Digital Transformation in Sweden's Public Organisations
- A Study of Cultural and Structural Barriers

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Abstract

Digital transformation has a significant impact on various areas of public sector organizations across the globe. While its most noticeable effect is proposed at the organizational level, digital transformation influences operational efficiency and performance. Digital transformation can enhance operational efficiency, for instance, by enabling accelerated decision-making processes through analytics and big data. Automation and improved business processes also contribute to operational efficiency. However, these organizations often encounter significant challenges in digital transformation, particularly cultural and structural barriers. While plenty of research is exploring digital transformation in private and public organizations, specific insights into the context of Swedish municipalities still need to be explored. Prior research has shown that digital transformation involves overcoming several barriers. In response to the research, this study aims to analyse the most impactful obstacles in digital transformation in public organizations: cultural and structural DT barriers within Swedish municipalities. The research strategy is a survey-based study involving semi-structured interviews with IT directors and managers from 14 municipalities undergoing digital transformation. The data collected was analysed using thematic analysis. The data analysis has identified a total of 19 DT barriers, with 11 being newly discovered and 8 reaffirmed from prior research literature and internal documents to achieve data triangulation. These findings provide a deeper understanding of these DT barriers, promoting the successful implementation of digital transformation strategies in the public sector.

Keywords: Digital transformation; municipalities; cultural barriers; structural barriers; public sector; barriers in digital transformation; Sweden
Synopsis

Background

The rapid advancement of technology has brought significant changes in the way people interact with their surroundings, communicate, and work. In this digital age, consumers must rely heavily on technology to accomplish their daily tasks, increasing expectations for seamless and efficient experiences. Businesses have also recognized the importance of digital transformation to meet these growing demands and remain competitive in the market. Transformation in the context of digital transformation, is defined as “the fundamental change of a whole new form, function, or structure with the adoption of digital technologies that create new value”. However, successful digital transformation requires a clear strategic vision based on a thorough understanding of customer needs and the potential of technology. Similarly, as citizens' expectations for high-quality digital services from the public administration increase, government agencies must adapt their operations to improve service delivery, transparency, and overall satisfaction. Sweden, which was ranked among the top countries for e-government development, has seen a decline in its positions over time, prompting policymakers and politicians to encourage a more rapid digital transformation in all levels of the public sector, particularly in local government organizations.

Problem

As the digital landscape continues to evolve rapidly, organizations across different sectors recognize the importance of adopting digital transformation to remain competitive and meet the growing demands of their customers and stakeholders. Yet, there is a research gap concerning why public organisations fail in their digital transformation efforts. With this consideration in mind, the focus of this research on Swedish municipalities appears particularly relevant. It seeks to scrutinize the DT barriers identified in prior research within a new context, and in doing so, it will seek to contribute to our understanding of the influence these barriers exert on digital transformation efforts.

Research Question

"What are the primary structural and cultural barriers for the digital transformation in Swedish municipalities?"

Method

The research strategy used is a survey. We have focused on Swedish public organisations like municipalities in Sweden and collect data through semi-structured interviews with key personnel involved in the digital transformation within each municipality. These participants will be selected using an exploratory sample method. Data from internal documents was also used to achieve data triangulation. The collected data will be analysed using thematic analysis method.
Results

In the exploration of digital transformation barriers within Swedish municipalities, research has identified a total of 19 DT barriers. The data was collected through interviews with key persons involved in digital transformation in 14 Swedish municipalities, 11 of these DT barriers are newly discovered, while the remaining 8, although previously documented in literature. These DT barriers are systematically categorized into two main groups: structural and cultural. The structural group comprises 5 barriers from prior studies and 7 new ones, while the cultural group consists of 3 previously known barriers and 4 new findings. This combination of old and new DT barriers underscores the evolving challenges municipalities face in their digital transformation journey, emphasizing the multifaceted nature of both organizational and cultural hurdles.

Discussion

Comparing our findings with earlier research, the study points out both ongoing and new challenges faced by Swedish municipalities in their digital transformation efforts. While some issues have been noted in past studies, new ones have come up due to changes in technology and the specific challenges of the public sector. Highlighting both old and new challenges shows the complex nature of digital transformation and emphasizes the need for ongoing research and adjustment. The results also stress the importance of deeply understanding these challenges, as they significantly influence the success of digital transformation in the public sector.
Acknowledgement

We would like to extend our gratitude to Professor Lazar Rusu for his valuable guidance and expertise throughout the course of this study. Your support and insights have been foundational in shaping our research.

A special thanks to all the people in the municipalities around Sweden that participated in this study. Your first-hand experiences and shared knowledge have been the foundation of our study and has made this study both comprehensive and meaningful.

We’re also very grateful to our partners for their continuous support during our work.
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List of Abbreviations

CEO - Chief Executive Officer
CIO - Chief Information Officer
DT - Digital Transformation
DSV - Department of Computer and Systems Sciences
IT - Information Technology
1. Introduction

1.1. Background

Advances in technology are constantly providing more opportunities for both business and personal use. Both consumers and companies have become accustomed to the convenience and flexibility offered by modern technologies. As technology continues to evolve, it has become an integral part of everyday life, shaping the way people communicate, work, and interact with their surroundings. In this digital age, consumers have become more reliant on technology to accomplish tasks, access information, and communicate with others, resulting in increased expectations for efficient and seamless experiences. Consequently, businesses are also adapting to these changing expectations, implementing digital solutions to stay relevant, meet customer demands, and maintain a competitive edge in the market. This ongoing process of digital adoption and adaptation paves the way for a broader transformation, affecting not just businesses and consumers, but also the public sector and its relationship with citizens. Consumers and companies now expect efficient and effective communication not just with their friends and business partners, but also with government agencies (Jakob and Krcmar 2018). As the digital landscape continues to evolve rapidly, organizations across different sectors recognize the importance of adopting digital transformation to remain competitive and meet the growing demands of their customers and stakeholders. By adopting advanced technologies and innovative approaches, companies can simplify operations, enhance teamwork, and cultivate a commitment to continuous progress. Similarly, the public sector must also adapt to its citizens' changing needs and expectations, ensuring that public services are delivered efficiently, transparently, and securely through digital channels.

Digital Transformation is defined as the “organizational change that is triggered and shaped by the widespread diffusion of digital technologies.” (Hanelt et al., 2021, p. 2). Another term describes transformation in the context of the digital transformation as the “fundamental change of a whole new form, function, or structure with the adoption of digital technologies that create new value” (Gong and Ribiere 2021). It entails utilizing digital tools to optimize operations, improve customer experience, and develop new business models and revenue sources. Digital transformation can impact every aspect of a business, from its internal operations to its interactions with customers, and can lead to increased efficiency, flexibility, and competitiveness (Jakob and Krcmar 2018). To remain competitive and successful, many organizations must make digital transformation a central part of their strategy. This involves using technology to significantly enhance performance and reach within the organization (Heavin and Power 2018).

Having a clear strategic vision for digital transformation is essential, but it must be based on a thorough understanding of customer needs and the potential of technology. Many organizations have undergone
a digital transformation with varying levels of success. A critical factor in success is identifying which processes can be digitized that will improve customer service and developing innovative business models. These elements are essential for organizations to reap the benefits of digital reinvention fully (Rickards, Smaje, and Sohoni 2015).

As the private sector undergoes digital transformation, citizens’ expectations for high-quality digital services from the public administration also increase. However, government agencies face challenges in adapting their operations to improve service delivery, design and transparency, interoperability, and overall satisfaction for citizens. These challenges are often due to the reliance on outdated IT systems, isolated storage, and paper-based processes, which impede their ability to transform and offer digital e-government services (Ruud 2017).

Sweden was listed among the top countries in the world for e-government development in the latest UN e-government survey (United Nations, 2020). Additionally, The European Commission’s annual e-government benchmark from 2020 identifies Sweden as one of the ten countries with “fruitful e-government” which represents countries that offer a robust supply of digital services and have a high number of users (European Commission, 2020). However, despite having high rankings, Sweden has decline in its positions over time. To address the drop in ranking and to adapt to the new challenges, policymakers and politicians are encouraging for a more rapid digital transformation in all the levels of the public sector, especially in local government organizations (Lindgren et al., 2021). Quantitative studies on large-scaled Swedish national surveys in Swedish municipalities (Bernhard et al., 2018) have shown that there is a strong relation between digital transformation in municipalities and citizen satisfaction. However, there is limited research exploring the reasons why some public sector entities do not achieve successful transformation. This creates an incentive to conduct a comprehensive study to understand what the barriers are during the process of digital transformation in the public sector.

1.2. Research Problem

Digital transformation is a critical area that has not been fully explored or understood by many organizations, leading to several operational challenges (Heavin and Power, 2018; Kane et al., 2015). This state of uncertainty has spurred academics to explore what organizations that succeed in digital transformation are doing differently, and how they manage their journey to success (Morakanyane et al., 2020, p. 4356). Similarly, practitioners are seeking the development of tools to help guide them towards successful digital transformation.

One area where digital transformation can have a significant impact is in public administration reform, including the development of e-governance applications and projects. The use of digital technologies has the potential to transform traditional governance into smart governance (Sarker, Wu, and Hossin 2018). Yet, a survey of Norwegian public sector organizations found that the maturity level of change
management competence, portfolio management, innovation governance, and benefit realization were ranked as one (indicating an ad-hoc approach) on a scale from one to five (where five indicates optimized operations) (Ruud 2017).

The article of Jakob & Krcmar (2018), highlights a variety of barriers hindering successful digital transformation in municipalities. These include the lingering frustration from past unsuccessful projects, the absence of a clear IT strategy, a lack of understanding and implementation of legislative requirements, and a tendency to deprioritize digitalization projects in favour of more tangible concerns like construction and infrastructure. These barriers, among others, can significantly hamper successful digital transformation within municipalities.

The field of digital transformation presents an array of challenges that are both universal and context dependent. As such, Tangi et al. (2020) research serves as a valuable reference point, particularly in the context of their findings on structural and cultural barriers. Structural barriers refer to organizational and managerial challenges intrinsic to the organization’s characteristics, such as inflexible organizational structures, lack of adequate resources, and ineffective managerial practices (Tangi et al. 2020). On the other hand, cultural barriers encompass behaviours of the employees, including resistance to change, low digital literacy, and lack of innovative thinking, which can obstruct the digital transformation (Tangi et al. 2020).

While their study did not demonstrate a direct connection between these barriers and the depth of digital transformation in public organizations, this outcome, as they state, was unexpected and counterintuitive based on previous studies and existing literature. Tangi et al. (2020) results, therefore, underscore the need for further research into these obstacles, particularly regarding their significance and impact on the digital transformation. As stated in the paper: “the counterintuitive evidence of no correlation between the barriers and the depth of organizational transformation calls for further analysis to better understand the reasons behind these results” (Tangi et al., 2020, p.11)

Furthermore, Tangi et al. (2020) study was limited to the context of the Netherlands, a country that already possesses high maturity in digital implementations within the public sector. This leaves open the possibility that the role of structural and cultural barriers in digital transformation could differ in other contexts, such as Swedish municipalities. Consequently, there is a research gap to examine these barriers in varied environments, and the findings may offer valuable insights into the different challenges faced by public organizations across different geographic and cultural landscapes.

