AI introduction in public organisations with blended central-regional management structures

A study of AI introduction in the Norwegian Labour and Welfare Administration (NAV)

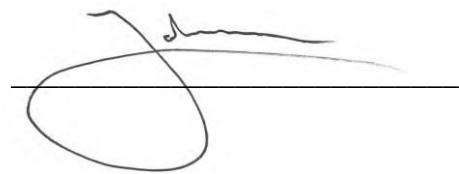JOHANNES DØNNEM HALVORSEN

MAGNUS SKOGLI LONEBU

Preface

The work with this thesis has been exciting, fun, challenging and at times demanding. We have ended up with a result that we are satisfied with and proud of.
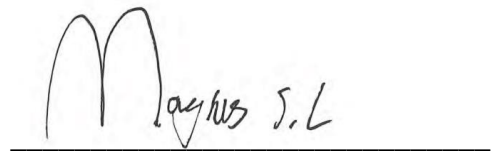
We want to thank UIA and the department of Information Systems for helping us getting in touch with informants for this thesis. A special thanks to Polyxeni Vassilakopoulou, our supervisor for good guidance throughout this project. Many thanks to all the participants who took the time to attend at interviews and shared their insights to us.

We want to say thanks to friends, family, and partner for supporting and motivating us this semester. Thanks to "UIA suppe" for good soup, and "Lunsjgjengen" for many laughs and pleasant lunches throughout the year.

Kristiansand, 03.06.2024

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Abstract

This study investigates AI introduction in a public distributed organisation with blended regional and central management structures. The research aims to explore different perspectives within the Norwegian Labour and Welfare Administration (NAV). The public sector is in the early stages of using AI and are still trying to understand how to use it. There have been studies identifying factors specifically to AI adoption in the public sector, but they haven't taken into consideration the different perspectives and concerns a large organisation can hold.

The data are gathered through semi-structured interviews with representatives from regional and central level in NAV. The data was then analysed using the Gioia method to sort it into themes. To introduce AI in a public distributed organisation we found that there are different perspectives to consider from a regional level and central level. Many themes are shared between the two levels, but some are only brought up by one or the other. Concerns around citizens were only brought up by actors on the regional level, while economic concerns and environmental conditions were only brought up by actors from the central level. The implication of this study is that you need to be aware of perspectives from the whole organisation when introducing AI.

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1. Introduction

One of the first stories of Artificial Intelligence has its origin dating back to the 1940's where it emerges in Isaac Asimov's work: *Runaround*. Here he introduced the groundbreaking "Three laws of Robotics". These laws are often regarded as the earliest framework of ethical considerations in AI systems (Haenlein & Kaplan, 2019). The laws are as followed:

> 1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.

> 2. A robot must obey orders given it by human beings except where such orders would conflict with the First Law.

> 3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law. (Murphy & Woods, 2009)

While the academic exploration of AI began in the 1950s, it was not until modern times that the field gained a widespread traction. Among the earlier pioneers we have the cognitive scientist Marvin Minsky which was inspired by the writings of Asimov. Minsky later co-founded the MIT AI laboratory, and alongside John McCarthy, played an important role in popularizing the term "Artificial Intelligence" (Moor, 2006).

1.1 Motivation and research problem

AI in public sector is a field that is becoming more and more popular but is still in its early stages. It has lagged behind the private sector in development and use of AI, but in the later years it has been put more on the agenda, and the potential that AI has when it comes to the public sector, led to an increase in interest in this field by many (Gesk & Leyer, 2022). This is also the case within research of AI in the public sector. While the researchers have focused on the impact AI has on financial services, retail, travel, and high tech, there has not been done much research on the public sector (Sun & Medaglia, 2019). Because of the great opportunities, but also the challenges that

come with AI, it is a field in which it is important to carry out active research. Development happens quickly, and being able to keep up with this development and have control over it is central to success (Torkington, 2023). AI comes with benefits such as effectiveness and automation of repetitive tasks, and better decision making. On the other hand, there is also challenges which occur, such as questions around privacy and ethics, and accountability and transparency. Further research and collaboration between academia, the public sector and the technology industry is crucial to realize the potential of AI in the public sector, and to reduce the challenges that follow (Kommunal- og moderniseringsdepartementet, 2020).

In Europe we have large public organisations that are responsible for key functions in our societies. These organisations include among other the police, tax agencies, health, and other welfare services and are important for our societies. To put it in context, welfare alone accounts for 1/3 of the state budget in Norway, which shows its importance. These public organisations are often complex, consisting of many parts, central and also regional ones which makes coordination for introducing AI demanding. It is therefore important to have good mechanisms for coordination. This includes coordination within the organisations, but also between different public organisations, and across similar organisations in different European countries. AI offers possibilities for innovation, but innovation can be difficult in these large complex organisational settings. Due to the complex structures that public organisations have, it is important to understand specific managerial concerns related to introducing AI in complex distributed public organisations in a successful way. Examining this is interesting and important, and a great motivation. Most of Europe relies on such complex public organisations so gaining insight in this area has broad relevance (Milotay et al., 2022).

In Norway we have a welfare state run by the public sector. We can define a welfare state as

> A state which to a significant extent guarantees society's members help if they should experience ill health, social distress or loss of income, for example in the event of unemployment or old age, and which ensures the individual's right to education. (Christensen & Berg, 2022)

The welfare state benefits all the citizens in Norway. Being able to find out and learn about AI in the context of the welfare state, to make the services it offers even better is a great motivation to study this topic. Within the Norwegian welfare state, we have the Norwegian Labour and Welfare Administration (NAV). This public organisation is one of the most important actors within the state, this by being responsible for the pension you get when you get old and social assistance if you get sick or injured and can't work. NAV is organised in a central – regional structure and consists of both municipal and state services (NAV, 2023). Studying AI introduction in a public organisation with blended central - regional structure is interesting and important. This is because they represent a combination of central level decision making and regional level implementation. By studying this we can examine how the organisation looks at how AI is introduced, adapted, and integrated, this at different levels of governance. We are looking for perspectives from the early stages of AI initiatives. Doing research on an organisation such as NAV provides insight into challenges and opportunities of AI introduction, this within complex bureaucratic systems, including issues related to coordination, resource allocation, and stakeholders (Neumann et al., 2024).

