenging for practitioners (Wendler, 2014). To fill this gap, several scholars have proposed agility maturity models (Lin et al., 2006; Sharifi & Zhang, 1999; Tseng & Lin, 2011; van Oosterhout et al., 2006; Wendler, 2014).

Sharifi and Zhang (1999) were among the first to develop a framework to determine an organization's agility need. This framework was later expanded by van Oosterhout et al. (2006) to include the evaluation of an organization's agility readiness. The difference between agility need and readiness, the so-called agility gap, can then be used as the starting point for an agile transformation by mapping out necessary agility capabilities and designing corresponding strategies. Sharifi and Zhang's (1999) framework also serves as the foundation of Lin et al.'s (2003) study. To overcome the ambiguity and vagueness of organizational agility, the scholars develop an agility index to assess an organization's agility capabilities and respective agility level. This index is expanded by Tseng and Lin (2011) to plan the agile development of an organization. The last study to be mentioned in this regard is Wendler's (2014) comprehensive agility maturity model. The author measures agility along three dimensions: (1) agility prerequisites, containing agile values and technology; (2) agility of people, comprising workforce and management of change; and (3) structures enhancing agility, including collaboration and coordination, as well as flexible structures.

Agility maturity models prove useful in providing organizations with an overview of their current agility level and their deficits. Thereafter, however, concrete measures must be taken to transform an organization towards greater agility. In this regard, Moreira (2017) points out that it is not sufficient to solely adopt agile working methods owing to the fact that "for agile to work well, all levels of the enterprise must play their part in the agile journey" (p. 29). The author argues that too often agility is confined to the team level, while structures and processes higher up the hierarchy remain unchanged. The hierarchical separation of agile and traditional modes of operation impedes, however, effectivity and does not create organizational agility.

Beyond that, scholars find that an organization can only become agile, if employees have an agile mindset, or are trained to develop one, which implies that agility of the workforce is a key enabler for organizational agility (Alavi & Wahab, 2013; Wendler, 2014). A further critical element for the implementation of agility is an organization's culture (Häusling & Kahl, 2018a; Moreira, 2017; Pal & Lim, 2005; Wendler, 2014). Pal and Lim (2005) explain that to become agile, organizations require

a culture characterized by open-mindedness, willingness to change, a strong focus on the customer, internal and external collaboration, a spirit of collectiveness, and eagerness to learn. Thus, it can be summarized that the transformation towards agility demands a holistic approach integrating leadership, HR, organizational culture, strategy, structures, and processes (Häusling & Kahl, 2018a).

## 2.2 Agility in the Public Sector

As demonstrated, private sector organizations are undergoing complex organizational changes to strategically position themselves in a VUCA environment, as well as to live up to customers' demands of closer interaction by becoming agile. Little focus is, however, put on similar efforts undertaken by public sector organizations. Since those operate in the same external environment and, thus, face comparable challenges and opportunities, despite some organizational differences, it might be assumed that agility is also relevant for the public sector.

In this subchapter I explore state of the art on the topic of agility in the public sector. In the first section, I review studies revealing the necessity for the public sector to become more agile and present the limited amount of empirical studies analyzing agility in public sector organizations. In the second, I summarize challenges of changing the public sector towards agility and examine differences between private and public sector organizations. In the last section, I provide an overview of implementation models of agility.

### 2.2.1 Relevance of Organizational Agility

While neither the practical application nor theoretical foundation of organizational agility in the public sector is on par with the usage of the concept in the private sector, numerous authors underline its relevance for public sector organizations (Dahmardeh & Pourshahabi, 2011; Häusling, 2018; Liang et al., 2018; Shah & Stephens, 2005). This is due to the fact that recent developments in the public sectors' external environment, including increasing uncertainties and complexities, stemming from global phenomena such as climate change and globalization; technological advancements, creating a demand for online services; and citizens' and businesses' push for quicker services and a

greater say in the design of public policies, are “challenging its adaptive capacity” (OECD, 2015, p. 17).

Thus, similar to the reasons why agility became an attractive and promising organizational model in the private sector, external changes are rendering traditional processes and structures of public sector organizations insufficient to deal with the dynamics of the 21<sup>st</sup> century (Häusling, 2018). This is aggravated by the fact that trust in the public sector has declined over the past years and citizens’ expectations of public sector organizations have moved from an administrative role towards the role of a service provider (OECD, 2015). For these reasons, it is argued that the public sector needs to change, and a shift towards organizational agility is advocated (Dahmardeh & Pourshahabi, 2011; Liang et al., 2018; OECD, 2015).

Several scholars state that public sector organizations could attain similar benefits as private sector organizations by becoming agile. For instance, the OECD (2015) argues for the necessity of the public sector to become agile, as agility is evaluated as a mean for public sector organizations to become more strategic, hence, to more effectively “anticipat[e] market, social, environmental and economic trends and [to] adjust [...] accordingly” (p. 20). This implies that by becoming agile, public sector organizations are able to adapt internal structures, and ultimately their services more quickly to external changes. In this regard, Mergel (2016) explains that an increased responsiveness to change can enhance innovation capabilities and generate cost-savings. Dahmardeh and Poushahabi (2011) highlight that agility enables governments to address citizens’ needs in the short-term, to learn from those and to adapt processes and services in the medium-term, and finally, to “positively interven[e] in society to affect long term trends, creating [thereby] new opportunities and preventing or reducing problems before they arise” (p. 98). This indicates that, similar to private sector organizations, agility can enable public sector organizations to both react to and shape changes in the external environment.

Nevertheless, despite the apparent relevance of agility and the expected benefits, only few empirical studies on agility in the public sector exist, most of which encourage further research on the topic (Liang et al., 2018; Nuottila et al., 2016; Ribeiro & Domingues, 2018). Studies can be clustered into two categories, analyzing (1) the advancement of organizational agility, and (2) the utilization of agile software development methods in public sector organizations. I provide a short overview of the main findings in the following paragraphs.

(1) Among the first scholars pioneering into this underdeveloped field of research, Walsh et al. (2002) conduct a comparative case-study of public and private sector organizations in New Zealand with the aim of identifying how HR strategies can enhance organizational agility. They detect a stronger positive relationship in private sector organizations and conclude that unique aspects of the public sector, such as a hierarchical culture and structures, impede agility. Similarly, Liang et al. (2018) find that the “strategic rigidity of public service organizations” (p. 75) obstructs the application of user-driven innovation to develop strategic agility. Based on their case study of the Finnish public sector, they propose a model on how to promote greater agility in public sector organizations. Soe and Drechsler (2018), studying the usage of agile trials before ICT procurements in the context of a Finnish-Estonian project, find that local governments can become agile by collaborating with other public sector organizations, innovation labs, and small and medium enterprises. Furthermore, their findings yield that agility creates public value, meaning that by following an agile approach, public sector organizations improve the quality of their services, create an enhanced impact of policies on societal problems, as well as increase citizens’ trust in the respective institutions.

(2) Ribeiro and Domingues (2018) analyze the implementation of Scrum in a Portuguese public sector organization and state that employees deemed the new approach beneficial for their organization and evidenced a willingness to adopt it. Nuottila et al. (2016), examining the introduction of agile methods of software development in a Finnish public sector organization, also find that transparency, efficiency, and productivity were enhanced. Nonetheless, the researchers encountered several challenges during the implementation process, some of which they identify to stem from the public sector’s special characteristics. Therefore, they conclude that the adoption of agile approaches in the public sector proves more challenging than in the private sector.

Comparing these studies, it becomes evident that the research field is still fragmented and in part contradictory. Commonly, direct comparisons between public and private sector organizations are drawn, and the public sector’s unique peculiarities are found to impede the realization of agility. I examine these points in more depth in the subsequent section, as it is important to generate a better understanding of the inherent challenges in order to be able to develop a constructive approach of implementing agility in the public sector later.

### 2.2.2 Barriers to Agility

As indicated, much of the literature on agility in the public sector identifies barriers of transforming public sector organizations towards agility. One barrier frequently mentioned is the organizational setup of public sector organizations. The prevailing structures and organizational environment are described with terms as ‘command-and-control’ (Mergel, 2016; Mergel et al., 2018; Walsh et al., 2002), ‘rigid’ (Liang et al., 2018), ‘risk-averse’ (Mergel, 2016), and ‘hierarchical’ (Walsh et al., 2002), all of which appear to contradict the principles of agility. Furthermore, intraorganizational silos (Shah & Stephens, 2005; Suri, 2015) and the heterogeneity of public sector organizations’ stakeholders (Gong & Janssen, 2012; OECD, 2015) are named as factors complicating the introduction of agility. Beyond that, Shah and Stephens (2005) list multiple characteristics of public sector organizations that constitute barriers to agility, including the approval of budgets months before spending, the prevalence of organizational structures determined by regulations rather than strategic considerations, as well as legal restrictions with regards to information sharing and recruitment. Similarly, Nuottila et al. (2016) identify requirements for detailed documentation to impede the introduction of more informal and flexible forms of communication. Besides these structural barriers, employees’ unfamiliarity with agility, specifically with the novel roles and responsibilities agile approaches such as Scrum foresee, are described to challenge the agilization of public sector organizations.

Overall, I depict a tendency of scholars drawing direct comparisons to the private sector when studying agility in the public sector. Commonly, the latter is described to move slower (Shah & Stephens, 2005), to focus less on training and development, to be more hierarchical and formal, to be more risk-averse (Walsh et al., 2002), and to be more restrained by legal requirements (Nuottila et al., 2016; Shah & Stephens, 2005) than the private sector. Walsh et al. (2002) express that public sector organizations are required to focus on both short and long-term outcomes, while private sector organizations tend to operate with “a shorter term perspective, focused on profitability” (p. 190). Closely connected to this point is the frequently cited difference in the type of value organizations of the respective sectors are expected to produce: while private sector organizations need to create economic value, public sector organizations have to generate public value for their heterogeneous citizenry (Liang et al., 2018; OECD, 2015; Shah & Stephens, 2005; Soe & Drechsler, 2018). This places different demands on public sector organizations and limits their flexibility in allocating resources.

Because of these fundamental differences, Walsh et al. (2002) raise the question whether “organizational agility acquires a different character in the two sectors” (p. 190). This consideration appears relevant as also in the private sector, agility has been found to unfold in different shapes, dependent on the respective organizations (Worley & Lawler, 2010). Consequently, the abundant theoretical approaches and empirical studies on the private sector can serve as inspiration for transforming public sector organizations towards greater agility, while respecting their unique differences (OECD, 2015). Yet, some scholars go one step further and question whether agility can even be transferred to the public sector (Liang et al., 2018). For instance, Mergel et al. (2018) assert that “bureaucracies, in general, are not designed for shared leadership or open collaboration approaches across ad hoc teams. It is unclear how a bureaucracy, often intentionally designed to move slowly and methodically, can become more agile” (p. 295) – a claim that I aim to challenge throughout the empirical part of this thesis.

In summary, even though scholars confirm the relevance of agility for the public sector, many studies focus on the barriers preventing its transformation. This poses the question how public sector organizations can become agile despite such challenges. Again, while literature is still fragmented and sparse, some studies provide first pointers.

### 2.2.3 Implementation Models of Agility

Both agility transformation models and general principles on how to implement agility in the public sector can be identified in the literature. As the following paragraphs demonstrate, many similarities between the approaches exist, such as the role of leadership commitment and relevance of cultural change.

Shah and Stephens (2005) are among the first to propose a constructive approach on how barriers of organizational agility can be overcome. While their framework is rather generic, it summarizes eight areas of an organization that need to be engaged in a change towards greater agility: (1) the organization should be governed by leadership coordinating internal projects and supporting their realization with according resources. (2) Similar to private sector organizations, an agile public sector organization should be guided by a strategy articulating a clear purpose and aligning all operations, (3) the execution of which must be traced along clear parameters. (4) Public sector organizations need

to focus more closely on the citizens they work for. (5) Their internal processes should be repeatedly revised and (6) habits of continuous communication should be established to keep employees motivated. Beyond that, to install a willingness to constantly change, (7) employees receptive to such a culture have to be hired. Last, the above-listed areas need to be (8) embedded in a technology infrastructure that is stable enough to deliver services continuously, yet dynamic enough to react to changes of the external environment.

A less comprehensive model is presented by Mergel (2016) who focusses on agile innovation management within public sector organizations. The author finds that to become agile, public sector organizations need to adapt on two layers, namely, policies and management. The former predominantly concerns the innovation of HR and IT policies, which are crucial in establishing the right foundation for agility by “shift[ing] once learned behavior and practices toward an agile practice” (p. 519). For this purpose, the author suggests to increasingly recruit employees from outside the public sector. The latter encompasses both agile methods and leadership practices, aimed at communicating and protecting agility throughout the organization. Mergel (2016) stresses, in particular, the role of public leaders’ and middle managers’ commitment for the success of such a transformation and argues for a shift towards agile leadership.

Elements of these frameworks can also be found in the 4C model that Liang et al. (2018) developed. The authors identify four areas of commitment, competences, communication, and climate, in which public sector organizations need to make adjustments to attain strategic agility. With regard to commitment, leaders on all levels should express their commitment to “the collaborative innovation strategy” (p. 93) and create action plans setting out precise activities and performance indicators. Concerning competences, organizations need to enhance their innovative capabilities by investing in human capital and shifting from a ‘public-value- approach’ to a ‘user-value-mindset’. Regarding communication, the authors explain that public sector organizations should implement diverse communication channels to enable citizens to get involved in innovation processes and to obtain their feedback. Last, an organization’s climate, comprising its culture, practices, and structures, should be changed towards encouraging user-driven innovation.

Besides these models, studies on agility in the public sector reviewed in section 2.2.1 suggest several principles of changing public sector organizations towards greater agility. Some of these principles underline the relevance of aspects covered by the three models, whereas others add new points. Increased collaboration with the business world and civil society is advocated as a mean to enhance

public sector organization's innovativeness, as well as public services' closer alignment with the needs of its citizenry (OECD, 2015; Soe & Drechsler, 2018). Furthermore, several studies argue that ICTs cannot only facilitate the development of agility in public sector organizations (OECD, 2015; Shah & Stephens, 2005), but also that IT projects can be the first place to implement agile methods and, thus, serve as a starting point for developing organizational agility (Mergel, 2016). This argument is supported by the fact that three of the five empirical studies reviewed in section 2.2.1 examine cases of agile methods of software development (Nuottila et al., 2016; Ribeiro & Domingues, 2018) and ICT procurements in public sector organizations (Soe & Drechsler, 2018). This could indicate that it is most viable to drive agile transformations through IT projects.

Last, multiple authors agree that for agility to take hold in public sector organizations, a cultural change is inevitable (Häusling, 2018; Mergel, 2016; Nuottila et al., 2016; OECD, 2015). The envisioned agile organizational culture should empower employees to experiment with new ideas, to improve existing processes, and to independently explore novel projects (OECD, 2015). While cultural change is identified as a necessary condition for public sector organizations to become agile, it is also estimated to be "the main challenge" (Mergel, 2016, p. 522). Therefore, managerial commitment, reflected in "political will, effective leadership, and clear communication [is crucial] to overcome inevitable resistance and inertia" (OECD, 2015, p. 13). Beyond that, Nuottila et al. (2016) stress the necessity to educate employees about the underlying rationale and value of agility, as well as to train them methodically since they need to "understand and learn agile values and principles in addition to practices to be motivated and committed" (p. 81). This indicates that also in the context of the public sector, agility of the workforce is a key component of changing organizations towards becoming more agile.

In conclusion, literature assesses the transformation of the public sector towards organizational agility to be challenging since multiple barriers need to be overcome. From this follows that the execution of the proposed models and principles of implementation require effective change management as I examine in subchapter 2.4.

## 2.3 Alternative Organizational Formats in the Public Sector

Comparing the first two subchapters it is evident that agility in the context of public sector organizations remains an underdeveloped field of research. It would be wrong to say, however, that despite the apparent need for the public sector's organizational structures to change, academia is lacking theoretical solutions. In fact, several organizational models have been proposed to alter the public sector towards greater adaptiveness. While most approaches detect similarities to the concept of organizational agility, they also propose alternative formats. Since literature suggests that agility might need to look different in the public sector, reviewing literature on alternative concepts may be promising in identifying elements that are instructive and could be included in an adapted conceptualization. For this purpose, I present four alternative approaches in the following paragraphs and underline their main ideas.

A form of organization closely related to the concept of agility is adaptive governance. Its core claim is that public sector organizations are in need of adaptability and stability, and, thus, should become ambidextrous to balance both capabilities (Janssen & van Der Voort, 2016). This means that “governance at the organizational level should ensure stability and accountability, [while] governance at the lower levels should create adaptive capacity” (p. 2). It is argued that public sector organizations can, thereby, better deal with uncertainties and unpredictable changes. As the model advocates a decentralization of decision-making, collaboration among internal and external resources, and puts strong emphasis on organizational learning, it closely resembles agility.

A different organizational form is advocated by DeSeve (2007) and Thompson and Lawrence (2009) who suggest the organization in networks. Parallels to agility can be identified, as both are characterized by principles of free-flowing information, the organization around a common cause, and shared responsibilities among employees. Two key characteristics of the netcentric organization Thompson and Lawrence (2009) propose is the digitalization of processes and a downward shift of decision-making powers to the implementation level. DeSeve (2007) presents a model of public value networks and defines those as “integrated system[s] of relationships that [are] managed across formal and informal organizational boundaries and sectors with recognized organizational principles and a clear definition of success in terms of public value realized” (p. 211). Nevertheless, the models differ in one crucial point, namely with regards to how these networks should be organized. Whereas Thompson and Lawrence (2009) argue that the public sector can only become more responsive by

abandoning hierarchical structures and moving “towards hyperarchic design and netcentric operation” (p. 226), DeSeve (2007) understands networks as a tool, rather than a substitution of hierarchies. The author indicates that public sector organizations “require some form of hierarchy to reassure participants and stakeholders of their roles” (p. 211).

This assumption also forms the basis of heterarchical structures. A heterarchy is defined as “a connection between three or more hierarchies engaged in asymmetric, repetitive and sustained collaborations. Participating hierarchies intermittently lead and follow, suppressing a competitive drive in lieu of a collaborative ethos that benefits the whole network” (Stephenson, 2016, p. 141). Hence, this model has a meta-organizational perspective and foresees large changes in the collaboration between public sector organizations, while leaving their internal structures relatively intact – a main difference to the concept of organizational agility. Contrary to the arguments made by proponents of the network model, it is argued that the “over-reliance on either network or hierarchy concepts overlooks important elements of system structure and constrains our perspective on complexity” (Cumming, 2016, p. 629). Since complex issues exceed the capabilities of singular organizations, heterarchies are suggested as an appropriate organizational solution (Gunningham, 2009).