With this consideration in mind, the focus of this research on Swedish municipalities appears particularly relevant. It seeks to scrutinize the DT barriers identified in Tangi et al. (2020) research within a new context, and in doing so, it will seek to contribute to our understanding of the influence these barriers exert on digital transformation efforts.
In summary, by focusing on the cultural and structural barriers in digital transformation within the context of Swedish municipalities, this research aims to fill a significant gap in the current literature. This approach not only adheres to Tangi et al. (2020) call for further research but also recognizes the need for a nuanced understanding of the specific barriers that public organizations might encounter in their digital transformation journeys. In this way, this research hopes to better guide towards more successful and effective digital transformation strategies within the public sector.

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With this consideration in mind, the focus of this research on Swedish municipalities appears particularly relevant. It seeks to study the barriers identified in Tangi et al. (2020) research within a new context, and in doing so, it will seek to contribute to our understanding of the influence these barriers exert on digital transformation efforts.

In summary, by focusing on the cultural and structural barriers in digital transformation within the context of Swedish municipalities, this research aims to fill a significant gap in the current literature. This approach not only adheres to Tangi et al. (2020) call for further research but also recognizes the
need for a subtle understanding of the specific barriers that public organizations might encounter in their digital transformation journeys. In this way, this research hopes to better guide towards more successful and effective digital transformation strategies within the public sector.

1.3. **Research Question**

This study aims to identify the primary cultural and structural barriers in digital transformation in municipalities across Sweden. The research question guiding our investigation is: "What are the structural and cultural barriers in digital transformation in Swedish municipalities?". This question will allow us to delve deeper into the specific challenges these municipalities encounter while attempting to introduce and implement digital transformation initiatives.

Additionally, we seek to explore the connection of these barriers identified through our research with those revealed in previous analyses. By comparing the barriers identified in our interview-based research with those reported in prior studies, we aim to validate previous findings and potentially uncover new barriers. It is important to note that we are not quantitatively analysing the degree or intensity of these barriers, but rather qualitatively analysing their existence and nature. In this context, our definition of connection is related to the difference between our findings and those in previous research.

Our research can offer valuable insights into the complexities of digital transformation in the public sector, specifically within Swedish municipalities. Furthermore, this understanding can serve as a guide for municipalities in their efforts to overcome these hurdles and successfully implement digital initiatives.

1.4. **Delimitations**

There are a few important aspects that contribute to the overall scope of this study. These delimitations further refine the focus and provide boundaries for the research to be conducted effectively. The study was delimited by focusing on cultural and structural barriers which were determined based on previous research as a significant impact on digital transformations in public organisations (Tangi et al. 2020). Recognizing the importance of these barriers in the context of the research topic, the study aims to thoroughly analyse and understand their impact on the implementation of digital transformation initiatives.

Another key delimitation in the thesis paper revolves around the selection of Swedish municipalities that are already in the process of digital transformation. By focusing on municipalities in Sweden, the study benefits from real-world insights and experiences gained from ongoing digital transformation projects. This deliberate choice enables us to engage with personnel who possess first-hand knowledge
and expertise relevant to these initiatives. By interviewing individuals directly involved in such projects, the study gains valuable perspectives and insights that can contribute to a comprehensive understanding. It is important to note that while these delimitations establish boundaries for the research, they also imply certain limitations.

By embracing these delimitations, the research can contribute to the existing knowledge and pave the way for future studies that can explore alternative contexts and broaden the understanding of cultural and structural barriers in digital transformation.

1.5. Thesis Outline

This thesis consists of six main chapters that cover various aspects of the barriers faced during the digital transformation of municipalities in Sweden. Chapter one presents the topic’s background and outlines the problem statement, the study’s objective, and the research question. The second chapter offers an extensive literature review of previous research on digital transformation in municipalities. The chapter discusses the definition of digital transformation, its significance, and the barriers that hinder it. Chapter three focuses on the research methodology, detailing the research strategy, data collection, sampling method, analysis method, application of case study, data analysis procedure, and ethical considerations. The fourth chapter presents the findings of the study, accurately presenting the data gathered. In chapter five, the empirical data is explained based on the earlier findings of our literature review, highlighting the barriers in digital transformation in municipalities. Finally, chapter six includes the research’s conclusion, originality, and significance. It also discusses the quality of research, ethical and social consequences, limitations, and recommendations for future research.
2. Extended Background

In this chapter, a comprehensive background is presented on digital transformation within the public sector, particularly in municipalities. The significance of digital transformation is explored, and various DT barriers are examined based on previous academical studies in the field.

2.1. Importance of Digital Transformation

Digital transformation has a significant impact on various areas, including the societal level. While its most noticeable impact is proposed to be at the organizational level, digital transformation influences operational efficiency and organizational performance. According to (Vial 2019), digital technologies can enhance operational efficiency, for instance, by enabling accelerated decision-making processes through analytics and big data. Automation and improved business processes also contribute to operational efficiency. In addition, digital transformation can reduce costs leveraging cloud technologies and computing. These offer scalable and readily available solutions that eliminate the need for ongoing IT staff involvement in maintenance and management (Kane 2019). The tools and technologies used for digital transformation has significant impact on organizational procedures, best practices, and measuring efficiency (Vial 2019).

Digital transformation has the potential to enhance organizational performance, which is partially associated with operational efficiency. Improved organizational performance may manifest as increased innovativeness, growth, financial performance, competitive advantages, and reputation. According to (Vial 2019), digital technologies can help organizations anticipate and respond to increased environmental complexity, enabling them to construct strategies, changes, responses, and developments that redefine and adapt core processes and activities to increase survival possibilities. While the most prominent impacts of digital transformation are at the organizational level, several higher-level impacts are considered including those at the industry and societal levels (Vial 2019). One frequently raised positive impact is the potential for enhanced living conditions for individuals, such as improvements in the healthcare industry through electronic records, analytics, and developed physical products (Haggerty 2017). Digital transformation can act as a value-amplification mechanism in which value generated in one aspect can lead to further value creation. It also comes with certain downsides, most notably issues related to security and privacy (Vial 2019).
2.2. Digital Transformation in public organizations

Public and private organizations differ in several aspects, and it is important to understand these differences. Public organizations usually operate under a more rigid hierarchical decision-making framework which tends to be less agile compared to private companies. The main objective of these public entities is to enhance societal value, in contrast to private companies that target shareholder value maximization. Values like accountability, legitimacy, and justice are fundamental to the ethos of public organizations whereas private sector companies primarily emphasize financial performance, revenue growth, competitive advantage, and fostering client relations. The goal for public organizations is to utilize taxpayer money efficiently and minimize bad results (Goh and Arenas 2020).

Public organizations face numerous challenges when it comes to digital transformation. In the past, governments outsourced projects to gradually transfer their internal capabilities outside of the organization, which has resulted in limited capacity and reduced internal skillsets (Wang, Medaglia, and Zheng 2018). The cultural roots of public sector organizations make it difficult to bring about changes, especially digital transformation projects (Ruud 2017). Also, technological hurdles like scarcity of skilled professionals, undeveloped software solutions, issues with data storage, difficulties in merging data from various sources, and access restrictions can present as obstacles. Public organizations must also address societal issues arising from technological advancements (Janssen and van der Voort 2020).

According to (Frennert 2021), digital transformation and technological advancements are constantly evolving. This fast-paced rate of change makes it challenging for municipal eldercare organizations to accurately anticipate the future needs of patients, staff, and the organization itself, and determine the most suitable welfare technology and digital services to meet those needs. The budget and strategic planning models in some municipalities are set up several years in advance, making it difficult to accommodate technological changes. Changes in plans often must wait until the next planning or procurement cycle, but digital transformation and digitalization do not wait for these cycles. Failure to quickly adapt to technological changes can result in missed opportunities or the acquisition of irrelevant technologies (Frennert 2021).
2.3. Structure and Cultural Barriers in Digital Transformation Identified in Previous Research Literature

Embarking on a journey of digital transformation involves overcoming several barriers. The research by Benedetti et al. (2020) breaks these obstacles down into two main categories: cultural and structural barriers. Structural barriers are connected to the setup of the organization and its managerial aspects, while cultural barriers are tied to the behaviours of employees that can obstruct the change process (Tangi et al. 2020). This classification highlights that digital transformation isn't just a technological challenge, but also involves changes in the organization and behaviours. Moreover, Benedetti’s research suggests that both structural and cultural barriers can limit the depth of digital transformation, stressing their critical role in the success or failure of such efforts (Tangi et al. 2020).

Our study will follow Benedetti’s framework to investigate these barriers in the context of Swedish municipalities that are in the process of digital transformation. This investigation is guided by a thorough analysis of existing literature and validated by our empirical study. The barriers, categorized as cultural and structural, form the foundation of our exploration of the factors that hinder digital transformation within these municipalities. In the following discussion, we will delve into the details of identified barriers, such as fear of innovation, organizational complexity, resistance to change, and digital skills of employees. We will examine each of these barriers closely, drawing from previous scholarly work, to understand better their impact on digital transformation efforts.

Fear of innovation: Digital transformation often involves the use of digital technologies to improve business processes and management efficiency (Vial 2019). However, employees may feel threatened by the potential impact of digital transformation on their job security. This fear can lead to both conscious and unconscious resistance to change, particularly in production companies where technology can replace human labour. If this fear is realized, the digital transformation may fail to achieve its objectives. Some employees may even hope for an unsuccessful transformation to protect their jobs. Therefore, leaders and managers must recognize and address these fears with care, reassuring employees about their job security, and explaining potential opportunities for job and skill growth toward overcoming this barrier to DT (Tabrizi et al. 2019).

Organization complexity: The major obstacles that stand out when it comes to changing the value creation processes as part of digital transformation are inertia, resistance as noted by (Vial 2019). Organizational inertia is a prevalent characteristic among mature organizations, wherein they tend to continue their current trajectory without much deviation. Two key aspects associated with inertia are routine rigidity and resource rigidity, as commonly discussed by researchers. Routine rigidity arises when patterns and business processes are challenging to modify, while resource rigidity results from a
reluctance to make new investments. Structural inflexibility is associated with the framework for responding, whereas motivational inflexibility relates to the incentives for response. Inertia is frequently seen when existing resources, skills, and habitual practices obstruct the adoption of ground-breaking technologies like digital solutions. This comes from an inclination to stick to established ways of doing things, and path dependency created by existing routines can hinder the innovative potential offered by digital technologies. During digital transformation, inertia is a notable barrier. While having the backing of top management can be helpful in rolling out new technologies and transformation initiatives, research indicates that the ingrained structural elements of an organization, both tangible and intangible, serve as the primary contributors to inertia. These elements are deeply embedded in daily operations and procedures, acting as substantial roadblocks to fully exploiting the advantages of digital technologies (Vial 2019).