This thesis focuses on AI introduction in a distributed public organisation with a blended central – regional management structure, focusing on what differ in perspectives on AI introduction between regional and central level in NAV. The empirical data were collected both from central and regional offices, we explored the different perspective on AI challenges and opportunities across levels, how the technology will affect the organisation and the services they offer, and the inter-organisational collaborations. There is not much research on AI perspectives that takes into account the structures within a public organisation that consist of both central and regional offices. Mikalef et al. (2020) & Alshahrani et al. (2021).

We formulate the problem as: *Successfully introduce AI in a public distributed organisation.*

The research question (RQ) and sub questions (SQ) developed for this thesis are as follows:

RQ: *What differ in perspectives on AI introduction between regional and central actors in large public organisations?*

SQ1: *What are the perspectives on AI challenges and opportunities by regional and central actors?*

SQ2: *What are the perspectives on the inter-organisational collaborations around AI by regional and central actors?*

1.2 Research approach

The approach for our study was first to conduct a literature review. The review was a systematic literature review consisted of two searches. After a four-phase process of selecting the relevant articles, we analysed the findings and found themes and our research gaps. By looking at the findings from the literature review we developed a strategy for data collection. We decided to perform qualitative data collection through interviews and workshop. We collected our main body of empirical data from NAV and in order to explore potential differences with other major public organisations, we had interviews with two study participants from different organisations. The interviews we conducted were semi-structured, which gave us consistent and reliable data, as well as the opportunity to follow up on information that needs further investigation or new leads that unveils under the process (Recker, 2021, p. 119). To enrich our empirical data and broaden our perspective we also participated in a workshop with participants from different major organisations on the topic of data use for AI and other data intensive applications. Here we gathered data by participating in the workshop as rapporteurs documenting the discussion. We analysed the data collected to identify themes related to the perspectives from regional and central level actors on AI introduction. To perform this analysis, we followed the Gioia method as explained later in the thesis.

1.3 Structure of the thesis

The rest of the thesis is structured into chapters and sup chapters. The structure will be as follows:

Chapter 2 starts with general background information on the subject and then deals with the approach and presents the findings from the literature review in addition to going through the further research proposed by the article and identifying research gaps. At the end of the chapter, we go through the NAV case, where we describe what NAV is and their relation to AI.

Chapter 3 is about the research method. This chapter describes the research design, data collection and how we analysed the data.

Chapter 4 is about the findings from our data analysis. Here we present the findings in the form of the themes we have developed. We will look at quotes from the interviews and discuss what the informant means with the quotes, and what similarities and differences there is between regional and central level NAV employees when it comes to perspectives around the adoption of AI.

Chapter 5 is the discussion chapter. Here we discuss our findings and link it to the literature. In addition to this we will look at the limitations with our study.

Chapter 6 is the last chapter of our thesis. Here we conclude our research, in addition to reviewing the implication our work has for both research, and practise.

2. Background and literature review

This chapter is going to describe the background for the research. The first part is a general introduction to the topic of AI. The second part of the background material is found doing a literature review. The way we conducted it is described and it shows how we established the background material for this paper. These two combined makes out the bases of knowledge this study are going to build upon.

2.1 Man and machine

In this sub-chapter, we will briefly describe what AI is and how it got where it is today. Then we will go over how humans should relate to the new technology and why it should adapt to us and our needs. This interplay is important to be aware of before one can consider starting using AI.

2.1.1. What is AI?

AI technology is relatively new in human history and only stretches back to the 1950's as a science field. You can find early versions of the idea in words like automaton, which in ancient Greek would mean "acting of one's own will". One of the more famous references of the word is by Plato who describes his friend's mechanical pigeon that was moving on its own. Describing something nonorganic as acting on its own will can be considered a predecessor to the idea of artificial intelligence, and we can see that some predecessor concept of AI has followed us for a long time.

The idea got picked up again in the first half of the 20th century by many artists, one of the more famous ones being Karel Capek's Rossum's Universal Robots which introduced the term "Robot" into English or The Wizard of Oz with the Tin Man, a robot that clearly shows a constructed "intelligence" in another entity than a human being. This cultural trend may very well be one of the strongest influences for early scientists and worked as inspiration when they laid the foundation of what was to become AI (Anyoha, 2017).

Alan Turing's publishing of "Computer Machinery and Intelligence" in 1950 can be considered a start for AI as a field within science. In this paper he proposed the famous Turing Test, or as he

calls it in the paper "The Imitation Game". In this paper he proposes how to build an intelligent machine and how to test its intelligence (Turing, 1950).

Just a few years later, in 1956 John McCarthy and Marvin Minsky hosted the Dartmouth Summer Research Project on Artificial Intelligence. In this conference Allen Newell, Cliff Shaw, and Herbert Simon presented Logist Theorist, the very first AI program. This is also where the term "Artificial Intelligence" was coined by John McCarthy. These events where the start and from this point onward the field made breakthroughs and met setbacks throughout the years (Moor, 2006).

AI is a term that historically has been a lot of discussions around. There have been different concerns weighted through the years when defining artificial intelligence like capability mimicking humans, problems solving, consciousness, independent work etc. Dwivedi et al. concluded in their research review on "The common thread amongst these definitions is the increasing capability of machines to perform specific roles and tasks currently performed by humans within the workplace and society in general" (Dwivedi et al., 2021).

