



Lisbon School
of Economics
& Management
Universidade de Lisboa

MASTERS IN MANAGEMENT

MASTER'S FINAL WORK

DISSERTATION

UNDERSTANDING DRIVERS AND BARRIERS OF DIGITAL
TRANSFORMATION IN THE GERMAN PUBLIC SECTOR:
A QUALITATIVE STUDY BASED ON EXPERT INTERVIEWS

LAURA ZOÉ SANTOS

FEBRUARY - 2026



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ABSTRACT

Digital transformation is considered a key instrument for maintaining the performance and service capacity of the German public sector. Despite legal mandates and increasing political pressure, implementation outcomes remain uneven. This thesis investigates which factors influence the success or failure of digitalisation initiatives in the German public sector and how these factors are perceived by key project stakeholders.

Drawing on a qualitative research design, nine semi-structured expert interviews with strategic and operational actors were conducted and analysed using qualitative content analysis. The study explores how perceived benefits, effort, organisational culture, risk perceptions and institutional framework conditions shape the implementation and sustained use of digital solutions.

The findings show that efficiency gains and automation are important drivers of digital transformation, particularly in the context of staff shortages. However, perceived benefits alone are insufficient to ensure acceptance. Success depends on the meaningful integration of digital systems into existing work routines and organisational structures. Resistance is closely linked to hierarchical decision-making, established routines and professional self-perception. Furthermore, technical reliability, resource availability and long-term budgeting emerge as structural preconditions for sustainable transformation. While legal mandates act as external drivers, they often lead to compliance-oriented rather than holistic digitalisation.

Overall, the study highlights that digital transformation in the German public sector is less a technological challenge than a socio-technical organisational change process.

Keywords: Digital Transformation; Public Sector; Drivers and Barriers; Germany.

RESUMO

A transformação digital é considerada um instrumento-chave para manter o desempenho e a capacidade de prestação de serviços do setor público alemão. Apesar de exigências legais e de uma pressão política crescente, os resultados da implementação permanecem desiguais. Esta dissertação investiga quais os fatores que influenciam o sucesso ou o fracasso de iniciativas de digitalização no setor público alemão e como esses fatores são percebidos por stakeholders-chave dos projetos.

Com base num desenho de investigação qualitativo, foram realizadas nove entrevistas semiestruturadas com atores estratégicos e operacionais, analisadas através de análise de conteúdo qualitativa. O estudo explora de que forma os benefícios e o esforço percebidos, a cultura organizacional, as percepções de risco e as condições institucionais de enquadramento moldam a implementação e o uso sustentado de soluções digitais.

Os resultados mostram que os ganhos de eficiência e a automação são motores importantes da transformação digital, sobretudo no contexto da escassez de mão de obra qualificada. No entanto, os benefícios percebidos, por si só, não são suficientes para assegurar a aceitação. O sucesso depende da integração significativa dos sistemas digitais nas rotinas de trabalho existentes e nas estruturas organizacionais. A resistência está estreitamente ligada à tomada de decisão hierárquica, a rotinas estabelecidas e à autoimagem profissional. Além disso, a fiabilidade técnica, a disponibilidade de recursos e o planeamento orçamental de longo prazo surgem como pré-condições estruturais para uma transformação sustentável. Embora os mandatos legais atuem como impulsionadores externos, frequentemente conduzem a uma digitalização orientada para a conformidade, em vez de uma transformação holística.

No geral, o estudo evidencia que a transformação digital no setor público alemão é menos um desafio tecnológico e mais um processo de mudança organizacional sociotécnica.

Keywords: Transformação Digital; Setor Público; Fatores Impulsionadores e Barreiras; Alemanha.

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GLOSSARY

DT	Digital Transformation
IRT	Innovation Resistance Theory
ÖGD	Pact for the Public Health Service
OZG	Online Access Act
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
UTAUT	Unified Theory of Acceptance and Use of Technology

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1 INTRODUCTION

Digital transformation (DT) is a highly relevant topic for Germany's public sector because, despite being Europe's largest economy, the country lags behind in terms of the digitisation of its public sector (European Commission, 2025). In addition, the Online Access Act (OZG) has been enforced, requiring public sector administrations to make their services available digitally by the end of 2022 (Gesetz zur Verbesserung des Onlinezugangs zu Verwaltungsleistungen (Onlinezugangsgesetz – OZG), 2017). However, not every organisation has fulfilled this requirement (Kuhlmann et al., 2021; Richter, 2022). In addition to external pressure due to legal requirements, the public sector is also under pressure due to a shrinking workforce (Gräfe et al., 2024). Digital transformation is thus an essential measure to maintain service capacity and mitigate the lower availability of personnel (Friedländer, 2024). So, in general, there is a lot of external pressure, for example from legal requirements, as well as internal pressure, for instance from the shrinking workforce due to demographic shifts. Nevertheless, the results of DT in the public sector remain limited.

Due to the topicality of the subject, there are a large number of studies dealing with the topic of digitisation. These studies primarily examine DT and barriers to innovation in the private sector in detail. However, research on this topic in the public sector is limited (Bjerke-Busch & Aspelund, 2021). In addition, there have been few studies to date that deal with specific implementation processes within public administration, which is why there is a need for more detailed empirical research. The studies available on digitisation in the public sector often have an international focus and either do not consider Germany at all or only consider it in aggregate terms. For this reason, differentiated country-specific studies are necessary to better understand the specificities of each country in DT (Mergel et al., 2019).

Accordingly, this work aims to contribute to filling these identified research gaps by identifying the factors influencing the success or failure of digitalisation initiatives in the German public sector. Accordingly, the main research question is:

RQ1: Which factors influence the success or failure of digitalisation initiatives in the German public sector, and how are they perceived from the perspective of key project stakeholders?

To structure the investigation, the following sub-questions are addressed:

RQ1a: How do perceived benefits and effort influence the adoption and sustained use of digital solutions in public-sector projects?

RQ1b: How do organisational, cultural, and social factors contribute to resistance or acceptance of digital initiatives?

RQ1c: How do perceived risks, security requirements, and regulatory frameworks affect the implementation and success of digitalisation projects?

This study contributes to existing research by providing qualitative insights into German public administration, incorporating strategic and operational perspectives. In addition, it combines two theoretical models, the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Innovation Resistance Theory (IRT), in a public sector context, thereby enabling simultaneous consideration of acceptance and resistance (Ram & Sheth, 1989; Venkatesh et al., 2003).

After introducing the topic of this study in the first chapter and setting out the objectives and structure of the work, including the derivation of the research question and sub-questions, the second chapter explains relevant terms and constructs. The focus here is on the current state of research on drivers and barriers for DT and characteristics unique to the public sector. In addition, the theoretical constructs are presented here, which form the conceptual framework in the following third chapter and specify the structure of the subsequent data collection and analysis. Finally, the fourth chapter contains a detailed explanation of the methodological approach used to collect and process the data. The fifth chapter presents and discusses the results of the expert interviews and places them in the context of the current state of research. The concluding chapter summarises the main findings of the research with regard to the research question, highlights the theoretical and practical implications, and discusses possible limitations of the research as well as future research directions that emerge from this work.

2 LITERATURE REVIEW

The following section discusses the theoretical background and relevant definitions that underpin this research. It also takes a closer look at the current state of research on the topic in question.

2.1 Digital Transformation in the Public Sector context

The academic literature presents a wide range of definitions of DT reflecting its multidimensional and evolving nature (e.g. Haffke et al., 2016; Mergel et al., 2019). In response to this conceptual fragmentation, Vial (2019) conducted a systematic comparison of existing definitions and proposed a synthesized conceptualisation that integrates core elements from prior studies. He defines DT as “a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies” (Vial, 2019, p. 121).

While this definition provides a general conceptual basis, its specific form depends on the context. Since the following research focuses on the German public sector, it is required to take a contextualised perspective of sector-specific and country-specific institutional and organisational characteristics.

2.1.1 Public Sector Characteristics and the German Digitalization Context

In order to better understand the challenges public sector organisations encounter in keeping pace with innovation trends (Clarke, 2020), it is necessary to gain a better understanding of the public sector as such. First, it can be said that organisational structures and bureaucracy are a key distinguishing feature compared to private companies. Public organisations are characterised by strong hierarchical and centralised decision-making structures (Syed et al., 2023). In addition, the functional division of labour leads to silo-like organisational structures (Bjerke-Busch & Aspelund, 2021), which make cross-organisational collaboration and innovation more difficult. This siloed approach is also evident in the IT landscape of the public sector. In the past, digital infrastructures were often developed in isolation, resulting in limited interoperability between specialist procedures and databases. The technical starting point is therefore a fragmented IT landscape that needs to be harmonised with different programmes and political measures in different units (Clarke, 2020).

Although these structural characteristics have a significant influence on the DT process in the public sector, national differences cannot be attributed solely to these characteristics. Rather, they provide the context within which country-specific governance arrangements, implementation strategies and organisational practices unfold. For Germany, this broader context is reflected in comparatively weak performance in digital service delivery relative to other EU Member States (European Commission, 2025). Especially the negative year-on-year development in digital public service indicators, suggests potential inefficiencies in implementation, coordination or organisational readiness within the German public administration. Taken together these comparative indicators illustrate that Germany continues to face substantial challenges in advancing DT in the public sector, particularly when benchmarked against its European peers.

In summary, it can be said that the literature provides limited country-specific information and that its significance in relation to the German public sector has not been conclusively clarified. This context reinforces the need for in-depth analysis of organisational, procedural, and strategic factors that may hinder or enable successful DT initiatives.