The last model to be mentioned here is potentiality administration as conceptualized by Åkerstrøm Andersen and Grønbæk Pors (2016). The authors further develop the idea of public sector organizations needing to become adaptive and argue that mere adaptability does not suffice. Instead, organizations should be “capable of adapting to something that has not yet even be predicted” (p. 19). Since predictions about the future might be wrong and result in inadequate adaptive behavior of organizations, they envision potentialization as a new public management paradigm, which they describe to encompass the creation of “possibilities for change beyond the presently imaginable” (p. 22). A necessary precondition for this is space in organizations’ and employees’ minds for potentialization. This requires public sector organizations to abandon current planning mechanisms, structures, and ways of thinking, and to engage in constant efforts of reflection, reinvention, and experimentation.

In comparison to the concept of organizational agility and other models reviewed above, potentiality administration appears to be the most ambitious and radical model as it entails the dissolution of all existing schemes and a complete organizational transformation. Despite their paradigm-breaking concepts, both organizational agility and the models of adaptive governance, networks, and

heterarchy offer a higher level of congruence with the public sector's current setup than potentiality administration, for which reason, they might be more feasible to implement in the near future.

## 2.4 Public Sector Change

As demonstrated in subchapter 2.2, the transformation towards organizational agility constitutes a large-scale organizational change process that is likely to be hindered by several challenges. To generate a better understanding of how public sector organizations can be changed, I review change management literature in this subchapter and structure it into three sections: first, I summarize literature explaining the differences between change management in private and public sector organizations and explore the latter's unique peculiarities. Second, I present how resistance to change can be effectively leveraged and dealt with. Third, I review literature on the centrality of public leadership in changing public sector organizations.

### 2.4.1 Implementing Change in the Public Sector

Abundant literature on managing organizational change exists. Scholars agree that the “particular context of a public organization puts specific demands on the management of change” (Sminia & van Nistelrooij, 2006, p. 100), which is why a distinct stream of public sector change management literature exists. While organizational changes in the two sectors do not differ significantly in terms of complexity, organizations of the respective sectors are described to have distinct motives to initiate change processes (Barton Cunningham & Kempling, 2009; Jurisch, Ika, Wolf, & Krcmar, 2013). Whereas changes in private sector organizations are primarily driven by customer demands, efficiency improvements, and, thus, ultimately, profit motives, public sector organizations' change initiatives are found to be less motivated by these factors, but to result predominantly from legal regulations (Jurisch et al., 2013). Beyond that, Barton Cunningham and Kempling (2009) point out that “the unique thing about the public sector is that change takes place in a fishbowl” (p. 330), which illustrates that decision-makers of public sector organizations need to operate transparently and are being closely scrutinized by the public (Kee, Newcomer, & Davis, 2007; Osborne & Brown, 2005; Sminia & van Nistelrooij, 2006). As a consequence, a greater amount of negotiations and

consultations needs to take place before changes can be approved, making their implementation less swift than in the private sector. Furthermore, differences between organizational cultures are identified as a main reason why change management differs in the public sector (Bilney & Pillay, 2015).

Organizational culture can be defined as the “basic assumptions and beliefs, which members of an organization have in common. It also includes rituals, behavior, and corresponding organizational forms” (Schedler & Proeller, 2009, p. 7). As this definition highlights, organizational culture refers to both a mindset and norms shared by an organization’s workforce, as well as its corresponding organizational structures and processes. The prevailing culture in the public sector is frequently generalized to be strongly rooted in the Weberian bureaucratic model (Bilney & Pillay, 2015; Bouckaert, 2009). From the 1980s onwards, many countries reformed their public administration inspired by the New Public Management (NPM) paradigm towards greater managerialism and performance orientation (Hammerschmid et al., 2009; Radnor, Osborne, & Glennon, 2016). Yet, in the case of Germany, Schröter (2009) finds that NPM gained little popularity and instead, public sector reforms have predominantly been “concerned with ‘maintaining’ [...] established features of the administrative system and fine-tuning the internal bureaucratic machinery” (p. 229), thus, to have been of an incremental nature (Pollitt & Bouckaert, 2017). Consequently, the prevalent culture in the public sector is described to be neither familiar with organizational changes of a transformative nature, nor acquainted with bottom-up change efforts, but to be characterized by stability, gradually implemented incremental changes, and top-down decision-making (Osborne & Brown, 2005; Sminia & van Nistelrooij, 2006).

From a functionalist perspective, organizational culture is understood as an essential tool of change management, owing to the fact that culture can promote the implementation of change initiatives and increase an organization’s performance and effectivity (Osborne & Brown, 2005; Schedler & Proeller, 2009). These enabling effects are, however, subject to the condition that the envisioned changes align with the prevailing culture or, should this not be the case, that an organization’s culture is considered during the change management process (Barton Cunningham & Kempling, 2009). Since organizational agility appears to contradict the predominantly bureaucratic and hierarchical culture of the public sector, one can assume that a change process towards greater agility will not be facilitated by public sector organizations’ culture but rather impeded. Thus, the peculiarities of the

public sector need to be taken into account when designing and implementing the transformation towards greater agility (Osborne & Brown, 2005).

Yet, culture is not static. The definition presented by Schedler and Proeller (2009) further stipulates “that organizations not only possess cultures, but also can create culture” (p. 7), which indicates that organizational cultures are constructed and formed over time. As stated in subchapter 2.2, a change in organizational culture might be necessary to establish an atmosphere receptive to agility and to change public sector organizations towards becoming more agile (Mergel, 2016; Nuottila et al., 2016). Nevertheless, changing an organization’s culture is a difficult and complex task, particularly in the public sector (Bilney & Pillay, 2015). Employees supporting the initiative and “a top-down commitment” (Mergel, 2016, p. 522) of managers to agile values and principles are crucial for cultural change to take place. Furthermore, resistance to change needs to be addressed and effectively leveraged to attain an internalization of the new culture.

#### 2.4.2 Resistance to Change

Resistance to change has been identified as one of the main reasons why change initiatives fail, and has been found to be particularly high in public sector organizations (Hameed, Khan, Sabharwal, Arain, & Hameed, 2019; Jurisch et al., 2013). Hameed et al. (2019) explain that resistance arises when new changes are proposed but poorly understood by the workforce, causing “feelings of anxiety, uncertainty, negative emotions, and ambiguity” (p. 400) to develop. To deal with resistance to change, two strategies are proposed in change management literature: (1) scholars underline its utility and argue that organizations should adopt a constructive approach towards resistance and leverage it (Ford, Ford, & D’Amelio, 2008; Waddell & Sohal, 1998). (2) It is advocated that resistance to change can be turned into readiness for change by means of dialogical communication and a participatory management style (Hameed et al., 2019).

(1) Resistance is predominantly presented as a negative effect of change processes which change managers should aim to avoid (Agócs, 1997; Kanter, Stein, & Jick, 1992). Yet, some scholars draw attention to the positive impact resistance can have and claim that it can be a “source of innovation in a change process” (Waddell & Sohal, 1998, pp. 4) and the “critical factor in its ultimate success” (Ford et al., 2008, p. 368). Since not all aspects of a change initiative might be beneficial, internal

resistance can draw attention to these and generate an opportunity to enhance the proposal (Waddell & Sohal, 1998). This requires, however, a participatory management style, free-flowing information, and the consultation of employees. Allowing resisters to make their voices heard and to potentially alter the change initiative, can generate commitment and ultimately, facilitate its implementation (Ford et al., 2008; Sminia & van Nistelrooij, 2006).

(2) In a similar vein, other scholars demonstrate how readiness for change can be sparked in public sector organizations (Hameed et al., 2019). A necessary precondition therefor is that employees understand the proposed change and believe in it, given the fact that “public employees’ affective commitment to change is paramount to the program’s success” (p. 401). The authors find that managers can induce readiness for change by creating a positive image of the organization to strengthen employees’ organizational identification, by openly communicating the change process to reduce uncertainties, and by involving employees. Particularly in the context of complex changes such as an organizational culture change, Osborne and Brown (2005) highlight the relevance of dialogic communication – a two-way communication technique involving employees in the change process and enabling them to understand its content, to create shared meanings for it, and to eventually, support it. Bilney and Pillay (2015) agree that legitimacy for a change proposal can only be created “collaboratively rather than coercively as an imposed cultural change initiative lacks a feeling of employee ownership and, therefore, leads to a lack of trust in the leadership” (p. 43). From this follows that readiness for change depends on open communication and a participatory management style.

### 2.4.3 The Role of Public Leadership

Both of the above-presented strategies hint at the significant role of leadership for implementing organizational change in the public sector, and several other scholars confirm its centrality. For instance, Bilney and Pillay (2015) describe the CEO of a public sector organization to be “the driver of cultural change” (p. 43), and Barton Cunningham and Kempling (2009) find that the most important principle of change in the public sector, is the building of a guiding coalition advancing the change process. Furthermore, Jurisch et al. (2013) conclude that civil servants have little confidence in their abilities to change, yet, that they welcome reform when strong managerial commitment is displayed. Consequently, leadership-support is vital in driving the change process towards greater

organizational agility, as also the reviewed implementation models of agility in the public sector underline (Liang et al., 2018; Mergel, 2016).

Yet, for leaders to support the transformation, Morse and Buss (2007) explain that just like public sector organizations need to be transformed to deal with the challenges of the 21<sup>st</sup> century, leaders need to change as well. They argue that collaboration and connection skills are increasingly important for public leaders and, thus, similar to other authors, advocate a participatory management style (Osborne & Brown, 2005; Sminia & van Nistelrooij, 2006). Likewise, Mergel (2016) indicates in her implementation model that the introduction of agility in public sector organizations necessitates agile leadership. This comprises a change in leadership style towards the encouragement of teams to collaborate, to experiment, as well as to potentially fail, thereby. Thus, leaders need to deviate from a command-and-control approach and instead, take up the role of a motivator and supporter.

A further vision of how public leadership should change is provided by Kee et al. (2007) who claim that “public leaders in the twenty-first century must be transformational stewards” (p. 154). Similar to the scholars reviewed above, the authors envision transformational stewards to be accountable, empowering, power-sharing, comfortable with ambiguity, and change centric. This entails that public leaders need to find a balance between transforming public sector organizations while fulfilling their administrative responsibilities as stewards. Even though these demands appear paradoxical, transformational stewardship might present a promising and suitable leadership format for driving the change of public sector organization towards greater agility. This view recognizes the public sector’s unique peculiarities, namely requirements for stability, accountability, and administration, and combines them with attributes necessary to make it more adaptable.

In summary, to change the public sector towards greater agility, an organization’s culture needs to be considered, resistance to change should be addressed to potentially improve a change proposal as well as to generate commitment, and the process needs to be driven with strong leadership support. Furthermore, the prevalent managerial style might need to change towards becoming more participatory and inclusive.

## 2.5 Interim Resume

As the previous subchapters illustrate, agility has become a paradigm-breaking organizational concept in the private sector since it is deemed suitable to strengthen organizations' ability to act in an external environment characterized by VUCA. Even though the public sector is exposed to comparable volatility, uncertainty, complexity, and ambiguity, agility receives considerably less attention from scholars in this context. Studies mainly focus on barriers of transforming public sector organizations towards agility, and question whether they can become agile as the characteristics of agility appear contradictory to the public sector's structures and culture (Liang et al., 2018; Mergel et al., 2018; Walsh et al., 2002). This raises the question of how public sector organizations can become agile despite such challenges. While the purpose of this thesis is to provide an answer to this question, I present first observations and interim conclusions on the reviewed literature in the following. To advance these observations and to answer the research questions posted, I discuss them against the empirical findings in chapter 6.

(1) When agility was introduced in manufacturing companies, organizations were perceived as too rigid to become agile, and it was argued that large changes were required with regards to employees' mindsets and organizational structures (Burgess, 1994). Thus, private sector organizations encountered similar challenges as public sector organizations throughout their endeavors of becoming more agile. However, as the dissemination of the concept indicates, constructive approaches were found to deal with such barriers and today, several organizations in the private sector have attained (partial) organizational agility. As with any reform, agility, thus, meets intraorganizational challenges and requires changes to be made. Yet, agility can be implemented if barriers are dealt with and the change is driven with strong strategic intent.

(2) Such strategic intent is highly dependent on the commitment of public leaders, which in return, proves crucial to obtain employees' support (Liang et al., 2018). To attain a mindset and organizational culture receptive to agility, dialogic communication, as well as a participatory management style constitute valuable enabling factors.

(3) Previous reforms of the public sector have often been inspired by the adoption of concepts originating in the private sector, such as the NPM reforms which were grounded in rational choice and economic theories (Radnor et al., 2016). This poses the question why not also organizational

agility can be adopted in the public sector, or at least serve as inspiration to change public sector organizations towards greater adaptability.

(4) Closely connected to the third point, agility is a changing concept by principle. Conceptual evolutions from agile manufacturing, agile software development, and organizational agility have been described. And even today, a demarcated definition is missing, as organizational agility is context-dependent, and its execution differs between organizations. This implies that in the public sector, agility can and potentially will need to be looked at differently, too. This realization provides scholars and practitioners with creative leeway to make public sector organizations more agile while respecting their unique peculiarities.

(5) The reviewed alternative models of organizational forms offer different stances on whether greater adaptability requires the dissolution of hierarchies or whether they are inherently needed in public sector organizations. This raises the question whether the collaborative work structures and flat hierarchies of organizational agility can be realized or whether these elements necessitate adaptation.

(6) Not only is literature on agility in the public sector sparse, studies within this strand have also not examined the topic in the context of Germany. By focusing on the German public sector as a research setting, this thesis both ventures into this empirical gap and advances literature on agility in the public sector.

### 3. Research Setting

To generate a contextual understanding of the research setting, as well as the rationale behind the choice to examine Germany's public sector, I provide a brief overview in this chapter.

The German public sector is described as having undergone few groundbreaking administrative reforms over the past few years and to be very bureaucratic (Schröter, 2009). One explanation for the incremental and slow changes that produced "bureaucratic finetuning in Germany" (p. 315), rather than transformations is that the country "is federal and extensively decentralized" (Pollitt & Bouckaert, 2017, p. 57). Owing to its federalist structure, Germany's public administration is comprised of a multitude of actors at the national, state, and municipal level, and characterized by a clear separation of tasks and powers between those. Organizations at both the state and municipal

level enjoy considerable independencies in implementing national legislations and administrating citizens through their own laws and budgets (Schimanke, 2007). Being organized in sixteen states and more than 11,000 municipalities, Germany's public sector is fragmented, which impedes centrally driven change efforts (Pollitt & Bouckaert, 2017; Statista, 2019).

An example thereof is the country's deficit of digitalizing public services. In fact, in the EU comparison, Germany falls below average and only ranks fifth last with regards to offering digital public services (European Commission, 2019). For too long the digitalization trend was underestimated and necessary changes towards becoming an e-government were not pursued (Nationaler Normenkontrollrat, 2019). However, citizens' expectations are rising and the broad majority of Germans wishes to use public services online, while remaining very cautious about data protection (Bitkom, 2018). Realizing the acute need for action, the German government recently adopted various programs and laws to digitalize its public administration, the most ambitious of which constitutes the Onlinezugangsgesetz, which translates to Online Access Act (OAA). Guided by the principle of user orientation, it sets out to digitalize 575 public services until 2022, including the possibility for citizens to apply for parental benefits or for businesses to register their operations, and to introduce a shared digital portal connecting these services (Stocksmeier & Hunnius, 2018). It is argued that thereby, the agility of the administration [...] should be secured in the long-term (Bundesministerium des Innern für Bau und Heimat, 2018, p. 1).

Since ICT projects were found to be promising starting points to introduce agility in public sector organizations, the German public sector faces an opportunity to become more agile while implementing the OAA and other digitalization projects. In fact, several studies conducted by consultancies come to the conclusion that the successful digitalization of Germany's public administration needs to go hand in hand with an agilization of its organizational structures and working methods since the complexity of the topic cannot be tackled with classical project management methods (AIOS et al., 2019; Daub, Domeyer, & Polier, 2018). For these reasons, Germany offers an interesting empirical setting to study agility in public sector organizations and to develop a constructive approach on how a classical bureaucratic administration can be changed towards greater agility.

## 4. Methodology

In this chapter, I explain the research process underlying this thesis. In the first subchapter, I introduce my research philosophy and indicate how it influences this thesis. Thereafter, I elaborate on the chosen research design and describe how and with which sampling strategy I collected data, as well as the method I used to analyze it. The chapter closes with a subchapter demonstrating how I ensured the quality of my findings.

### 4.1 Research Philosophy

The ontology I base my research upon is classified under the relativist research tradition since I recognize that not solely one truth exists, but that different researchers have varying perspectives on a topic of study, all of which can add novel and valuable insights into complex research phenomena (Easterby-Smith, 2018). From this follows, that I hold a social constructionist epistemological stance, meaning that I acknowledge my role as a researcher to influence the collection and analysis of data and thus, the presented findings. Consequently, I do not claim that the results presented in this thesis explain in their entirety how organizational agility can be implemented in public sector organizations, but that they serve as a first in-depth exploration of this complex research topic, and that other studies will be needed to capture different aspects of it and to complement my findings.

Furthermore, as social constructionism understands the world to be given meaning to and to be constructed by people (Creswell & Creswell, 2018; Easterby-Smith, 2018), I place great importance on the experiences and knowledge of singular interviewees. I consider them to be essential parts of their respective organizations as they shape the social reality they work in and that I am examining.

### 4.2 Research Design

The research design of a study refers to its strategy of how a research question will be answered (Easterby-Smith, 2018). Thus, it includes all methods utilized to collect and analyze data and provides

a rationale for why a particular design was selected, as well as how it matches the research purpose. In this thesis I set out to provide answers to the research questions:

1. *Why is agility only being timidly adopted in public sector organizations?*
2. *How can public sector organizations become agile despite potential challenges and barriers?*

Since this thesis ventures into the under-researched field of agility in the public sector, I make use of a qualitative research design. Qualitative research methods are particularly suitable for exploratory purposes due to their focus on generating in-depth findings, the possibility to capture nuanced differences between data sources, and to obtain a deep understanding of the meanings and experiences of individuals (Brewer, 2003; Creswell & Creswell, 2018; Easterby-Smith, 2018). Organizational agility is a concept that has proven difficult to measure (Wendler, 2014) and which is only being timidly adopted in the public sector. Therefore, a qualitative research design is most suitable to explore the experiences employees and consultants of the public sector have made with agility, and which difficulties and opportunities they encountered.

Qualitative research designs are frequently categorized as inductive, hence as approaches that generate theoretical explanations from empirical observations (Brewer, 2003; Bryman & Bell, 2011). While I follow an inductive data analysis method, this thesis cannot be classified to be purely inductive. Since I reviewed literature before the data collection, I cannot claim to have solely been guided by the data during the research process but to have already had some preconceptions. In the following sections, I elaborate more closely on my data collection and analysis methods and highlight deviations from a strictly inductive research approach.

#### 4.2.1 Data Collection Method: Qualitative Interviews

In line with the exploratory research purpose of this thesis as well as my underlying ontological and epistemological assumptions, I collected data by conducting in-depth interviews. The method of interviews offers the benefit of allowing researchers “to collect information that captures the meaning and interpretation of phenomena in relation to the interviewees’ worldviews” (Easterby-Smith, 2018, p. 179). This implies that interviews generate detailed and personal accounts of the topic studied, and thereby, increase the chance to unravel novel, alternative or contradicting viewpoints.