From the definition we can learn that there is a lot of potential with this technology. It can benefit society, businesses, and individual humans. The technology is already widespread through products like ChatGPT but also algorithms in software we use every day that determines how we interact with the world, like TikTok, Facebook and many more. It makes our life easier with automating tasks we otherwise would have done manually.

But for a more accurate and relevant definition we will use the EU's AI act article 3, paragraph 1 that state:

> 'AI system' means a machine-based system designed to operate with varying levels of autonomy, that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. (Artificial Intelligence Act, 2024)

2.1.2. The importance of Human Centered AI (HCAI)

One thing pop-culture and cinema has shown us is how spectacularly wrong AI can turn out for humanity. It's shown dystopian AI killing machines, AI social control, erosion of human connection in society that has been replaced by AI and many more different scenarios. They vary widely in how likely they are, but all show potential harm done to us humans. But regardless of how likely the scenario is, they show us the importance of human control of AI.

Human Centered AI (HCAI) is a perspective on design, development, and deployment of Artificial Intelligence. It has a goal of leading AI to be a societal good and work for humans. Scholars from University of Agder conducted a literature review on the different definitions of HCAI and synthesized a new definition that goes like this:

> Human-Centered AI (HCAI) focuses on understanding purposes, human values and desired AI properties in the creation of AI systems by applying Human-Centered Design practices. HCAI seeks to augment human capabilities while maintaining human control over AI systems, by considering the necessity, context, and ethical and legal conditions of the AI system as well as promoting individual and societal well-being. (Schmager et al., 2023, p. 7)

It demonstrates a well-rounded and holistic view of AI which will guide the technology in the right direction. When focusing on making AI systems you will need to develop trust in the systems, which is crucial to make it a viable technology for the future. Trustworthy is a central value for HCAI, and you will find it in many former definitions, because it makes you prioritize human values and desire when developing AI.

2.1.3 AI Adoption and trust

When dealing with AI services in a public organisation, trust by both the employees of the organisation and the society around is important. This is a key concern for implementation and management of AI, to be successful in your endeavours using the new technology. The term trustworthiness in context of AI systems refers to meeting the expectation of a stakeholder in a

verifiable way. This verification is done by the system fulfilling different characteristics of a trustworthy AI. These characteristics include the terms bias, control, transparency, explainability and accountability (ISO/IEC, 2022, p**.** 11-13). In a society like Norway where the form of government is a welfare state, the lack of trust is a big risk. A welfare state cannot exist without trust from the citizens, so the challenge of offering AI services that are trustworthy is something that welfare states such as Norway must take seriously and have on their agenda when implementing AI.

We conducted last year a study that focused on AI risks in the public sector and found that it linked up with the characteristics of trustworthiness from ISO. Risks such as bias, the black box problematic, lack of transparency and lack of competency (control) are all risks that our informants addressed (Halvorsen & Lonebu, 2023a). In the literature review done for that study we developed a concept matrix (Webster & Watson, 2002) where we identified the concept Society. Within this concept there are several articles mentioning this with trustworthiness by the citizens when it comes to using AI, and that the public sector has a social responsibility (Halvorsen & Lonebu, 2023b). Seeing this and a correlation between our findings and the ISO standard, where these characteristics are further developed, shows us the importance of trustworthiness when it comes to AI and introducing the technology.

2.3 Literature review

In this sub-chapter we will look at our approach for the literature review that we performed specifically for the master thesis. It was particularly useful to perform this literature review after performing a review last semester (2023) on a topic again related to AI (AI risks) because we were already familiar with the performance of a Structured Literature Review. The review was conducted by following the approach suggested by Kitchenham, by summarizing existing articles in the field, we could identify the gaps and key insight from previous research (Kitchenham, 2004).

2.3.1 Search and selection process

The search for this literature review was mainly done using Scopus as a database. We started out knowing we wanted to delve deeper into AI in public organisations and look at it from a managerial point of view. That meant we started the search with the search terms "AI", "managerial" and "public" and their respective variations as shown in Figure 1. This gave us good results, but there were few articles. We decided to supplement our search result by looking for more literature in a wider search. We did this by discarding "public" and its variation in the search string. This gave us many more articles to sift through when we looked for papers relevant to our needs.

Search String: "Public"	N= 11
TITLE-ABS-KEY (managerial OR management AND "ai" OR "Artificial Intelligence" AND "Public Sector" OR "Public Organisation" OR "Public Services" OR "Government Services") AND ISSN (1476-9344) OR ISSN (1365-2575) OR ISSN (1526-5536) OR ISSN (1536-9323) OR ISSN (1466-4437) OR ISSN (0742-1222) OR ISSN (0963-8687) OR ISSN (2162-9730) OR ISSN (1872-7530) OR ISSN (1471-7727) OR ISSN (0167-9236) OR ISSN (0740-624x) OR ISSN (0268-4012) OR ISSN (1557-7325) OR ISSN (1570-1255) AND (LIMIT-TO (DOCTYPE, "ar"))	
Wide Search String	N= 233
TITLE-ABS-KEY (managerial OR management AND ai OR "artificial intelligence") AND ISSN (1476-9344) OR ISSN (1365-2575) OR ISSN (1526-5536) OR ISSN (1536-9323) OR ISSN (1466-4437) OR ISSN (0742-1222) OR ISSN (0963-8687) OR ISSN (2162-9730) OR ISSN (1872-7530) OR ISSN (1471-7727) OR ISSN (0167-9236) OR ISSN (0740-624x) OR ISSN (0268-4012) OR ISSN (1557-7325) OR ISSN (1570-1255) AND (LIMIT-TO (DOCTYPE, "ar"))	

Figure 1: The search string used for the literature review. N illustrate the amount of articles

In our search, we decided to choose only certain journals to collect literature from. We used AIS recommended list of journals called "Senior Scholars' List of Premier Journals". This list consists of the most respected Information System journals. To cover more research, we included four additional relevant high-quality journals from the government research field as well. This would give us highly relevant search results filled with good quality literature. Figure 2 illustrates the full list of selected journals.