2.1.2 Drivers and Objectives of DT in the Public Sector

There are various motivations for driving forward digitalisation in the public sector. On the one hand, these are determined by legislation, which obliges public institutions to address the issue of digitalisation. Firstly, there is the Online Access Act (Onlinezugangsgesetz, OZG). This obliges organisations in the public sector to provide all major administrative services online and is intended to contribute to the modernisation of German administration (Gesetz zur Verbesserung des Onlinezugangs zu Verwaltungsleistungen (Onlinezugangsgesetz – OZG), 2017). Public organisations are therefore under external pressure to actively engage in digitisation initiatives and to comply with legal requirements. In addition to legal regulations, there are also agreements between the federal and state governments that provide public funds for various digital initiatives. One example of this is the Pact for the Public Health Service (Pakt für den Öffentlichen Gesundheitsdienst, ÖGD). This measure was a response to the shortcomings in the public health system that were uncovered during Covid, which also included the state of digitalisation. In order to actively address these deficits, €800 million was made

available for digitalisation alone within the framework of the ÖGD. Relevant dimensions to be addressed in the area of digitalisation include, for example, IT security, process digitalisation and IT provision (Bundesministerium für Gesundheit, 2024). At the organisational level, digitalisation may help mitigate existing shortage of skilled workers. Although there are often fears that digitalisation will replace human labour, it is more likely to change the skills required for jobs and can be an effective means of overcoming existing staff shortages in the public sector (Gräfe et al., 2024).

Due to the fact that the literature on underlying motivations for DT in the public sector is limited (Hong et al., 2022), drivers that have been researched in the private sector will also be discussed. Since the following drivers from the private sector environment relate to fundamental structures and mechanisms of the organisation, it is likely that they can also be applied to the public sector. DT is commonly understood as a critical driver of both internal efficiency and external value creation. Implementing digital solutions facilitate the optimisation of internal processes, enhance resource utilisation, and support organisational agility, while simultaneously enabling the development of new services, products and value propositions for customers and stakeholders (Parviainen et al., 2017).

2.1.3 Barriers to DT projects in the Public Sector

Digital transformation in the public is associated with a wide range of potential barriers discussed in the literature. The following section focuses on a selection of those barriers that are most relevant to the research objectives. In particular organisational, regulatory and human resource-related barriers are discussed, as these are central dimensions of the subsequent analysis.

At the individual and cultural level, the human factor plays central role in the success or failure of DT initiatives. If the future users of a software programme do not understand the need for transformation, this may lead to them rejecting its use and sticking to traditional working methods (Bjerke-Busch & Aspelund, 2021). Furthermore, it is not only the shortage of skilled workers that poses an obstacle (Schwab et al., 2019; Schwester, 2009), but also the lack of digital skills among the existing workforce (Hofmann & Ogonek, 2018; Lemke et al., 2021; Wilson & Mergel, 2022). In addition, general barriers to change are also relevant here, such as a fundamental resistance to

change or innovation on the part of employees (Syed et al., 2023) and the perception that change is not necessary (Bjerke-Busch & Aspelund, 2021).

Beyond individual-level barriers, DT is also constrained by organisational and regulatory factors. Savoldelli et al. (2014) argue that political barriers constitute one of the main factors contributing to the lack of DT within public sector organisations. In this context, previous studies have cited data protection in particular as a major challenge in relation to digitalisation in the public sector. These include, in particular, the EU General Data Protection Regulation, German data protection and administrative procedure law, and the associated attendance and documentation requirements, disclosure restrictions, retention obligations and restrictions on inter-agency data exchange (Schwab et al., 2019). Since sensitive citizen data is handled in the public sector, the issue of data protection is particularly relevant in DT projects and has a significant impact on the design of digital processes (Durman et al., 2025). In the broader institutional context, public sector DT is often hampered by dependency on bureaucratic structures and budgetary constraints (Bjerke-Busch & Aspelund, 2021). In particular, the financing of digitisation projects is frequently mentioned as an obstacle (Schwester, 2009). Unlike private companies, public organisations such as city administrations do not generate their own capital and are therefore dependent on government funding for projects (Bjerke-Busch & Aspelund, 2021). These funding constraints not only affect the timing and scope of DT projects but also have direct impact on the technical infrastructure. The initial situation in the public sector is often that the technical infrastructure is inadequate and outdated, and that the availability of technical resources is limited overall (Savoldelli et al., 2014).

In summary, the literature clearly shows that the success of DT measures in the public sector is determined by a complex interplay of various factors. However, since existing studies provide only limited specific findings for the German public sector, this theoretical frame of reference merely serves as a starting point that needs to be further examined in the context of the subsequent empirical analysis for the German context.

2.2 Theoretical Foundations of Technology Acceptance

To gain a clear insight into the reasons for the success of digitization initiatives, two complementary theories are combined. While the UTAUT identifies key drivers that motivate individuals to adopt new systems (Venkatesh et al., 2003), IRT explains the

psychological barriers that lead to rejection or avoidance (Ram & Sheth, 1989). In combination, the two theories provide a comprehensive overview and a solid basis for a deeper understanding of this complex interplay of acceptance and resistance of digital initiatives in the public sector.

2.2.1 The Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology was developed to integrate eight previously established models into a single theoretical framework for explaining the acceptance and use of information technologies. The models incorporated in UTAUT include, among others, the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB). UTAUT is a cross-validated model that explains around 70% of the variance in behavioural intention to use technology, thereby substantially outperforming the explanatory power of the individual models on which it builds (Venkatesh et al., 2003). Although there are newer versions such as UTAUT 2, the original UTAUT model is more focused on the organisational context and extrinsic motivation, while UTAUT2 focuses more on voluntary use. Therefore, the original model is relevant to the present research (Tamilmani et al., 2021; Venkatesh et al., 2016). In addition UTAUT has already been successfully applied in previous studies to investigate issues in the field of digitalisation (Al-Mamary et al., 2025). The model in question comprises four core constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy captures the degree to which an individual believes that using a system will help to achieve gains in job performance, making it the most influential driver of intention in many empirical applications. Effort expectancy refers to the perceived ease of use of the system, reflecting how simple and straightforward individuals expect interaction with the technology to be. Social influence denotes the extent to which people perceive that important others think they should use the new system, thereby linking adoption decisions to normative pressures in their social and organizational environment. Finally, facilitating conditions describe the degree to which individuals believe that an adequate organizational and technical infrastructure is in place to support system use, including resources, training, and technical support (Venkatesh et al., 2003).

The literature suggests using UTAUT as a basic model and expanding it to include conceptual factors that are relevant to the research topic (Tamilmani et al., 2021;

Venkatesh et al., 2016). This work follows the recommendations by integrating dimensions specific to the German public sector and combining them with another validated theoretical model, in this case the Innovation Resistance Theory.

2.2.2 Innovation Resistance Theory

The Innovation Resistance Theory explains why individuals resist adopting innovations, even when these appear objectively beneficial. According to Ram and Sheth (1989), innovations can disrupt established routines and may conflict with existing belief structures, which triggers resistance rather than immediate acceptance. Within IRT, this resistance is attributed to a set of functional and psychological barriers that shape the evaluation of new offerings. Functional barriers relate to the perceived utility and practicality of an innovation. The usage barrier arises when an innovation is seen as incompatible with existing processes or as too difficult and complex to use. The value barrier reflects situations in which the perceived performance-to-price ratio is not sufficiently favourable for individuals to consider adoption worthwhile. The risk barrier captures the fact that innovations inherently involve uncertainty, when potential risks are perceived as high or cannot be anticipated, they strongly inhibit adoption decisions. Psychological barriers concern how an innovation fits with personal norms and images. The tradition barrier emerges when an innovation requires individuals to deviate from established habits or traditions. The image barrier stems from the symbolic meaning or reputation of an innovation that an individual might have (Ram & Sheth, 1989).

IRT is considered a suitable model for the subject of this study, as it has already been applied and empirically tested in various contexts of previous research, including the public sector (Laukkanen, 2016; Nikiforova et al., 2024). Similar to the recommendations for using UTAUT, it is also recommended for the use of IRT to adapt the model to the individual context in order to examine relevant barriers for this specific innovation context (Huang et al., 2021).

3 CONCEPTUAL FRAMEWORK

In accordance with the study's objective and in order to answer the proposed research questions, the following conceptual model is proposed, which is adapted from the models developed by Venkatesh et al. (2003) and Ram & Sheth (1989). The combination of both models allows two perspectives to be captured: innovation adoption and resistance to innovation. These are extended by additional sub-dimensions that are particularly relevant for the public sector context (e.g. Bjerke-Busch & Aspelund, 2021; Savoldelli et al., 2014), as suggested in previous studies (Huang et al., 2021; Tamilmani et al., 2021; Venkatesh et al., 2016). This Framework is shown in figure 1.

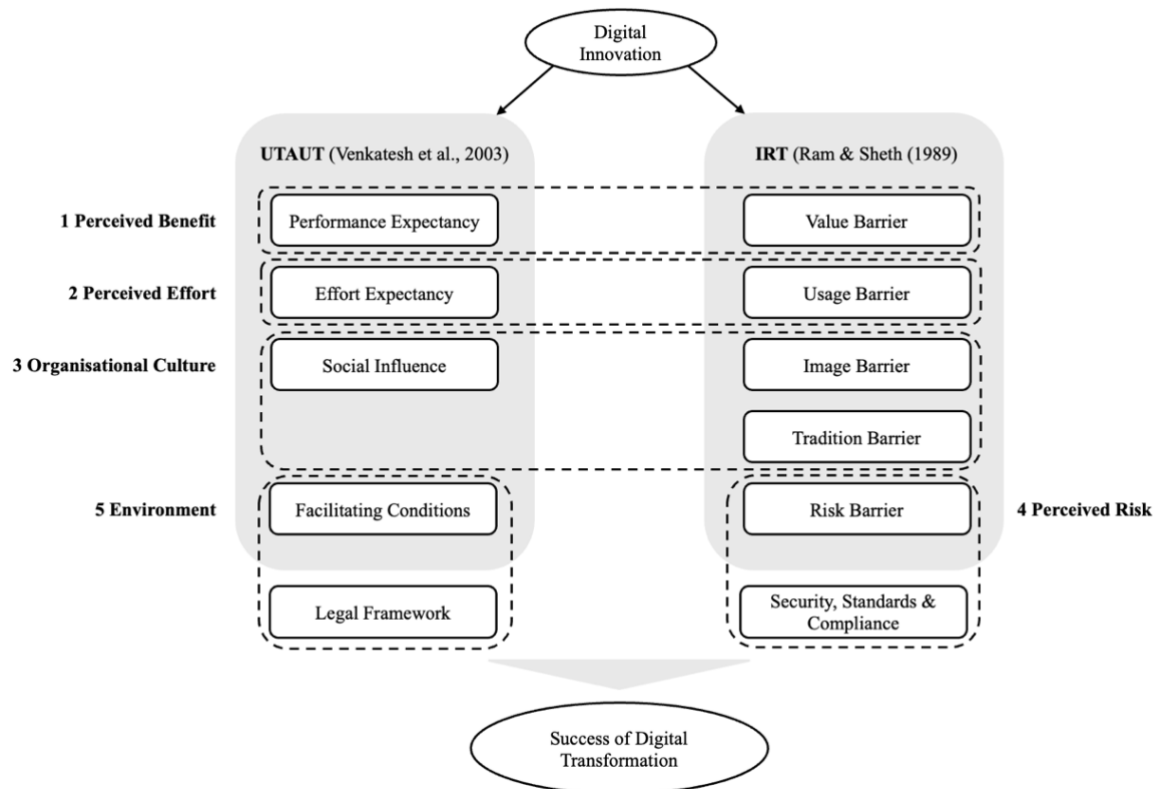


Figure 1: Conceptual Framework for Success of Digital Transformation

Source: own elaboration based on Venkatesh et al. (2003) and Ram & Sheth (1989)

4 METHODOLOGY

To answer the research question and its subordinate sub-questions, expert interviews were conducted with 9 participants from the public sector. These were evaluated using qualitative content analysis based on the approaches of Mayring (2022) and Kuckartz (2022), and using MAXQDA software. The following section takes a closer look at the survey design and composition of the sample, including relevant demographic data. This is followed by a more detailed description of the interview process and the specific evaluation strategy.