**Resistance to change:** Resistance from employees is another major barrier that can hinder the progress of digital transformation efforts. Such resistance frequently occurs when ground-breaking technologies are rolled out too quickly, or the way in which they are presented and introduced causes discomfort among employees. Innovation fatigue is one potential cause of this resistance, according to researchers. To minimize the risk of resistance, CDOs and CIOs can play a crucial role in ensuring the usage and leverage of digital technologies and ensuring that their implementations align with the organizational culture. Considering these factors may increase the likelihood of employees accepting and adjusting to the new technologies (Singh and Hess 2017). But there is uncertainty around the effectiveness of these resistance-minimizing measures. It is proposed that resistance arises from inertia, a force deeply embedded in daily routines and practices. This inertia can't be overcome merely by modifying employee conduct or regulating the speed at which new technology is introduced. Researchers argue that a radical alteration of existing processes is required to achieve the flexibility needed to adapt to necessary changes, thereby overcoming resistance. Additionally, the absence of a long-term vision and clear understanding of the potential gains, advantages, and efficiencies that can be achieved through digital technologies can also contribute to resistance (Svahn, Mathiassen, and Lindgren 2017). Having workshops to improve organizational engagement could mitigate resistance. Participants in these sessions gain clearer insights into the processes, merits, and advantages of digital transformation, while also fostering improved collaboration across different functions (Vial 2019).

**Digital skills of employees:** Despite the common perception that resistance to change is a significant challenge in digital transformation, particularly in the public sector (Vial 2019). The research from (Bousdekis and Kardaras 2020) showed that there is a high level of acceptance of the disruption brought about by the adoption of digital technologies and integrated information systems. This finding indicates a strong potential for successfully transforming conventional municipalities into digital ones (Bousdekis and Kardaras 2020). The adoption of new technologies in the public sector faces various obstacles,
including a lack of relevant training and education. The daily routines and habits of individuals within bureaucratic cultures prioritize safety and conformity, making it difficult to modify working habits without causing anxiety and discomfort (Andriole 2017). As a result, employees are generally hesitant to adopt new ways of understanding their work. Public sector organizations are compelled to engage in digital transformation projects due to internal pressures, leading them to focus on changing the bureaucratic culture and organization to better deliver public services (Assar and Hafsi 2019). Public administrations are aware of the need to adapt to new demands and technologies, and digital skills adoption should be a core aspect of a strategic digital culture. This requires systematically defining education courses for employees based on their directorate, background, and job function. There is a need for further training in the actual use of information systems, which can be provided by technology suppliers. The directorate of Informatics can also play a central role in this process (Bousdekis and Kardaras 2020).

Table 1: Structural barriers in digital transformation from the research literature.

<table>
<thead>
<tr>
<th>Structural barriers</th>
<th>Barrier definition</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of managerial support</td>
<td>“The leader shall be able to put into action proper change management activities, such as to instil the urgency and need of changing the status quo, addressing short-term and long-term goals, and involving all employees by promoting participation.” - (Tangi et al., 2021, p. 8)</td>
<td>(Tangi et al. 2021), (Ashaye and Irani 2019)</td>
</tr>
<tr>
<td>Lack of political support</td>
<td>“Strong political support from the project group, with good understanding and support from the executive agency, are vital during the initiation stage.” - (Ashaye &amp; Irani, 2019, p. 264)</td>
<td>(Ashaye and Irani 2019)</td>
</tr>
<tr>
<td>Digital skills of employees</td>
<td>“Adoption of digital skills should be a core aspect of a strategic digital culture in order to systematically define education courses for the employees according to their directorate, background, and job function.” - (Bousdekis &amp; Kardaras, 2020, p. 138)</td>
<td>(Bousdekis and Kardaras 2020)</td>
</tr>
<tr>
<td>Organizational complexity</td>
<td>“Digital transformation is the profound and accelerating</td>
<td>(Vial 2019)</td>
</tr>
</tbody>
</table>
transformation of business activities, processes, competencies, and models to fully leverage the changes and opportunities brought by digital technologies and their impact across society in a strategic and prioritized way.” - (Vial, 2019, p. 120)

Lack of coordination among the departments

“Digital transformation highlights the impact of IT on organizational structure, routines, information flow, and organizational capabilities to accommodate and adapt to IT.” - (Vial, 2019, p. 121)

(Vial 2019)

Table 2: Cultural barriers in digital transformation from the research literature.

<table>
<thead>
<tr>
<th>Cultural barriers</th>
<th>Barrier definition</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to change</td>
<td>“When employees perceive that digital transformation could threaten their jobs, they may consciously or unconsciously resist the changes.” - (Tabrizi et al., 2019, p. 4)</td>
<td>(Svahn, Mathiassen, and Lindgren 2017), (Tabrizi et al. 2019)</td>
</tr>
<tr>
<td>Bureaucratic culture</td>
<td>“The daily routines and habits of those who live within a bureaucratic culture led to safety and conformity, and therefore the modification of these working habits will result in anxiety and discomfort” - (Bousdekis &amp; Kardaras, 2020, p. 138)</td>
<td>(Bousdekis and Kardaras 2020)</td>
</tr>
<tr>
<td>Fear of innovation</td>
<td>“Inertia is relevant where existing resources and capabilities can act as barriers to disruption, highlighting the relevance of path dependence as a constraining force for innovation through digital technologies” - (Vial, 2019, p. 129)</td>
<td>(Svahn, Mathiassen, and Lindgren 2017), (Vial 2019)</td>
</tr>
</tbody>
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3. Research Methodology

3.1. Choice of Research Method

3.1.1. Research Strategy

As stated by Johannesson & Perjons, (2014, p. 39) “A research strategy is an overall plan for conducting a research study”. Based on previous literature review, but also by examining the research problem, we tried to identify which strategy will be more appropriate for our research. Three main key concepts are to be considered in the decision of a research strategy, and these are regarding the suitability, feasibility, and ethical aspect of the strategy (Denscombe 2010). Our strategy of choice should be suitable, meaning it will help us find the answer to the main research question that we have identified. It must be also feasible from a practical standpoint (Johannesson and Perjons 2014). Since the area of interest are Swedish municipalities, our strategy should assist us with the process of obtaining and analysing the required data. From the ethical point of view, our strategy must be executed in a responsible way, “this means that no one should suffer harm as a consequence of the research study, neither humans, nor animals, nor the environment” (Johannesson & Perjons, 2014, p. 40). To determine the most appropriate research strategy for our study, we thoroughly evaluated our research problem and reviewed relevant literature.

In a study published by Jakob & Krcmar, (2018) we can identify patterns like those of our research. In their case, their study aimed to obtain knowledge, about the infrastructure of the IT departments of municipalities in the country of Germany. More precise to assess the feasibility of implementing new legal regulations and potential future changes, they examined the robustness of IT infrastructure and organizational capacity in small and medium-sized municipalities (Jakob & Krcmar, 2018). Based on Denscombe's approach, this strategy is like a case study. It tries to see how different things relate to each other in a specific social situation. (Denscombe, 2010).

A similar approach around digital technologies in municipalities of Sweden, is conducted by (Lindgren et al., 2021), where their research strategy is a qualitative and interpretive case study set in one of the larger municipalities in Sweden with approximately 160,000 citizens. The goal of this research project, which runs from 2020 to 2022, was to map current developments and use of digital technologies for implementing automated case handling in local government. Our approach differs from this one, as we try to investigate the digital transformation in multiple municipalities and based on the perspective of the managers and not the stakeholders.

Through our analysis of previous research and considering the specific context of Swedish municipalities, we determined that a survey research strategy would be most appropriate to achieve our research objectives. This approach is highly suitable for exploring and analysing the barriers
presented in the process of digital transformation in the public sector. As noted by Denscombe (2010), surveys are useful when the researcher wants to assess certain aspects of a social phenomenon or trend and collect information to validate a hypothesis Denscombe (2010). Our objective is to gain a comprehensive understanding of the intricate connection between the established goals and the barriers encountered throughout the digital transformation, necessitating a thorough investigation of the procedures and interconnections within the context.

Conversely, a case study approach, while insightful, would limit our analysis to a single municipality, thereby potentially overlooking important variations and commonalities in the digital transformation across different municipalities. Furthermore, as our focus is on the managers' perspective rather than the stakeholders', a case study approach, which typically involves a thorough investigation of all relevant perspectives, might not be as suitable.

According to Denscombe (2010), surveys are a viable research strategy as they can be used to measure certain aspects of a social phenomenon or trend and to gather facts for theory testing. However, when deciding on the most appropriate strategy for a research project, it is important to consider whether it is suitable, feasible, and ethical, as mentioned before.

Our research problem and objectives led us to choose a survey research strategy. While a case study approach offers valuable in-depth analysis of a single instance, our research question aims to uncover the primary structural and cultural barriers in digital transformation across multiple Swedish municipalities. By employing a survey strategy, we can gather data from various municipalities, thereby providing a broader and more representative view of the digital transformation in the public sector. This approach aligns well with our objective to identify commonalities and differences in the barriers faced by these municipalities. A survey research strategy will provide us with the necessary scope and depth to address our research question effectively and comprehensively, while allowing for the comparison and contrast necessary to reveal common DT barriers and potential solutions.

3.1.2. Data collection
When selecting our data collection approach, our initial step was to determine the most suitable type of data to gather. Given the crucial involvement of personnel in the digital transformation, it was evident that our research would necessitate an analysis of various types of data beyond numerical figures. Consequently, we concluded that collecting qualitative data would be more appropriate for our study. Given our research question and problem, the semi structured interview research method is more suitable than the other methods. According to Denscombe (2010), a semi-structured interview is a type of interview in which the interviewer has a clear plan of the topics to be addressed and the questions to be asked but is also flexible in the order in which these topics are discussed. The key characteristic of this approach is that it encourages the interviewee to expand on their thoughts, allowing them to speak more extensively about the issues raised. This provides room for in-depth and open-ended responses,
emphasizing the interviewee's perspective and experiences, rather than strictly following a rigid question and answer format. Our focus is on understanding the specific challenges of digitalization in municipalities in Sweden, and the insights we seek are related to the opinions, feelings, experiences, and perceptions of the personnel involved in the digital transformation. To supplement semi structured interviews as our primary research method for data collection, we will analyse documents from related studies by other researchers, ensuring we have a comprehensive secondary data source to triangulate our initial results.

In the case of understanding municipalities in the region of Germany, an interview-based research method was conducted, to gather data and information, regarding the specific challenges of digitalization in small and medium-sized municipalities. “To develop an understanding of what the specific challenges regarding digitalization in small and medium-sized municipalities in a federal system are, we conducted a series of 12 expert interviews across municipalities of different sizes in one German territorial state” (Jakob & Krcmar, 2018, p. 1). The participant group may seem small, however as stated by the authors, this was a result of a low response rate from the municipalities. The number of municipalities that were contacted was only 22, as this number was a result of the regular distribution of all 2,056 municipalities within the Bavarian countries. Taking this into consideration, in our case we should aim to contact a higher number of municipalities in Sweden.

An article that uses a similar way for data collection, by (Guinan, Parise, and Langowitz 2019), describes the findings from a multilevel study of the IT function of 60 companies, including fieldwork at five company sites involving more than 130 semi structured interviews with senior level IT professionals. They have identified four essential team-based levers that enable digital transformation. Those are diverse and targeted team composition, iterative goal setting, continuous learning, and talent management (Guinan, Parise, and Langowitz 2019). A similar method can be used to identify the most influential factors determining the success of the digital transformation in a municipality. As Denscombe (2010) notes, interviews are a more suitable method when such insights are needed and are more effective for gathering complex and sensitive information than questionnaires are (Johannesson and Perjons 2014).