#### 4.2.1.1 Interview Partners and Sampling Strategy

For the purpose of writing this thesis, I collaborated with the consulting firm ‘mgm’ that serves several clients in the German public sector. Employees of mgm supported me during the data collection process by granting me access to the firm’s network for finding relevant interview partners and by being interviewees themselves.<sup>1</sup> I conducted interviews with two groups of respondents: (1) practitioners working in organizations of the German public sector who have introduced agile methods; and (2) experts, they being mgm consultants, who have supported agile projects in public sector organizations. I chose these two interviewee groups to contrast their accounts and to identify potential differences between self-assessments of practitioners and external assessments of consultants. Interviewing individuals both internal and external of the public sector decreases the risk of presenting biased results and serves as a mean of triangulating data (Easterby-Smith, 2018).

To select relevant interview partners within these groups, I made use of a theoretical sampling strategy, which constitutes a non-probability technique aimed at the development of theory (Glaser & Strauss, 1967). Originally, theoretical sampling is a technique of grounded theory, designed for the saturation of preliminary findings during later stages of the research process. However, I utilized this sampling strategy upfront to ensure that interviewees were experienced in the research topic and that their accounts would serve valuable in addressing the research questions. Accordingly, I composed a list of relevant criteria and purposely selected interview partners meeting those (Tables 1 & 2).

**Table 1.** Selection Criteria for Interviews with Practitioners

<b>Selection Criteria for Practitioners</b>			
<b>Number</b>	<b>Category</b>	<b>Criterion</b>	<b>Rationale</b>
<b>1</b>	Employer	Public sector organization	Only employees of the public sector are relevant for this interviewee group
<b>2</b>	Exposure to agility	Yes	Ensures that interviewee has experienced agility in the public sector
<b>3</b>	Topical expertise	Deals with digitalization projects	Increases chances of success to drive change towards organizational agility

<sup>1</sup> Consultants from mgm consulting partners GmbH and mgm technology partners GmbH were interviewed.

**Table 2.** Selection Criteria for Interviews with Experts

<b>Selection Criteria for Experts</b>			
<b>Number</b>	<b>Category</b>	<b>Criterion</b>	<b>Rationale</b>
<b>1</b>	Type of organization consulted	Public sector organization	Ensures that interviewee knows about peculiarities of the public sector
<b>2</b>	Area of expertise	Agile approaches	Ensures that interviewee is knowledgeable in agile approaches
<b>3</b>	Topical focus of previous projects	Digitalization projects	Increases chances of success to drive change towards organizational agility
<b>4</b>	Years of occupation	>2	Ensures interviewee's sufficient exposure to topic

Besides these criteria, it was crucial to collect a heterogeneous pool of interviewees to meet the exploratory purpose of this thesis (Tables 3 & 4). By including as many different viewpoints as possible, I anticipated to collect a wide range of novel insights. Moreover, resulting from my social constructionist stance, I assert the diversity of perspectives to enhance the quality of my analysis. Therefore, I considered the type of organization interviewees work for, their level of seniority, years of professional experience in the respective organization, their gender, as well as whether they have previously worked in the private sector or whether they pursued a career in the public sector (i.e. ‘socialization’ category in Table 3). While I composed a diverse selection of practitioners with regards to the organizations they work for and the positions they hold, I acknowledge that the gender distribution in this interviewee group is heavily male dominated. Unfortunately, I was not able to get hold of more female practitioners.

**Table 3.** Overview of Interviews with Practitioners

<b>Interviews with Practitioners</b>									
<b>Interview</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P7</b>	<b>P8</b>	<b>P9</b>
<b>Position</b>	Head of Department* (Data Exchange)	Head of Department* (Central IT)	Head of Department* (IT) & Operations Manager	IT Project Manager	Head of Division** (Digitalization Strategy)	Head of Division** (OAA)	Managing Director	Advisor (Organizational Development)	Head of Division** (IT Customer Support)
<b>Socialization</b>	Internal	Internal	Internal	External	External	Internal	External	Internal	External
<b>Gender</b>	Male	Male	Male	Male	Male	Male	Male	Female	Male
<b>Date of interview</b>	18.02.2020	19.02.2020	20.02.2020	25.02.2020	16.02.2020	26.06.2020	20.02.2020	03.03.2020	06.03.2020
<b>Duration of interview (minutes)</b>	42	44	50	39	47	65	42	47	45
<b>Interview medium</b>	Phone	Phone	In person	Phone	In person	In person	Phone	In person	In person

\* Author’s translation of German position “Bereichsleiter”.

\*\* Author’s translation of German position “Referatsleiter”.

**Table 4.** Overview of Interviews with Experts

<b>Interviews with Experts</b>						
<b>Interview</b>	<b>E1</b>	<b>E2</b>	<b>E3</b>	<b>E4</b>	<b>E5</b>	<b>E6</b>
<b>Organization</b>	mgm	mgm	mgm	mgm	mgm	mgm
<b>Position</b>	Account Manager	Manager	Senior Consultant	Senior Developer	Senior Manager	Junior Consultant
<b>Area of expertise</b>	Employer's Liability Insurance Associations & Head of Project Management Office	Head of Department for Public Sector	Project Office, Digitalization of Educational Institutions	Product Owner & Project Coordinator, Public Digitalization Projects	Digitalization Projects, OAA & Public Pension Fund	Project Office, OAA
<b>Years in organization</b>	10	2	2	2	10	2
<b>Gender</b>	Female	Male	Female	Male	Male	Male
<b>Date of interview</b>	21.02.2020	25.02.2020	27.02.2020	27.02.2020	02.03.2020	06.03.2020
<b>Duration of interview (minutes)</b>	47	32	47	41	53	23
<b>Interview medium</b>	In person	Phone	In person	In person	In person	In person

Since I determined theoretical saturation, which refers to a phenomenon of qualitative research where “the further collection and analysis of data on additional instances appear less and less likely to reveal new or relevant information” (Easterby-Smith, 2018, p. 184), during the concurrent analysis of interviews, I concluded the data collection process after the fifteenth interview. Thereof, I conducted nine interviews with practitioners and six with experts.

In addition to interviews, it would have been favorable to collect observational data in the field in order to obtain an even deeper understanding of the research setting and to triangulate data. Yet, due to my methodological choice to interview practitioners across various organizations rather than within only one or two, as well as the limited time frame of this thesis, I was not able to engage in participant observation at interviewees’ workplaces.

#### 4.2.1.2 Interviewing Technique

Out of the numerous interviewing methods that exist, I found the problem-centered interview (PCI) technique to align best with the research questions of this thesis as it “is directed towards topics [...] which are little explored” (Witzel & Reiter, 2012, p. 12). Developed by Witzel (2000) this technique can be described as a “qualitative, discursive-dialogic method of reconstructing knowledge about relevant problems” (Witzel & Reiter, 2012, p. 3). For this purpose, interviews should resemble a well-informed conversation during which the researcher aims to understand the interviewee’s unique perspective on the topic of research by asking open questions and encouraging narrative accounts.

For the researcher, it is, thus, crucial to have prior knowledge of the topic. Accordingly, I reviewed academic literature before conducting the interviews to inform myself about the concept of agility and its current relevance in the public sector. Thereby, I arrived at several interim conclusions and observations, as presented in subchapter 2.5. While this does not imply that I later deductively tested those, the observations certainly influenced my perception of the topic and directed my attention to particular aspects during the research process. For instance, as it was found that ICT and software procurement projects constitute a first step of introducing organizational agility in the public sector (Mergel, 2016), I decided to focus my interviewee sample on practitioners and experts who are engaged in digitalization projects.

The PCI technique follows a semi-structured approach and the preparation of an interview guide is recommended “to ensure comparability of interviews” (Witzel, 2000, p. 4). Yet, the interview guide should be designed flexibly, allowing a natural flow of conversation to emerge, for interviewees to develop additional or novel points, and for the researcher to examine such in more depth or to ask clarification questions (Witzel & Reiter, 2012). Beyond that, a semi-structured approach provides the researcher with the possibility to introduce assertions made by previous interviewees and to test their theoretical relevance throughout the remaining interviews (Corbin & Strauss, 2008).

For these reasons, I drafted two interview guides adapted to the respective interview groups, specifying topics I deemed relevant to cover, and providing standard outline questions (Appendices A & B). In alignment with the research questions, I included the topics ‘value of agility for public sector organizations’ and ‘implementation (potential) of agility’ in both interview guides, since questions under these topics aim at the identification of opportunities and challenges of introducing agility in the public sector, as well as strategies on how to overcome the latter. Asking both

practitioners and experts about these topics enabled me to contrast their accounts and to develop a constructive implementation approach.

Apart from that, practitioners' guides contained questions about 'working environment and methods', as well as the 'usage of agile methods' to examine organizations' prevailing cultures and current familiarity with agility (Appendix A). Furthermore, I included questions about organizations' 'change management' to understand how changes have been implemented and communicated in the past and to, thereby, find out how a transformation towards agility would need to be executed. In contrast, experts' guides comprised the topics 'experiences from agility projects in public sector organizations' and 'differences between public and private sector organizations with regards to agility' to explore in which areas agility is already being used and to unravel how the concept of organizational agility might need to be aligned to the public sector's unique peculiarities (Appendix B).

Over the course of the data collection process and simultaneous data analysis of already conducted interviews, these interview guides evolved as I adjusted them to better suit the research topic and incorporated relevant discoveries from previous interviews. For instance, the topic of change management in practitioners' guides turned out to be less insightful, for which reason, I asked less questions regarding this topic. Instead, I tested insights from previous interviews by asking other interviewees whether they had made similar experiences in their organizations or shared the same opinion on particular phenomena. Conducting the interviews, I utilized the laddering technique to ask follow-up questions (Easterby-Smith, 2018). By asking why-questions, I 'laddered up' and explored interviewees' underlying assumptions and values. To obtain a more detailed understanding, I 'laddered down', by asking how-questions and inviting interviewees to illustrate their assertions with examples.

While face-to-face interviews are recommended due to the fact that they transmit the most visual cues and allow the researcher to analyze interviewees' body language and facial expressions (Easterby-Smith, 2018), not all interviews could be conducted in person because of geographical distances. When a personal meeting was not possible, I utilized a synchronous medium of communication, namely a phone call, as it still offers the possibility to analyze interviewees' tone of voice and reaction to questions.

Interviews were conducted in the period of February 18 to March 6, 2020, and their duration ranged between 23 and 65 minutes, with an average of 44 minutes (Tables 3 & 4). I voice-recorded all

interviews after interviewees had given their consent. This allowed me to concentrate on the conversation and the reactions of my interview partners. All interviews were conducted in German. With the help of the transcription software 'Trint', I fully transcribed recordings and later translated passages to English to present them as direct quotes in this thesis. After each interview, I drafted a postscript to note which topics interviewees had particularly stressed or which novel insights I had obtained (Witzel, 2000). I consulted these postscripts in preparation for following interviews, as well as during the data analysis process to compare the analysis of transcripts with the interpretations I had made directly after the interviews.

#### 4.2.2 Data Analysis Method

To analyze the collected data, I utilized the method of grounded theory. Its core principle is that theory is inductively developed "from categories that are 'grounded' in the data" (Easterby-Smith, 2018, p. 242). Originally developed by Glaser and Strauss (1967), grounded theory has become one of the most frequently used methods for analyzing qualitative data in business research. While numerous versions with differing epistemological assumptions have evolved, I followed the approach developed by Charmaz (2006) as she holds a constructionist epistemological stance that matches my underlying research philosophy best. Charmaz (2006) understands "research participants' implicit meanings, experiential views – and researchers' finished grounded theories – [as] constructions of reality" (p. 10) which implies that the development of theory is based on interviewees' meanings of the social reality they live in and researchers' interpretations thereof.

Grounded theory is a suitable data analysis method for in-depth interviews as both "are open-ended yet directed, shaped yet emergent, and paced yet unrestricted" (Charmaz, 2006, p. 28). In fact, the PCI method is closely related to grounded theory (Witzel, 2000; Witzel & Reiter, 2012), for which reason I consider them a suitable methodological pairing. Beyond that, I chose grounded theory as it offers several other advantages: following an inductive approach allows for the encounter of novel and unexpected results during the analysis, since the researcher is guided by the data (Easterby-Smith, 2018). Therefore, the method aligns with the thesis' exploratory research purpose. Furthermore, as theory is derived from data, grounded theory is well suited to study an underdeveloped field of research such as the one tackled by this thesis, which currently offers little theoretical approaches that could be deductively tested.

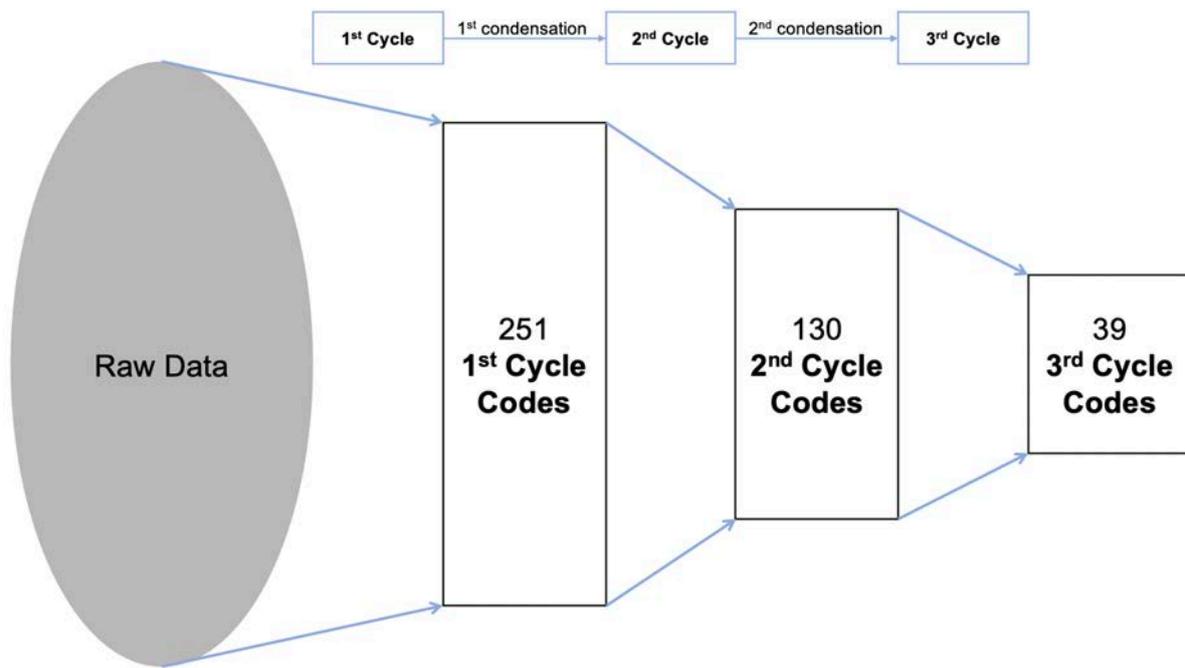
To move from raw data to theory, coding is an essential tool of grounded theory as “it shapes an analytic frame” (Charmaz, 2006, p. 46) for the analysis process. Typically, a dual coding cycle is utilized: the initial coding cycle is strongly characterized by an inductive approach as data is made sense of by summarizing it with codes grounded in the data. Thereby, it is critical for the researcher to stay close to the original meanings and to avoid imposing predefined concepts on the data in order to develop authentic theoretical findings. By identifying emerging relations and patterns among codes, categories are developed. In the second cycle of focused coding, the most relevant or frequently occurring codes are used to code the data again. By continuously comparing codes and categories to the raw data, their theoretical relevance is tested, categories become more saturated, and grounded theory is developed. Consequently, the second cycle follows a more abductive analysis approach. Coding is, however, not a linear but an emerging process and shifting between initial and focused coding can generate new insights also during later phases of the analysis process (Charmaz, 2006). Furthermore, the parallel collection and analysis of data is recommended, as it enables researchers to test categories or to seek further evidence for emerging categories that still lack theoretical saturation.

Based on this method, I coded interview transcripts using the software ‘NVivo 12’. During the first coding cycle, I identified 251 codes (Figure 3). This high number can be explained by interviewees’ varying experiences with agility and their different opinions on the topic, as well as my personal coding style of staying close to the data, aiming to depict a multilayered analysis. Furthermore, I iterated between interview transcripts to examine whether codes I had detected in one interview were also relevant in others. Hence, I inductively generated codes in one interview and tested them in others.

After I concluded the first coding cycle, I condensed the identified codes to 130 (Appendix C). My assessment of codes during the condensation process was based on several criteria: (1) codes with a similar meaning were merged and potentially renamed; (2) codes that only referenced in singular interviews and with an overall low frequency were crossed out; and (3) codes that lacked explanatory value for answering the research questions were dissolved. Furthermore, I contrasted practitioner and expert interviews with regards to the thematic focus of codes, as well as their frequencies. Here I examined whether certain codes prove particularly relevant for one interview group but not for the other, or whether consensus between the groups exists.

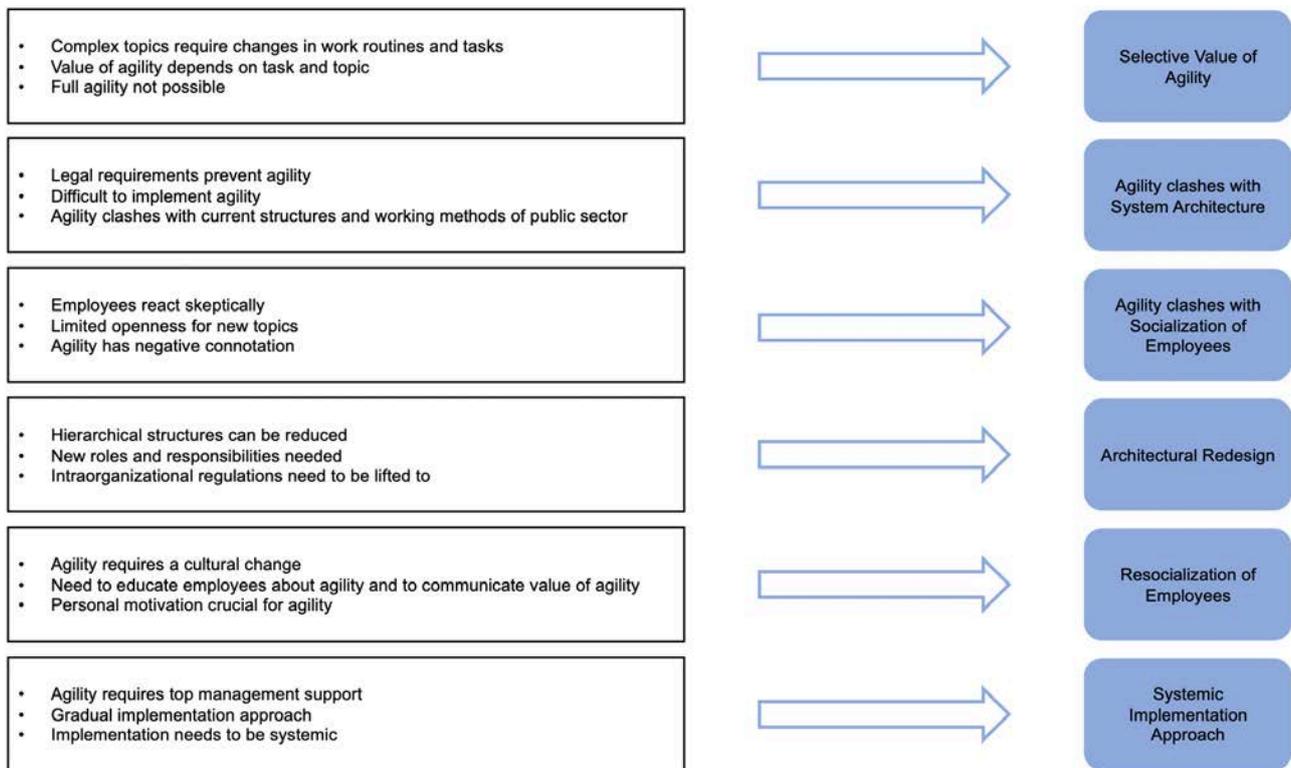
Following the first condensation, I coded all interviews utilizing the second cycle codes. Since my analysis was still too detailed after the second cycle, I concentrated the codes again to 39, using similar assessment criteria as during the first condensation process (Appendix D). Subsequently, I conducted a third coding cycle to attain further analytical abstraction.