4.1 Research Design

The present research adopts a qualitative design, with its foundations lying in an interpretivist paradigm and an abductive reasoning process. This study aims to understand how stakeholders perceive DT in the German public sector. However, this is not one objective result, but rather a collection of subjective assessments and experiences that vary depending on the respondent. Therefore, it stands to reason that the findings are derived from the interpretation of expert statements, with interpretivism as the underlying research philosophy (Saunders et al., 2023). Although the study is based on UTAUT and IRT theoretical models for orientation, the analysis phase reviews their suitability for the specific context of the German public sector. At the same time, new aspects identified in the material are added, relating existing theories and empirical observations to one another in an abductive approach (Dubois & Gadde, 2002). The study aims to improve understanding of how individuals perceive the complex matter of DT in the public sector. Given this exploratory objective and the focus on subjective interpretations, a qualitative research approach was considered the most suitable method. Data was collected through expert interviews because this method provides in-depth insights into participants' individual assessments and experiences relating to DT initiatives. No additional methods of data collection were applied; therefore, the research followed a mono-method principle. The interviews took place within a limited timeframe and included only one measurement point. In addition, relevant stakeholders were asked about their current views on DT initiatives, making this a cross-sectional study (Saunders et al., 2023).

4.2 Sampling Unit

The target population of this study includes relevant actors who are directly or indirectly involved in digitisation initiatives in the German public sector. This includes both operational employees who use the implemented digital solutions in their everyday work, as well as strategic decision-makers and external consultants/project staff who bring a more strategic perspective to DT initiatives. It was important to include a wide range of perspectives, so attention was paid to heterogeneity in terms of organisational role, hierarchical level and type of organisation. This approach to participant recruitment follows purposive sampling to ensure that participants can provide insights relevant to the research question. Therefore, the focus was placed on information-rich cases rather than on achieving statistical representativeness (Saunders et al., 2023). The experts were approached successively in order to support the iterative data collection and evaluation process with the overarching goal of theoretical saturation (Glaser & Strauss, 1967). Therefore, data collection was only completed when no new findings emerged from further interviews.

4.3 Interview Procedure

Data collection followed a standardised procedure based on the conceptual model, ensuring consistency across all interviews (see Appendix 1). Each interview began with an introduction, during which the topic and interview procedure were explained. All relevant data protection information was also discussed, including data processing, preserving participant anonymity and obtaining consent to automatically generate a verbatim transcript of the conversation for subsequent analysis. This step was necessary to make participants feel safe about sharing information, which ultimately results in better-quality data. The main part of the interviews consisted of questions based on the concept in appendix 1. These questions were adapted in terms of wording or order as necessary, and additional questions were asked to gain further insights. This semi-structured approach provides orientation and ensures that the interviews have a similar thematic basis, while also providing flexibility and contributing to the openness of the interviews. Therefore, it is particularly well-suited to interpretive research, as it enables comparisons to be made across interviews while still allowing for individual interpretation. At the end of the interview, participants were given the opportunity to

mention any additional points that had not been covered by the questions in the interview guide. This allowed participants to explore topics in greater depth and introduce additional topics in order to prevent guideline bias.

4.4 Data Analysis Approach

The subsequent analysis aimed to identify patterns of perception. Rather than analysing frequencies, the intention was to recognise structures of meaning and interpret the stakeholders' assessments at this level. After each interview, the transcripts were analysed, and all data that could allow conclusions to be drawn about individuals or specific authorities was immediately anonymised in order to ensure data protection compliance. As the interviews were conducted in German, the original German transcript was also used in the content analysis to avoid any loss of information due to translation. However, for reasons of better comprehensibility, a subsequent translation of quotations relevant to the discussion of results was carried out.

For the actual evaluation, a qualitative content analysis was performed based on the approach of Mayring (2022) and Kuckartz (2022). This analysis method aligns with the interpretative objective, enabling a structured examination of individual perspectives. It is also suitable for combining categories based on theory with those that emerge from the data. The aim of this evaluation method is to create a category system that can be used to analyse and systematically report on the content of the transcripts. The analysis was carried out using MAXQDA software. The software facilitates systematic organisation and management of qualitative data. Furthermore, the use of MAXQDA optimally supports the iterative approach applied here, as recoding and refinement of the codes is possible throughout the ongoing evaluation process.

There are two approaches to generating codes: inductive and deductive category formation. In the inductive method, categories are generated from the statements in the interviews, while in the deductive method, a theory-driven approach is taken and categories are thus based on theoretical findings from previous research (Mayring, 2022). In the present study, a mixed approach was used, as categories were taken deductively from the interview guide, which is based on a comprehensive literature review, and new categories were generated inductively from the collected data during the evaluation process. This iterative interplay between theory- and data-driven codes reflects the

abductive logic of the study. The advantage of this approach is that the deductive categories minimise the susceptibility to error in the coding process, as they refer to findings that have already been established. On the other hand, the inductive categories support the aspect of openness (Kuckartz & Rädiker, 2020). Following the coding process, the categories were interpretatively condensed to form the basis of the results discussion.

To ensure the quality of the analysis, a codebook containing definitions and anchor examples from the interviews was developed to provide guidance and ensure consistency in the coding procedure (see Appendix 2). This also improves the transparency and traceability of the analytical process. Furthermore, the coding process began with deductive codes, followed by an inductive refinement to introduce categories as required for codes that included a large number of statements. To make the results more accessible and comprehensible, selected exports, such as the coding system and code frequencies, are provided (see Appendices 3 and 4).

5 ANALYSIS AND DISCUSSION OF RESULTS

This section of the work begins with a brief description of the composition of the interview sample in order to provide contextual background for the subsequent results. This is followed by a descriptive presentation of the research results and a discussion of these in relation to the underlying research question.

5.1 Sample Description

The sample of expert interviews, which forms the empirical basis of the analysis, is described in more detail below. A total of $N = 9$ individuals from 6 different organisations operating in the public sector were interviewed. All interviewees are involved in digitisation initiatives either directly as project participants or indirectly as users or coordinating actors. Four of the respondents are external consultants or project managers who carry out digitisation projects in the public sector and thus have an external perspective on the topic of digitisation. The remaining respondents contribute an internal perspective as employees of public organisations.

In addition to an internal and external perspective on digital initiatives, insights into different organisational levels were also gained through the mix of operational, coordinating, and strategic roles. Moreover, participants covered a wide range of functional tasks, including operational case handling, technical system support, project coordination, and strategic consulting functions, providing insights into various phases of digitalisation initiatives. The participants' tenure in their current role ranges from < 1 year to > 20 years, with an average of around 6.5 years, indicating a heterogeneous sample in terms of professional experience. An overview of the sample characteristics is provided in Table I.

Table I: Overview of the Sample

ID	Category of Organization	Position / Role	Tenure in Current Role	Core Tasks
E1	Public Sector Consultancy	Consultant	3 Years	Personnel requirement analyses and process optimization within public sector organizations
E2	Public Sector Consultancy	Senior Consultant	2 ¼ Years	Organizational and functional analyses and assessments in municipal and county administrations, with a focus on youth and social services
E3	Federal Public Authority	Public-Sector Officer	16 Years	Case processing, research, preparation of written administrative documents
E4	Public Sector Consultancy	Manager	< 1 Year (8 years overall)	Project acquisition and project leadership, coordination of project teams, strategic and organisational advisory support
E5	Federal Public Authority	Public-Sector Officer	1.5 Years (13 years overall)	Digital document handling and case management
E6	Public Broadcasting Organisation	Technical Specialist	5 Years	Involvement in technical infrastructure projects, coordination and support of digital systems
E7	Municipal Administration	Administrative Officer	3 Years	Budget planning, administrative coordination
E8	IT Consultancy	IT Project Manager	> 20 Years	Operational management of IT projects, coordination of project teams, technical and organisational implementation of requirements
E9	Municipal Health Administration	Administrative Officer	3 Years	Payment office administration, support of specialised software administrators, digital case processing, public health administrative services

Source: Own elaboration based on interview transcripts

5.2 Perceived Benefit

5.2.1 Performance Expectancy

The topic of performance expectancy deals with any statements regarding expectations for improvements resulting from the implementation of digital systems. Overall, the statements were clustered around three main topics: flexibility and accessibility, process efficiency, and automation and workload reduction.

Firstly, process efficiency emerged from the interviews as the most frequently cited expected benefit. In this context, Expert 5 reported that in the analogue process, “[...] a day was always lost until the brochure arrived from the mailroom or from the submission department, and that this is no longer the case with the digital process” (Verbatim E5). In addition, experts 1, 8, and 9 emphasize that digital solutions enable faster provision of information and direct communication. As Parviainen et al. (2017) explain, DT promotes internal process optimisation and resource utilisation. The emphasis on reduced throughput time by Expert 5 directly reflects this internal efficiency logic. The quote also makes it clear that digital processes reduce intermediate interfaces and coordination dependencies.