While semi-structured interviews have been chosen as our primary method of data collection, we acknowledge the potential value of alternative approaches in enriching our understanding of the digital transformation challenges in Swedish municipalities. One such approach is the unstructured interview. Unstructured interviews, as described by Denscombe (2010), place a significant emphasis on the interviewee's thoughts. The researcher merely introduces a theme or topic and then allows the interviewee to develop their ideas and pursue their train of thought. What they share, and what differentiates them from structured interviews, is their willingness to let interviewees use their own words and develop their own thoughts. Allowing interviewees to ‘speak their minds’ is a better way of
discovering things about complex issues, and generally, semi-structured and unstructured interviews have as their aim ‘discovery’ rather than ‘checking’ (Denscombe 2010). Another research done in Swedish municipalities investigates how professionals in city elder care feel about using welfare technology. The study performed by Baudin et al. (2020), addressed the demographic challenge that Swedish municipalities face, because of the rising number of elderly individuals and the growing demand for health care services. For this exploratory cross-sectional study, 393 responses from an online survey about city elder care in Sweden were gathered (Baudin, Gustafsson, and Frennert 2020).

In conclusion, while the unstructured interview and web-based survey methods offer distinct advantages, our research question and problem are best suited to a semi-structured interview approach. This approach allows for the flexibility of unstructured interviews while maintaining a level of structure that ensures we cover all relevant topics. It also allows for a depth of understanding that is not achievable through web-based surveys. This approach will best facilitate our aim of understanding the specific challenges of digitalization in municipalities in Sweden from the perspectives of the personnel involved.

3.1.3. Sampling Method

Sampling is a fundamental concept in social research, allowing researchers to get accurate results without needing answers from everyone in the group they're studying. According to Denscombe (2010), there are two primary types of samples in social research: representative samples and exploratory samples. Representative samples accurately reflect the population being studied, while exploratory samples are utilized for probing relatively unexplored topics and generating insights and information. In our research, we determined that an exploratory sample would be more appropriate, as our goal was to better understand the barriers presented in the digital transformation of municipalities in Sweden through interviews and the collection of quantitative data.

Cluster sampling is an alternative technique employed in social research, particularly when resources are limited. It involves selecting pre-existing, naturally occurring groups or clusters that reflect the heterogeneity of the total population, rather than individual units (Denscombe 2010). By concentrating on these clusters, researchers can save time and money while still adhering to the principles of random selection and probability, making cluster sampling a valuable approach for market researchers and others working with constrained budgets.

A total of 290 municipalities within this group were initially contacted using the email addresses provided on their official websites. Of these, 14 municipalities responded positively to our proposal. This response rate presents a potential risk of non-response bias, as there is a chance that the municipalities that chose to participate are in some way different from those who did not. For instance, the participating municipalities might be those that are more advanced or more committed to their digital transformation, which could tilt our findings.
To mitigate this risk as much as possible, we tried to reach out to a diverse range of municipalities, in terms of size, location, and digital transformation progress. However, we acknowledge that the non-response bias could still be present and have tried to account for this in our data analysis and interpretation. We selected municipalities that were easily accessible and focused our selection on municipalities that we knew were actively engaged in digital transformation initiatives. This ensured that our sample was both practical to gather and relevant to our research objectives.

We identified potential respondents within these municipalities by requesting interviews specifically with managers or other key personnel who were directly involved in managing or developing the digital transformation initiatives. This targeted selection aimed to ensure that our respondents had relevant knowledge and experience in digital transformation, thus enhancing the quality of our data. We conducted interviews with representatives from each of these municipalities, which provided us with valuable insights into the barriers faced during the digital transformation.

3.1.4. Data Analysis

Following a thorough literature review of comparable studies such as from Jakob & Krcmar (2018) and Wipulanusat et al. (2019), exploring the barriers in digital transformation in municipalities, we concluded that a qualitative data analysis method would be the most appropriate for our research. As Denscombe (2010) notes, the analysis of qualitative data varies depending on the type of data being used and the research objectives. Consequently, there is no single approach to the analysis of qualitative data that can be universally applied to all situations. Our decision was also based on our data collection method, which involves conducting interviews with managers who have pertinent experience in the digital transformation.

The study conducted by Jakob & Krcmar (2018), focused on analysing German municipalities to gain insight into their strategic and technical capabilities, as well as their opinions on what measures could promote their further development. To achieve this, the researchers conducted interviews with participants, and subsequently transcribed and analysed the resulting texts using a qualitative content analysis method. The study provided valuable insights into the perceptions and needs of the municipalities, which can guide policymakers and stakeholders in developing effective strategies for promoting digital transformation. A similar approach was conducted by Wipulanusat et al. (2019), in which the aim of their research was to identify common themes in archival records related to innovation in the Australian Public Service. A thematic analysis was conducted on transcripts from senior manager presentations. “Having conducted a comprehensive thematic analysis, this study has identified how senior managers view innovation in the Australian Public Service from different standpoints” (Wipulanusat et al., 2019, p. 19).
Based on their results but also from relevant research on thematic analysis provided by Braun & Clarke (2006), we concluded in the use of a thematic analysis method. “Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 6). We have followed the framework of steps provided by Braun & Clarke (2006), in which six steps are indicated to be performed. These are:

**Phase 1:** Familiarizing yourself with your data. The first phase involves becoming familiar with the data by reading through the entire data set at least once to shape our ideas and identify potential patterns.

**Phase 2:** Generating initial codes. In the second phase, we generated initial codes that highlighted interesting features or content within the data.

**Phase 3:** Searching for themes. In the third phase, we searched for themes by sorting the codes into potential themes and collating all relevant data extracts within each identified theme.

**Phase 4:** Reviewing themes. The fourth phase involved reviewing the themes to determine if any needed further refinement or if some were not well-supported by the data.

**Phase 5:** Defining and naming themes. In the fifth phase, we defined and named the themes, refining their essence and determining what aspect of the data each theme captured.

**Phase 6:** Producing the report. Finally, in the sixth phase, we produced a report that told the story of our data analysis and convincingly demonstrated the merit and validity of our findings.

It is important to state that qualitative analysis guidelines are not rules, following the basic steps and framework, will need to be applied with flexibility to fit the research questions and data (Braun and Clarke 2006). Having that in mind, we have followed the framework provided but small changes have been implemented where it was necessary.

It is important to note that qualitative analysis guidelines are not set in stone, and while following the basic steps and framework is necessary, some flexibility is required to ensure that they are applicable to the research questions and data at hand (Braun & Clarke, 2006). With this in mind, we have utilized the provided framework but also made small modifications where necessary to better suit our specific research needs.

Denscombe's (2010) highlights the fact that there is no single approach to qualitative data analysis. The iterative analysis approach, where data collection and analysis occur simultaneously, is a potential alternative for our research goal of identifying digital transformation barriers in Swedish municipalities. This approach can be particularly useful in exploratory research where the research question may evolve as data is collected (Denscombe 2010). However, iterative analysis can also be time consuming and
resource intensive as it requires ongoing data collection and analysis. Thematic analysis remains a more feasible approach for our research question as it allows us to systematically identify and analyse patterns within the data related to our specific research objective. Additionally, thematic analysis provides a structured and repeatable framework (Braun and Clarke 2006), that allows us to compare findings across different data sources and participants, ensuring the reliability of our results.

3.2. Application of Method

3.2.1. Application of Research strategy

In the context of the municipalities in Sweden, our research has identified that each municipality is at a distinct stage in their digital transformation journey. Most of these municipalities are in their promising phases of implementing digital transformation strategies, while a select few have successfully executed a comprehensive implementation of new digital tools. The differences in the pace and functionality of digital transformation among municipalities can be attributed to their autonomous nature. This independence reveals itself in various aspects, such as budget allocation, personnel numbers, and long-term objectives. Consequently, each municipality must adapt to the unique challenges they encounter.

We contacted a total of 290 municipalities to capture a fair representation of the diversity characteristic in these public organizations. Our response sample included municipalities of different sizes, from small rural municipalities to larger urban centers, each with differing levels of experience in digital transformation projects. The primary criteria for selection were the presence of ongoing or completed digital transformation projects within these municipalities.

To achieve this, we employed a specific approach in our initial communication with the municipalities. In our email approach, we explicitly stated our interest in municipalities actively engaged in digital transformation projects, and we requested to connect with the representative manager overseeing these projects. This approach ensured that our selected sample comprised municipalities that had a tangible level of experience in implementing digital transformation, making their insights significantly valuable for our research.

To address our research objective, we precisely crafted our research questions and conducted our interviews in a manner that neither directly targeted the specific issues faced by a municipality nor was too generic to detract from the overall aim of our research. Furthermore, our employment of open-ended questions facilitated an environment in which interviewees from the municipalities could freely and uninhibitedly express the challenges they confront in their respective jurisdictions. This approach ensured that no bias was introduced or perpetuated during the interview process. The resulting data,
thus, provides a comprehensive and objective understanding of the digital transformation journey experienced by municipalities in Sweden.

### 3.2.2. Application of the Data Collection

The data collection process employed in this study was primarily interview-based, utilizing an exploratory sample method for selecting participants. The participating municipalities were of different size, based on the total population ranking in Sweden, to ensure a fair representation. These municipalities were contacted via email, which was obtained from their official contact pages. The email presented the thesis topic and the research problem under investigation. It also requested an anonymous interview with the digital transformation responsible manager from each municipality. The interview’s objective was to better understand the barriers faced by these organizations during their digital transformation.

The primary data collection method was through structured interviews. This choice was informed by the focus on the first-hand experiences and insights of the digital transformation responsible managers, which were considered sufficiently representative and comprehensive for the purpose of this research. The interview method encompassed a set of 16 questions, designed to analyse and cross-validate the barriers identified during the literature review, as well as uncover potential new barriers in the digital transformation. These questions were carefully crafted to avoid introducing bias and to ensure that the interviewees’ opinions and beliefs were accurately captured. Data was sourced from internal documents, encompassing workshops and reflections of the investigated municipalities. Additionally, the literature “Offentlig sektors digitalisering,” commonly used by various municipalities as a handbook was checked. This method ensured data triangulation through diverse information sources.

Data collection took place over spring of 2023, with most interviews lasting approximately 60 minutes. All interviews were conducted in a consistent manner, recorded, and subsequently transcribed from audio to text format. The participants were informed and consented to the recording of the interviews. The concept of data saturation was a key consideration in this process. Data saturation, also known as theoretical saturation, as mentioned by Denscombe (2010), was considered achieved when additional interviews did not present new insights or barriers in the digital transformation. This occurred after approximately seven completed interviews, stating that a comprehensive understanding of the topic had been reached. We wanted to investigate further, even after reaching saturation. Our goal was to identify if there were any additional themes and explore variations across different sizes of municipalities. We extended our interviews to get a broader range of municipal sizes.

This process facilitated a comprehensive analysis of the data collected. To maintain the anonymity of the participants and to preserve the integrity of the research, in Table 3 are presented the participants’
positions, interview dates, and durations is included in the end of this section, without however mentioning the specific municipality that was being interviewed.