**Figure 3.** Overview of Coding Process



After the third coding cycle, I utilized visualization exercises to examine relationships between the third cycle codes and to detect clusters (Appendix E). Thereby, I identified six categories present in all fifteen interviews, namely ‘Selective value of agility’, ‘Agility clashes with system architecture’, ‘Agility clashes with socialization of employees’, ‘Architectural redesign’, ‘Resocialization of employees’, and ‘Systemic implementation approach’ and clustered the codes accordingly (Figure 4; for complete overview, see Appendix F).

**Figure 4.** Exemplary Excerpt of Clustering of 3<sup>rd</sup> Cycle Codes into Categories



*Note.* For complete overview see Appendix H.

The collection of codes summarized in the category ‘Selective value of agility’ indicates that agility creates value in public sector organizations, yet, that this value is confined to specified areas and that current working methods are still eligible and necessary for other tasks. Codes grouped under the category ‘Agility clashes with system architecture’ explain the structural and legal challenges of changing public sector organizations towards agility. The category ‘Agility clashes with socialization of employees’ illustrates that employees’ mindsets and the prevailing culture in public sector organizations constitute further challenges for the implementation of agility. ‘Architectural redesign’ stands for the regulatory and organizational changes necessary to facilitate the change towards greater agility. The category ‘Resocialization of employees’ underlines the importance of adapting the recruitment and education of employees to trigger a mind shift and cultural change. Finally, codes clustered under the category ‘Systemic implementation approach’ highlight the necessity to follow a holistic and coherent change approach when introducing agility in a public sector organization.

Before I provide a detailed account of the precise findings generated under these categories in the subsequent chapter, I conclude this methodological chapter with a statement of how I ensured the quality of research throughout the analytical process in the following.

### 4.3 Quality of Research

The quality of qualitative studies is more difficult to prove than that of quantitative research (Bryman & Bell, 2011; Easterby-Smith, 2018). This is due to the fact that the former cannot be replicated easily since the data comprises an assortment of unique empirical observations and the researcher is actively involved in the collection and analysis processes (Pratt, Kaplan, & Whittington, 2019). For these reasons, qualitative studies need to be evaluated along different criteria than quantitative research.

Flick (2007) suggests intersubjective transparency as a suitable criterion for qualitative studies. It implies that the researcher should generate a mutual understanding of how findings were derived by documenting the research design and allowing other researchers to retrace the research process. Here the focus does not rest on enabling others to replicate a study and to arrive at the same findings, but to provide methodological transparency by explaining how the researcher's ontological and epistemological assumptions, the chosen data collection method, and coding process yield the presented findings (Pratt et al., 2019). Accordingly, as suggested by Steinke (2000), I demonstrated my prior knowledge of the topic in chapter 2, explained how I collected data and which selection criteria I employed, as well as how I conducted the analysis in this chapter. Beyond that, I attached interview guides, and other documentation of my analysis in the appendix to ensure transparency.

Furthermore, Charmaz (2006) proposes four criteria grounded theory studies of high-quality should fulfill. First, results should be credible. This is achieved by covering a wide range of empirical observations. Since I included a diverse pool of interviewees and contrasted practitioners' with experts' statements, my findings meet this criterion. Second, a study should be original, which refers to its theoretical relevance and the presentation of novel insights. As this thesis ventures into a theoretical and empirical gap, its originality is given. Third, results should fulfill a resonance criterion that encompasses the question whether "categories portray the fullness of the studied experience" (p. 182). Collecting and analyzing data in parallel, I tested emerging categories and included new insights in interview guides to ensure that no relevant aspects were overseen. Last, findings should be useful,

meaning that they should inspire research into related topics and generate benefits for practitioners. Since I shed light on an underdeveloped research topic and develop a constructive implementation approach, the findings of this thesis can be considered useful. Their theoretical and practical implications are presented in more detail in subchapter 7.2.

## 5. Presentation of Findings

Having demonstrated how I collected and analyzed the empirical data; I now turn to the presentation of generated findings. To enable readers of this thesis to better evaluate my findings, I provide two observations of the dataset, first.

While the research questions of this thesis venture into the exploration of organizational agility within public sector organizations, experiences of the practitioners and experts I interviewed are mostly confined to the usage of agility as a framework to carry out projects, such as the development of software or the digitalization of processes with Scrum, or as a mean to coordinate teams or smaller divisions with Kanban. Efforts to restructure entire departments or organizations towards organizational agility are desired by most interviewees but still lack practical realization as seldomly an organization-wide awareness for the topic exists. Only one interviewee works in a team designated to advance the topic of organizational agility internally. This indicates the still nascent level of agility of organizations covered in this sample.

A second observation to be noted is that the analysis yielded a high degree of consensus among practitioners and experts. Almost all codes were present in interviews of both groups and I detected no major conflicts or disagreements between the interview groups. Only in singular instances practitioners and experts had differing perceptions of a matter or stressed a topic with more emphasis (Appendices G & H). I highlight these instances throughout the subsequent presentation of findings and present experts' and practitioners' varying stances.

The remaining of this chapter follows the order of the above-presented categories. In the first subchapter, I explain why interviewees estimate agility to have a selective value. In the following subchapter I address the first research question and thematize the challenges that arose by implementing agility in public sector organizations. It is divided into two sections presenting findings

of the categories of agility clashes with system architecture and agility clashes with socialization of employees. In the third subchapter I display changes interviewees deem necessary to enable a transformation towards greater agility and thus, tackle the second research question of this thesis. Again, this subchapter is structured into two sections in which I elaborate on the findings generated under the categories of architectural redesign and resocialization of employees. In the last subchapter, I illustrate why interviewees argue for a systemic implementation approach of agility. Each section is introduced with a quote characteristic of the respective category and concludes with a figure summarizing its main findings.

## 5.1 Selective Value of Agility

***Regulated fixed structures are valuable and have a purpose, and agility has its purpose. There is no view of always wanting to be agile. (P2)***

Interviewees agree that the usage of agile methods creates value across several levels of public sector organizations (Table 5). In fact, the code ‘agility creates value’ is the second most frequently occurring code across both interview groups. Experts who conducted agile projects in public sector organizations, and practitioners who introduced agile methods in their departments report that they generated positive results, thereby. Interviewees explain that in the public sector, agility is predominantly valued as a mean to conclude projects more rapidly: “[organizations] want to work more agile, more modern, leaner, and more flexible, because they see that they make faster progress that way” (E5). Furthermore, interviewees observed that following agile approaches enables public sector organizations to better meet customer needs, to detect mistakes earlier, and to resolve them more effectively, as the experience of E4 underlines: “only agile development allowed our project to react when we realized: ‘oh, there is a pillar in the way, we have to react immediately’”.

Besides these result-oriented benefits, interviewees witnessed other positive side-effects with the introduction of agility. On an employee and team level, interviewees find that agile methods improve internal communication and strengthen interpersonal bonds: “it contributed to the fact that you talk to each other more, that you develop [...] a common understanding of the goal, maybe even a team understanding” (P9). Furthermore, many interviewees mention that agility increases transparency within a team or division, and reveal that, particularly Kanban methods, allow for a better

coordination of work tasks, as P7 reports: “we do a daily, every day at 8:30 am and that improved a lot. We’ve gotten more transparency and people know better what one person is doing and what the other is doing”. As a result, employees find it easier to collaborate and are disburdened since “they can optimize their workflow, make their work visible, they can see where they can help a colleague, [and] how they can support him” (P9).

On an organizational level, interviewees evaluate agility to be beneficial for dealing with regulatory barriers, since creative solutions can be found more easily to carry out projects within the legal framework. Moreover, several interviewees stress that an agilization of public sector organizations is crucial in order to increase their “chance to remain an attractive employer in the future” (P9). P8 finds that agile public sector organizations create an “image [of] ‘they somehow do something a bit differently, newer, and not so stiff anymore’ [which] works quite well” in attracting skilled and young employees. Thus, interviewees believe that by becoming more agile, the upcoming demographic change and therewith connected loss of employees in the public sector can be dampened and even counteracted.

**Table 5.** Overview of Value-Creating Effects of Agility

<b>Level of value creation</b>	<b>Created value</b>
<b>Result-oriented</b>	Increased speed to realize projects and objectives
	Closer alignment to customer needs
	Early detection and resolution of mistakes
<b>Employee and team</b>	Better communication
	Stronger interpersonal and team bonds
	Increased motivation of employees
	Increased transparency
	Better coordination of work tasks
	Disburdening of employees
	Greater effectivity
<b>Organization</b>	Increased attractiveness as an employer
	Possibility to balance out demographic change
	Increased trust of external partners
	Cost-savings
	Means to better deal with regulatory barriers

Due to the multitude and variety of benefits interviewees experienced with agility, both practitioners and experts report that the interest in agility is slowly rising in the public sector. Experts witness that tenders for projects increasingly include the usage of agile methods or that the division managers they work with push the topic internally. For instance, E3 states that in her project “the client told me: ‘oh we want to be agile, with prototype and all’”. However, it is interesting to note that predominantly practitioners stress the need for the public sector to become more agile, while this statement is less emphasized by experts. For instance, P4 explains that “the public administration is dependent on implementing agile working methods. There is no other way because the speed at which changes take place requires it”. Similarly, P6 mentions: “I do not see any other way to proceed. I could, however, imagine – and this would be my dream – that the administration as a whole, reforms itself”. Yet, why do practitioners perceive such a strong need for the public sector to change?

Consensus among interviewees exists that the increasing complexity of tasks public sector organizations need to deal with requires novel ways of working. Particularly, the digitalization is mentioned as a topical area where the public sector’s current structures and working methods are perceived to no longer suffice, as P8 underlines: “you can no longer move these topics in one specialized department. That does not work anymore, because there are far too many players, or the networking is far too large for one person to be able to move it. There you have to become agile”. The main advantages of an agile approach compared to traditional working methods interviewees observe are cross-functional collaboration and the thereof resulting variety of expertise, greater speed, early detection of mistakes and the possibility to react to those, as well as a better match of the final outcome with the initial requirements. Therefore, interviewees agree that “there will be no other way to do this than to actually accomplish it with agile methods” (P4), meaning that they evaluate the digitalization to create an urgency for public sector organizations to become more agile.

While the digitalization demands greater agility from public sector organizations, interviewees also explain that the digitalization and other comparably complex topics can function as a trigger for the agilization of the public sector.<sup>3</sup> For instance, P6 explains that “the OAA is the key. We have never held a key in our hands like the OAA”, and P8 confirms that “[the] digitalization awakens this whole

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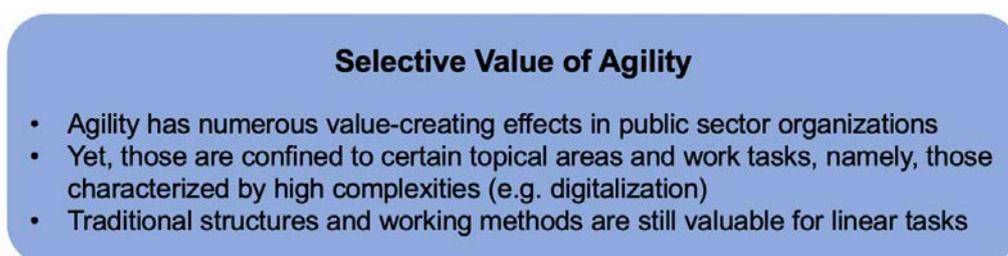
<sup>3</sup> Since the corona crisis had not broken out in Germany when I concluded the collection of data, interviewees did not mention the handling of the crisis as another example of a complex topical area. It would, however, be interesting to study, whether the corona crisis might, similarly to digitalization, demand and support greater agility in the public sector.

issue of getting out of one's classical forms of working". Thus, interviewees assess the increased digitalization efforts of the German government to support the change towards greater agility.

Nevertheless, both practitioners and experts clarify that a complete agilization of the public sector is neither attainable nor desirable since "such a huge apparatus [...] cannot work completely agile, there have to be some rules for the machine to work" (P8). Instead, a large majority of interviewees argues that the value creating effects of agility are confined to certain areas and tasks such as the development of software or the processing of complex cases. For instance, E6 states that agility "is rather in certain environments, for example digitalization, a methodology or mindset, which can be applied to fast-moving topics". In contrast, agility is not perceived to be valuable in areas demanding standardized ways of working, as E5 summarizes: "it makes sense if I have units that have to implement something like the OAA and need to operate it. Here it makes sense to approach it more creatively, more agile [...]. But in rigid line functions with clear fields of activity, it does not make much sense".

In fact, interviewees agree that for linear tasks the hierarchical structuring, specialization of employees, and stream-lined working methods continue to be valuable and necessary: "I just cannot do this, no matter how agile I want to be, because it's these topics that I have to approach differently, more structured, hierarchically, I have to plan them more, and conduct them in a step-by-step approach" (P2). And P4 confirms that within those areas, "what is needed is typical case processing and not the development of new working practices with agile methods". Hence, even though interviewees confirm the relevance of agility for public sector organizations, they advocate a selective use, which implies that certain departments should adopt agile approaches and undergo restructuring, while others preserve their current structures and ways of working. P2 fittingly summarizes that the public sector needs to find "a healthy balance" between agile and traditional approaches.

**Figure 5.** Summary of Category Selective Value of Agility



## 5.2 Challenges of Implementing Agility in Public Sector Organizations

Even though interviewees recognize the diversity of value creating effects of agility, as well as the selective value of implementing it in public sector organizations, they also stress the many challenges they encountered introducing it. Practitioners and experts thematize challenges concerning the public sector's system architecture and employees' socialization in the system, both of which I present in detail in the following two sections.

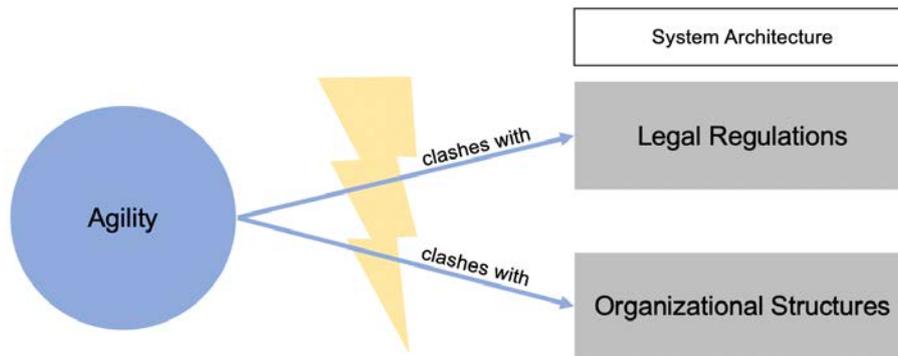
### 5.2.1 Agility clashes with System Architecture

*Agility simply encounters fixed structures. No matter where you poke, you stand in front of the door and have to make sure that you find the keyhole [...] [to] open the door. (P5)*

Practitioners and experts alike report that legal and structural elements of public sector organizations impede and prevent the introduction of agility (Figure 6). While interviewees acknowledge the fundamental necessity of public sector organizations' strict boundness to the law in order "not to drown in corruption" (E1), they also lament that "the administration is being slain by regulations" (P3). More specifically, interviewees criticize that the sheer amount of legislation restricts organizations' autonomy, as P4 emphasizes: "when the legislator gives us a legal requirement, we cannot simply say: 'yeah, but we need it differently.' That just doesn't work. That is why we are [...] the driven ones of this regulation".

The regulations interviewees most frequently mention to impede the introduction of agility are legal specifications governing the tenders for projects in the public sector. They explain that commonly the scope of a project is predetermined by a specifications sheet which prevents an open-ended and iterative solution approach characteristic of agility. Furthermore, interviewees criticize the length of the tendering process and miss the flexibility to carry out projects in an ad-hoc manner, since projects need to be tendered across Europe and their budget approved months, if not years in advance: "this flexible planning, which is needed in the context of such projects, cannot be reflected in budgets [...]. It's already very difficult in companies, but even more difficult in public administration" (E3). Because of these reasons, interviewees describe the tendering process to be a real "heavy weight" (P8) which "simply does not match with agility".

**Figure 6.** Elements of the Public Sector’s System Architecture clashing with Agility



Yet, more than legal barriers, interviewees stress that the internal set-up and processes of public sector organizations impede the introduction of agility since those seem to contradict agile principles. In fact, the codes ‘agility clashes with current structures and working methods of public sector’ and ‘difficult to implement agility’ are the first and third most frequently occurring codes in the data. Both practitioners and experts report that despite a clear intention of singular divisions or teams to become agile, structures of the public sector do not allow for greater agility: “the colleagues who have tried it out and for some reason haven’t really made any progress, they think it’s not bad in principle, [...] but the feedback is more like: ‘we’re not quite there yet in the organization’” (P9). And E5 confirms that public sector organizations “just can’t [become agile], even if they have good will. They just can’t do it because the organizational structures won’t allow it”.

In this regard, interviewees name several elements that constitute challenges for introducing agility. One of those is the strict division of tasks and responsibilities between employees or departments, and their clearly demarcated scopes of duties, as P5 laments: “there are 5,000 administrative regulations which also specify, in the end-definition what each individual employee must do and what not”. These “fixed responsibilities” (E3) clash, however, with the cross-functional collaboration foreseen in agile teams or organizations, as P5 further elaborates: “there is such a thing, it’s called a business distribution plan. It is something like an organigram and it indicates specifically which tasks are assigned to which employee. [...] These are just these hurdles”.