While the above statements refer to structural improvements in terms of the speed and coordination of workflows, automation takes place at the level of the execution of individual tasks. Experts 2, 3, 4, 5, and 8 report on various specific aspects that could be automated or simplified through DT. Expert 3 describes that "ISINs, which are 12-digit numbers that describe this security, had to be entered manually [...]. And now these final terms are uploaded automatically, so this step has been completely eliminated for us" (Verbatim E3). This demonstrates that DT eliminates time-consuming manual tasks in everyday work. Expert 4 makes it clear that the real value of DT initiatives lies in "addressing the shortage of skilled workers, relieving employees of tasks that they simply no longer have to do because there are tools and support available and allowing them to focus on the essentials" (Verbatim E4). These findings not only reinforce the aspect of resource optimisation (Parviainen et al., 2017) but also show that DT enables the public sector to focus the capacities of its existing workforce on relevant tasks. This is in line with Gräfe et al. (2024), who argue that DT in the public sector tends to change the job profile rather than replace personnel.

While process efficiency and automation primarily affect structural workflows and individual activities, flexibility and accessibility relate to work organization and working modes. Experts 2 and 3 emphasize that DT enables location-independent access to data, which forms the basis for hybrid and mobile work. Expert 2 expands on this by adding the possibility of flexibility, because "In the past, they would say that they had to take the files home on Tuesday so that they could work from home on Wednesday and then bring them back on Thursday. Then it wasn't possible on Tuesday to get up on Wednesday morning, see that my child was sick, and decide to stay home" (Verbatim E2). This example clearly shows the qualitative change in working mode brought about by DT and the resulting increase in freedom of action and easier work-life balance. This is also part of the perceived increase in performance, which is perceived here not through quantitative results but through qualitative improvements (Venkatesh et al., 2003). In addition, Vial (2019) describes how DT changes the characteristics of an organization, which is clearly evident here in the spatial decoupling of work.

Overall, the findings suggest that performance expectancy operates at different analytical levels. At the organizational level, experts highlighted the improved efficiency of processes; at the task level, they emphasized the aspect of automation and

simplification of tasks; and at the work arrangement level, increased physical flexibility was highlighted. The findings strongly support the central role of performance expectancy in the acceptance and use of digital measures, as conceptualized by Venkatesh et al. (2003). Experts' perceptions of the benefits of DT go beyond mere efficiency gains. DT is perceived as a mechanism for stabilizing organizational performance and levelling out structural resource shortages and is thus seen as relieving employees so they can focus on important activities and as compensating for the shortage of skilled workers. This corresponds to the logic of internal resource optimization (Parviainen et al., 2017). In the public sector, this resource logic is closely linked to dealing with the shortage of skilled workers (Gräfe et al., 2024). The emphasis on process optimization is particularly relevant given the fragmented IT landscape in the public sector (Clarke, 2020). It is apparent that perceived efficiency arises in comparison to existing processes. This corresponds to the logic of IRT (Ram & Sheth, 1989) and illustrates that, although performance expectancy emerges as a central construct in the public sector, it is still embedded in a complex system of trade-offs.

5.2.2 Value Barrier

Although experts perceive clear advantages in DT, doubts have also been expressed about its actual added value. Experts 2, 4, 7 and 9 argue in this context that comparisons with analogue processes show that the analogue processes either function without digital components or even work better without digital solutions. The latter is illustrated by expert 9, who reports that "it was a little easier then than it is now when you do it digitally. [...] it was less complicated and you could also react more quickly or record information more easily" (Verbatim E9). This quote illustrates the comparison of the status quo with the digital process. In this case, the comparison shows that the digital solution does not represent an improvement over the existing handling and thus, as conceptualised by Ram & Sheth (1989), a value barrier arises. In addition, the other case is also highlighted, where existing processes are perceived as sufficient. E4 reports that users emphasise, "I've always done it this way. It works fine" (Verbatim E4). This quote once again illustrates that changes are not evaluated in isolation, but in relation to existing routines. Expert 4 also points out that "the effort is avoided because the benefits are not immediately apparent" (Verbatim E4). This illustrates the greater weighting of the effort when the added value cannot be directly anticipated. In summary, it can be said that value barriers

do not result from fundamental rejection, but from the perception of existing processes that already work, a lack of clear improvements through digital components, and the invisibility of concrete added value. This makes it clear that the value barrier, as conceptualised by Ram & Sheth (1989), not only emerges as an explanatory construct relevant to the public sector, but that the specific causes for its emergence can also be derived from the findings, specifically the persistence of functioning routines and the lack of visible improvements.

5.3 Perceived Effort

5.3.1 Effort Expectancy

In connection with effort expectancy, the experts repeatedly referred to perceived complexity, usability, and the effort required to become familiar with new systems. Venkatesh et al. define effort expectancy as the degree to which a system is perceived as easy to use. The probability of acceptance is increased by a lower perceived benefit.

In this context, the experts first mention factors relating to the interface and usability. Expert 9 states that “such a program overwhelms you. There are so many areas of application, so many masks, so many things you can use there” (Verbatim E9). The quote emphasises the perceived cognitive overload associated with a new system. The complexity is not only technical, but also due to the vast amount of information that comes with DT. On the other hand, expert 1 describes that there are also features that counteract cognitive overload, such as “input aids. So, for example, when you enter the date, you don't have to add dots but simply enter 011226 and the system then automatically adjusts it” (Verbatim E1). It is evident that user-friendliness is a key prerequisite for acceptance which is in line with the UTAUT assumption that perceived simplicity is a key predictor of usage intention (Venkatesh et al., 2003). In addition, according to experts, the initial conversion effort is also a relevant factor. Expert 4 confirms that DT “involves a setup effort that cannot be downplayed” (Verbatim E4), which, according to Expert 2, leads to fears, especially at the operational level, “that this will be added to the everyday workload and will actually be unmanageable for individuals in terms of the time required” (Verbatim E2). These insights from the experts suggest that the perceived effort mainly concerns the initial phase. In addition, employees perceive it as an additional burden on top of their regular range of tasks. Thus, the expected

additional effort can reduce acceptance among users, even if there are long-term benefits. This is in line with UTAUT, which states that perceived complexity has a direct negative effect on the intention to use (Venkatesh et al., 2003).

Overall, effort expectancy in the public sector is primarily influenced by the complexity of interfaces, cognitive overload, and the initial effort required to get used to the system. The perceived increased effort is particularly evident at the operational level. These findings confirm the relevance of effort expectancy as conceptualized by Venkatesh et al. (2003). Nevertheless, it appears that perceived effort is less a function of individual abilities and more a function of structural and workload-related factors.

5.3.2 Usage Barrier

The interviews revealed specific structural barriers that make it difficult to integrate digital systems into everyday work. The barriers identified in this context correspond to what Ram & Sheth (1989) refer to as usage barrier. In contrast to effort expectancy, the focus here is on actual difficulties encountered in practice. The experts' statements focused on the two sub-topics of system complexity and system performance.

Starting with system complexity, the experts presented a variety of factors that contribute to an increase in this. First, Expert 9 explains that “many decisions are also based on experience or assessments of the individual case” (Verbatim E9) and then describes the digital process for handling cases: “First, you have to fill in various mandatory fields, go through the masks, and so on. That's another lengthy process” (Verbatim E9). This clearly shows that the standardisation that digital systems bring with them conflicts with individual decision-making processes. The high degree of formalisation of the systems, while case-by-case logic is often required in administration, creates a functional incompatibility. The problem described by Expert 8, “that you basically export [the data], import it into Excel, correct it, and then import the correction back into the tool, is simply not possible at the moment. In addition, this involves the extra effort of having to use two different software programs” (Verbatim E8) underlines that the actual needs that arise from everyday work are not always fully compatible with digital systems. It also becomes evident that, instead of an integrated and holistically designed system landscape, the issue of a fragmented IT landscape is once again emerging

(Clarke, 2020). Thus, both are clear examples of the usage barrier that, according to Ram & Sheth (1989), arises when there is incompatibility with existing work routines.

In addition, the experts also describe system performance as a factor, specifically long loading times or instability. In this context, Expert 4 describes, "If I now need an hour longer for the digital process because I have to make lots of individual clicks or upload attachments to this software, which doesn't process them well and makes errors in processing, then people won't switch if the analogue process takes half an hour" (Verbatim E4). This quote illustrates that performance is an integral part of usability and that slow or unstable digital processes directly undermine their acceptance. On the other hand, the experts also highlight developments in terms of system performance. Expert 3 describes how "Internet connections were unstable or data wasn't saved. You had to start all over again. That has really improved dramatically over the 16 years I've been here" (Verbatim E3). This clearly demonstrates that the quality of the systems has improved over time and that usage barriers are not static but can be reduced through further development.

Overall, the usage barrier in the German public sector manifests itself in two main factors, namely the complexity of systems and technical performance. System complexity is particularly evident where standardised digital process logic does not correspond to case-related administrative practice. A lack of interfaces and the need to use multiple systems reinforces this integration problem (Clarke, 2020). The barrier thus appears to arise from an interplay between technology and organisational architecture. Experts also perceive system performance as a key component of practical usability. Digital processes lose their relative advantage if they are perceived as slower or more prone to failure than analogue workflows. A solid technical infrastructure therefore appears to be a prerequisite for actual use (Savoldelli et al., 2014). Overall, the findings indicate that the actual integration of digital systems into everyday work depends significantly on systemic coherence, interoperability and technical reliability.

5.4 Organisational Culture

5.4.1 Social Influence

Social influence describes the degree to which relevant individuals endorse or expect the use of a system. Expert 5 emphasises this point: "And that was a decision made by our

executive committee, and then one department after another was converted to the new system" (Verbatim E5). This statement is supported by Expert 4, who emphasises that "ultimately, software is not introduced because employees want it, but because managers see the need for it or because there are legal requirements" (Verbatim E4). These examples illustrate that DT initiatives in the public sector are strongly top-down. The workforce has only limited scope for action and must primarily follow what is defined by the upper levels. The strong hierarchical structure of the public sector is reflected in this decision-making logic for DT initiatives (Syed et al., 2023). In addition to hierarchical influence, there are also informal opinion dynamics. On the one hand, Expert 4 speaks of so-called "power users who really see the added value and thus act as multipliers" (Verbatim E4), while Expert 2 reports that, on the other hand, there are also "the absolute obstructers" (Verbatim E2). These statements make it clear that social influence occurs not only vertically but also horizontally. Furthermore, polarisation within the organisation can increase or decrease acceptance.