Table 3: Interview information

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Interviewee Position</th>
<th>Date</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality #1</td>
<td>IT and Digitalization Manager</td>
<td>24 April 2023</td>
<td>72 minutes</td>
</tr>
<tr>
<td>Municipality #2</td>
<td>Digitalization Leader</td>
<td>26 April 2023</td>
<td>64 minutes</td>
</tr>
<tr>
<td>Municipality #3</td>
<td>Enterprise Architect</td>
<td>02 May 2023</td>
<td>60 minutes</td>
</tr>
<tr>
<td>Municipality #4</td>
<td>Digital Strategy Specialist</td>
<td>02 May 2023</td>
<td>53 minutes</td>
</tr>
<tr>
<td>Municipality #5</td>
<td>Digitalization Leader</td>
<td>03 May 2023</td>
<td>58 minutes</td>
</tr>
<tr>
<td>Municipality #6</td>
<td>Business Architect</td>
<td>03 May 2023</td>
<td>65 minutes</td>
</tr>
<tr>
<td>Municipality #7</td>
<td>Digital Transformation Leader</td>
<td>03 May 2023</td>
<td>56 minutes</td>
</tr>
<tr>
<td>Municipality #8</td>
<td>IT Manager</td>
<td>05 May 2023</td>
<td>41 minutes</td>
</tr>
<tr>
<td>Municipality #9</td>
<td>Digitalization strategist</td>
<td>09 May 2023</td>
<td>43 minutes</td>
</tr>
<tr>
<td>Municipality #10</td>
<td>IT Manager</td>
<td>10 May 2023</td>
<td>50 minutes</td>
</tr>
<tr>
<td>Municipality #11</td>
<td>Digital Strategy Specialist</td>
<td>10 May 2023</td>
<td>57 minutes</td>
</tr>
<tr>
<td>Municipality #12</td>
<td>Innovation and Development Manager</td>
<td>11 May 2023</td>
<td>62 minutes</td>
</tr>
<tr>
<td>Municipality #13</td>
<td>Head of IT Development</td>
<td>12 May 2023</td>
<td>49 minutes</td>
</tr>
<tr>
<td>Municipality #14</td>
<td>IT Project Manager</td>
<td>19 May 2023</td>
<td>55 minutes</td>
</tr>
</tbody>
</table>
3.2.3. Application of the Data Analysis

Given the qualitative nature of our data and the research objectives, we employed a thematic analysis method to analyse the data collected from the interviews. Thematic analysis, as defined by Braun & Clarke (2006), is a method for identifying, analysing, and reporting patterns or themes within data. The use of thematic analysis in our study is well-supported by similar research conducted by Jakob & Krcmar (2018) and Wipulanusat et al. (2019). In line with the framework provided by Braun & Clarke (2006), we followed the six steps detailed in a previous section to perform our thematic analysis. An example of thematic analysis is the following. Suppose we identified a segment in one interview transcript where a participant mentioned difficulties in obtaining sufficient budget allocation for their digital transformation initiatives. We would assign an initial code to this segment, such as "budget constraints." While analysing other transcripts, we might encounter similar statements or concerns about budget limitations. We would then continue to assign the same "budget constraints" code to these segments. Upon completion of the coding process, we would begin searching for themes. We might identify a broader theme of "financial barriers" that involves not only budget constraints but also other financial-related challenges, such as return on investment concerns or funding allocation issues. Once all themes have been identified, we would review them to ensure they are well-supported by the data and refine them as necessary. For example, we might decide to split "financial barriers" into two separate themes: "budget constraints" and "investment concerns," if we found distinct differences in the data. It is crucial to mention that the themes we selected were also influenced by our previous literature analysis. Finally, we would define and name the themes, ensuring that they accurately capture the core of the data segments they represent, and produce a report detailing our analysis and findings. By employing thematic analysis, we were able to systematically identify and analyse patterns within the data related to barriers faced by Swedish municipalities during their digital transformation. Table 4 illustrates examples on data using thematic analysis. This structured approach allowed us to compare findings across different data sources and participants, ensuring the reliability and validity of our results.

Table 4: Data analysis illustration.

<table>
<thead>
<tr>
<th>Interview</th>
<th>Sub-theme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>“In some cases, as a manager you don't really have knowledge about the process and the ways of working when you work with change management in a structured way. But then also maybe not really knowing or being sure about what's in your area of mandate. Kind of as a manager, your responsibilities appear to lack of managerial support”</td>
<td>Lack of managerial support</td>
<td>Structural barriers</td>
</tr>
</tbody>
</table>
“Of course, there is always some resistance to change from worrying about their own competence, lack of understanding the goal and lack of interest. And you’re used to the processes you’re already in, the way you work today can be very hard to see anything else. We’re not used to think about the developing our processes, our ways to work.” – Municipality #4

<table>
<thead>
<tr>
<th>Resistance to change</th>
<th>Culture barriers</th>
</tr>
</thead>
</table>

3.2.4. Ethical Considerations

Qualitative research necessitates a critical consideration of ethical issues, which should be considered at the beginning of the study. As the research is focused on social subjects and the data collection is performed by interviews, it is crucial for researchers to maintain a good relationship with the participants, and ethical considerations must be upheld to prevent violating the interests of the participants. Denscombe (2010) outlined four main standards for social research: prioritize the well-being and rights of the participants, ensure participants are informed and join freely, avoid deception, and conduct research honestly while adhering to legal guidelines. To ensure ethical standards during the data collection process for this study, we considered all the principles stated by Denscombe (2010). The protection and anonymity of data collected from the selected participants was ensured when contacting and interviewing the personnel involved in the municipalities. The respondents were informed before the interview, but also through informed consent (Appendix A – Consent Form) in which they had to read, understand, and verbally agreed on, at the beginning of the recorded interview. The research aims that their participation is voluntary and that they have the freedom to answer the questions posed to them. To avoid any interruptions, we maintained scientific integrity to our questions, communication, and behaviour during conversations with the participants, who are aware of the research scope and research aim. Additionally, we as researchers considered and followed all the regulations posed by Stockholm University. Since the research is conducted only in Swedish municipalities, Swedish laws and regulations were also taken into consideration.
4. Results

4.1. Thematic map

This chapter outlines the findings of a thematic analysis conducted on data collected from interviews with 14 Swedish municipalities. The analysis focused on identifying barriers in digital transformation within these municipalities and categorized them into two main contexts: organizational barriers and cultural barriers. During the study, multiple barriers were identified that influence the successful implementation of digital transformation in Swedish municipalities. The thematic analysis revealed a total of 19 sub-themes, which were further divided into two thematic areas: organizational barriers (8 sub-themes) and cultural barriers (11 sub-themes).


Figure 1 provides a visual representation of the thematic analysis, mapping out the identified barriers in digital transformation for Swedish municipalities. Interestingly, eight of the sub-themes were found to align with themes previously known from extended background research, while eleven were recognized as new sub-themes. The following chapters will present a detailed exploration of all the sub-themes, providing a comprehensive understanding of the barriers in digital transformation within the context of Swedish municipalities.

Figure 1: Thematic map with themes, sub themes and new sub themes identified concerning barriers in DT in Swedish municipalities.
4.2. Structural barriers in digital transformation

In the subsequent section, we will present the results of our thematic analysis. This includes the newly identified DT barriers and those previously recognized and reaffirmed from existing literature.

4.2.1. Lack of managerial support

Managerial support is a vital component in the success of digital transformation, as identified in both our analysis and previous literature (Tangi et al. 2021), (Ashaye and Irani 2019). This barrier, found in our study, highlights the challenges faced due to unclear leadership and lack of commitment. The following quotes from the interviews illustrate the various aspects of this barrier:

"Sometimes the responsibilities of a manager are a bit unclear." Interviewee 5

“Digital transformation in different forms in our municipality is very interest based on what managers like pursuing, the result of the projects often reflects that.” Interviewee 8

“Today, top management and the HR unit are conspicuous by their absence when it comes to digital transformation. Also need to ensure that the digitization issues do not become their own ‘magical’ track or culvert which is something that must be done in order not to appear old-fashioned or lagging.” Interviewee 11

“Lack of support from managers due to ignorance, being poorly educated, non-commitment due to poor prioritization, resource inefficiency, communication and information problems, sometimes outdated hierarchical thinking and no flat organization.” Interviewee 3

"It is very important that the management knows the importance of the work, and sometimes we are missing that." Interviewee 5

"In our municipality many management teams say that they don't take any decisions in those groups, it's not our role.” Interviewee 7

These insights emphasize the ongoing struggle with managerial support in the digital transformation within Swedish municipalities, underscoring the need for clear direction and engagement from leadership.

4.2.2. Lack of direction

One of the new DT barriers identified in our study, and closely related to the previously discussed "Lack of Managerial Support", is the lack of clear direction in the digital transformation within Swedish municipalities. Both DT barriers fall within the same thematic area, as represented in Figure 1, and are on the same level, reflecting their interconnectedness in influencing digital transformation. The lack of direction emphasizes the challenges faced when there is no clear strategy, end goal, or planning, leading
to confusion, miscommunication, and ineffective implementation. The following quotes from the interviews illustrate this barrier:

"We lack the purpose of the strategy, the end goal and the planning." Interviewee 10

"It is not clear enough how the guidelines are supposed to get used." Interviewee 10

"On a high level they have many areas to discuss, and digital transformation is only one area." Interviewee 6

"Communication is lacking when the goals are not clearly set." Interviewee 12

"The person who initiated this is not working here anymore, so people think we shouldn't dig deeper there." Interviewee 9

"It's a barrier when we start a project not in the right way, when it's not anchored correctly, and this sometimes happens." Interviewee 9

"We need a common direction when it comes to this area, we need to do it in a wise way." Interviewee 14

These insights highlight the critical need for clear direction and strategic alignment, emphasizing the importance of well-defined goals and cohesive planning. The connection between the lack of direction and lack of managerial support underscores the complexity of these barriers and their collective impact on the successful implementation of digital initiatives within Swedish municipalities.

### 4.2.3. Lack of political support

Political support plays a crucial role in the successful execution of digital transformation initiatives, especially in public sector contexts like municipalities. As identified in both our study and previous literature (Ashaye and Irani 2019), the absence of political backing can lead to challenges in securing necessary resources, aligning strategic goals, and ensuring the successful implementation of digital projects. The following quotes from our interviews with Swedish municipalities helps us understand better how this barrier is identified:

"We can’t really talk to our politicians about the cost of IT, they are shocked to learn that a big digital project costs a lot." Interviewee 2

“There is a lack of powerful structures where politicians collaborate with those who drive digitization issues. I think they wish to know more and learn more, but meeting structures etc. do not meet the need. Follow-up and evaluation of digitization measures are also not continuously communicated to politicians.” Interviewee 11

“There is a lack of proper knowledge both among managers and politicians, which means that demand and follow-up do not come automatically but must be lifted by driven development leaders and strategists.” Interviewee 3
These insights underscore the importance of bridging the knowledge gap and promoting collaboration between political leaders and digital transformation drivers. The lack of political support can hinder the momentum of digital initiatives, underscoring the need for informed and engaged political leadership in the digital transformation journey of Swedish municipalities.

4.2.4. Lack of capital
A newly identified barrier in our study, which aligns closely with the previously discussed "Lack of Political Support", is the "Lack of Capital" for digital transformation initiatives within Swedish municipalities. Both DT barriers fall within the same thematic area, as represented in Figure 1, and their interconnectedness emphasizes the challenges municipalities face in securing both political and financial support for their digital endeavours. The lack of capital underscores the difficulties municipalities encounter when trying to allocate funds for research, IT infrastructure, and other essential components of digital transformation. The following quotes from our interviews provide a deeper understanding of this barrier:

"We need to invest in research, but we don’t have the money to invest." Interviewee 4

"They didn’t put aside resources after agreeing on the guidelines, there was a lack of money." Interviewee 4

"We do not have control over the cost of IT and systems in the municipality as a whole." Interviewee 2

“The possibility of research grants is more difficult to get in a smaller municipality.” Interviewee 4

These insights highlight the critical need for adequate funding and resource allocation in the digital transformation. Without the necessary capital, even the most well-intentioned digital initiatives can face significant roadblocks, emphasizing the importance of financial planning and support in the successful digital transformation of Swedish municipalities.