AIS - Senior Scholars' List of Premier Journals:

o Decision Support Systems
     o European Journal of Information Systems
     o Information & Management
     o Information and Organization
     o Information Systems Journal
     o Information Systems Research
     o Journal of the AIS
     o Journal of Information Technology
     o Journal of MIS
     o Journal of Strategic Information Systems
     o MIS Quarterly

Other journals:

o Government Information Quarterly
     o International Journal of Information Management
     o ACM Transaction on Computer-Human Interaction
     o Information Polity

Figure 2: Overview of selected journals for the literature review

The next step in our literature review was to go through the articles carefully to find which articles are most relevant to our research and which research gaps that exist. Frank Danielsen's method for literature review helped us here (Danielsen et al., 2022, pp. 151-187). By using this template, we could systematically go through the articles and assess them first by title, then abstract, then by skimming, before finally deeply analysing them. In all phases of the process (Figure 3) we removed articles that we felt were not relevant enough. If we thought the article still could be of some use later, we marked them as SL (Support Literature).

| Rate based on title | → | Rate based on abstract | → | Rate based on scimming | → | Rate based on deep analysis |
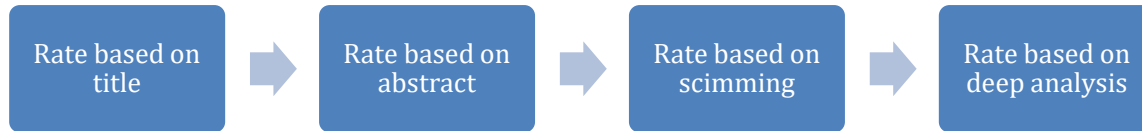
Figure 3: The process of the literature review

To find out what articles we should bring to the next phase and which to remove, we scored the articles:

0 = not relevant -> will not be taken further

1 = might be relevant -> taken further but with doubts

2 = relevant -> taken further

3 = very relevant –> taken further

The score was given based on developed inclusion criteria. These criteria were that *AI must be in focus*, the article needs to be *sociotechnical*, and preferably *be empirical*. Which means that an article that is categorized as a review, for it to continue in the process, must be good and relevant, and we were stricter with them.

By using the template for our review, it was easier for us to have control over all the articles we worked with. The template gave us easy access to information such as author, abstract, and the number of citations, as well as a link to the article. This made us stay on top of the process and made it easier for us to collaborate. Beside using good journals, thoughtful keywords and asked ourselves control questions along the way, the template has helped us when it came to quality assurance of the articles we ended up with. Figure 4 illustrates the articles we ended up with after the literature review process.

Authors / Year	Title	Journal
Alsahrani A., et al. (2021)	An attention-based view of AI assimilation in public sector organizations: The case of Saudi Arabia	Government Information Quarterly
Dwivedi Y.K., et al. (2021)	Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy	International Journal of Information Management
Gesk T.S. & Leyer M. (2022)	Artificial intelligence in public services: When and why citizens accept its usage	Government Information Quarterly
Hjaltalin I. T. & Sigurdarson H. T. (2024)	The strategic use of AI in the public sector: A public values analysis of national AI strategies	Government Information Quarterly
Maragno G., et al. (2023)	Exploring the factors, affordances and constraints outlining the implementation of Artificial Intelligence in public sector organizations	International Journal of Information Management
Mikalef P. et al. (2022)	Enabling AI capabilities in government agencies: A study of determinants for European municipalities	Government Information Quarterly
Rinta-Kahila T. et al. (2022)	Algorithmic decision-making and system destructiveness: A case of automatic debt recovery	European Journal of Information Systems
Selten F. & Klievink B. (2024)	Organizing public sector AI adoption: Navigating between separation and integration	Government Information Quarterly

Van Noordt C. & Misuraca G. (2022)	Artificial intelligence for the public sector: results of landscaping the use of AI in government across the European Union	Government Information Quarterly
Wang C. et al. (2021)	Public and private value creation using artificial intelligence: An empirical study of AI voice robot users in Chinese public sector	International Journal of Information Management
Wirtz B. W et al. (2022)	Governance of artificial intelligence: A risk and guideline-based integrative framework	Government Information Quarterly
Yigitcanlar T. et al. (2023)	Artificial intelligence in local government services: Public perceptions from Australia and Hong Kong	Government Information Quarterly

Figure 4: Articles from the literature review

2.3.2 Result of the literature review

By doing the literature review we identified articles within several themes. These themes are areas which we can link to introduction and implementation of AI and repeats itself in several of the articles. The themes we identified was *Benefits*, *Risks and Challenges*, and *Strategies*.

Benefits

The advantages that AI provides is an important recurring theme and are addressed in several articles. Wang et al. (2021) examines this with the use of an AI voice robot in the Chinese public sector, which turns out to have a significant connection with the fact that it creates value. The use of AI chatbots is also mentioned as an advantage by Dwivedi et al. This in addition to using AI to solve problems such as shortage of resources, scale of operations and standardization of

government delivery systems. The paper also mentioned this with trust, that by using AI in services, the trust of the citizens can increase (Dwivedi et al., 2021). Van Noordt and Misuraca (2022) explores digital transformation in public services and emphasises the important role that AI gives in reshaping government operations and interactions with citizens. The importance of balancing the benefits together with the potential risks that AI brings is mentioned. This takes us to the next topic, risks and challenges.