Overall, it is clear that social influence in the German public sector is strongly determined by hierarchical structures (Syed et al., 2023). Managers thus play a central role as drivers, legitimisers or even blockers of DT initiatives. The results suggest that social influence, as conceptualised by Venkatesh et al. (2003), is relevant in an organisational context, especially in formalised administrative structures.

5.4.2 Image Barrier

Image barrier describes a negative symbolic attribution of users towards DT. The rejection therefore results from the perceived significance of DT for one's own role or identity (Ram & Sheth, 1989). The specific fears cited by experts in connection with DT initiatives include "fear of replaceability and [...] fear of control options" (Verbatim E2), "concern that one's own experience will count for less" (Verbatim E9) and "the rationalisation away of the entire job" (Verbatim E4). This makes it clear that innovation is not perceived by all users as support, but rather as a threat to their status and identity. Above all, the aspect of job rationalisation is not a justified fear, as there is a high level of job security for employees in the German public sector due to legal provisions (e.g. the Unfair Dismissal Protection Act [KSchG], 1969; TVöD, 2005). This underlines that not all fears cited by users can be attributed to real economic reasons, thus highlighting the reputational nature of the barrier. In summary, it can be said that the image barrier in the

German public sector primarily manifests itself as concern about status, role and professional identity.

5.4.3 Tradition Barrier

The sub-dimension "tradition barrier" refers to resistance to established routines, historically developed practices and familiarity with the known. This is not based on a cost-benefit analysis, as is the case with the value barrier, but can be traced back to cultural dependencies and habits (Ram & Sheth, 1989).

The interviews reveal above all the aspect of sticking to the familiar. Expert 2 reports that users often argue "we've always done it this way" (Verbatim E2). In addition, E8 states that users try "to transfer their usual workflow to these tools" (Verbatim E8). These examples clearly illustrate the core of the tradition barrier (Ram & Sheth, 1989). Users emphasise the familiarity of the known and show difficulties in adapting to digital ways of working, which ultimately leads to the "effectiveness of the tools not being utilised" (Verbatim E8). Thus, Expert 8 highlights that the tradition barrier can negatively impact the success of DT measures in practice. In addition, experts also report more specifically on a refusal to accept change, especially with regard to voluntary digital applications that still offer users alternatives. In this context, Expert 1 reports that "some people just say no. They continue to print out documents and file them in the office" (Verbatim 1). This example clearly shows that the tradition barrier can also slow down DT initiatives as Expert 8 was already stating. The results correspond to the institutionalised roles and behaviour patterns in the public sector identified by Bjerke-Busch & Aspelund (2021). Prevailing structural organisational patterns, such as silo logic and division of labour structures, promote the stability of such routines. In this context, DT initiatives are perceived as a disruption of established modes of action (Ram & Sheth, 1989).

5.5 Perceived Risk

5.5.1 Risk Barrier

The Risk Barrier relates to resistance resulting from perceived negative consequences or insecurities associated with DT (Ram & Sheth, 1989). The statements for this barrier mainly relate to three aspects: socio-organisational risk, financial risk, and technical and operational risk. In the first instance, experts refer to risks for internal employees and certain population groups among customers. According to Expert 4, there is a concern

internally that DT “may overwhelm or even alienate employees” (Verbatim E4). Furthermore, Expert 1 states that DT poses health risks and suggests that “it might not be a bad thing to not digitise everything for health purposes” (Verbatim E1). As the public sector delivers services to society, there is also a concern that “accessibility is simply not provided” (Verbatim E2). It is evident that DT is evaluated not only on a technical level, but also on a societal level.

Furthermore, financial risks were highlighted by Experts 1 and 3. Expert 1 states that “You basically have to renew your licence every year and pay again, and that's extremely expensive. I think that's a real risk because you're basically trapped” (Verbatim E1). This statement highlights the commitment to a long-term licence as well as the effects of vendor lock-in. According to Expert 1, risk emerges through the long-term nature of DT measures, as they impose a long-term financial commitment on an organisation. Furthermore, Expert 3 highlights this aspect, stating that during an ongoing DT project, “additional funding was required because the programme [they were] reprogramming turned out to be more expensive than originally calculated” (Verbatim E3). This poses a particularly high risk in the public sector due to budget commitments (Bjerke-Busch & Aspelund, 2021).

Lastly, the interviews also revealed technical and operational risks. In this case, Expert 9 states that the risk associated with DT is system failure, as this would result in work simply coming to a standstill. This quote highlights the systemic dependency created by digital systems, whereby technical errors affect entire workflows, not just individual parts of a process. Expert 6 emphasises this dependency on technical availability, stating that “you can be as digitally advanced as you like, but if the necessary preconditions aren't met, it won't work” (Verbatim E6). These statements again highlight that, despite being a significant influencing factor on the actual success of digital transformation, the technical conditions in the public sector are limited (Savoldelli et al., 2014).

In summary, the findings confirmed the relevance of the risk barrier for the German public sector. In this context, risk extends beyond abstract uncertainty to encompass concrete structural concerns such as long-term financial commitments, systemic technological dependencies, and infrastructural vulnerability. Financial commitments

carry heightened significance in the public sector due to limited budget flexibility and formal procurement procedures (Bjerke-Busch & Aspelund, 2021; Schwester, 2009). Besides, technical instability not only reduces efficiency but also directly threatens the overall functionality of the organisation.

5.5.2 Security Standards & Compliance

A specific risk that was identified as particularly relevant for the German public sector in the preceding theoretical chapters concerns the topic of security, standards and compliance, which is directly related to general legal requirements, but here primarily deals with individual internal regulations (e.g. Durman et al., 2025; Savoldelli et al., 2014). Since sensitive data is handled in the public sector, experts report various internal requirements to protect this data. Two dominant perspectives emerged from the interviews.

Firstly, the view that security is a routine practice in the German public sector. As Expert 3 states, “The speed of digitisation was not influenced by security requirements” (verbatim E3). This perspective is also emphasised by Expert 6, who states that “Data security is definitely a relevant issue [...] but [he] would argue it's not exactly a limitation” (Verbatim E6). These examples both highlight the integral role of security, standards and compliance in public sector work. Compliance seems to have been institutionalised and become routine. Consequently, security measures are not viewed as an obstacle to DT, but rather as an essential structural framework.

However, some experts argue that security is a process constraint with regard to DT. Indeed, expert 4 describes internal security requirements as “one of the key reasons why some things aren't implemented immediately and quickly” (Verbatim E4). This statement clearly portrays security requirements as a central obstacle in DT projects, significantly shaping the transformation process. This is consistent with the current state of research (Durman et al., 2025; Savoldelli et al., 2014). This view is also supported by Expert 8, who states that, “besides data protection, [he] cannot think of anything else that poses a risk with regard to digital initiatives” (Verbatim E8).

A central analytical finding is the perceptual gap between different organisational levels. While security and compliance are viewed as integral components of professional routine especially at the operational level, the strategic level primarily perceives security

as a structural barrier to DT. Consequently, compliance does not appear to be an inherent barrier, but its impact seems to be defined differently depending on the respective level of action.

5.6 Environment

5.6.1 Facilitating Conditions

Facilitating conditions describe the extent to which individuals believe the necessary preconditions within the organisation to support DT are available (Venkatesh et al., 2003).

The technical state of the art first emerged as a necessary precondition for DT. Hardware appears to be a problematic factor; expert 1 states that organisations "have no microphones, for example, or simply bad or very old equipment" (Verbatim E1). Other experts also highlight software issues as a key problem. For example, Expert 2 states that "when it comes to introducing specialised programs or software solutions, and especially interfaces, the problem usually arises that the transfer is not guaranteed" (Verbatim E2). This view is supported by Expert 4, who states that "the specialist application from the health department doesn't communicate with the specialist application from accounting, so they end up sending PDFs back and forth again" (Verbatim E4). These statements again highlight the fragmented IT landscape predominant in the public sector (Clarke, 2020). Specialist programmes are constructed in modules without considering the overall workflow. In practice, this leads to media breaks, where processes switch back to analogue procedures to bridge the deficiencies that arise in the digital process, as Expert 4 illustrates. In conclusion, it can be said that the technical infrastructure of the German public sector appears unevenly developed. Fragmented IT landscapes and insufficient system interoperability limit the success of DT (Clarke, 2020). Thus, while technical infrastructure can function as an enabler, in this case, the experts describe the current state of the IT landscape as a limiting factor for DT.

Another central aspect that was frequently mentioned by the experts is the integral role of training and knowledge management in a DT process. Expert 8 described it as follows: "The fundamental problem is simply that the tools are provided, but people aren't properly trained to use them" (Verbatim E8). This expert also highlights that "standardised training covers about 90% of cases, but not special cases" (Verbatim E8).

These statements demonstrate that training is either not happening at all, or is insufficient, meaning that it is more technically oriented than focused on specific cases, especially unusual ones. For this reason, it is apparent that training for a new system within a DT process is not sufficiently adapted to the context of future users. Expert 9 emphasises the importance of adapting content to specific cases, using the example of a coach "who mentioned something relevant to everyday work. This plays a big role, and you become more confident over time" (Verbatim E9). This example of an individually adapted training programme shows how contextualisation and a practical approach can reduce users' overload and uncertainty. In conclusion, the expert statements emphasise the importance of developing skills through organisational training and knowledge transfer. As current research highlights, a lack of digital skills is a major barrier to DT (Hofmann & Ogonek, 2018; Lemke et al., 2021; Wilson & Mergel, 2022). For this reason, it is becoming increasingly evident that DT requires organisational learning structures to provide future users with the necessary skills to ultimately benefit from the anticipated improvements of DT. A lack of skills among the workforce seems to emerge not only from individual differences, but also from organisational deficits.