A result of this individualization of tasks is the specialization of employees in particular topics and the creation of “insular knowledge” (P9), hence, the concentration of knowledge in singular

employees rather than the dissemination of knowledge throughout an organization. Interviewees experience the specialization of employees to impede the introduction of agility since employees' focus on one topical domain prevents them from shifting work tasks with colleagues as agile teams would: "within a division, each one has their own thematic focus. And that's where classic administration clashes with agility. Agility is designed to enable everyone to take over the tasks of the other. That only works to a limited extent here" (P5). In addition, P9 confirms that "we have the problem that we have so many specialists, so much insular knowledge, when there is a Kanban card concerning a topic, then only one colleague can help. No one else can support".

Beyond that, interviewees explain that the principles of sharing knowledge and transparently communicating one's work progress clash with current working methods: "we are just not used to work transparently from our old organizational culture" (P8). Yet, even more than an unfamiliarity, transparency has a negative connotation for many employees. Frequently it is understood as a mean to monitor employees' performance which, by German law, is forbidden to conduct with civil servants as P5's experience illustrates: "there is definitely a certain explosive potential if one were to approach such processes that someone says: 'that's performance control, I have to explain what I do every day, I am controllable'".

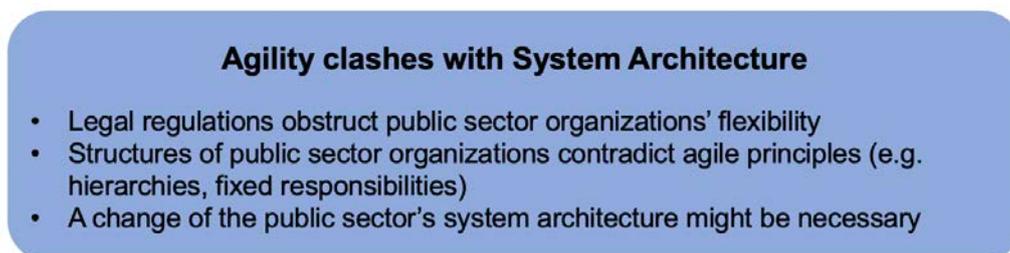
A further structural element that was emphatically thematized by interviewees is the hierarchical setup of public sector organizations and the challenges it bears for wanting to introduce a non-hierarchical format in this context. Interviewees question whether autonomous, self-organized teams can be realized in an environment characterized by a strong centration of decision-making powers on the managerial level: "that's the biggest obstacle that these hierarchies are very concreted, and a division or department manager in the public sector does not simply give up his power to bring someone from the team into the lead to push a topic forward" (E5).

Especially the fixed payment scheme that is directly bound to the different hierarchical ranks is evaluated critically as it "is not particularly conducive to agility" (P4). Interviewees cast doubts on whether the clear separation of employees along lines of hierarchies and pay scales can be reconciled with the flat hierarchies of an agile setup. More specifically, interviewees wonder how the roles foreseen in agile teams such as the role of a Product Owner or Scrum Master can be integrated in public sector organizations, and how their payment should be determined. This point is particularly pressing, as some interviewees are of the opinion that the public sector's hierarchical structures cannot be transcended:

Hierarchy will continue to exist; it won't disappear tomorrow. [...] And that's what the pay is ultimately determined by. It won't change in any way tomorrow, because these are the framework conditions that are set and created for the public service. We live in four career paths and we live in 15 pay scale groups [...]. And no matter how agile you get, they exist. You won't be able to abolish hierarchies. (P3)

As the statement of P3 indicates, the public sector's system architecture is a manifestation of long-held traditions and regulations. Consequently, interviewees are skeptical whether agile methods can simply be introduced in such an environment: "this public administration is a system that was developed over many years, through various regulations, guidelines, through the status of civil servants. These are all things that are manifested, and I don't know if you can dump methods on them" (E6). Beyond the pure introduction of agile methods, it might, thus, be necessary to change the public sector's system architecture as I explore in depth in section 5.3.1.

**Figure 7.** Summary of Category Agility clashes with System Architecture



## 5.2.2 Agility clashes with Socialization of Employees

*People who work in the authorities. [...] They're just raised to follow the rules.* (P6)

Besides the legal and structural challenges described above, interviewees, particularly practitioners, point out that employees and their socialization in the public sector's system represent a challenge for the implementation of agility. A main reason for that is that the level of knowledge about agility is low in public sector organizations and "the classic administrative staff have often not even heard of these methods at all and simply have no contact points with them" (E6). While the desire to become

agile is increasing as demonstrated in subchapter 5.1, and first initiatives are being carried out in singular divisions, many experts stress that these agile projects are still far from exhausting the full potential of agile approaches. As the following two excerpts illustrate, interviewees evaluate them to be a combination of agile and traditional working approaches:

I'll give you the example of [name of organization], who claim: 'we've always been agile, incremental and iterative'. But that's not agile. So that's kind of a waterfall, but that's not agile. (E5)

It was then said: 'we're agile now because we do Kanban'. But you can argue whether that has anything to do with agility, the way we deal with it. [...] It becomes like a waterfall model again, where I simply map my work status, but without any agility in it. (P9)

Interviewees acknowledge structural reasons as presented in section 5.2.1 to impede the execution of agility, since "agile projects can actually not be made agile" (P4). Yet, they also point out that "no one in the administration has ever learned to work agile. Scrum is a foreign word; Kanban is a foreign word" (P5), meaning that currently, agility is rather utilized intuitively than it is introduced methodically. Moreover, employees lack opportunities to educate themselves further as "agile training programs are nowhere to be found" in public sector organizations.

Due to the overall low awareness for agility, interviewees report that employees' first reaction when they are confronted with agility is frequently skepticism: "concerns, reluctance, the entire issue of performance control pops up immediately. It is rather viewed suspiciously" (P5). Beyond that, practitioners share that many colleagues have negative preconceptions of agility and have called it "complete bollocks" (P9) or "newfangled knick-knacks" (P7). P8 mentions that when she provides internal information sessions or trainings regarding agile methods, a frequent reaction of colleagues has been: "oh, now they are back with their post-its, their cards, and with their English language". In this regard, E6 summarizes that "agile itself, is often misunderstood as a swearword. It is one of those taboo words in the system".

Interviewees explain these reluctant and partially negative reactions with employees' unwillingness to change current ways of working: "it's still the case that some people say: 'if you're pushing a few cards around, I don't care, I'm going to continue as before'" (P9). Yet, they clarify that employees do not only react skeptically towards agile approaches, but in general, show limited interest for novel

topics and methods. E5 illustrates that employees of the public administration “wear blinkers. [They are people] who think that way and [...] who are not able to think differently and allow other things to happen”. While this explanation might sound stereotypical, interviewees reason that this behavior results from employees’ socialization in the public sector and name two factors creating the organizational culture employees are socialized in (Figure 8).

As a first factor, interviewees argue that the public sector attracts “a relatively homogeneous employee clientele” (P5), namely, employees who share a preference for clearly formulated work tasks, demarcated responsibilities, and who value the job security the public sector grants. More specifically, interviewees share that people deliberately choose to work in the public sector “because it’s just a different kind of culture, because they don’t have to participate in the decision-making process” (E2). In fact, several interviewees assume that employees enjoy not having to take over additional responsibilities and approach work with a rather reactive attitude: “the civil servant is paid for attendance. He’s not intrinsically motivated to say: ‘I’m going to use the creative leeway I have’” (P5).

Besides employees’ personal preferences, interviewees mention as a second factor that they are also being shaped by the workings of the public sector. Particularly, employees who followed classical educational and career paths in the public sphere – i.e. who studied at a school of public administration and directly after entered to work in a public sector organization – are strongly socialized in the prevailing working methods and organizational structures. This means that they have been coined by the peculiarities of the system architecture described in section 5.2.1 and have internalized matching ways of working. In fact, both practitioners and experts experienced that “employees who did not grow up and develop from the core of the administration” (P3), hence, employees who did not follow a linear career path in the public sector but who have held an occupation in the private sector before and have, thus, been socialized differently, find it easier to adapt to agile working methods.

One manifestation of employees’ socialization in the public sector’s working methods is their tendency to think within strict legal boundaries. Interviewees explain that due to the mass of regulations governing the public sector “you need people in the case processing area [...] who must work uniformly from morning to night according to set rules” (P3). Accordingly, employees are socialized with a perception that “law and order is enough” (P7) not only to solve linear work tasks, but also more complex projects. From this results that employees are strongly influenced by legal considerations and react skeptically towards alternative working methods as P3 fittingly explains: “if

you have to deal with such a clientele, then it is absolutely clear that it can't be people who are just bubbling over with willingness to change. Because how should that fit together?". Since thinking within legal boundaries limits, however, employees' abilities to think cross-functionally and restricts their creativity, interviewees assess it to be obstructive for the introduction of agility.

Another manifestation interviewees name is that the individualization of work tasks and organization along fixed responsibilities creates a "silo culture" (E2). This implies that employees act within linear structures and seldomly collaborate with other departments or utilize internal knowledge as inspiration to solve problems: "you have something in front of you and [...] have to solve it. And you don't even look into other departments to see if there is already something there, or if there is know-how available [...], you simply do it" (P1). Again, interviewees explain the silo culture to be a result of the system architecture of the public sector since "this thinking across disciplines is not in the genes of an administration, the way it is structured" (E3). Consequently, they identify this manifestation to be "another barrier" (P5) for the implementation of agility.

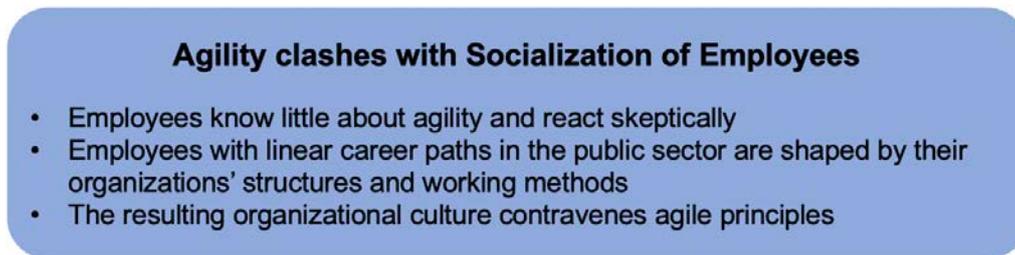
**Figure 8.** Factors of the Socialization of Employees



In summary, interviewees evaluate the socialization of employees in the public sector to be a challenge since their work tasks, mentalities, and the thereof resulting organizational culture are perceived as to contradict the mindset and work attitude agility demands from employees. In fact, P5 clarifies that "the main problem is the internal culture. That's the only thing that really clashes with [agility]". What might, thus, be necessary is a change of employees' socialization and organizations'

cultures. In this regard P5 further elaborates that “this culture, it’s rather manifestations from the working life, it’s not a regulation, it’s not a specification”, indicating that a cultural change would be theoretically feasible as I further examine in section 5.3.2.

**Figure 9.** Summary of Category Agility clashes with Socialization of Employees



## 5.3 Necessary Changes to implement Agility in Public Sector Organizations

Besides the various challenges of implementing agility in public sector organizations, interviewees mention several potential solutions and indicate which changes they deem necessary for a successful transformation towards greater agility. In line with the challenges discussed in subchapter 5.2, they can be divided into changes of an organizational (i.e. architectural redesign) and of a human nature (i.e. resocialization of employees).

### 5.3.1 Architectural Redesign

*One would have to use the methods to change, to revolutionize the whole system.* (E6)

As presented in section 5.2.1, interviewees perceive agility to clash with the system architecture of the public sector and state that legal and structural barriers challenge the implementation. To overcome those, interviewees agree that an architectural redesign of the public sector is necessary: “the way the organizational units are structured today, they actually need a change in there” (E5).

Concerning the public sector's boundness to legal regulations several interviewees, particularly experts, indicate that small changes in legislation or a "more contemporary" (E6) interpretation of the law could enable public sector organizations to act more flexibly, and support the implementation of agility. Nevertheless, several interviewees stress that changes in regulations are not mandatory for the implementation of agility. They explain that legal regulations are frequently used as an excuse why agility cannot be implemented in public sector organizations, but that they actually do not inhibit the agilization: "readily this tight corset is being blamed to prevent it" (P7). Both experts and practitioners who have utilized agile methods in public sector organizations report that regulations did not hinder them from introducing agility and that no alterations of the law needed to be made:

These are the classic administrative excuses. These are the very people who say: 'oh no, it's not possible, you have to change a law'. That's all nonsense, you don't have to do that. For all of this fun, I didn't have to change a single stupid law, or amend any internal regulation. (P5)

I only get certain approvals for budgets, for resources, if I have filled out certain documents and have gotten approvals within my organization. But none of these are barriers for working agile. These are not barriers. Whoever claims this, has never done agile projects in the public sector. (E5)

Hence, while smaller alterations of the legislation could facilitate the implementation of agility, several interviewees argue that the legal barriers presented in section 5.2.1 are not actual obstacles for the transformation. This is due to the fact that agility primarily demands novel ways of thinking and E6 fittingly comments that "there is no law that says: 'no, you are not allowed to change your ways of thinking'". This realization might, however, necessitate a different perception of agility and an overall mind shift among employees, as further examined in section 5.3.2.

Beyond legal barriers, interviewees also experience organizations' structures to impede the implementation of agility. E6 clarifies that "the structure of public administration is not necessarily made to be agile, but that doesn't mean that it can't be agile", hinting at both the necessity and the possibility to redesign public sector organizations' structures. And indeed, interviewees suggest several measures for this purpose.

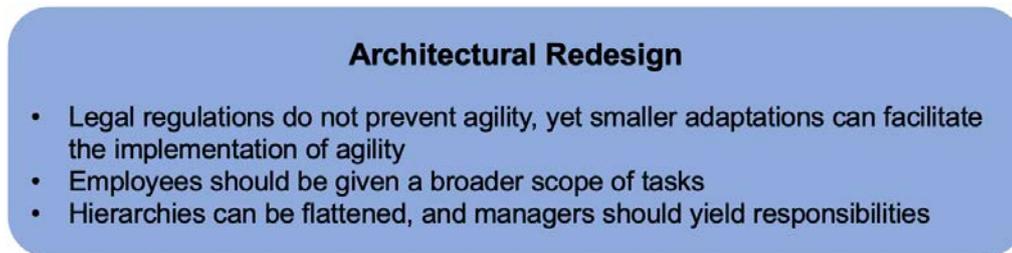
Both practitioners and experts agree that the roles and responsibilities of employees and managers need to be newly defined. To enable the development of self-organizing (agile) teams, the fixed separation of tasks and responsibilities has to be softened, allowing employees and divisions to shift between different areas of work. Interviewees recommend that the broadened scope of responsibilities and reduced degree of specialization should be reflected not only in organizations' organigrams, but also in employees' job descriptions and contracts, as P5 argues: "[you have] to standardize job descriptions so that, if necessary, you have a unit with ten employees who actually all have the same job description. [...] And at the bottom of the contract there is a passage that states: 'if new tasks are added, then the civil servant is obliged to take on new tasks'". As this statement underlines, interviewees advocate to reduce the individualization of work tasks by providing employees with a more generic definition of their responsibilities. This requires employees to engage in topics that would otherwise remain outside their demarcated work scope. Interviewees believe that, thereby, ad-hoc problems can be tackled more swiftly, and cross-functional collaboration be facilitated.

Moreover, interviewees argue that managerial roles need to be redefined and that managers should yield more responsibility and autonomy to their employees: "that also means that a superior [...] will have to take a different view on his or her role. Because that's the biggest obstacle in there" (E5). As a potential solution P3 advocates that "the hierarch in charge becomes coach", which implies that managers should reduce the delegation of work tasks and share their decision-making powers with self-organizing teams. He further explains that managers need "to stand in the background and have to strengthen [employees'] backs" by counseling teams on the tasks they are dealing with and bearing the final responsibility for their output. Nevertheless, such a new managerial role might also necessitate leaders with a different mindset, as I explore in section 5.3.2.

Last, interviewees thematize the clash of agility with public sector organizations' daily experienced hierarchies. Interestingly, only practitioners suggest that certain hierarchical levels can be reduced, and hierarchies should be kept "slightly flatter" (P8) in the future: "all this middle management, you won't need it anymore" (P7). And P9 affirms that "some hierarchical levels are obsolete or obstruct agility a little". Thus, even though hierarchies cannot be completely dissolved in public sector organizations, several practitioners make the case that they could be slimmed down to enable the agilization of the public sector.

While the proposed measures to redesign the system architecture of the public sector can indeed facilitate the implementation of agility, they also constitute considerable modifications of its current setup. Consequently, these changes will have to be managed well, as I elaborate in subchapter 5.4.

**Figure 10.** Summary of Category Architectural Redesign



### 5.3.2 Resocialization of Employees

*The minds have to change, big time.* (E5)

Besides the legal and structural alterations, interviewees emphasize, in particular, the role employees play in the transformation towards greater agility and identify several changes to generate greater acceptance for agility. Since interviewees experience employees to be strongly socialized into the public sector's regulations, structures, working methods, and organizational culture, they underline that agility demands a mind shift among employees and a cultural change within organizations: "this cultural change, this agile mindset or in general a more open mindset away from the idea of administration to the idea of service to the citizen is the biggest thing that should be tackled in the middle-term future" (E6). This is deemed necessary as agility "is simply a mindset question and not a method question" (P8) which means that the sole introduction of agility will not suffice as its principles clash with employees' current socialization. Hence, more than structural factors, interviewees stress the dependability of agility on open-minded employees and managers, as well as a receptive organizational culture since "it stands and falls with the people" (E5). Yet, how can a mind shift on an employee level and a cultural change on an organizational level be attained? Interviewees identify three measures which public sector organizations should pursue concurrently.

First, interviewees point out that public sector organizations need to increasingly recruit employees and managers “who are accessible for these working methods” (P4). Therefore, interviewees propose that the focus of recruitment should shift towards a closer assessment of peoples’ soft skills: “you also have to recruit the right skills, not only the hard skills, but also the soft skills” (E5). This means that applicants’ cultural fit should be evaluated as P1’s considerations during the recruitment process exemplify: “with new people who join us [...] we take a close look at them to make sure they fit into this environment. And I don’t think it will fit if we hire someone who insists on old structures and doesn’t open up”. In this regard, several interviewees mention that public sector organizations should increasingly hire people who did not follow classical public sector career paths, but have been socialized externally – i.e. who studied topics such as business administration or worked outside the public sector: “it seems to me that you must deliberately... that you need to bring in greater external stimulus, structures and personnel” (P5).

Second, interviewees explain that also the education of future employees needs to be changed. Since civil servants and public administrators typically follow linear career paths, they are being socialized within the public sector’s structures and working methods from the beginning. Interviewees underline the necessity to include trainings about agility in the education of apprentices, in order for them to be socialized with a more open mindset, to be skilled in contemporary working methods, and to ensure that they will push these topics in their later occupations: “one must also approach science or the places of education and question to what an extent the one thing or the other needs to be supplemented” (E2).