Risks and Challenges

The terms risk and challenges are two different terms but are in the literature mixed up and are used interchangeably. The difference with these terms is that a challenge is an obstacle which you choose to overcome or meet with a form of action, while a risk is an adverse event with a harmful outcome (Halvorsen & Lonebu, 2023a). Challenges related to AI implementations such as data governance, algorithmic decision-making, ethical concerns, and the potential impact on bureaucratic processes are discussed (van Noordt & Misuraca, 2022). Challenges related to misalignment between AI decision making and management decision making, challenges in developing and implementing AI infrastructure, and tensions with linguistic and national cultures are also addressed. This by Alsahrani et al. (2021) which emphasizes that it is important that organisations addressing these challenges for a successful AI adoption in the public sector. Risks such as loss of privacy, job displacement and the lack of understanding is also mentioned and are something the public sector need to be aware of (Dwivedi et al., 2021). From this we can see there are pointed out a general risk of AI goals that won't align with the organisational values and goals. This stems from a lack of transparency in the technology and low technical capabilities of the organisations that adopts AI.

Strategies

Having a good strategy for the introduction of AI is important and is a theme we have identified in the literature. Within this theme we have chosen to include strategies, guidelines, and framework. We have done this because we believe these falls under the same umbrella. Articles within this theme includes Maragno et al. which developed a framework showing how AI

implementation is the result of a combination of contextual factors which are interrelated. Findings from the articles is that AI related factors bring new affordances and constraints to the application domain (Maragno et al., 2023). There is also developed a framework explaining through four mechanisms how ADM (Algorithmic decision making) can lead to negative effects. These mechanisms are *directing change with limited vision*, *limited sociotechnical agency*, *dismissing destructive effects,* and *generating societal response* (Rinta-Kahila et al., 2022*)*. Wirtz et al. (2022) provides a risk and guideline framework for governance of AI. The risks and guidelines are mapped into categories which are *Technological, Analytical, Informational and communicational, Economic, Social,* and *Ethical*. These are again transferred into a four layered framework which combines AI risks and guidelines, using a risk management process to create a governance layer. It acts as a reference for implementing AI governance strategies in the public sector. Having a good plan for the implementation and use of AI needs a lot of work to be developed and it is important to acknowledge that AI adoption is influenced by context-specific factors, highlighting the need for tailored strategies (Selten & Klievink, 2024).

Area for research beyond the current state of the art

By looking at what the articles propose as future research, we found several areas that were interesting to take a closer look at. Going through the literature, it became evident that the adoption and management of AI in public organisations is of critical importance for societies and economies. AI in the public sector is a new phenomenon and it is currently evolving. We need more research in the field. Selten and Klievink emphasizes in their article that there is a need for a general investigation of public organisations' implementation of AI (Selten & Klievink, 2024) and Yigitcanlar et al. (2023) are in their article trying to fill the gap around the limited knowledge around AI in context of public services. This shows that AI in the public sector is something that needs more attention within the academic world and highlights the importance of researching it. Having trust in AI is also something that's brought up in the review, where Gesk and Leyer (2022) addresses this with a need for an investigation of public trust within human - AI collaboration. The same applies to Dwivedi et al. (2021) who propose research on the consequences of the public sector workforce by delegating decisions that have previously been made by humans to AI.

A more specific gap is the one Mikalef et al. (2020) suggest in their article. They propose research into what kind of factors influence the implementation and adoption of AI both nationally and regionally. In addition to the municipalities ability to use AI effectively. They say that their analysis most likely does not include important factors that is national or regional specific. Besides this they emphasise that continued research will be to explore how roles assigned to local governments influence their likelihood to develop expertise in AI.

Further research provided by Rinta et al. (2022) goes into this with implementation of AI in a public organisation for welfare overpayment detection pointing on how top management´s limited vision could affect the efficacy of the AI system, the fairness of decision-making, and the well-being of citizens reliant on welfare services. The top management limited vision and that this can affect various aspect of the introduction and implementation process, is something we can link to the article by Mikalef et al. which identifies factors that influencing the implementation and adoption of AI. In addition to this, Alshahrani et al. (2021) address the fact that there is a difference between the people who are responsible for finding out how the public will use AI, and the people who will adopt it in the organisation. They suggest more research on topics such as what actions that needs to be taken to make communications between departments better, and what action that is needed to tackle the challenges around how the decisionmakers or leaders raise the awareness of adopting AI and its importance in the organisation.

In this literature review we have identified three themes. This is *Benefits, Risks and challenges* and *Strategies*. We have also looked at what kind of areas for further research exists within the field. We were especially interested in areas for further research related to the particularities of complex public organisations. The gaps we have identified are that there is a general need for research within public organisations' implementation of AI, and that there is limited knowledge around AI in the context of public services. In addition, we have found that research into what actions need to be taken to facilitate communication between departments and what kind of factors influence the implementation and adoption of AI both nationally and regionally is something that is interesting to research.

2.4 NAV context

The Norwegian Labour and Welfare Administration, abbreviated into NAV in Norwegian, is the part of the state that handles labour and welfare services for the Norwegian people. Their task is to provide social and financial security and to facilitate the transition into work and activity. To make this possible they are allocated around a third of the state budget. This is used to serve citizens facilitated work, unemployment benefits, work assessment allowance, sickness benefit, child benefits and cash-for-care benefits (NAV, 2023).

To make the most of the money allocated to NAV they have formulated three principles to resolve their social tasks. These all are intended to produce the best services possible. To achieve this, they have described the importance of digital technologies in their "NAV's State of the world review 2023-2035" (NAV's Omverdensanalyse 2023-2035). In this document they describe the new technologies and the opportunities this gives NAV to improve and be more efficient in their processes. This describes how the technology can help them improve across their organisation and products and one of the key technologies underlined is AI (NAV, n.d).

NAV has already started to explore how to use AI in their organisation. They have conducted three pilot projects with AI to test out its capability (Digdir, n.d). One was a chatbot which they use today to help its users with their general questions. The other two was AI projects that helped with effective CV matching and predicting the development of sick leaves of their users. The sick leave development project had a secondary aim to shorten the path from idea to implemented AI in other areas of NAV. This is the furthest it seems they have tested out implementation of AI. The report describes problems they faced related to legal, fairness and explainability but doesn't go in depth on challenges with introducing AI technologies in the organisation (Datatilsynet, 2022). NAV is a distributed organisation, where the operations of the organisations take place in offices all around the country. In our thesis we are talking about actors from central and regional level of the organisation. We define the employees working at NAV's headquarters as central actors, and employees working outside of this office as regional actors.