Another aspect that emerges from the interviews is the importance of transparency and communication. As Expert 2 states, "despite having a digitalisation strategy, awareness is usually close to zero, especially at administrative level" (Verbatim E2). This shows that the problem is not a lack of ideas, but a lack of systematic communication and knowledge transfer structures. E4 also highlights the absence of systematic and early communication within a DT process stating that "it's pointless if it's just imposed; you feel like something's been placed on your desk and you have to work with it, but you don't really know why or how" (Verbatim E4). This again demonstrates the hierarchical nature of the public sector and its influence on the DT process (Syed et al., 2023). The implementation of an innovation is top-down, with lower levels of the hierarchy being informed at short notice about upcoming changes. This results in a lack of understanding of the new system and the overall implementation process at operational level, as Expert 4 stated. Furthermore, experts emphasise the importance of communicating upcoming changes early in the process. As Expert 4 pointed out, "employees should also be able to participate and define how such a process should function in the future. From my experience, this approach has been successful because everyone was pulling in the same

direction” (Verbatim E4). This statement highlights the importance of the early participation of relevant stakeholders in the DT process. Furthermore, it is evident that DT initiatives are not merely technical IT initiatives, but rather organisational transformation projects and remain successful, when they are perceived accordingly. However, Expert 3 also presents an opposing view, stating that "DT remains an annual objective of the organisation as a whole to further advance digitalisation [...]. This is all communicated openly" (Verbatim E3). While several experts highlighted deficits in communication and transparency, not all organisations displayed such patterns. As Expert 3 describes some organisations in the public sector already have established communication structures, as well as DT as part of their annual strategic objectives, which are known at administrative level. Overall, the results demonstrate that communication and transparency are pivotal factors in DT initiatives. Resistance tends to arise where innovation is perceived as externally imposed or not adequately explained. Conversely, early involvement appears to reduce uncertainty and encourage acceptance among future users. Although hierarchical and silo structures in the public sector can limit innovation (Bjerke), the findings also suggest that certain public organisations have implemented structured communication to overcome typical problems such as a lack of transparency between departments. In line with the findings of Hanelt et al. (2021), DT should be understood not merely as a technical implementation, but as an organisational change process requiring alignment across strategic and operational levels.

Another aspect frequently mentioned by the experts is process integration. As discussed previously, DT is not just an IT project, but also an organisational change project that requires processes to be adapted (Hanelt). Expert 2 describes how, “of the organisations they have supported, very few have a comprehensive concept that is genuinely put into practice. The consequence of this is that digitalisation is only carried out selectively” (Verbatim E2). This example highlights the absence of a holistic process perspective and suggests that incompatibility also results from insufficient alignment throughout the entire workflow. In practice, this manifests as media discontinuities, as described by Expert 4: “In administration, we print the material, creating a media discontinuity because the digitalisation behind the front end simply did not take place” (Verbatim E4). This example from administrative practice highlights a structural deficit due to a lack of end-to-end process continuity. The absence of streamlined digital

workflows is exacerbated by the implementation of isolated transformation measures within different specialised departments that collaborate with each other. According to expert 4, "the problem usually arises at the latest when it comes to interfaces, as the transfer of data is not guaranteed" (Verbatim E4). This finding emphasises the impact of silo structures in the public sector that contribute to these isolated transformation initiatives among different departments (Bjerke-Busch & Aspelund, 2021). In summary, it seems that a large number of DT initiatives in the German public sector are implemented without any structural reorganisation of the underlying process logic. As Expert 4 states, only a few cases understand DT as organisational redesign (Hanelt et al., 2021).

Lastly, the experts introduced financial and human resources as necessary preconditions for successful DT. Expert 8 highlights the importance of budgeting, stating that "without a budget, there are no training sessions or specialised applications" (Verbatim E8), while Expert 4 emphasises the need for long-term financial commitment, stating that "one should not only estimate an initial budget, but also provide for annual updates, further developments, training, and so forth" (Verbatim E4). This demonstrates the important role of budgets in DT processes and is consistent with the findings of Bjerke-Busch and Aspelund (2021) that budgetary constraints can impact long-term transformational capabilities. On the other hand, the experts also highlight the importance of personnel. Expert 8 refers to personnel problems during DT processes, stating that "due to the shortage of skilled workers, implementation is more difficult in many areas" (Verbatim E8). These findings align with the literature that a shortage of skilled workers in the public sector is a major obstacle to DT (Schwab). However, it is not only human capabilities that are insufficient, but financial capabilities too, as Expert 4 states: 'There is always budget for digitalisation, but not enough of it' (Verbatim E4). These findings reveal a chronic resource gap: despite the formal existence of a budget and personnel, the actual extent remains insufficient. This aligns with prior research on structural resource constraints (Bjerke-Busch & Aspelund, 2021; Schwab et al., 2019; Schwester, 2009).

5.6.2 Legal Framework

Another dimension that emerged from the literature as a specific factor for the sector context is the legal framework. On the one hand, the experts stated that the legal framework enables DT by highlighting that "without this legal mandate, nothing would

probably have been implemented so far, or at least it would have happened much later” (Verbatim E9). However, experts also highlighted that the legal framework can act as a barrier when legal requirements counteract digital processes. For example, Expert 3 described how “we still need this original signature - the legislator has not waived this requirement - it must be printed out, filled in and scanned back in” (Verbatim E3). These statements emphasise the ambivalent nature of the legal framework. While the requirements can pose a major obstacle to DT (Bjerke-Busch & Aspelund, 2021), the framework can also be a major driver through mandatory character and the provision of financial means (Bundesministerium für Gesundheit, 2024).

6 CONCLUSION

The following chapter summarises how the study's empirical results answer the research questions and sub-questions. It also outlines the academic and managerial contributions and concludes with limitations and directions for future research.

6.1 Key Findings

The aim of the study was to identify factors that influence the success of DT initiatives in the German public sector from the perspective of key stakeholders. The nine expert interviews provided valuable insights for answering the questions of interest. To provide guidance, Table II gives a more detailed overview of how the dimensions and sub-dimensions contribute to the underlying questions of this research.

Table II: Overview of dimensions and subdimensions in relation to the Research Question

RQ	Dimension	Subdimension
RQ1a	Perceived Benefit	Performance Expectancy
		Value Barrier
	Perceived Effort	Effort Expectancy
		Usage Barrier
RQ1b	Organisational Culture	Social Influence
		Image Barrier
		Tradition Barrier
RQ1c	Perceived Risk	Risk Barrier
		Security, Standards & Compliance
	Environment	Facilitating Conditions
		Legal Framework

Source: Own Elaboration based on results

Regarding RQ1a, the results confirm that performance expectancy is a key driver for acceptance (Venkatesh et al., 2003). Experts highlighted the automation of routine tasks, efficiency gains and increased flexibility as key DT objectives (Parviainen et al., 2017). However, the results suggest that automation is used to address the shortage of skilled workers, not to replace them (Gräfe et al., 2024). At the same time perceived benefits are not sufficient to ensure acceptance, as users evaluate digital processes in relation to existing routines, which corresponds to the IRT assumption that innovations are not viewed in isolation, but only in comparison to established processes (Ram & Sheth, 1989). Acceptance therefor depends less on abstract performance expectations and more on tangible improvements in everyday work practices. With regard to effort expectancy, usability and learning effort remain relevant factors (Venkatesh et al., 2003). However,

the findings suggest that perceived effort is primarily influenced by systemic conditions rather than individual capabilities. Fragmented process integration and organisational embedding generate additional workload and media discontinuities. Therefore, effort arises less from the technology itself and more from how it is integrated into the overall organisational structure.

The aim of answering sub-question RQ1b was to highlight how organisational, cultural and social factors influence resistance to or acceptance of digital initiatives. With regard to social factors, the experts reported that decisions on DT are predominantly top-down, reflecting the hierarchical nature of the public sector (Syed et al., 2023). The role of managers therefor emerges as a key social factor in the DT process. Where leadership actively supported and communicated digital initiatives, acceptance increased, whereas resistance intensified where initiatives were perceived as imposed. Conversely, acceptance was fostered and resistance reduced through structured communication, managerial support and the early involvement of operational staff. Secondly, the tradition barrier represents a central cultural obstacle to DT. Experts reported that there are users who strongly insist on old routines and try to transfer analogue to digital processes as far as possible, limiting their potential. This behaviour reflects the organisational inertia patterns (Bjerke-Busch & Aspelund, 2021; Syed et al., 2023) and aligns with IRT (Ram & Sheth, 1989). Thirdly, the image barrier manifests as concerns about the loss of professional status and the devaluation of experience, as well as increased monitoring possibilities through digital systems. Overall, the findings suggest that acceptance and resistance are primarily embedded in hierarchical structures, established routines, and professional self-perceptions rather than being determined by technological features alone.

The last sub-question, RQ1c, focused on the impact of perceived risks, security requirements and institutional framework conditions on implementation. Regarding risk, the findings show that it is primarily experienced in operational terms, as experts referred to unstable systems, long loading times and technical failures as specific risks that directly impact everyday work. In this sense, the results reflect the risk barrier described by Ram and Sheth (1989), whereby uncertainties relating to digital technologies result in immediate operational consequences. Although digital solutions promise efficiency gains, they also create a dependency on technical reliability. Perceptions of security

requirements and compliance differ across hierarchical levels. Operational experts often describe these requirements as part of routine administrative work, whereas strategic actors perceive them as limiting flexibility and increasing accountability pressure. This divergence supports previous findings on institutional risk aversion in public administration (Bjerke-Busch & Aspelund, 2021; Syed et al., 2023) and provides an explanation for cautious implementation strategies at management level. Beyond individual risk perceptions, the broader regulatory and organisational framework plays a crucial role. Legal mandates and support programmes are generally considered significant drivers of DT as they increase political prioritisation and create implementation pressure. However, simple compliance with legal requirements does not necessarily result in comprehensive transformation. In several cases, front-end DT was introduced without any corresponding changes to internal processes. Furthermore, facilitating conditions such as financial resources, personnel and organisational support were identified as structural preconditions for successful implementation. Rather than functioning as supportive additional elements in the sense of UTAUT (Venkatesh et al., 2003), these preconditions appear to determine whether digital initiatives can be sustained over time. Consequently, limited staffing, politically determined budgeting logic and short-term funding structures directly affect the long-term success of DT projects (Bjerke-Busch & Aspelund, 2021; Schwester, 2009).