4.2.5. Digital skills of employees
This is a barrier that is also identified in previous literature (Bousdekis and Kardaras 2020). All the interview respondents mention the lack of digital skills of employees for moving forward in digital transformation initiatives. The underlining tone where that municipalities doesn’t have the knowledge, skill, or expertise in digital transformation.

"We are lacking competence and even if we want, we can’t transition too digital." Interviewee 13

Due to lacking competence, municipalities are overdependent on external resources and consultants that are needed to move forward with their initiatives, this approach results in inefficiency allocating resources and can impede the digital transformation efforts by limiting the organization’s ability to develop inhouse solutions and innovate on their own.
There is a lack of organization for how we make use of our competence and experience within the municipality. We are very quick to buy in external actors even when we sometimes possess the knowledge ourselves.” Interviewee 13

Other insights that were recurring was lack of skill sharing within the municipality so the competence in a project or a department gets passed on to other employees or departments. That implies that most of the municipalities don’t have a well-defined structure or strategy to harness its internal expertise.

4.2.6. Digital transformation thinking

A newly identified barrier in our study, closely related to the "Digital Skills of Employees", is the "Digital Transformation Thinking" within Swedish municipalities. Both DT barriers fall within the same thematic area, emphasizing the challenges public organizations face in not only equipping employees with digital skills but also in fostering a mindset that embraces and integrates digital transformation into everyday operations. The lack of a cohesive digital transformation mindset can hinder the long-term effectiveness and sustainability of digital initiatives. The following quotes from our interviews provide a deeper understanding of this barrier:

"There is a lack of structure and how digital transformation will have an effect on the long term.” Interviewee 10

"The model for digitization is something of a holy grail that we hope will solve many of the knots that exist today.” Interviewee 1

"Yes, there is a lack of an organization that integrates digitization work and digitization issues into regular work, in daily work. This means that we often run on digital transformation requests that come in the form of surveys or evaluations from for example our municipal association instead of constantly having digitization thinking in everything that happens.” Interviewee 1

"Some managers lack the necessary knowledge.” Interviewee 8

"There is a lack of knowledge from politicians, it is one subject among many others and sometimes they don’t really know what needs to be done.” Interviewee 12

These insights highlight the importance of cultivating a culture that not only possesses the skills but also the mindset to seamlessly integrate digital transformation into all areas of the municipality. This barrier underscores the need for a holistic approach to digital transformation, where skills and thinking go hand in hand for the successful digital evolution of Swedish municipalities.

4.2.7. Lack of technological familiarity

Emerging as a new barrier in our study and aligning closely with the themes of "Digital Skills of Employees" and "Digital Transformation Thinking" is the "Lack of Technological Familiarity" within Swedish municipalities. This barrier underscores the challenges faced by municipalities in ensuring that
their employees and leaders are not only digitally skilled and possess the right mindset but are also familiar with the specific technologies and tools essential for digital transformation. A deep understanding of technology is crucial for effective decision-making, strategic planning, and successful implementation of digital initiatives. The following quotes from our interviews present the various forms of this barrier:

"You can digitalize for the masses, but you have to stay analog for some." Interviewee 6

"We are lacking the maturity to discuss technical and strategical questions and issues." Interviewee 14

"They don't have the deep knowledge about the question that we want to solve, sometimes it's too complex." Interviewee 7

"I think the project and the idea should be communicated much more times." Interviewee 12

"There is a lack of knowledge in this area, from the politicians all the way down." Interviewee 12

"A lot of managers don't have the tools or the knowledge to better communicate with their team."

Interviewee 5

These insights emphasize the importance of fostering technological familiarity at all levels of the organization. Without a deep understanding of the technologies in play, even the most well-intentioned digital transformation efforts can face significant challenges, highlighting the need for continuous learning and adaptation in the rapidly evolving digital landscape of Swedish municipalities.

### 4.2.8. Organizational complexity

Organizational complexity has been recognized in earlier literature as a significant barrier to the successful implementation of digital transformation initiatives (Vial 2019). The intricate structures, roles, and responsibilities within municipalities can often lead to challenges in decision-making, clarity of purpose, and alignment of digital transformation goals. Especially in smaller municipalities, the overlapping roles and responsibilities can further complicate the digital transformation journey. The following quotes from our interviews provide insights into the challenges posed by organizational complexity:

"We are a very small municipality which makes it difficult in the decision-making when one person has multiple 'hats' and responsibilities that can collide with their personal bias." Interviewee 9

"Sometimes it is not crystal clear, for example, why our department exists." Interviewee 5

These insights underscore the need for clear organizational structures, roles, and responsibilities to ensure the smooth implementation of digital initiatives. Addressing organizational complexity is important for creating an environment favourable to digital transformation, emphasizing the importance of clarity, communication, and alignment within the organizational framework of Swedish municipalities.
4.2.9. Lack of coordination among the departments

Building on the theme of "Organizational Complexity", another well-documented barrier around digital transformation is the "Lack of Coordination Among the Departments" (Vial 2019). Effective digital transformation often requires seamless collaboration and coordination across various departments within an organization. However, in many municipalities, especially those with autonomous departments or divisions, achieving this coordination can be challenging. The absence of a unified approach can lead to fragmented efforts, duplicated work, and missed opportunities for coordination. The following quotes from our interviews reveal the complexities of this barrier:

"The city is divided into 14 different areas and each area is autonomous and there is no governance model that says that they all have to use a specific tool." Interviewee 6

"We both want to reach the same place, but we may have ideas about getting there that are not the same." Interviewee 14

"Only a few used the strategy in their work, it was not fully implemented." Interviewee 10

"There is no centralized direction when it comes to implementing strategies." Interviewee 10

"There are no special decision-making forums and that's one of our challenges, we need to help the organization prioritize." Interviewee 7

“All municipalities have different administrations that look after their special areas. Despite many administrations, we have a flat hierarchy, we have 'open doors in between'. The negative thing about sub-administrations is that 'silos' are created which create difficulties in sharing what we do between the administrations and how the other administrations can take part in digital solutions without it becoming too bureaucratic.” Interviewee 1

“Communication between operations and management as well as communication with policy and follow-up and evaluation should be improved. The business and citizen perspectives need to be made more visible. A joint municipality-wide consensus for educational initiatives etc. is needed.” Interviewee 11

“The biggest is probably that the issues are not raised and reasoned about in an open way and that cooperation between the sectors in the municipality is often lacking. Even the communication plan for how we reason shines with its absence. An attempted solution is to create meeting structures that handle the digitization area in the same way that others handle issues around health and medical care, etc. and that we are then brought together when necessary." Interviewee 11

These insights emphasize the critical need for improved coordination, communication, and collaboration among departments. Addressing this barrier is essential for ensuring that digital transformation efforts are aligned and effective across the entirety of Swedish municipalities.
4.2.10. Lack of synchronization
Emerging from the same thematic area as "Organizational Complexity" and "Lack of Coordination Among the Departments", a newly identified barrier in our study is the "Lack of Synchronization" within Swedish municipalities. This barrier underscores the challenges faced when different departments, teams, or individuals within a municipality are not aligned in their approaches, decisions, or communication regarding digital transformation. The absence of synchronization can lead to confusion, duplicated efforts, and inefficiencies, hindering the smooth progression of digital initiatives. The following quotes from our interviews provide insights into the complexities of this barrier:

"We don't have a central finance model for budget; budget comes really individually." Interviewee 2

"Different people have different answers for our problems, and it makes moving forward quite difficult."
Interviewee 3

"Sometimes we don't really know who has to take the decision regarding the project." Interviewee 7

"Many times, we bypass each other, and confusion is created when someone in management says one thing and then starts development projects that have given different expectations. However, we hope to be able to identify this before it happens now, but communication and information transfer are certainly not easy things.” Interviewee 3

"We need to take many meetings to understand each other due to a lack of communications and information.” Interviewee 12

These insights emphasize the importance of ensuring synchronization at all levels of the organization. Clear communication channels and aligned decision-making processes are important for the successful digital transformation of Swedish municipalities, ensuring that all efforts are coordinated and moving in the same direction.

4.2.11. Lack of research and development
A new barrier we identified in our study is the "Lack of Research and Development" within Swedish municipalities. This barrier points to the challenges municipalities face when trying to explore new trends and technologies. Without proper research and development, it's tough for municipalities to innovate and keep up with the digital age. The following quotes from our interviews shed light on this issue:

"If we are doing something, there has to be a spoken need from all the departments in order to execute it." Interviewee 14

"We cannot work with new trends and technologies because we don't have the resources and the competence; that's a barrier." Interviewee 13
These insights show the importance of investing in research and development. For Swedish municipalities to successfully transform digitally, they need the tools, knowledge, and resources to explore and adopt new technologies.

4.2.12. Lack of employees

A new challenge we've identified in our study is the "Lack of Employees" within Swedish municipalities. This barrier highlights the difficulties municipalities face when they don't have enough staff to carry out digital transformation projects. Without the necessary manpower, even the best digital plans can stall. The following quotes from our interviews give more insight into this challenge:

"One of the small obstacles is lacking headcount most of the times; they can implement only one or two things per year." Interviewee 4

“It is more labour-intensive information logistics in a larger municipality, while the contact routes are shorter in a smaller municipality like ours, but we don’t have the 'muscles' to carry on all the changes we want.” Interviewee 9

"We have the big cities surrounding us, and people with the knowledge go to bigger municipalities to work." Interviewee 9

These comments emphasize the need for adequate staffing. For Swedish municipalities to move forward with their digital goals, they need enough skilled employees on board.

4.3. Cultural barriers in digital transformation

4.3.1. Fear of innovation

Low innovation rate in municipalities has been well known, according not only from the interviews, but also from previous literature (Svahn, Mathiassen, and Lindgren 2017), (Vial 2019), the fear of innovation is a hindering factor in their digital transformation. Multiple interviewees said that the common goal is to work for efficiency and not innovation and that leads to lack of creativity and willingness to explore new approaches.

"If we develop processes, it’s just for efficiency and not for innovation, like how can we do this differently" Interviewee 12

When strategies are strictly focused on efficiency without room for experimentation, it can limit innovation and the potential of finding better solutions.

"Maybe there is a fear of doing things wrong." Interviewee 9

Several interviews expressed that employees are an afraid of making mistakes due to low knowledge in the area and don’t want to take the risk of trying new ideas in case of failure.
“Absolutely! Reference to GDPR and other legal issues can stop most things. Instead of daring to challenge the system, in most cases people choose to lie flat and not proceed with reference to the GDPR.” Interviewee 3

One interviewee highlighted the excessive fear of innovation due to all the legal and compliance regulations. The fear of legal repercussions hinders employees in a municipality to explore new ideas that could lead to positive outcome.