3. Research Method

3.1 Intro

Qualitative research is a method of inquiry that seeks to understand human behaviour and the reasons that govern such behaviour (Denzin & Lincoln, 2005). It's particularly useful for exploring complex phenomena that are impossible to quantify. The method allows us to delve into the 'why' and 'how' of decision making, rather than just 'what', 'where', and 'when'.

A case, in the context of qualitative research, refers to a specific instance or example that is studied to understand question related to "how" and "why". Cases can be individuals, groups, organisations, or even events (Yin, 2009, p.1).

In exploring the introduction of artificial intelligence within a public organisation, this study adopts a constructivist epistemological stance. Constructivism posits that knowledge and meaning are constructed through interactions with the world and are thus subjective (Creswell & Creswell, 2017, p.6). This perspective allows for a deep exploration of how the different stakeholders within the organisation perceive, react to, and shape the process of AI integration. By conducting in-depth interviews and Gioia analysis, the study seeks to uncover the different and subjective meanings that individuals assign to AI technologies, highlighting the varied impacts and considerations across the organisation (Gioia et al., 2013).

3.2 Data collection

The interviews we performed were semi-structured. This type is ideal when you wish to combine the strengths of the structured format and the unstructured. It gives a more consistent and reliable data while it also allows to follow up on information that needs further investigation or new leads that unveils under the process (Recker, 2021, p. 119).

Interviews were organised and conducted on Teams, a digital platform that allows for effective communication over the internet. This platform was particularly useful given the circumstances that favour remote interaction given that the case is a distributed organisation.

The interviews were recorded to ensure that no information was lost or overlooked. These recordings were then transcribed to facilitate data analysis. This process is in line with the recommendations of Rubin and Rubin (2005) in their work on qualitative interviewing.

The informants were selected based on their relevance to the research question and problem statement. The process of how we got the informants is a crucial aspect of the research as it directly impacts the validity and reliability of the study. The target organisation has a research relationship with our university. Through this we got connected with key informants in the organisation.

	Informant	Affiliation Type
1.	Department manager (NAV)	Regional level
2.	Project manager (NAV)	Regional level
3.	Manager for a local initiative (NAV)	Regional level
4.	Data scientists (NAV)	Central level
5.	Data scientists (NAV)	Central level
6.	Senior advisor (NAV)	Regional level
7.	Office manager (NAV)	Central level
8.	Data scientist (Kripos)	Central level in another public sector
9.	Communication advisor (Helfo)	Central level in another public sector
10.	Office manager (NAV)	Regional level

Figure 5: Table for interviews

Besides conducting interviews with NAV employees, we also participated at a workshop to get a broader understanding of other public organisations perspectives. The workshop served as an interactive platform for stakeholders to share experiences. The workshop participants were 21 in total and included representatives from five organisations. The workshop was designed to facilitate open dialogue and knowledge sharing among participants. It included presentations and group discussions. We actively participated in the workshop as rapporteurs documenting the discussions, insights, and outcomes of the workshop. The workshop outcome complemented the interview findings by providing a broader perspective. Overall, the workshop provided valuable context,

allowing for a comprehensive understanding of the issues and perspectives surrounding the implementation of AI. The combination of interviews and workshop participation enhanced the richness and depth of the data. Figure 6 illustrates the workshop participants. The organisations are anonymized except for the Norwegian Data Protection Authority. [1]

	Public sector participants	Number of participants
1.	Public tax organisation	4
2.	Public health organisation	4
3.	Public welfare organisation	1
4.	Police organisation	3
5.	The Norwegian Data Protection Authority	1

Figure 6: Table of workshop participants

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[1] We have used Microsoft Copilot (Microsoft, 2024) in sub-chapter 3.1 and 3.2. It is an AI-tool that are built upon the language model GPT-4 and Bing Search. We used it to brainstorm how to develop these sub-chapters, by giving it our notes and ideas and asked it to expand on it and come up with new sources if it had some, which were checked thoroughly. We have not used Copilot to write these sub-chapters, only for giving us ideas on what to include, which we then have processed and written ourselves.

3.3 Data Analysis

After the data was collected it was time for the data analysis. For the data analysis we used the software NVIVO to code our interviews. By marking out the section from the transcribed interviews we could identify what is known as 1st order concepts, which we then developed to 2nd order themes, and last to dimensions. This approach is what is known as the Gioia methodology. This methodology emphasizes both creativity and systematic rigor in the process of generating new concepts and grounded theories from empirical data (Gioia et al., 2013). The method helped us going from the interview data, which was raw to coded data, which we then could employ in the Gioia model and make "data structure" (Rönkkö, 2020, 6:38)

The coding of the data was done systematically, and we focused on identifying the concepts and themes which was related to the introduction of AI. We gave the codes and themes labels which were concise and understandable. This made it easier for us to do the analysis, which was data driven. By using a data – driven approach we could search for patterns in the data to get some findings instead of sieving the data through already established concepts from the literature. After the analysis we used the findings which now was in the format of codes to develop the Gioia model to illustrate the 1st order concepts, the 2nd order themes and then the overarching dimensions.

When it comes to validation of our findings we took several measures, both before and during the data analysis phase. This was done by changing the interview guide during the course of the project. We tried couple of approaches until we found a guide that worked. The interview questions are designed to tackle the research problem head-on and extract relevant information from the participants. The questions are constructed to approach the information from various angles, ensuring ample opportunities for the interviewees to recollect and elaborate on the specific insights we seek. We did employ inter-coding practises when coding the interviews, this to maintain consistency. This practise involves that several researchers code the data independently, and then discuss the findings from the coding to resolve any discrepancies. In addition to these measures, we chose to use NVIVO, a proper coding software that improves both the rigor and the reliability of the analysis.