To answer the overarching research question of which factors influence the success or failure of DT initiatives in the German public sector, and how these factors are perceived by key stakeholders, the findings suggest that digital transformation should be understood as an ongoing socio-technical organisational change process, rather than a purely technical implementation. According to the interviewees, perceived benefits such as efficiency gains and automation are important drivers, but they are not sufficient to ensure sustained use. However, the acceptance of digital solutions seems to their meaningful integration into existing work practices and organisational structures. Effort is not primarily attributed to technological complexity, but to structural misalignment, fragmented processes, and inadequate organisational support. At the same time, resistance is shaped by hierarchical decision-making, established routines, and professional self-perception. DT initiatives introduced top-down without early involvement tend to be met with scepticism, whereas transparent communication and

managerial support foster acceptance among future users. Furthermore, perceived risks and institutional framework conditions significantly influence implementation outcomes. Operational risks, security requirements and political budgeting logic all contribute to a cautious approach to implementation. Although legal mandates and funding programmes are important drivers, they often encourage compliance-oriented rather than holistic transformation. Overall, the success of digitalisation initiatives in the German public sector depends less on individual attitudes towards technology, and more on structural alignment between digital systems, organisational architecture, and long-term strategic commitment. Failure, on the other hand, tends to occur when digital solutions are isolated, driven by compliance or insufficiently integrated into everyday administrative procedures.

This results of this study further contribute to Sustainable Development Goal 9 (Industry, Innovation and Infrastructure) by analysing the structural prerequisites required to develop sustainable digital infrastructure within the German public sector. By identifying the drivers and barriers to sustainable DT, this study provides insights into how public organisations can strengthen their capacity for innovation and their long-term organisational performance.

6.2 Academic Implications

This research makes a valuable contribution to the existing academic literature by combining two separate frameworks, UTAUT (Venkatesh et al., 2016) and IRT (Ram & Sheth, 1989), to create an integrated approach. Thus, this study serves as empirical support for combining UTAUT and IRT within a public sector context and demonstrates that acceptance and resistance mechanisms occur simultaneously and should therefore be analysed together.

Furthermore, the importance of facilitating conditions has been expanded, as the findings suggest that they function as structural preconditions rather than merely supportive factors, as originally conceptualised in UTAUT (Venkatesh et al., 2003).

Finally, the findings contribute to the conceptualisation of DT by framing it as a holistic organisational change process rather than a mere IT implementation (Hanelt et al., 2021). In particular, the study shows that although regulatory requirements such as

the OZG can prompt DT activities, they do not necessarily lead to sustainable transformation.

6.3 Managerial Implications

On the other hand, the study's findings also have practical implications for public organisations. Firstly, practitioners should adopt a holistic approach when implementing DT measures. This requires the early involvement of different stakeholders, a rethink of the underlying process logic, and structural embedding within the organisation, especially with regard to interfaces between departments. Practitioners should incorporate these best practices into the DT process.

Another relevant implication for the public sector is the need for structural and resource alignment. As DT is a long-term task involving further development, updates, and so on, continuous budgeting is required beyond initial funding. Additionally, having personnel resources, especially dedicated points of contact for DT matters, could facilitate more sustainable implementation and long-term use.

6.4 Limitations and Future Research Directions

The results of this study are subject to limitations. First, the restriction to a specific industry and country represents a barrier to transferability to other countries or industries, as these are likely to encounter different barriers and drivers in relation to DT. Another factor that limits transferability is the general examination of DT without specifying the analysis to individual technologies. As a result, even within the industry and country context examined, the results cannot be transferred to every type of digitisation project, as the barriers and success factors may vary depending on the technology. These problems of transferability, like problems of generalisation, are general disadvantages of qualitative studies and are therefore also applicable to the present study (Kuckartz & Rädiker, 2022). Lastly, the coding process also represents a limitation, as the coding was carried out by a single researcher and did not involve several researchers to ensure inter-coder reliability.

This study opens up a wide range of possibilities for further research. Future studies could, for example, carry out a quantitative validation of the qualitative findings obtained using a sample representative of the German public sector. In addition, the expert interviews revealed the effects of different generations in the DT process, which could be examined in more detail as part of a systematic investigation.

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DECLARATION

Parts of this manuscript were translated from German into English using DeepL. The author reviewed and revised all translations for accuracy, terminology, and meaning. In addition, the author used Chat GPT 5.2 to support scientific phrasing and to improve spelling, grammar, clarity, and readability during manuscript preparation. The author carefully reviewed and edited all AI-assisted text and takes full responsibility for the final content.

APPENDICES

Appendix 1: Concept including Interview Procedure

Dimension	Subdimension	Description	Reference	Questions / Contents
Opening	Purpose of Study & Introduction	-	-	- Thank interviewee for participation - Personal Introduction - Introduction of topic and goals of the study - Ensure that interview is strictly confidential and anonymous - Ask for permission to record / use auto transcription
	Ethics & Consent	-	-	- What is your current position and for how long have you been working in your current role? - What are your main responsibilities?
	Questions about Interviewee	-	-	- What specific improvements in work performance are expected from digital initiatives? - To what extent has this performance promise actually been fulfilled in projects that have already been implemented, and how do you determine this specifically?
1 Perceived Benefit	1.1 Performance Expectancy	Degree to which an individual believes that using the system will help attaining gains in the job.	(Venkatesh et al., 2003)	- Where exactly does the core value of the old processes/systems lie that cannot be adequately replaced by the digital solution? - What practical disadvantages do users accept when they stick to the old way of working, even though the new solution is available?
	1.2 Value Barrier	Resistance arises because the perceived benefit or value of the innovation is deemed insufficient relative to the cost or effort required.	(Ram & Sheth, 1989)	- How is ease of use in digital projects ensured? - Think of a project where high usability played a key role in quickly overcoming user resistance. What were the key features of this solution?
2 Perceived Effort	2.1 Effort Expectancy	The degree of ease associated with using the system.	(Venkatesh et al., 2003)	- In your experience, what structural or functional shortcomings in digital solutions most often lead to users abandoning the application? - Describe an initiative in which the switch to digital processes led users to perceive the work as slower, more complicated or more confusing.
	2.2 Usage Barrier	Resistance results from the perception that the innovation is difficult, complex, or complicated to use.	(Ram & Sheth, 1989)	- Which project-related initiatives were employed to facilitate organisational alignment and secure stakeholder commitment? - In your experience, which initiatives were most successful in getting employees on board with the intention to use the system?
3 Organisational Culture	3.1 Social Influence	The degree to which an individual perceives that important others (superiors, peers) believe they should use the new technology.	(Venkatesh et al., 2003)	- What fears exist regarding changes to one's own role or the loss of influence/competence as a result of digitalisation? - How are these concerns addressed within the organisation / which means are taken to mitigate fears?
	3.2 Image Barrier	Resistance arises because the innovation is perceived to negatively affect one's self-image or social role.	(Ram & Sheth, 1989)	

4 Perceived Risk	3.3 Tradition Barrier	Resistance results from the desire to maintain established habits and adhere to the status quo.	(Ram & Sheth, 1989)	- What deeply held beliefs cause employees to be fundamentally sceptical of digital solutions? - How does the administration justify and rationalize the digital transformation to employees who prefer traditional methods in order to overcome this barrier?
	4.1 Risk Barrier	Resistance stems from the fear of negative consequences or uncertainty regarding the reliability or safety of the innovation.	(Ram & Sheth, 1989)	- What perceived risks (other than data security) prevent employees from embracing new digital initiatives? - How are these perceived risks systematically addressed in DT projects?
	4.2 Security Standards & Compliance	The degree to which security requirements, including internal policies and regulatory processes, and organisational standards shape digital processes.	(Durman et al., 2025)	- What specific security measures need to be implemented internally (e.g., two-factor authentication, password policies)? - Do these security requirements promote user confidence, or do they primarily lead to additional effort or rejection?
5 Environment	5.1 Facilitating Conditions	The degree to which an individual believes that the necessary technical and organisational infrastructure exists to support the use of the system.	(Venkatesh et al., 2003)	- Which resources are most critical to the success of DT projects? - How available are these resources?
	5.2 Legal Framework (e.g. OZG, DSGVO)	Legal requirements influencing DT in the public sector (e.g. OZG, GDPR)	(European Commission, 2025; European Union, 2016)	- Which of the OZG requirements are perceived as mere 'token digitisation' in your projects, and where is genuine transformation taking place? - To what extent do other legal requirements relevant to your organisation pose an obstacle in DT projects, and what are these specifically?
Conclusion	Open-ended Question	-	-	We've covered many drivers and barriers regarding digitisation in the public sector. Is there anything you would like to add to what has already been discussed, or anything else you would like to say on the subject?
	Administrative Close	-	-	Stop recording / transcription Thank interviewee again