4.3.2. Resistance to change

The barrier of "Resistance to Change" is a well-documented challenge in digital transformation, as highlighted by (Svahn, Mathiassen, and Lindgren 2017) and (Tabrizi et al. 2019). This barrier points to the natural human tendency to resist new methods or technologies, especially when the benefits aren't immediately clear or when there's a lack of understanding. The following quotes from our interviews provide a perspective on this challenge:

"Of course, there is always some resistance to change because of the lack of competence and lack of understanding." Interviewee 5

"Sometimes they don't see the benefit of digitalizing some tools." Interviewee 7

These insights emphasize the importance of education and clear communication when introducing new digital initiatives. Overcoming resistance is key for Swedish municipalities to successfully adopt and benefit from digital transformation.

4.3.3. Lack of engagement

On the same theme as “Resistance to Change”, we have identified a new barrier in our study, the "Lack of Engagement" within Swedish municipalities. This barrier emphasizes the challenges faced when employees and stakeholders aren't actively involved or interested in digital transformation efforts. The following quote from our interviews helps us understand this issue:

"Sometimes it's just a lack of time to learn new things and do things differently." Interviewee 7

"Some people might argue on what's in it for me, while being part of the change." Interviewee 14

“I think that there is a very strong interest in learning a lot about digitization and a desire to be involved in reasoning. Coordination is lacking, however, and it is on the management's agenda to fix it.” Interviewee 11

“We must manage to make sure they understand it and also see the benefits, so they don't feel that it slows their process." Interviewee 8

"The project has not been supported when it's work that does not involve everyone." Interviewee 6
They should understand some parts of our work, so they also feel the ownership of the project.” Interviewee 8

These insights highlight the importance of fostering a sense of ownership and understanding among all involved. Ensuring active engagement is crucial for the successful digital transformation of Swedish municipalities.

4.3.4. Bureaucratic culture

The barrier of "Bureaucratic Culture" has been previously highlighted as a significant challenge in digital transformation by (Bousdekis and Kardaras 2020). This barrier points to the difficulties organizations face when processes and traditional ways of working hinder the adoption of new technologies and methods. The bureaucratic nature of some organizations can slow down the pace of change and innovation. The following quotes from our interviews with Swedish municipalities provide a perspective on this challenge:

"It costs time to learn new technologies and tools." Interviewee 10

"Sometimes you are stuck in the processes you are already in." Interviewee 12

These insights emphasize the need to address bureaucratic practices. For Swedish municipalities to successfully navigate digital transformation, they must confront and adapt their existing cultural norms and processes.

4.3.5. Regulatory Compliance

On the theme of "Bureaucratic Culture," a newly identified barrier in our study is the "Regulatory Compliance" within Swedish municipalities. This barrier underscores the challenges faced by public sector entities, like municipalities, when navigating many laws and regulations before adopting new technologies or actions. Unlike the private sector, which might have more flexibility, public sectors often must ensure compliance with a broader set of regulations, making the process more time-consuming and complex. The following quote from our interviews provides a clear perspective on this challenge:

"In contrast to the private sector, we have to check much more laws before we move to any new actions and technologies." Interviewee 2

This insight emphasizes the importance of understanding and navigating the regulatory landscape. While compliance is crucial, it's also essential for Swedish municipalities to find efficient ways to ensure they meet all legal requirements without slowing innovation and progress.

4.3.6. Negative Public Perception

A newly identified barrier in our study is the "Negative Public Perception" faced by Swedish municipalities. This barrier highlights the challenges municipalities encounter when rapid digital
transformation efforts might convey a sense of insecurity or instability to their citizens. It underscores the importance of balancing the pace of change with the need to maintain public trust. The following quote from our interviews provides insight into this challenge:

"As a municipality, when we are moving too fast, we are not sending a signal of security to our citizens." Interviewee 13

This insight emphasizes the need for municipalities to be mindful of how their digital transformation efforts are perceived by the public. Ensuring that citizens feel informed, involved, and secure in the face of change is crucial for the successful adoption of new digital initiatives.

4.3.7. Digital exclusion

Another newly identified barrier in our study is "Digital Exclusion". This barrier points to the challenges faced by municipalities in ensuring that digital transformation efforts are inclusive and cater to everyone, not just the majority. In the rush to digitalize, there's a risk of leaving behind certain groups or individuals who might not have the same access or familiarity with digital tools. The following quote from our interview’s sheds light on this issue:

"Have to provide for all, not just the masses." Interviewee 7

This comment highlights the importance of inclusivity in digital transformation efforts. For Swedish municipalities to be truly successful in their digital endeavours, they must ensure that no one is left behind, and all citizens have equal access and opportunities in the digital age.
5. Discussion

In this chapter, we delve into the primary findings of our research, comparing them with existing literature to understand the unique challenges faced by Swedish municipalities in their digital transformation journey. Our investigation is guided by the research question: "What are the structural and cultural barriers in digital transformation in Swedish municipalities?". Through this lens, we aim to provide a clear answer by contrasting our findings with prior studies from other researchers such as Tangi et al. (2021), Shaye and Irani (2019), Bousdekis and Kardaras (2020), Vial (2019), Svahn, Mathiassen and Lindgren (2017), Tabrizi et al. (2019) and Benedetti et al. (2020).

Guided by our research question, "What are the structural and cultural barriers in digital transformation in Swedish municipalities?", our study identified 19 distinct DT barriers. These barriers can be categorized into:

**Structural Barriers:** This group consists of 12 barriers, with 5 aligning with prior research which are Lack of Managerial Support, Lack of Political Support, Digital Skills of Employees, Organizational Complexity and Lack of Coordination Among the Departments, while 7 emerging as new findings from our study, which are Digital Transformation Thinking, Lack of Synchronization, Lack of Research and Development, Lack of Capital, Lack of Technological Familiarity, Lack of Direction, and Lack of Employees.

**Cultural Barriers:** Of the 7 barriers in this category, 3 were previously recognized in literature, Fear of Innovation, Resistance to change and Bureaucratic Culture, while 4 were newly identified through our research, consisting of Lack of Engagement, Digital Exclusion, Negative Public Perception, and Regulatory Compliance.

Breaking down these barriers, 11 were newly discovered, and 8 were consistent with existing literature. This combination of persistent and emerging barriers offers a comprehensive overview of the evolving challenges municipalities face in their digital transformation journey. It underscores the intricate landscape of hurdles, both organizational and cultural, that these entities must navigate.

In direct response to our research question, we've identified both structural and cultural barriers faced by Swedish municipalities in their digital transformation efforts. The presence of 8 barriers previously documented and the introduction of 11 new barriers provide a complete view of the challenges, emphasizing the multifaceted nature of both organizational and cultural hurdles. The barriers identified have significant implications for decision-makers within municipalities. Recognizing and addressing these challenges can lead to more informed policy decisions, better resource allocation, and the development of targeted training programs to overcome specific obstacles.
Our research question, while offering a clear direction to explore the barriers in digital transformation, inherently possesses certain limitations that shape our findings. The question is primarily aimed at identifying barriers, which means potential facilitators of digital transformation may not be within its scope. This focus could lead to oversight of positive factors or mechanisms that assist municipalities in their digital transformation journey.

Furthermore, the specificity of our question, encompassing "structural" and "cultural" barriers, may inadvertently exclude other distinct categories or intersections of barriers that are equally important. Additionally, while we aim to identify these barriers, the depth of our exploration doesn't extend to assessing the intensity, frequency, or relative importance of each barrier. Such approach could provide a richer understanding of the challenges faced by municipalities. Recognizing these limitations is essential, not only to identify our findings but also to highlight potential areas for future research to explore further.

The study reaffirms the presence of 8 barriers previously documented in the literature, emphasizing the persistent challenges faced by municipalities in their digital transformation journey. The discovery of 11 new barriers, however, underscores the evolving nature of challenges in the digital age. It's clear that while some barriers remain consistent over time, new barriers emerge as technology and organizational dynamics evolve. As mentioned before, Benedetti et al. (2020) categorized digital transformation obstacles into two primary groups: structural and cultural barriers. Structural barriers relate to the organization's setup and managerial aspects, while cultural barriers are tied to employee behaviours that can obstruct the change process. In our study, we followed Benedetti's framework to investigate these barriers within Swedish municipalities. Our findings identified a total of 19 barriers, with 11 being newly discovered and 8 reaffirmed from prior literature. When comparing our findings with previous research, we observed that:

**Structural Barriers in DT in Swedish municipalities**: Our study identified new structural barriers such as Digital Transformation Thinking, Lack of Synchronization, Lack of Research and Development, Lack of Capital, Lack of Technological Familiarity, Lack of Direction, and Lack of Employees. These barriers add to the previously known structural challenges like inflexible organizational structures, lack of adequate resources, and ineffective managerial practices highlighted by Tangi et al. (2020).

**Cultural Barriers in DT in Swedish municipalities**: In addition to the known cultural barriers like resistance to change and bureaucratic culture, our study unveiled new barriers like Lack of Engagement, Regulatory Compliance, Negative Public Perception and Digital Exclusion. These findings underscore the evolving nature of challenges in the digital age and the multifaceted nature of both organizational and cultural obstacles.
6. Conclusion

This section discusses the challenges faced by Swedish municipalities during digital transitions. It also delves into the societal and ethical implications, evaluates the quality and significance of the research, assesses its originality, acknowledges its limitations, and suggests directions for future studies.

6.1. Barriers in Digital Transformation

As the digital landscape continues to evolve rapidly, organizations across different sectors recognize the importance of adopting digital transformation to remain competitive and meet the growing demands of their customers and stakeholders. Yet, there is a research gap concerning why public organizations fail in their digital transformation efforts. With this consideration in mind, the focus of this research on Swedish municipalities appears particularly relevant. It pursued to study the barriers identified in prior research within a new context, and in doing so, contribute to our understanding of the influence these barriers exert on digital transformation efforts to answer the research question “What are the primary structural and cultural barriers in digital transformation in Swedish municipalities?”.

A survey research strategy was applied to conduct semi structured interviews with employees in different municipalities in Sweden. A thematic analysis of the collected data from the interviews revealed 19 barriers that hinder digital transformation in municipalities. 11 new barriers were identified in this study, 7 Structural Barriers, which are Digital Transformation Thinking, Lack of Synchronization, Lack of Research and Development, Lack of Capital, Lack of Technological Familiarity, Lack of Direction, and Lack of Employees, and 4 Cultural Barriers, consisting of Lack of Engagement, Digital Exclusion, Negative Public Perception, and Regulatory Compliance.

Barriers in digital transformation in Swedish municipalities identified in this study are presented in the table 5, new barriers are marked in bold text.