For the data analysis we used the Gioia method. From the 1st order concept we coded, we developed 2nd order themes, which then led us to two overarching dimensions. The number of concepts developed during our coding process was 61. Based on these concepts we developed seven themes. Our themes are the perspectives that emerged during our interviews and are as we have interpreted it, the aspects the central and regional actors in NAV believe are most likely to influence or be affected the AI introduction. The themes we developed are *Concerns around citizen, Operation concerns, Organisation concerns, Economic concerns, Environmental conditions, Legal concerns,* and *Technology concerns*. Further we have developed two dimensions to which we have linked these themes to. These dimensions are *Affected factors* and *Influencing factors*. The first dimensions which includes the themes *Concerns around citizen, Operation concerns* and *Organisation concerns* is about the factors that is affected by AI introduction. The other dimension which includes *Environmental conditions, Legal concerns,* and *Technology concerns*, is the factors that influence the introduction. The theme *Economic concerns* is connected to both dimensions. The reason for this is because economic is affected by the AI introduction, but also influence it. The Gioia model is illustrated inn Figure 7.

Concerns around citizen
- Clearer communication to target demographics
- Lov competence exclusion
- Unforeseen social consequences
- Use government benefit
- Recommendation improvement

Operation concerns
- Analog work
- Old way of structuring work
- Require understanding of AI use
- Usecase guidelines
- Internal service improvement
- Improved potential
- Efficiency improvement
- Generated summaries
- New way of structuring work
- Doubt of the usability
- Lack of control on information integrity
- Lack of human touch
- Utilize the benefit

Organisation concerns
- Communicate regional value to improve adoption
- Communicate continuous development
- Many interests input
- Open internal communication
- Collaboration outside the organisation
- Lack of collaboration
- Lack of adoption control
- Lack of capacity
- Low regional technical innovation
- Central development
- Rigged for central innovation
- Implementation
- Top-Down understanding
- Autonomous team vs a common goal
- Autonomous team accountability
- Regional consulting

Economic concerns
- Cost benefit analysis
- Lack of economic funds
- Many resources

Enviromental conditions
- External data handler concerns
- External efficiency pressure
- Norwegian context
- Centrally structured

Legal concerns
- Data transparancy
- Decision transparancy
- Human accountability
- Outdated legislation
- Privacy concerns in AI products
- Privacy constraints
- Safety first
- Transparency by law

Technology concerns
- AI enhanced product
- Application with integrated AI
- Decision support systems
- Bias in job recommendation
- Unforeseen bias
- Shit in, shit out
- Language barrier
- Unwanted data access
- Low system integration
- Outdated systems
- Early stage of the adoption
- Ambitions to be early adopters
- Start with low hanging fruit