Appendix 2: Coding Guide

Code type Main code	Code name Perceived Benefit	Definition	Anchor Example
Sub-code (Level 1)	Performance Expectancy	Degree to which an individual believes that using the system will help attaining gains in the job.	-
Sub-code (Level 2)	Flexibility & Accessibility	Perceived improvements in flexibility and accessibility of work through digital solutions.	"The opportunities to work spontaneously, for example from home or on the move, are significantly greater. In the past, they would say that they had to take the files home on Tuesday so that they could work from home on Wednesday and then bring them back on Thursday." (E2)
Sub-code (Level 2)	Workload Reduction / Automation	The extent to which DT is perceived to reduce manual effort through automation or elimination of routine tasks	"So the middle office sat down and entered all these ISINs and WKNs by hand. I did that once, just for fun, because I thought, sure, I'll help out, but after 56 I had made so many mistakes in the ISIN that they said, no, go away. And now these final terms are stored automatically. So, they are automatically uploaded, which means that this step has been completely eliminated for us. That's why we now only have one middle office instead of 10, because a lot has been automated." (E3)
Sub-code (Level 2)	Process Efficiency	Perceived improvements in process speed or workflow efficiency.	"So, in the past, when someone sent in an application, the paper had to end up on my desk first. That always took two or three days, but now they send an email and I have it on my desk immediately, which is much faster." (E5)
Sub-code (Level 1)	Value Barrier	Perceived lack of added value of digital solutions compared to existing practices.	"Well, it was a lot of work and a lot of back and forth, and at times you wondered: Is it even worth it?" (E7)
Main code	Perceived Effort	-	-
Sub-code (Level 1)	Effort Expectancy	The degree of ease associated with using the system or the digital process.	"Most people see learning something new as an obstacle, and that's true - it requires effort, which cannot be downplayed. A new tool or a new specialist application always means that you first have to learn how to use it, whereas with the old specialist application or the analogue version, you could perhaps work very quickly." (E4)
Sub-code (Level 1)	Usage Barrier	Resistance results from the perception that the innovation is difficult, complex, or complicated to use.	-
Sub-code (Level 2)	System Complexity	Perceived difficulty in understanding or operating digital systems.	"It's a bit of a blessing and a curse that everything is concentrated in MS Teams, because all the information you encounter in your daily work can, of course, be managed via MS Teams on the one hand, but on the other hand, you've been searching for this information for a certain amount of time. It's easy to lose track of things because there are so many different channels for each project." (E6)
Sub-code (Level 2)	System Performance	Perceived deficiencies in system speed, stability or technical reliability affecting usability and efficiency.	"Generally speaking, performance. So, if I click and it takes three minutes for it to spit something out, to eject a result, so to speak, then these are things that employees don't have time for. If it's quicker to fill out the form in Word instead of doing it in the specialist application, then that's what they'll do." (E4)
Main code	Organisational Culture	-	-

Sub-code (Level 1)	Social Influence	The degree to which an individual perceives that important others (superiors, peers) believe they should use the new technology.	"I also have an example of a project in mind where there was what I would call a power user in the relevant department who was very enthusiastic about it and was delighted that a digital tool had been introduced or purchased, and he conveyed that enthusiasm to others. In my view, you need managers who are pulling in the same direction. You need employees who really see the added value and act as multipliers." (E4)
Sub-code (Level 1)	Image Barrier	Resistance arises because the innovation is perceived to negatively affect one's self-image or social role.	"Their main concern was that their own experience would count for less, or that there would simply be greater control over work processes." (E9)
Sub-code (Level 1)	Tradition Barrier	Resistance results from the desire to maintain established habits and adhere to the status quo.	"I have to say that when it comes to something like document storage, we know that some people simply say no, they continue to print things out and file them in the office. I have to say that this is often simply a refusal to change due to fear of the new, or fear of doing it wrong, or simply a lack of willingness to deal with it. So it's a general resistance to digital technology." (E1)
Main code	Perceived Risk	-	-
Sub-code (Level 1)	Risk Barrier	Perceived uncertainty regarding potential negative consequences of DT.	-
Sub-code (Level 2)	Socio-organisational Risk	Perceived risks related to employee acceptance, organisational dynamics or accessibility for users.	"There are certainly also managers who see it as a risk that digitising things will overwhelm or upset employees, especially if you still have a group of colleagues who are a bit older and not part of the younger generation." (E4)
Sub-code (Level 2)	Financial Risk	The extent to which DT initiatives are perceived as financially uncertain or prone to budget overruns.	"And probably also a lack of budget, because I always hear that we need a little more money because the programme we are now reprogramming has simply become more expensive than we had originally calculated." (E3)
Sub-code (Level 2)	Technical & Operational Risk	Perceived Risks concerning system reliability, vendor dependency or operational continuity.	"Mainly technical problems or system failures, because that's actually the worst thing that can happen, because then the work just piles up. You no longer have paper files, you can't do anything." (E9)
Sub-code (Level 1)	Security, Standards & Compliance	The degree to which security requirements and organisational standards shape digital processes.	-
Sub-code (Level 2)	Security, Standards & Compliance as Routine	Security, Standards & Compliance perceived as a normalised and integral part of everyday work.	"Data security is no more of an issue than it was before, really. So, the usual principles apply: you have to be aware that this is citizens' personal data and you have to handle it with care." (E7)
Sub-code (Level 2)	Security, Standards & Compliance as Process Constraint	The degree to which an individual believes that the necessary technical and organisational infrastructure exists to support the use of the system.	"I believe that these are actually the obstacles that prevent some things from working so quickly and why it takes time, because all the requirements for IT security, the General Data Protection Regulation, et cetera, represent a huge hurdle at first glance when it comes to implementing things digitally, digitising things, because you feel like you're moving through a jungle, which actually leads to a situation where, no matter how you decide or how you implement something, the authorities feel that they are violating something anyway or that they have not taken something into account." (E4)
Main code	Environment	-	-

Sub-code (Level 1)	Facilitating Conditions	The degree to which an individual believes that the necessary technical and organisational infrastructure exists to support the use of the system.	
Sub-code (Level 2)	Technical Infrastructure	Availability and adequacy of technical systems, hardware and digital infrastructure required to support digital processes.	"Well, I've always been told that either something doesn't exist at all, for example, we don't have any microphones, or we just have poor-quality equipment, very old equipment. Then I also noticed that there are pools where you have to register, and when you have a video conference, you can borrow a microphone from the pool." (E1)
Sub-code (Level 2)	Training & Knowledge Management	Availability of training opportunities and knowledge-sharing practices supporting effective use of technology.	"There are training courses, and if the quality of the trainer or the content isn't that good and certain special cases aren't necessarily addressed, it's difficult. But often the problem is that you may not know it yourself yet, so you just go through the standard programme." (E8)
Sub-code (Level 2)	Organisational & Change Support	Organisational structures and leadership actions that actively support DT.	"And I think it helps to bring everyone together around the table and use workshops to introduce colleagues and employees to the topic, so to speak, and give them the feeling that they can also contribute. So that it's not just something that's being imposed on them. Yes, and communication in general, explaining where we stand, why we stand there, and how we will proceed. I believe that is indeed the be-all and end-all." (E4)
Sub-code (Level 2)	Human Resources	Availability of sufficient qualified personnel to implement and maintain digital solutions.	"Well, due to the shortage of skilled workers, it's more difficult to implement in many areas. A lot of external human resources are used, and the quality varies greatly." (E8)
Sub-code (Level 2)	Financial Resources	Availability of financial means to support DT projects.	"The authorities go to the person responsible for digitalisation and say, 'We would like this and that, it will cost us this and that, take care of it.' And he probably works it out a bit and gets quotes and so on, but it's still a bit of a problem because you can request a lot, but what gets approved is another matter. Because our budget has to go through the finance committee and the city council, and I think the focus is on other things, so they say, 'Then we'll just cut the money for digitalisation.'" (E7)
Sub-code (Level 2)	Process Integration	Coherent integration of digital systems and workflows across organisational units.	"So, what we encounter very, very often is the incompatibility of different specialist programmes or support options. I think the background to this is a structural deficiency. In my experience, very few organisations have a comprehensive concept that is actually put into practice." (E2)
Sub-code (Level 1)	Legal Framework	Legal requirements shaping DT in the public sector (e.g. OZG)	
Sub-code (Level 2)	Legal Framework as Barrier	Legal requirements perceived to hinder or complicate DT.	"So it's not entirely clean, but it's better than nothing. We have this portal, but as I said, it could be digitised even further. However, because we still need the original signature – the legislator has not made this optional – it has to be signed in the original, printed out, filled in and scanned." (E3)
Sub-code (Level 2)	Legal Framework as Enabler	Legal requirements perceived to promote or accelerate DT.	"And to be perfectly honest, without this legal requirement, nothing would probably have been implemented yet, or at least not until much later." (E9)

Appendix 3: Code System – MAXQDA Output

Codes	225
Environment	0
Legal Framework	0
Legal Framework as Barrier for DT	2
Legal Framework as Enabler of DT	10
Facilitating Conditions	0
Technical Infrastructure	11
Training & Knowledge Management	18
Organisational & Change Support	17
Process Integration	16
Financial Resources	8
Human Resources	16
Perceived Risk	0
Security, Standards & Compliance	0
Security Standards as Routine Practice	10
Security Standards as Process Constraint	8
Risk Barrier	0
Socio-organisational Risk	3
Financial Risk	2
Technical & Operational Risk	8
Organisational Culture	0
Tradition Barrier	10
Image Barrier	8
Social Influence	7
Perceived Effort	0
Usage Barrier	0
System complexity	13
System performance	5
Effort Expectancy	12
Perceived Benefit	0
Value Barrier	11
Performance Expectancy	0
Flexibility & Accessibility	3
Workload Reduction / Automation	5
Process Efficiency	22

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Appendix 4: Code Matrix - MAXQDA Output

Codesystem	Transcript_E1	Transcript_E2	Transcript_E3	Transcript_E4	Transcript_E5	Transcript_E6	Transcript_E7	Transcript_E8	Transcript_E9
Environment									
Legal Framework									
Legal Framework as Barrier for DT			1						1
Legal Framework as Enabler of DT		1	1	3	2		1		2
Facilitating Conditions									
Technical Infrastructure	2	2	3	2	1	1			
Training & Knowledge Management	1	2	1	2	3	1	1	5	2
Organisational & Change Support	1	7	1	3		1	2		2
Process Integration		2		3	2		5	3	1
Financial Resources			1	3			2		2
Human Resources		1	3	2		2	5	3	
Perceived Risk									
Security, Standards & Compliance									
Security Standards as Routine Practice	1	1	2		2	2	1		1
Security Standards as Process Constraint				3			2	2	1
Risk Barrier									
Socio-organisational Risk	1	1		1					
Financial Risk	1		1						
Technical & Operational Risk	1			1		2	3		1
Organisational Culture									
Tradition Barrier	1	2		2	1	1		3	
Image Barrier		4	1	1	1				1
Social Influence		2		3	1		1		
Perceived Effort									
Usage Barrier									
System complexity	2	3		2		2		2	2
System performance			3	1					1
Effort Expectancy	2	4		2		2	1		1
Perceived Benefit									
Value Barrier		3		4			3		1
Performance Expectancy									
Flexibility & Accessibility		2	1						
Workload Reduction / Automation		1	1	1	1			1	
Process Efficiency	4	3	3	1	5	1	1	3	1