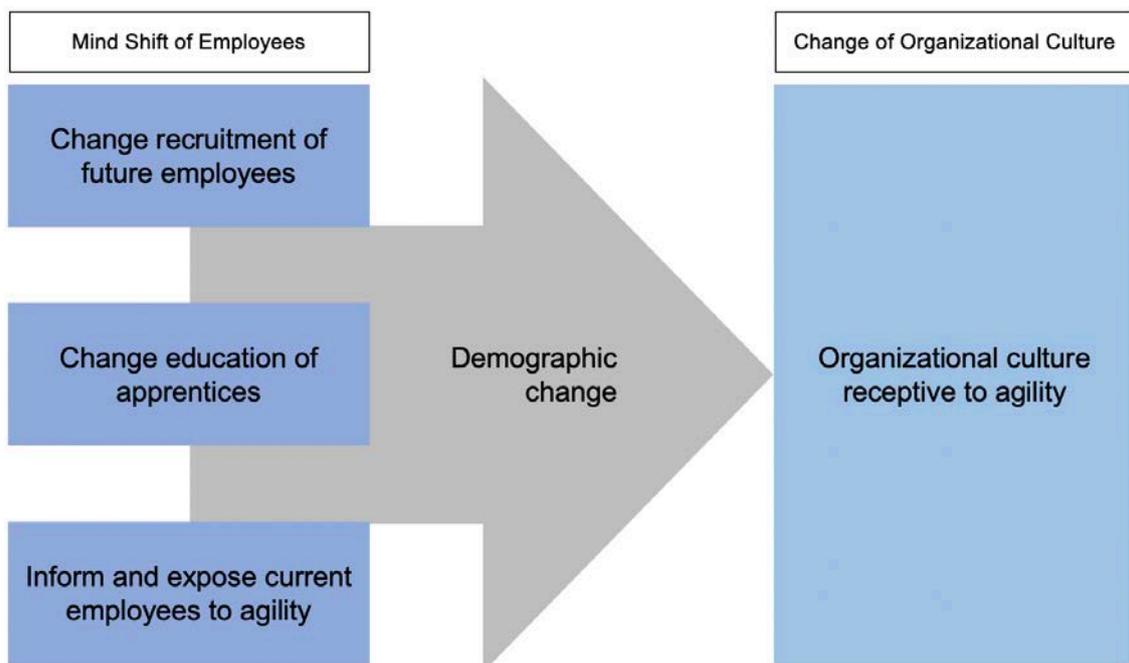
Last, since the people currently employed in public sector organizations typically have little knowledge about agility, interviewees agree that they need to be informed and educated about the value-creating effects of agility, the underlying reasons for the introduction, as well as the objectives public sector organizations wish to attain by becoming more agile, as E6 shares:

It is critical to first take a lot of time and to inform: ‘why do you do that?’ I don’t think it works to go in and be like: ‘these are the methods; we will change everything now’. Before that, you have to have change management, to say: ‘why are we doing this? What kind of rethinking is necessary to implement this approach?’ Because it is useless to overburden them, to go directly into the methodology without clarifying what the long-term goal is.

Beyond employees being informed, especially practitioners believe that employees need to be exposed to agility and test out agile working methods themselves to understand their value and to resolutely utilize them: “you can’t simply study agility, you have to experience and touch it” (P8). And P3 confirms that employees have to “master [agility], mastering does not mean they have to have attended a course, they have to live with it”. In fact, both employees’ information and exposure to agility is crucial, as interviewees consistently report that employees lost their initial skepticism and reacted positively once they had worked with agile methods themselves: “that’s for them such a revelation. It’s really crazy, you notice people who have open mouths: ‘I wouldn’t have thought that it would happen so quickly’” (E5). Interviewees highlight that even skeptical employees became “enthusiastic and want[ed] to participate” (E6) after they witnessed the positive effects agility can generate. Consequently, employees’ and managers’ personal conviction that agility can create value in public sector organizations is essential to advance the agilization of the public sector.

Thus, it is vital to recruit open-minded and potentially externally socialized employees, as well as to trigger a mind shift among internally socialized employees by adapting their education and informing them about the value of agility. Interviewees explain that, thereby, public sector organizations’ culture can be changed towards being more receptive to agility (Figure 11).

**Figure 11.** Mind Shift of Employees and Change of Organizational Culture



A development that is perceived to support this process is the pending loss of employees in the public sector resulting from the demographic change. Interviewees argue that a determining condition for the acceptance of agile methods is employees' age. Both practitioners and experts experienced that younger employees are more open for agility and curious to test new ways of working, whereas skeptical reactions are particularly high among older employees: "you do not have to convince a 60-year-old that agility might be cool after all. A young person is much more open-minded and has a certain will to perform. After 40 years in the administration [...] it's very rare for people to have that" (P5). For these reasons, interviewees estimate that the upcoming demographic change can increase the acceptance of agility as older, more skeptical employees will retire, and younger, more open-minded people can fill managerial positions.

In summary, the implementation of agility demands new ways of thinking and a cultural change in public sector organizations. This can be attained through the three measures outlined above and might be supported by the pending demographic change.

**Figure 12.** Summary of Category Resocialization of Employees



## 5.4 Systemic Implementation Approach

*You would really have to set it up strategically, implement it and push it through the entire organization. (P5)*

As demonstrated in the previous subchapter, interviewees identify several changes concerning the public sector's system architecture and employees' socialization that are necessary to transform organizations towards greater agility. Since the sum of these changes has a transformative impact on

organizations, they must be managed well and implemented systemically as interviewees stress. In fact, the highest degree of consensus among interviewees exists with regard to the question on how these changes should be implemented.

Both practitioners and experts emphasize that it is of utmost importance for initiatives aiming at the agilization of public sector organizations to have top management support. Several practitioners report that they are advancing the use of agility in their respective divisions or teams out of a personal motivation and conviction. Yet, they also lament the efforts it takes to push this topic individually and clarify that the scalability outside their area of responsibility is low. Practitioners explain that “you can give some impulses from below, but to achieve a real impact in the organization it has to come from above” (P8). In order to realize a sustainable change towards agility, interviewees, therefore, advocate to follow a top-down implementation approach rather than a bottom-up approach or guerilla tactics:

Implementing agility from the bottom up in an organization, I don't think it works, so it doesn't work in public administration. [...]. If the public sector deals with agility, it must be an issue that is driven from the top. The CEO has to stand up in front of everyone and say: ‘we are now doing agile administration’. (P5)

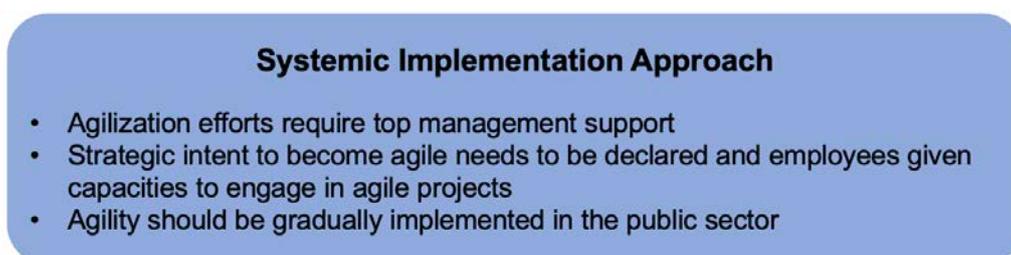
What's happening now is guerilla tactics for the most part. That just from bottom to top they try to break up these structures, but it doesn't work, because then they all would have to go along. (E5)

In this regard, E6 explains that a top-down approach is more suitable in the public sector “precisely because this idea of hierarchy is still present in the public system”. Nevertheless, such proceeding is subject to the condition that an organization's CEO and top management level do “not only want it because the topic is *en vogue* everywhere, but also understand the deeper meaning of it” (P8). Again, this underlines the necessity for managers to be convinced of the value-creating effects of agility and to have an intrinsic motivation to advance the topic in their organizations. Beyond that, interviewees argue that top management's wish to become agile should be institutionalized. This means that a strategic intent to change an organization towards greater agility should be communicated, as P9 demands: “you have to make it clear to your employees that you are actively seeking this [...]. But there is no vision or corporate strategy that actively calls for agility. It would be necessary to incorporate this in such areas”.

Furthermore, interviewees stress that the ones executing such strategic intent, hence middle managers and employees, need to be granted the designated time and space, potentially at the cost of their regular tasks, to introduce agile approaches: “you can’t just say it, you also have to really support the people in middle management, you have to set priorities for them so that they can say: ‘forget about that for half a year, take care of your teams’” (P8). In a similar vein, E4 reports from a successful agile project he carried out in a public sector organization, that an agile development was only possible because managers granted their employees capacities to engage in the project and “if [the employees] hadn’t had the support, they would have said: ‘no, I don’t have time for that’”. Hence, employees need to be signaled that the agilization of their organization is a strategic priority and that they should increasingly deal with this topic. Several interviewees clarify that this also requires managers across all levels “to lead by example” (P3) and to practice agile working principles in their daily work routines.

Nevertheless, despite the management backing and strategic intent interviewees demand, they also clarify that the change towards greater agility should and cannot progress as a transformation of the entire organization. Instead, interviewees advocate a punctual, yet coherent, introduction of agility in singular departments that display an urgent need for change, such as departments dealing with digitalization topics, or which have favorable conditions for the introduction of agile approaches. Thus, in line with the selective value of agility interviewees identify, they promote a gradual implementation in those areas of public sector organizations where agility can quickly and rather seamlessly create value. P3 explains that later in time “when we are ready, you can bring something like that very slowly [...] into the specialist departments”. In fact, interviewees agree that the change towards greater agility is a lengthy process, as the public sector “is just a tanker [and] until you get it on course, that takes a few years” (E4), “if not decades” (P8).

**Figure 13.** Summary of Category Systemic Implementation Approach



## 6. Discussion

Having reviewed academic literature relevant for the research topic of this thesis and presented my empirical findings, I now turn to the contrasting integration of the respective two chapters. For this purpose, I structure this chapter into five subchapters. In the first, I summarize main findings and present the constructive approach on how challenges of the adoption of agility in public sector organizations may be overcome. Thereafter, I discuss my findings against the reviewed literature. Following the order of topics covered in chapter 2, the remaining four subchapters reassess the relevance of the concept of agility for public sector organizations, address the challenges of executing agile approaches, discuss how these challenges can be overcome, and last, evaluate the necessary change management to implement agility.

### 6.1 Summary of Findings

Interviewees confirm that the adoption of agility generates value across several levels of public sector organizations. The value of agility is perceived to be particularly high in the area of dynamic and complex topics, such as digitalization, which interviewees observe to demand novel ways of working and to create pressures for increased flexibility, cross-functionality, and collaboration. At the same time, however, current structures and working methods of the public sector are still deemed adequate and necessary to carry out linear and standardized tasks. Consequently, the value of agility in public sector organizations is selective and dependent on topical areas, for which reason, interviewees advocate certain departments of an organization to become agile, while others remain unchanged (Figure 14).

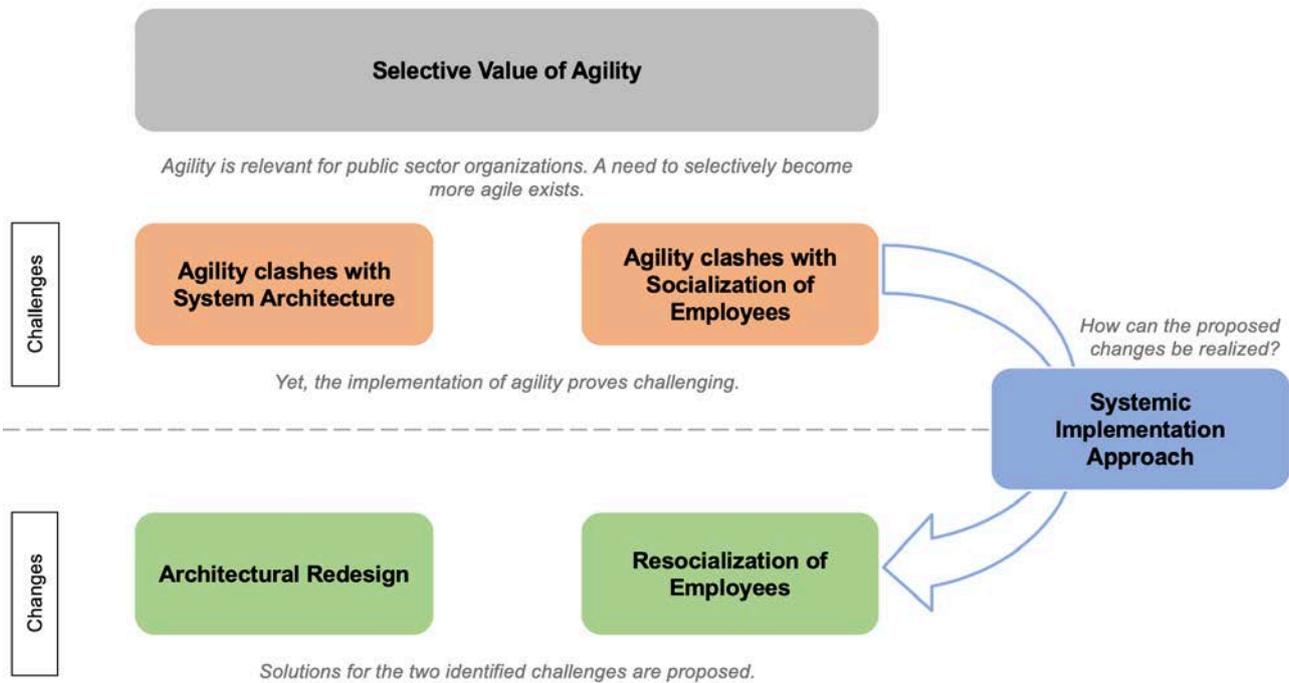
Due to the recognized need for public sector organizations to become more agile, singular divisions have introduced agile approaches in their workings. Yet, interviewees report that the utilization proves challenging as agility clashes with both the public sector's system architecture and employees' socialization in the organizational culture. Regarding the former, interviewees explain that legal requirements, such as lengthy tendering processes of projects and the inflexibility of budget approvals; as well as structural conditions, including the individualization of work tasks and strongly lived hierarchies, appear contradictory to agile principles. Concerning the latter, employees are

described to react skeptically towards agility since they have a personal preference for clearly defined scopes of tasks, and their socialization in the prevailing system induces them to think predominantly within legal boundaries and departmental silos.

However, interviewees propose several changes concerning the public sector's system architecture and the resocialization of employees that should be pursued to realize greater agility in public sector organizations. Concerning the former, interviewees argue that regulations governing the public sector generally do not prevent the introduction of agility, yet that alterations of certain legal regulations could facilitate the process. Beyond that, structural changes are suggested, including the broadening of employees' contracts and work descriptions, a novel definition of the managerial role, as well as the flattening of hierarchies. With regard to the latter, an organizational culture change needs to be triggered by resocializing employees. For this purpose, the recruitment of future employees should be adapted towards assessing candidates' soft skills and cultural fit, agile trainings should be included in apprentices' education, and current employees should be informed about agility as well as exposed to it in practice. A development that is likely to support the resocialization of employees is the pending loss of older, frequently more skeptical employees resulting from the demographic change in the public sector.

To realize the proposed changes, interviewees advocate a systemic implementation approach. This implies that the change process should be driven in a top-down manner and have strong managerial support. Beyond that, a clear strategic intent to increase an organization's agility should be declared and capacities should be freed up for employees to be able to engage in agile approaches. Last, in line with agility's selective value for public sector organizations, agile methods should be implemented gradually, meaning that departments dealing with digitalization topics or conducive of agility should be changed first before agilization efforts can be expanded to other areas. As a consequence, the incremental change towards greater agility is evaluated to be a lengthy process.

**Figure 14.** Visualization of Summary of Findings

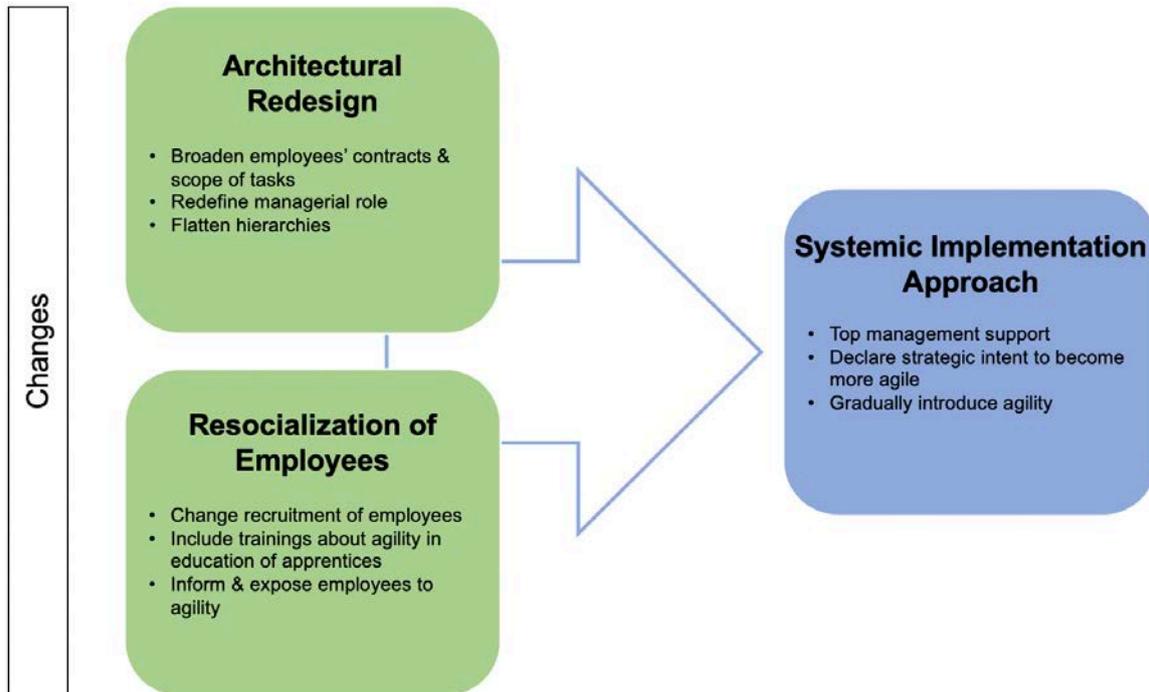


From the presentation of findings follows that the first three categories provide an answer to the first research question. Even though agility creates value in selective areas of public sector organizations, it is only being timidly adopted as agile principles clash with the system architecture of the public sector and the socialization of employees, which creates multiple challenges. The last three categories then tackle the second research question since they provide an answer on how the identified challenges can be overcome, namely by redesigning the public sector’s system architecture and resocializing employees. This requires, however, that the changes are implemented systemically.

Hence, the constructive approach which I meant to develop throughout this thesis emerges from the answer to the second research question and is centered on the proposed changes as well as the suggested systemic implementation approach (Figure 15). This is due to the fact that they collectively demonstrate how public sector organizations can become agile despite the numerous challenges the introduction bears. While this approach does not offer a blueprint solution for the agile transformation of the public sector, it indicates which areas and functions of an organization should be considered during the process, and which elements of change management prove crucial for its implementation.