*Table 5: Structural and Cultural Barriers in DT in Swedish municipalities.*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Barriers</th>
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<tbody>
<tr>
<td>Organisational structural barriers</td>
<td>Lack of managerial support</td>
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<td></td>
<td>Lack of direction</td>
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<tr>
<td></td>
<td>Lack of political support</td>
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<td>Lack of capital</td>
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<td></td>
<td>Digital skills of employees</td>
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<tr>
<td>Organisational culture barriers</td>
<td>Digital transformation thinking</td>
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<td>---------------------------------</td>
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<tr>
<td>Fear of innovation</td>
<td>Lack of technological familiarity</td>
</tr>
<tr>
<td>Resistance to change</td>
<td>Organisational complexity</td>
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<tr>
<td>Lack of engagement</td>
<td>Lack of coordination among the departments</td>
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<tr>
<td>Bureaucratic culture</td>
<td>Lack of synchronization</td>
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<tr>
<td>Regulatory Compliance</td>
<td>Lack of research and development</td>
</tr>
<tr>
<td>Negative Public Perception</td>
<td>Lack of employees</td>
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<tr>
<td>Digital Exclusion</td>
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### 6.2. Societal and Ethical Consequences

Before conducting the interviews, all the participants were provided with a consent form (see appendix A). This document detailed the data’s purpose and clarified that the outcomes would only be used for this thesis. Interviewees were also informed that they could abort the interview or retract their answers after the interview. The consent form was given in the beginning of each interview to record and later transcribe the recordings. Also, all the interviewees were assured that no one will be able to identify them in the thesis. This study has no societal consequences.

### 6.3. Originality and Significance

This study explores structural and cultural barriers in digital transformation in Swedish municipalities. Data was collected through semi-structured interviews with employees who had previously engaged in DT projects from each of the municipalities. While many of the barriers in DT identified align with previous research, this study brings eleven new potential barriers: the Structural Barriers, Lack of direction, Lack of capital, Digital transformation thinking, Lack of technological familiarity, Lack of synchronisation, Lack of research and development, Lack of employees, and the Cultural Barriers, Lack
of engagement, Regulatory compliance, Negative public perception, and Digital exclusion. These newly recognized barriers provide a valuable addition to existing research, particularly to digital transformation barriers in Swedish municipalities. The identification of these DT barriers underscores the necessity for further research, paving the way for a broad understanding of the DT barriers stakeholders might face during their digital transformation in municipalities.

6.4. Research Quality

Denscombe (2017) highlights the necessity for researchers to establish the credibility of their studies. According to Denscombe, there are four key criteria that can be used to assess the credibility of research: validity, reliability, generalizability, and objectivity.

Validity: Interviews are generally considered to have high validity due to their potential for accuracy and relevance checks during the process. In the semi-structured interview format, adjustments can be made if collected data appears irrelevant (Denscombe, 2017). The validity of findings in this study is reinforced by the alignment of views and experiences among participants despite their lack of connection between each other. These outcomes are consistent with prior research, supporting the credibility of the results and their potential for broader application even in unfamiliar contexts like municipalities the participants have no familiarity with. The study's generalizability remains limited due to the small sample size and relatively low reliability.

Reliability: The reliability of interviews is influenced by both the interviewer's approach and the interview setting. The uniqueness of data specific to each participant also diminishes reliability to some extent (Denscombe, 2017). While this inherent challenge cannot be fully eliminated steps were taken to mitigate its impact by using the same interviewer in a consistent context for all participants helped minimize external factors that could affect the interview's reliability.

Generalizability: According to Denscombe (2017), generalizability refers to the extent to which research results can be applied from the sample group to the broader population. In the current study, constraints of time and resources limited the interviews to just 14 municipalities, potentially affecting the research's broad applicability. The generalizability of the findings may be restricted to the specific cultural, structural, and contextual factors present in the selected Swedish municipalities. The results may not be directly applicable to other regions or countries that exhibit different characteristics or face distinct challenges in their digital transformation. The varied roles of the participants could also have an impact on the study's generalizability. However, it was observed that the organizational structures across the municipalities were consistent, suggesting that the study's findings could be applicable to other Swedish municipalities with similar characteristics.

Objectivity: Characterized as the absence of bias in a study (Denscombe, 2017), data for this research was gathered from individuals across various municipalities. To enhance objectivity, some details
obtained during the interviews were triangulated with information found in internal documents from the municipalities.

6.4. Limitations and Future Research
The research aimed to analyse the DT barriers in digital transformation in public organizations, focusing on cultural and structural DT barriers within Swedish municipalities. The study employed a survey-based strategy, involving semi-structured interviews with IT directors and managers from 14 municipalities undergoing digital transformation.

Contacting and agreeing with participants proved challenging due to time limitations. The planning, scheduling, conducting, and transcribing of interviews consumed more time than anticipated. Only participants in each municipality working exclusively on digital transformation were chosen, potentially limiting the diversity of perspectives. The allocated time for most interviews was insufficient. Engaging discussions often exceeded the agreed time limit, leading to lengthy interviews. Interviews conducted over Zoom presented technical issues, such as connectivity and audio quality problems, which might have influenced the quality and depth of responses.

Based on the mentioned limitations, future research can focus on several different areas. To enhance the understanding regarding the challenges of digital transformation in Swedish municipalities, future research could employ a multiple case study approach within each municipality. By examining several distinct cases within each municipality, researchers can gain a better understanding of the variations of digital transformation challenges. This method would not only provide broader viewpoints and insights but also allow for an analysis across different cases, leading to a richer understanding of the challenges related to digital transformation across each municipality.

Combining qualitative interviews with quantitative surveys could provide a more comprehensive understanding of the barriers in digital transformation. A survey conducted among many Swedish municipalities about barriers in digital transformation, can aim to compare and investigate potential variations in digital transformation barriers associated with size. Given that this study identified 19 DT barriers, with 11 being newly discovered, future research could focus on understanding the evolution of these DT barriers. Tracking their progression over time and identifying factors contributing to their development.


Appendix A – Consent Form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

Title of Research Study: Barriers in Digital Transformation in Public Organizations in Sweden
Researchers: Anouar Aboulkacim, email: anab1858@student.su.se
Dimitrios Lemperos, email: dile9663@student.su.se
Supervisor: Lazar Rusu, email: lrusu@dsv.su.se

Department of Computer and Systems Sciences - Stockholm University
Masters in Computer and System Sciences

I have read and understood the following information regarding my participation in the above-mentioned research study:

- This study aims to investigate the barriers faced in the process of digital transformation in the public sector in Sweden, specifically by municipalities in the country.
- By participating in the study, I understand that I am voluntarily agreeing to provide information about my experiences and opinions related to digital transformation in the public sector in Sweden.
- I understand that all data collected will be used only for research purposes and will be kept confidential as required by the General Data Protection Regulation (GDPR) guidelines.
- I understand that I will not be identified by name in the final research report or any other research output.
- I am aware that all records will be kept confidential in the secure possession of the researchers.
- I understand that my participation in the study is entirely voluntary, and I am free to withdraw from the study at any time without adverse repercussions.
- I agree to have my interview audio and/or video recorded.
- I understand that I will not directly benefit from participating in this research.
- I acknowledge that I have had the purpose and nature of the study explained to me in a language that I understand.
- I confirm that I am at least 18 years of age or older and capable of consenting to participate in the research.
- I have had the opportunity to ask questions about the research study, and my questions have been answered to my satisfaction.
- I hereby consent to participate in the research study described above.
Appendix B – Interview questions

<table>
<thead>
<tr>
<th>Interview Questions</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Kindly introduce yourself, your job role, and your municipality position.</td>
<td>These questions aim to understand the role of digital transformation in municipalities, covering the interviewee's role, the municipality's current and future digital transformation efforts, and the challenges faced by the size of the municipality.</td>
</tr>
<tr>
<td>2. Could you provide an overview of your municipalities' digital transformation efforts and what are the ambitions for the future?</td>
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<tr>
<td>3. Do you think it is easier to implement digital transformation technologies in small size municipalities like yours compared to large municipalities?</td>
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<tr>
<td>4. Can you describe the current structure of your municipality and how it has evolved in response to digital transformation initiatives?</td>
<td>This question aims to understand how digital transformation initiatives have influenced the current structure of the municipality, providing insights into the incentives and motivations behind such initiatives.</td>
</tr>
<tr>
<td>5. Can you describe the process of defining the digital transformation strategy and the key stakeholders involved in the decision-making process?</td>
<td>The incentive of the fifth question is to gain insights into the process of defining the digital transformation strategy, including the key stakeholders involved in the decision-making process. This can provide an understanding of how digital transformation strategies are developed and the role of different stakeholders in shaping them.</td>
</tr>
<tr>
<td>6. Are there areas or steps that can potentially improve in the process of defining the digital transformation strategy?</td>
<td>The aim of the sixth question is to explore potential areas or steps that can be improved in the process of defining the digital transformation strategy. This can help identify any weaknesses or gaps in the current process and inform future decision-making to ensure a more effective and efficient strategy.</td>
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<tr>
<td>Question</td>
<td>Incentive and Aim</td>
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<td>7. Have you encountered any difficulties in aligning your municipalities' structure with the requirements of digital transformation, and how did you address these challenges?</td>
<td>The incentive of the seventh question is to understand whether the municipality has faced challenges in aligning its structure with the requirements of digital transformation, and how it addressed these challenges. This can provide insights into the difficulties that municipalities face when trying to integrate new digital technologies and processes, as well as potential solutions to overcome these difficulties.</td>
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<td>8. Can you describe any instances where your municipalities' existing structure or hierarchy has created unforeseen challenges during digital transformation initiatives?</td>
<td>The aim of the eighth question is to explore any instances where the municipality's existing structure or hierarchy has created unforeseen challenges during digital transformation initiatives. This can help identify any gaps in the current structure or hierarchy and inform future decision-making to ensure a more effective and efficient digital transformation.</td>
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<td>9. What factors hinder a manager's ability to support change management activities and mitigate potential challenges during the digital transformation?</td>
<td>The incentive of question nine aims to understand the factors that can hinder a manager's ability to support change management activities and mitigate potential challenges during the digital transformation. This information can help the municipality to identify and address any roadblocks that may prevent managers from effectively leading and supporting digital transformation efforts.</td>
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<td>10. What are the barriers in the political support for digital transformation initiatives within your municipality?</td>
<td>Question ten seeks to identify any political barriers that may hinder the municipality's efforts to support digital transformation initiatives. This information can help the municipality to identify potential political challenges and develop strategies to overcome them, such as increasing awareness and education about the benefits of digital transformation.</td>
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<td>Question</td>
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<td>11. Are there any aspects of your municipalities' culture that have posed unexpected challenges or barriers during your digital transformation journey?</td>
<td>The incentives of these questions are to understand the impact of organizational culture on digital transformation initiatives within the municipality. By identifying cultural barriers, the municipality can develop strategies to address them and ensure a successful digital transformation journey. The questions aim to explore how cultural differences between departments or teams may impact the implementation of digital transformation initiatives and how the municipality can overcome these barriers.</td>
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<td>12. Can you describe any instances where cultural differences between various departments or teams within your municipality have created new barriers during digital transformation efforts?</td>
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<td>13. Does employee behaviour interfere with the successful implementation of digital transformation initiatives?</td>
<td>The aim of these questions is to explore the potential impact of employee behaviour and bureaucratic barriers on the successful implementation of digital transformation initiatives within the municipality.</td>
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<td>14. During the digital transformation efforts, are there bureaucratic barriers that slow down the process?</td>
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<td>15. What are some unique challenges or obstacles that you have encountered during your municipalities digital transformation journey that were not mentioned in the previous questions?</td>
<td>The aim of question fifteen is to catch barriers that weren’t mentioned in the interview. Last question seeks to leverage the respondent's experience to identify and understand how these new developments may affect the implementation and success of digital transformation initiatives.</td>
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<td>16. In your experience, have you noticed any emerging trends or new technologies that might pose unforeseen challenges or barriers in digital transformation efforts?</td>
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