In the following subchapters, I discuss the constructive approach as well as my other findings against the reviewed literature.

**Figure 15.** Presentation of Constructive Approach



## 6.2 Relevance of Agility for Public Sector Organizations

I approached this research topic with an assumption that the concept of agility should be relevant for public sector organizations because of their exposure to similar external developments and pressures as organizations of the private sector, where agility is already a much-discussed topic. And indeed, the sparse studies that exist within the literature strand on agility in the public sector confirm that the public sector needs to become more agile (Dahmardeh & Pourshahabi, 2011; Liang et al., 2018; OECD, 2015; Shah & Stephens, 2005). Similarly, practitioners and experts unanimously report that public sector organizations' current structures and working methods prove insufficient to tackle complex topics. While they predominantly refer to topics within the domain of digitalization – potentially owing to the fact that my data sample focusses on interviewees engaged in digitalization

projects – the reviewed academic studies additionally identify complexities resulting from climate change and globalization to demand greater agility from public sector organizations (OECD, 2015).

Beyond the relevance to become more agile, both literature and my findings presented in subchapter 5.1 confirm that agility creates value in public sector organizations. Studies find benefits such as an increased responsiveness to external changes (OECD, 2015), enhanced innovation capabilities (Mergel, 2016), closer alignment to citizens' needs (Dahmardeh & Pourshahabi, 2011), as well as greater transparency, efficiency, and productivity (Nuottila et al., 2016) to result from the usage of agile approaches. The value-creating effects presented in this thesis affirm several of those, including public sector organizations' ability to better meet citizens' needs, increased transparency, and improved efficiency. Beyond that, my analysis suggests, however, that these and other identified value-creating effects are selective in their nature, meaning that they are dependent on their point of use. While this finding generally confirms literature with regard to the assertion that agility creates value in public sector organizations, it adapts this statement by pointing out that the value-creating effect is not exhaustive, but confined to certain departments or topical areas, such as topics related to digitalization.

Closely connected to this finding is the affirmation of the argument that ICT projects function as a beneficial starting point to introduce agile methods in public sector organizations (Mergel, 2016). Interviewees agree that agile methods should first be implemented in departments dealing with digitalization projects, such as the realization of the OAA, since their complexities and dynamics are deemed particularly pressing for an agile approach. Focusing on interviewees engaged in digitalization projects, this thesis adds to existing academic studies examining cases of agile software development in public sector organizations (Nuottila et al., 2016; Ribeiro & Domingues, 2018) and ICT procurements (Soe & Drechsler, 2018). Nevertheless, by including interviewees from various organizational backgrounds in the sample, rather than examining a singular case as the listed studies have, this thesis offers a more holistic perspective on the usage of agile approaches in the context of digitalization projects.

Furthermore, the finding that agility has a selective value confirms the arguments made by Sharifi and Zhang (1999) and Wendler (2014) that the level of agility organizations should attain is dependent on their individual agility needs, and that organizations do not need to become fully agile. Interviewees explained that a complete agilization of public sector organizations is not desirable as linear functions and standardized work tasks still necessitate traditional structures and the processing

with current working methods. This finding implies that not only public sector organizations as a whole, but also individual departments within an organization can have varying agility needs and accordingly, require different levels of agility or no agility at all. From this also follows that agility is an evolving and context-dependent concept, as I already observed in subchapter 2.5. Owing to organizations' various agility needs and differing implementations, a clearly demarcated definition is difficult to attain.

### 6.3 Barriers and Challenges

As demonstrated in subchapter 2.2, most studies examining agility in public sector organizations identify numerous barriers the implementation of agility bears. Some of these challenges were also experienced by interviewees as presented in subchapter 5.2, including the inflexible approval of budgets, the orientation of organizational structures along legal regulations rather than strategic considerations (Shah & Stephens, 2005), strong hierarchies (Walsh et al., 2002), intraorganizational silos (Shah & Stephens, 2005; Suri, 2015), and employees' unfamiliarity with agile working principles, as well as with the novel roles agile methods foresee (Nuottila et al., 2016). In contrast, interviewees do not name other challenges such as public sector organizations' accountability to heterogenous stakeholders to inhibit the usage of agile methods (Gong & Janssen, 2012).

Comparing the challenges described in the literature with those evidenced by interviewees one notices that the former predominantly focus on challenges stemming from the public sector's system architecture, whereas the latter confirm legal and structural challenges, but also emphasize challenges of a human nature, namely employees' socialization and the thereof resulting organizational culture. In fact, apart from the Nuottila et al. (2016) study, literature has scantily addressed employees' role in the difficult process of changing public sector organizations towards greater agility. While several scholars argue that a change of organizational culture is inevitable for the implementation of agility (Häusling, 2018; Liang et al., 2018; Mergel, 2016; Nuottila et al., 2016), and that such a change is likely to be resisted by employees (OECD, 2015), these studies do not examine in more detail how employees' mindsets and their socialization in the described structures create a culture which is ultimately found to obstruct the agilization. In contrast, my analysis recommends that employees' unfamiliarity with agility, their limited curiosity for novel methods, and the strong impact the public

sector's system architecture has on their ways of working, cause skeptical reactions towards the introduction of agility.

Consequently, the findings that both the public sector's system architecture and employees' socialization in this system create challenges for the implementation of agility, underline the relevance of the human-centered factor for this research topic. Thereby, my analysis provides a broader and more integrated perspective on the reasons why agility has only been timidly adopted in the public sector. This is crucial since the realization of agility in public sector organizations requires both types of challenges to be addressed as I discuss in the following subchapter.

## 6.4 Implementing Agility in Public Sector Organizations

Due to the numerous challenges scholars identify, several of them question whether agility can be implemented in public sector organizations, or whether the public sector is too different from the private sector (Liang et al., 2018; Mergel et al., 2018). I set out to challenge this notion at the beginning of the thesis and to develop a constructive approach since only few principles and models of how public sector organizations can be changed towards greater agility exist. It is interesting to note that in contrast to the challenges discussed in literature, the proposed implementation models focus predominantly on human-centered factors critical for the transformation, such as leadership, agility of the workforce, and cultural change. Less attention is drawn to structural alterations that could resolve the numerous challenges scholars point out with regards to the public sector's system architecture.

Comparing the reviewed literature with the constructive approach I developed, several similarities can be detected. Both literature and interviewees attach a central role to leadership for the agilization of the public sector (Liang et al., 2018; Mergel, 2016; OECD, 2015). Beyond leaders' support, several authors argue that the prevalent leadership style needs to change, meaning that leadership should become more inclusive and participatory (Morse & Buss, 2007; Osborne & Brown, 2005; Sminia & van Nistelrooij, 2006), that public leaders should become agile themselves (Mergel, 2016), or that they should fulfill a role of transformational stewards (Kee et al., 2007). In this regard, my findings confirm that managerial roles should be redefined towards granting more autonomy and rights of co-determination to teams and employees. Moreover, the constructive approach supports studies

underlining the relevance of workforce agility for an organization's change towards greater agility (Alavi & Wahab, 2013; Liang et al., 2018; Wendler, 2014). The findings presented in section 5.3.2 affirm that employees receptive to agility should be hired (Shah & Stephens, 2005), potentially from outside the public sector (Mergel, 2016), and that resistance among current employees can be overcome by educating them about agile values and training them in agile methods (Nuottila et al., 2016). Last, both scholars and interviewees emphasize that an agilization of the public sector requires a cultural change (Häusling, 2018; Liang et al., 2018; Mergel, 2016; Nuottila et al., 2016; OECD, 2015). Even though existing studies do not articulate a need to resocialize employees of public sector organizations, they propose measures with a comparable effect, for which reason, a high overlap of the literature with the findings presented under the category of resocialization of employees exists.

Yet, also differences between the reviewed literature and the constructive approach can be identified. For instance, scholars propose that public sector organizations' increased collaboration with private enterprises can function as a mean to become more agile (OECD, 2015; Soe & Drechsler, 2018). Furthermore, interviewees thematize the role of communication for the agilization process only scantily, whereas the OECD (2015) as well as Shah and Stephens (2005) emphasize the need for increased internal communication, and Liang et al. (2018) underline the importance of greater external communication with citizens.

In contrast, my findings yield several measures that have not been proposed in literature, such as the integration of agile trainings in apprentices' education. Beyond that, structural changes including the broadening of employees' contracts and scopes of responsibilities, as well as the possibility to flatten hierarchical structures, are not proposed in studies on agility in the public sector. Yet, concerning the latter measure, the question whether a non-hierarchical setup can be implemented in the public sector has been addressed in studies on alternative organizational formats reviewed in subchapter 2.3. The presented formats offer different stances on this issue as some scholars argue for the dissolution of hierarchies to attain greater flexibility and adaptability (Thompson & Lawrence, 2009), whereas others claim that the hierarchical setup is inherently needed and that it does not obstruct efforts to become more adaptive (DeSeve, 2007; Stephenson, 2016). In this regard, interviewees confirm that the non-hierarchical structuring the concept of organizational agility foresees, necessitates adaptation to the public sector, where hierarchies cannot be abandoned and will continue to exist. Nevertheless, they identify a possibility to flatten hierarchies by reducing ranks along the middle management, as well as by redefining managerial roles. Since managers should increasingly devolve decision-making

powers to their teams, a redefinition would have as an effect that hierarchies become less pronounced and noticeable in daily life, without officially abolishing them. In return, this can facilitate an operational shift towards greater agility while respecting the peculiarities of public sector organizations.

Thus, the constructive approach developed throughout this thesis yields several measures on how the numerous challenges thematized by interviewees and in academia can be overcome. Thereby, it provides an affirmative answer to the doubt several scholars have uttered of whether the public sector can even become agile. The constructive approach extends existing implementation models by identifying measures that have so far not been examined, as well as by integrating changes concerning both the redesign of the system architecture and employees' resocialization. Therefore, it offers a more holistic perspective on how agility can be implemented in public sector organizations and proposes specific measures. Looking back at literature on agility in the context of private sector organizations, scholars confirm the necessity for an integrative implementation approach which considers an organization's culture, HR practices, structures, and strategy (Häusling & Kahl, 2018a), and impacts all organizational levels (Moreira, 2017). In the following subchapter I discuss how such an approach should be implemented.

## 6.5 Change Management

Even though interviewees do not argue in favor of the public sector's full agilization and advocate a selective adoption of agile approaches, they highlight the need to advance the proposed changes systemically throughout an organization. While the combination of these two findings might seem contradictory, several of the reviewed studies on public sector change confirm elements of the systemic implementation approach interviewees demand.

For employees to buy into the agile transformation, interviewees underline the importance of top management support since managers need to prove their commitment and lead by example by practicing agile methods in their daily work lives. This finding is affirmed by several scholars who find that strong leadership is the crucial driving force behind the implementation of changes in public sector organizations (Barton Cunningham & Kempling, 2009; Bilney & Pillay, 2015; Jurisch et al., 2013). Beyond that, interviewees explain that the agilization of the public sector needs to be advanced

from the top as bottom-up initiatives have proven unsuccessful. This aligns with the argument made by Osborne and Brown (2005) and Sminia and van Nistelrooij (2006) that the prevalent culture in public sector organizations is accustomed to top-down decision-making. Similarly, the finding that a gradual change approach should be pursued reflects scholars' assertion that the public sector is unfamiliar with transformational change and that an incremental approach is preferred.

Furthermore, my analysis informs that the wish to become more agile should be institutionalized, meaning that an organization's strategic intent behind the proposed changes should be officially declared to signal executing managers and employees that the agilization of their departments is a priority. Literature confirms that the agile transformation needs to be embedded in a public sector organization's strategy, aligning all corresponding implementation measures since the challenges of introducing agility can only be overcome, if the identified changes are introduced coherently and driven with strategic intent (Liang et al., 2018; Shah & Stephens, 2005). From this follows, that a systemic implementation approach matches the peculiarities and prevalent change management of the public sector best, even if agility is not introduced throughout the entire organization, but only in singular departments or divisions.

One principle of change management that is, however, less visible in the data and consequently lacking in the developed constructive approach, is how resistance to change is being dealt with. Interviewees' descriptions of employees' skeptical and partially negative reactions can be interpreted as resistance to change. While the proposed measure to inform employees about the value of agility and to let them experience it practically aligns with scholars' recommendation on inducing readiness to change by including employees and generating understanding for the change (Hameed et al., 2019), the data yields no further explanations on how resistance is addressed. An increased effort to involve employees in the change process and to address their concerns might, however, be supportive for the sustainable agilization of the public sector, as literature suggests that resistance to change should be effectively leveraged not only to facilitate the implementation of an initiative (Ford et al., 2008; Sminia & van Nistelrooij, 2006), but also to improve its content (Waddell & Sohal, 1998).

## 7. Conclusion

To conclude this thesis, I first provide a concise summary of the study. In the second subchapter I elaborate on the theoretical and practical implications of the presented findings. Last, I acknowledge limitations this thesis is subject to and derive stimuli for future research.

### 7.1 Summary of the Study

In this thesis I set out to challenge the notion that the public sector's peculiarities prohibit the change towards greater agility and examined possibilities for public sector organizations to become agile despite the numerous challenges identified in literature. For this purpose, I addressed the research questions (1) why is agility only being timidly adopted in public sector organizations? And (2) how can public sector organizations become agile despite potential challenges and barriers?

To answer these questions, I conducted fifteen in-depth interviews with practitioners of various organizations of the German public sector and experts of the consulting firm mgm. Since studies find that ICT and digitalization projects can facilitate the introduction of agility in public sector organizations, I purposefully selected interviewees working in related areas. To analyze the empirical data, I followed a grounded theory approach and after three coding cycles, identified six categories.

The findings that were generated revealed that agility selectively creates value in public sector organizations, predominantly in those departments dealing with complex topics such as subjects related to digitalization. The introduction of agility is, however, challenging as agile working methods and principles clash with the public sector's prevalent system architecture, namely the legal framework it is governed by and its structures; as well as the socialization of employees in this system, creating an organizational culture allegedly unreceptive to agility. Despite the confirmed relevance of agility for the public sector, the identified challenges provide an answer to the first research question, as they explain why agility has only been timidly adopted in public sector organizations until today.

To overcome these challenges, my findings indicate that organizations need to implement changes in terms of both redesigning the system architecture towards flatter hierarchies and newly defined

managerial roles, and triggering an organizational culture change by means of resocializing future and current employees. To ensure a sustainable agilization of public sector organizations, the proposed changes, as well as the introduction of agility should be implemented systemically, hence with top managerial support, with strong strategic intent, and expanded only gradually within an organization. Thus, the proposed measures yield a constructive approach on how the identified challenges can be overcome and, thereby, answer the second research question.

Addressing the two research questions, I aimed to fulfill a twofold purpose, namely, to advance sparse literature on agility in the public sector, and to develop a constructive approach on how public sector organizations can become more agile in practice. In the following subchapter, I show that my findings meet this dual purpose and elaborate on their theoretical and practical implications.

## 7.2 Theoretical and Practical Implications

This thesis advances the underdeveloped literature strand on agility in the public sector. First and foremost, my findings confirmed the relevance of the concept of agility for public sector organizations and, further, emphasized the need to advance this topic academically. By focusing the data collection on interviewees engaged in digitalization projects, this thesis adds to existing studies on the agile procurement and execution of ICT projects in the public sector, which currently is one of the two dominant research topics within this literature strand (Nuottila et al., 2016; Ribeiro & Domingues, 2018; Soe & Drechsler, 2018). My findings affirmed the argument made by other scholars that digitalization projects are a suitable context for the first introduction of agile methods and subsequent transformation towards organizational agility in public sector organizations (Mergel, 2016; Shah & Stephens, 2005). Beyond that, by offering a constructive approach on how agility can be implemented in the public sector, I objected the claim presented in several studies that public sector organizations are too different from private sector organizations and cannot become agile (Liang et al., 2018; Mergel, 2016). Last, by focusing on the German public sector, this thesis filled an empirical gap within the literature.

With regards to practical implications, it can be highlighted that the increased digitalization efforts of most national governments, as well as the demographic change that is pending in many – at least European – countries are both external developments promoting changes towards greater agility.

Thus, practitioners not only in Germany, but also in other industrialized, aging states, currently face favorable conditions for the agilization of their organizations. To introduce agile principles and methods, the developed constructive approach can support practitioners. Yet, it should be underlined that the approach does not offer a blueprint solution, due to the fact that organizations' agility needs as well as preconditions for an agilization differ, and the implementation itself constitutes a complex task, which impedes working with best practice patterns. The constructive approach rather provides guidance on the different dimensions as well as the proceeding practitioners should consider when changing public sector organizations towards greater agility. More specifically, it directs practitioners' attention to factors of both the public sector's system architecture and an organization's employees in terms of potential challenges and corresponding solutions. Since the presented challenges and changes are based on experiences of interviewees from various organizational backgrounds, it is likely that practitioners will detect similarities to their own organizations. Nevertheless, it is critical to evaluate the presented constructive approach not as exhaustive, but as a first exploration of a complex and multi-faceted topic. It might be that practitioners will not encounter all of the presented challenges or that they will be faced with additional ones, for which reason, their organizations might necessitate a different combination of changes.

From this follows that more studies, with different research foci are needed to complement my findings and to provide different perspectives on the topic as I elaborate in detail in the next subchapter.

### 7.3 Limitations and Stimuli for Future Research

This thesis is subject to limitations stemming in part from methodological choices, with others emerging from the discussion of findings. In the following I recognize these limitations and indicate various stimuli for future research.

First, as I already acknowledged in chapter 3, I could not identify more female interviewees meeting the presented selection criteria, particularly in the group of practitioners. Therefore, I encourage researchers to aim for a more balanced gender distribution in future studies.

Second, while the chosen data collection method of qualitative interviews allowed for an in-depth exploration of interviewees' experiences and understandings of the research topic, it would have been favorable to compare and contrast their accounts with observations from the environment they operate in. Consequently, I advocate future studies to utilize a combination of qualitative interviews and participant observation to be able to examine whether interviewees' assertions deviate from their behavior, to study the usage of specific agile methods in practice, as well as to observe employees' reactions to the introduction of agility. The last aspect would be particularly revealing with regards to (potential) resistance to change among the workforce and how it is being dealt with, since my analysis yielded an insufficient focus on this crucial aspect of change management as stated in subchapter 6.6. Thus, a bipartite data collection method would allow for an even deeper study and presumably unravel additional challenges, but also changes on how the implementation of agility can be facilitated.

Third, having chosen to interview practitioners across various organizations of the public sector to generate a diversified and holistic perspective on the research topic, I encourage researchers to conduct single or multiple case-studies. Focusing on solely one or two organizations offers the advantages of being able to contrast several viewpoints on the agilization efforts of a particular organization and obtaining an in-depth understanding of the challenges the introduction of agility bears, as well as how they can be overcome.

Fourth, whereas interviewees underlined the relevance of agility and its value-creating effects for public sector organizations concerning the topic of digitalization, literature also finds other complex phenomena, such as climate change, to demand greater agility from public sector organizations (OECD, 2015). Beyond that, I would assume that the latest corona crisis is posing comparable pressures on the public sector. Therefore, it would be interesting for future studies to focus on the relevance and usage of agility in other areas of public sector organizations, dealing with similarly complex requirements originating from the domains of environmental protection or public health.

Fifth, following a grounded theory approach proved useful for venturing into the underdeveloped field of research on agility in the public sector and I encourage more studies of this kind in order to broaden the perspectives on this multifaceted research topic. Nevertheless, I similarly want to highlight the usefulness of deviating from a purely inductive approach and examining the research topic through a theoretical lens. In this regard, I suggest the theory of paradox as a suitable approach (Lewis, Andriopoulos, & Smith, 2014; Lüscher & Lewis, 2008; Putnam, Fairhurst, & Banghart, 2016;

Smith & Lewis, 2011). Throughout the review of literature and the analysis of empirical data I observed that the introduction of agility brings several contradictions and tensions to the forefront. In fact, Lewis et al. (2014) explain that the agilization places contradictory demands on an organization, including “stability-flexibility, commitment-change, and established routines-novel approaches” (p. 58). As my analysis revealed that the value of agility for public sector organizations is selective and a balance between traditional and agile methods needs to be found, it confirms that the contradictory elements listed by Lewis et al. (2014) are needed and organizations cannot choose between them. To reconcile and manage the thereof resulting paradoxes within organizations, the theoretical lens of paradox could support researchers in identifying constructive approaches.

Sixth, my analysis did not yield strong links between the proposed changes and the role of communication. Since communication has, however, been identified as a vital component of several implementation models (Liang et al., 2018; Shah & Stephens, 2005), as well as a crucial tool for changing public sector organizations and overcoming resistance to change (Bilney & Pillay, 2015; Hameed et al., 2019; Osborne & Brown, 2005), it would be interesting to more closely examine the role of both internal and external communication for the agilization of public sector organizations.

Seventh, I would like to acknowledge that the constructive approach developed throughout this thesis does not provide answers to all challenges interviewees have mentioned, such as the lengthy tendering processes and inflexible budgeting cycles. Therefore, I encourage further research and theoretical considerations examining how these particular challenges can be addressed.

In summary, since this thesis ventured into an underdeveloped field of research, numerous stimuli for future research can be derived from the utilized methodology and empirical findings. Being rooted in a relativist ontology, I evaluate the identified research opportunities as valuable extensions of my own findings since they can collectively generate a more differentiated understanding of the research topic.

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# Appendices

## Appendix A: Interview Guide for Practitioners

### **Preparations**

- Interviewer introduces herself and provides brief background information on master's thesis.
- Interviewer reassures that all data is treated confidentially, and interviewee will be anonymized.
- Interviewer provides possibility to not give an answer.
- Interviewer asks whether it is ok to voice record the interview.

### **Personal information**

- For how long have you been working for your organization?
- What is your function in your organization?

### **Working environment and working methods**

- How would you describe the working methods used in your organization?
- Do you predominantly work on your own or in teams?
- Are employees given freedom to execute their work tasks? If yes, how is this freedom provided?

### **Usage of agile methods**

- How and when are agile methods being used in your organization?
- How did employees react on the topic of agility?
- In your opinion, what caused positive / negative reactions?
- Where do you see room for improvement?

- In which context have you dealt with the topic of agility in your current occupation?

### **Value of agility for public sector organizations**

- Do you perceive agility to be valuable for your organization?
- Why and what precisely makes it valuable?
- In your opinion, why do you think your organization wants / should become agile, or not?

### **Implementation of agility**

- If agility creates value, in your opinion, why is it not being realized more in your organization?
- Based on your opinion and experience, what are the greatest challenges of introducing agility in your organization?
- Do specific teams, employees or managers push the topic of agility internally?

### **Change management**

- How is change being implemented in your organization?
- Can employees involve themselves in change processes?
- How are changes being communicated in your organization?
- How is resistance to change dealt with in your organization?

### **Finish**

Interviewer provides interviewee with the possibility to mention any other relevant points that have not been raised yet or which the interviewee would like to stress again.

## Appendix B: Interview Guide for Experts

### **Preparations**

- Interviewer introduces herself and provides brief background information on master's thesis.
- Interviewer reassures that all data is treated confidentially, and interviewee will be anonymized.
- Interviewer provides possibility to not give an answer.
- Interviewer asks whether it is ok to voice record the interview.

### **Experiences from agility projects in public sector organizations**

- On which projects have you worked in the public sector that have addresses the topic agility?
- Did the projects deal with agile working methods?
- Or did they also concern efforts to make entire departments or organizations more agile?
- What was the reason or the driver of the agility projects you have been working on?
- Which challenges did you encounter during these projects?
- How could you solve these challenges?

### **Value of agility for public sector organizations**

- Based on your experiences, is agility valuable in the public sector?
- Why (not)?

### **Implementation potential of agility**

- In your opinion, is an agile public sector possible?
- What is necessary for a successful implementation?
- Are there any characteristics of the public sector that could facilitate the implementation of agility?
- Based on your experience, what are challenges of the implementation?

- Which changes are necessary?

**Differences between public and private sector organizations with regards to agility**

- Which differences do you recognize between the public and private sector with regards to the topic of agility?
- Does the concept of agility need to look differently in the public sector than in the private?

**Finish**

Interviewer provides interviewee with the possibility to mention any other relevant points that have not been raised yet or which the interviewee would like to stress again

## Appendix C: Overview of 2<sup>nd</sup> Cycle Codes

Code	Number of Coding References	Number of Interviews Coded
Value of agility depends on task and topic	55	10
Agility creates value	50	14
Agility requires top management support	43	10
Digitalization requires changes in work routines and tasks	41	10
Limited openness for new topics	37	9
Need to educate employees about agility and demonstrate methods	37	10
Difficult to implement agility	36	12
Gradual implementation approach	36	9
Increasing interest in agility	35	11
Agility clashes with existing fixed structures	34	13
Agility depends on right employees	34	13
Implementation needs to be systemic	33	6
Public administration needs to become agile	31	10
Agility clashes with traditional working methods	30	10
Public organizations need to adhere to legal regulations	30	9
Usage of agile working methods	30	11
Personal motivation to push agility topic	27	10
Agility requires a cultural change	26	9
Desire to become agile	26	7
Full agility not possible	22	7
No impulses for agility	22	8
Employees react skeptically	21	8
Legal regulations do not prevent agility	21	4
Usage of agile methods not really agile	21	6
Convince through communication of value of agility	20	11
Current working methods do no longer suffice	20	7
Agility pushed by division manager	19	9
Employees enjoy working agile	19	10
Low agility know-how in public administration	19	8

Agility increases transparency	18	5
Employees not willing to take over tasks outside their regular scope	18	6
Traditional working methods are too slow	18	7
Agility clashes with hierarchies	16	8
Believe that old ways can still function	16	7
Hierarchies are strongly lived	16	9
Agility produces fast solutions	15	7
Complex topics create urgency to change	15	6
Freedom to execute work specifications	15	3
New roles and responsibilities needed	15	7
Problem with fixed payment schemes	15	4
Thinking in silos prevents agility	15	5
Agility constitutes change	14	6
Intraorganizational regulations need to be lifted to enable agility	14	7
Long transformation process	14	6
Public administrators think uniformly	14	5
Tendering process is complex and lengthy	14	5
Agility has negative connotation	13	6
Lacking project management know-how	13	5
Legal requirements prevent agility	13	6
No willingness to change	13	4
Older employees more hesitant	13	7
Young people more open for agility	13	7
Agile methods need to be tailored to public sector	12	5
Agility clashes with administration work	12	2
Low success with bottom up implementation approach	12	4
Office design impacts working culture and methods	12	3
Transition to agility attracts good employees	12	4
Agility pushed from external partner	11	4
Agility used as a buzzword	11	5
Demographic change might support move towards agility	11	7
Employees value possibility to get involved	11	4
Socialization with organizational culture already during education	11	5

Changes in regulations and laws can facilitate agility	10	6
External consultants used for agility	10	6
Hierarchical structures can be reduced	10	4
Mix of both agile and traditional methods useful	10	4
Time-boundness in public sector limits agility	10	5
Agility enhances communication	9	5
Agility exists in theory, but lacks practical implementation	9	2
Change depends on willingness, not ability	9	2
External employees and expertise needed	9	4
Lacking progress frustrates employees	9	2
Little progress towards agile organization	9	4
Personal motivation crucial for agility	9	5
Public sector under pressure to be more lean	9	3
Specifications of project not clear at the beginning	9	6
Usage of project management methods	9	4
Discrepancy between method and factual knowledge	8	2
Experienced in agility due to prior occupation in private sector	8	4
Lacking tools to motivate employees	8	3
Learning by doing approach	8	5
Tensions between different levels of public administration	8	3
Agility demands self-responsibility	7	5
Collaboration with non-agile organizations difficult	7	2
Low scalability of agility outside singular divisions	7	5
Low wages limit abilities to attract good employees	7	4
Regulatory barriers as an excuse	7	5
Resistance to change	7	5
Specialization prevents organizational agility	7	2
Wish to become agile but in parallel	7	1
Changes in job descriptions of civil servants necessary	6	2
Education of employees needs to be changed	6	4
Factual knowledge of organization necessary when implementing agility	6	4
Fear of performance monitoring	6	2
Feedback of employees encouraged and utilized	6	1
Hierarchies will remain	6	2

Intraorganizational regulations are too abstract and limit ability to act	6	3
Intraorganizational regulations need to be adhered to	6	3
Purpose should be focused on, not method	6	2
Agility disburdens employees	5	3
Agility increases motivation of employees	5	3
Clear work specifications	5	3
Employees are limited in engaging in additional projects	5	3
Employees value job security in public sector	5	4
Lacking employee focus in change management	5	2
Loss of employees due to demographic change	5	4
Managers need to share responsibility	5	2
No consequences for unwilling	5	3
Too early to identify value of agility	5	3
Agility as a mean to deal with regulatory barriers	4	1
Agility does not require adaptation in public sector	4	4
Civil servant paid for presence, not performance	4	1
Clear separation of tasks and responsibilities	4	3
Competition among organizations for good employees	4	2
Exhausting for individual to push topic	4	2
No agile trainings for employees	4	3
Socialization of employees in system	4	4
Specifics of public sector do not prevent agility	4	4
Agility as a problem-solving method	3	1
Lacking managerial know-how of leaders	3	1
Agility as a tool to balance out demographic change	2	1
Leaders lack assertiveness	2	2
No problems with hierarchy due to small team size	2	2
Agility foresees flexible responsibilities	1	1
Agility requires flexibility	1	1
Low awareness that something needs to change	1	1
Work to rule	1	1
Challenge to identify responsibilities in agile teams	0	0
Cross-functional collaboration	0	0
Regulatory changes not necessary for implementation of agility	0	0

## Appendix D: Overview of 3<sup>rd</sup> Cycle Codes

<b>Code</b>	<b>Number of Coding References</b>	<b>Number of Interviews coded</b>
Agility clashes with current structures and working methods of public sector	105	14
Agility creates value	87	14
Difficult to implement agility	69	12
Implementation needs to be systemic	52	12
Value of agility depends on task and topic	45	11
Complex topics require changes in work routines and tasks	42	14
Employees react positively on agility	40	12
Need to educate employees about agility and to communicate value of agility	38	12
Low awareness for agility	37	13
Gradual implementation approach	34	10
Agility requires a cultural change	32	9
Agility requires top management support	32	11
Limited openness for new topics	29	9
Agility depends on right employees	28	11
Current working methods do no longer suffice	26	12
Public administration needs to become agile	24	10
Employees not willing to take over tasks outside their regular scope	23	8
Usage of agile methods not really agile	22	7
Increasing interest in agility	20	9
Legal regulations do not prevent agility	20	6
Desire to become agile	19	6
Employees react skeptically	19	8
New roles and responsibilities needed	19	9
Age influences openness for agility	17	10
Personal motivation crucial for agility	16	8
Socialization of employees in system	14	8
Traditional methods are still useful	14	7
Legal requirements prevent agility	13	7
Agility has negative connotation	12	6

Thinking in silos prevents agility	12	5
Demographic change might support move towards agility	11	7
Changes in regulations and laws can facilitate agility	10	6
Education of employees needs to be changed	9	4
Full agility not possible	9	4
Practical experience with agility crucial	9	6
Agility constitutes change	8	4
Hierarchical structures can be reduced	7	3
Mix of both agile and traditional methods useful	4	2
Intraorganizational regulations need to be lifted to enable agility	3	2

## Appendix E: Visualization Exercises to Cluster 3<sup>rd</sup> Cycle Codes



*Note.* Yellow post-its represent categories. Orange post-its represent 3<sup>rd</sup> cycle codes. Green, pink and blue post-its indicate significance of singular codes or categories.

## Appendix F: Clustering of 3<sup>rd</sup> Cycle Codes into Categories

Category	3rd Cycle Code
<b>Selective Value of Agility</b>	Agility creates value
	Value of agility depends on task and topic
	Complex topics require changes in work routines and tasks
	Current working methods do no longer suffice
	Public administration needs to become agile
	Current methods are still useful
	Full agility not possible
	Mix of both agile and traditional methods useful
	Desire to become agile
	Increasing interest in agility
<b>Agility clashes with System Architecture</b>	Agility clashes with current structures and working methods of public sector
	Difficult to implement agility
	Legal requirements prevent agility
<b>Agility clashes with Socialization of Employees</b>	Socialization of employees in system
	Limited openness for new topics
	Thinking in silos prevents agility
	Low awareness for agility
	Employees not willing to take over tasks outside their regular scope
	Usage of agile methods not really agile
	Agility has negative connotation
	Employees react skeptically
<b>Architectural Redesign</b>	Legal regulations do not prevent agility
	New roles and responsibilities needed
	Changes in regulations and laws can facilitate agility
	Agility constitutes change
	Hierarchical structures can be reduced
	Intraorganizational regulations need to be lifted to enable agility
<b>Resocialization of Employees</b>	Agility depends on right employees
	Demographic change might support move towards agility

	Agility requires a cultural change
	Need to educate employees about agility and to communicate value of agility
	Practical experience with agility crucial
	Education of employees needs to be changed
	Age influences openness for agility
	Employees react positively on agility
	Personal motivation crucial for agility
<b>Systemic Implementation Approach</b>	Implementation needs to be systemic
	Gradual implementation approach
	Agility requires top management support

## Appendix G: Analysis of Interviews with Practitioners

Code	Number of Coding References	Number of Interviews coded
Agility clashes with current structures and working methods of public sector	55	8
Agility creates value	53	9
Difficult to implement agility	49	8
Implementation needs to be systemic	41	7
Low awareness for agility	28	8
Need to educate employees about agility and to communicate value of agility	23	7
Agility depends on right employees	22	9
Limited openness for new topics	21	7
Agility requires top management support	20	6
Complex topics require changes in work routines and tasks	19	8
Employees react positively on agility	19	9
Public administration needs to become agile	19	7
Employees not willing to take over tasks outside their regular scope	18	4
Gradual implementation approach	18	5
Value of agility depends on task and topic	18	7
Agility requires a cultural change	15	4
Personal motivation crucial for agility	14	7
Current working methods do no longer suffice	13	8
Usage of agile methods not really agile	13	3
Age influences openness for agility	12	5
Agility has negative connotation	11	5
Employees react skeptically	11	5
Increasing interest in agility	11	5
New roles and responsibilities needed	11	5
Legal regulations do not prevent agility	10	4
Current methods are still useful	9	4
Demographic change might support move towards agility	8	4
Legal requirements prevent agility	8	4
Socialization of employees in system	8	5

Desire to become agile	7	2
Hierarchical structures can be reduced	7	3
Practical experience with agility crucial	6	5
Changes in regulations and laws can facilitate agility	5	3
Thinking in silos prevents agility	5	3
Mix of both agile and traditional methods useful	4	2
Education of employees needs to be changed	3	2
Full agility not possible	3	1
Agility constitutes change	1	1
Intraorganizational regulations need to be lifted to enable agility	1	1

### Explanation of Color Scheme

Codes clustered under category ‘Selective value of agility’ are marked **yellow**.

Codes clustered under category ‘Agility clashes with system architecture’ are marked **red**.

Codes clustered under category ‘Agility clashes with socialization of employees’ are marked **orange**.

Codes clustered under category ‘Architectural redesign’ are marked **green**.

Codes clustered under category ‘Resocialization of employees’ are marked **blue**.

Codes clustered under category ‘Systemic implementation approach’ are marked **pink**.

### Dominance of Categories in Interviews with Practitioners

Category	Number of Coding References
Selective value of agility	156
Resocialization of employees	122
Agility clashes with socialization of employees	115
Agility clashes with system architecture	112
Systemic implementation approach	79
Architectural redesign	35

## Appendix H: Analysis of Interviews with Experts

Code	Number of Coding References	Number of Interviews coded
Agility clashes with current structures and working methods of public sector	50	6
Agility creates value	34	5
Value of agility depends on task and topic	27	4
Complex topics require changes in work routines and tasks	23	6
Employees react positively on agility	21	3
Difficult to implement agility	20	4
Agility requires a cultural change	17	5
Gradual implementation approach	16	5
Need to educate employees about agility and to communicate value of agility	15	5
Current working methods do no longer suffice	13	4
Agility requires top management support	12	5
Desire to become agile	12	4
Implementation needs to be systemic	11	5
Legal regulations do not prevent agility	10	2
Increasing interest in agility	9	4
Low awareness for agility	9	5
Usage of agile methods not really agile	9	4
Employees react skeptically	8	3
Limited openness for new topics	8	2
New roles and responsibilities needed	8	4
Agility constitutes change	7	3
Thinking in silos prevents agility	7	2
Agility depends on right employees	6	2
Education of employees needs to be changed	6	2
Full agility not possible	6	3
Socialization of employees in system	6	3
Age influences openness for agility	5	5
Changes in regulations and laws can facilitate agility	5	3
Employees not willing to take over tasks outside their regular scope	5	4

Legal requirements prevent agility	5	3
Public administration needs to become agile	5	3
Current methods are still useful	5	3
Demographic change might support move towards agility	3	3
Practical experience with agility crucial	3	1
Intraorganizational regulations need to be lifted to enable agility	2	1
Personal motivation crucial for agility	2	1
Agility has negative connotation	1	1
Hierarchical structures can be reduced	0	0
Mix of both agile and traditional methods useful	0	0

### Explanation of Color Scheme

Codes clustered under category ‘Selective value of agility’ are marked **yellow**.

Codes clustered under category ‘Agility clashes with system architecture’ are marked **red**.

Codes clustered under category ‘Agility clashes with socialization of employees’ are marked **orange**.

Codes clustered under category ‘Architectural redesign’ are marked **green**.

Codes clustered under category ‘Resocialization of employees’ are marked **blue**.

Codes clustered under category ‘Systemic implementation approach’ are marked **pink**.

### Dominance of Categories in Interviews with Experts

Category	Number of Coding References
Selective value of agility	134
Resocialization of employees	78
Agility clashes with system architecture	75
Agility clashes with socialization of employees	53
Systemic implementation approach	35
Architectural redesign	32