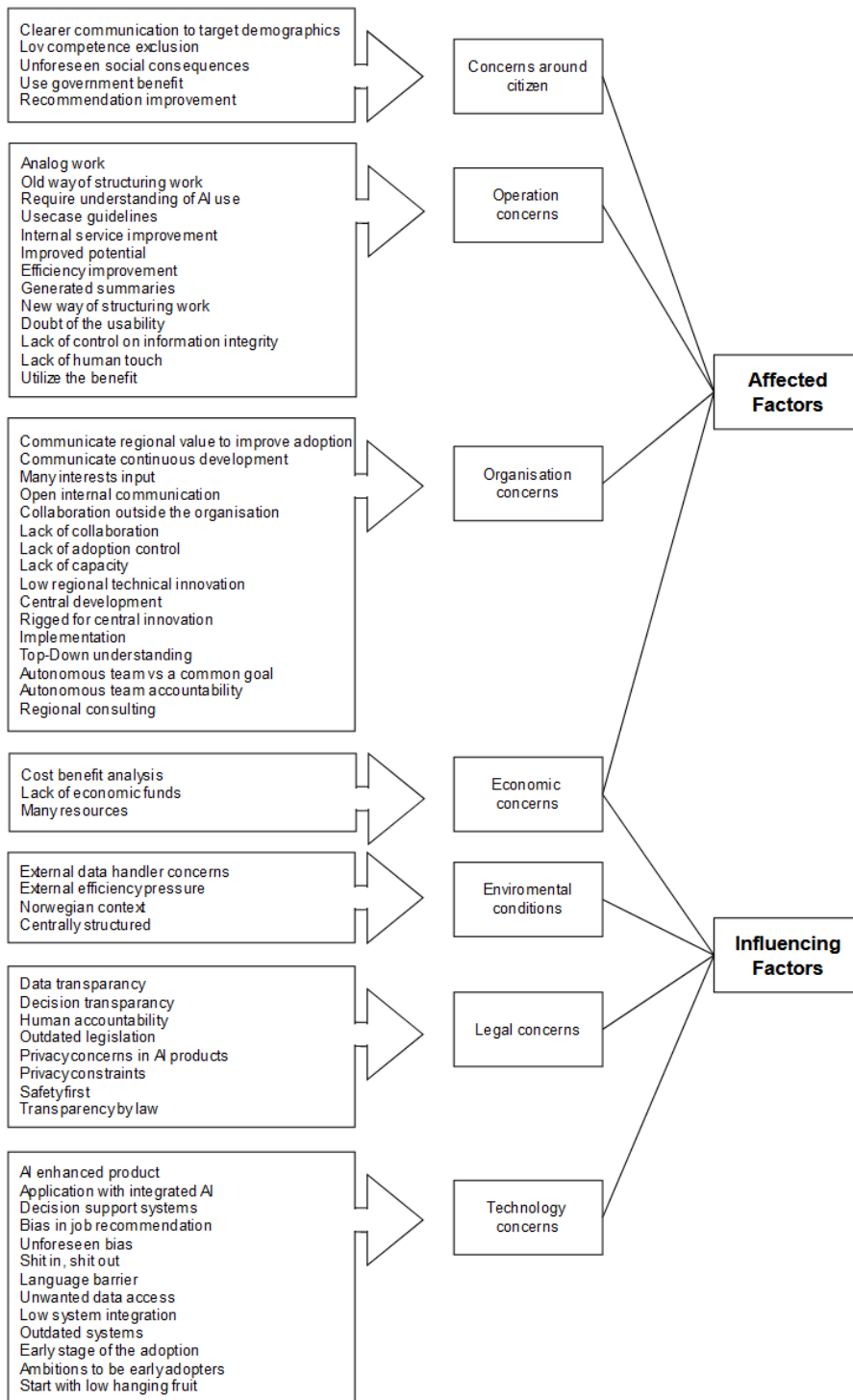**Affected Factors**

Influencing Factors

Figure 7: Gioia model

4. Findings

In this chapter we are going to look at the findings of our data analysis. We will go through the themes in detail and see the different codes that the themes consist of. Then we will look at similarities and differences between the regional and central levels of NAV when it comes to their perspectives on AI. At the end we want to compare NAV to two other public organisations, where we will focus on how far they have come within introducing AI and how the collaboration is with them compared to NAV.

4.1 Themes

In this subchapter we are going to present the quotes and codes that make up the themes. The codes are generalization or short versions of the quotes we have found from the interviews. They consist of one or more quotes, and the codes are group together with other codes with similar messages to create useful themes to understand what the informants are talking about. All the codes in each theme are presented in a table which can be found as an appendix at the end.

4.1.1 Concerns around citizens

The first theme we will go through is what we have called *Concerns around citizen*. This theme consists of the different perspectives the regional level and central level of NAV has when it comes to the citizens, the people which use the services NAV offer. Already by looking at the number of codes within this theme we can see that this is something which regional level NAV employees talks more about than the central level ones. Aspects concerning citizens have eight codes attached to it on the regional level but when it comes to the central level it has only one (see Appendix C). Two codes that we have developed from the interviews with the regional level are "Low competence exclusion" and "Unforeseen social consequences". These codes concern those who are negatively affected by the development of artificial intelligence. One of the informants says this:

> With more tasks being automated, there might be fewer contact points for the elderly, for those who don't have an extensive network. (Regional level interviewee)

And another says this:

> So I think there's something human that is disappearing in this, which I believe we might not see the consequences of because we are in the midst of it. (Regional level interviewee)

These quotes tell us that the regional level employees are anxious that AI can have consequences for the elderly and others who do not have such a large network, they are afraid that interpersonal relationships will disappear as a consequence of the implementation of AI technology.

In addition to these not so positive perspectives, the regional level employees also came up with opportunities that AI can provide. We have categorised it into two codes, "Clearer communication to target demographics", where they talk about using AI to translate the bureaucratic language to more simple language so the younger people in the age 14-15 can more easily understand it. The next code is "Use government benefit" which is about the thing that there is so many prescriptions and rules and rights that have consequences for the users, so because of this they say that AI can help the citizens that use NAV's services to easier understand the consequences of choices they take.

The quotes within these codes is as followed:

> When we had to communicate, because it must be communicated to each individual youth, that they are now part of the target group in the youth guarantee, and what it means. And that document is written somewhat bureaucratically, so we have taken it and translated this bureaucratic language into something that a typical 14-15-year-old can understand. And then we have produced it, and it is written in a completely different way, or in a more common

manner, and more understandable than it was in the academic language. (Regional level interviewee)

And:

There are an incredible number of regulations, rules, and rights that have consequences. So, given that AI can help ensure that citizens using NAV's services can more easily understand the consequences of the choices they make. That an AI can inform them that if you choose this, then this and that might happen. (Regional level interviewee)

If we look at what the central level NAV employees says within this theme, there is as mentioned only one code. The code is as followed:

We do see the potential, but we think that AI can contribute to getting more people into work. Perhaps faster? (Central level interviewee)

The code says that one of the potentials of AI is that it can help get people into work. The code is concrete, and it shows that the central level employees are thinking about the potential of how AI can help the users of NAV's services. Which is a good thing, nevertheless, by looking at both the number of codes (see Appendix C), but also the content of the codes we can see that this theme, which includes the citizens, is something the regional level employees have given more thought to. This is something we believe comes from the fact that the regional level NAV employees are much more in contact with the users of the services, and for that reason have given more thought to this topic.

4.2.2 Economic concerns

The theme *Economic concerns* has to do with resources required to introduce AI. When we talk about *Economic concerns*, we refer to aspects that has to do with money, potential cost etc. but also people, which is an important resource when it comes to introducing AI. We noticed that only in interviews with central level actors we found quotes related to this theme. We believe that this comes from the fact that the central level ones tend to have more decision-making authority when it comes to implementation of AI and therefore sees how economic aspects affect the introduction of the new technology and because of this have had more thoughts about this compared to regional level employees.

Within this theme we have three codes with one quote each. The first code is what we have called "Cost benefit analysis" where the informant says this:

> Does it feel like a tool that has value for you in your daily life? That's essentially what our pilot is all about, so that's what they're supposed to answer for us. We're going to say that we're going for this in NAV, but then I think more along the lines of it shouldn't be a one size fits all. Some environments might benefit from it while others may not. And then there are the expensive licenses. It's not like NAV IT is paying for 22,000 licenses for it because it's very expensive, so if someone says it's incredibly useful for them and they would like to have it, they actually need to budget for the additional cost, which is on top of an Office license. That's the thing with Microsoft, they have many types of licenses, and it's our responsibility as the IT department to try to figure out what are good combinations of products and licenses for the different environments. So, it will be very exciting to find out. (Central level interviewee)

The context around what our informant says here is a pilot project where they try to find out if Microsoft Copilot is a useful tool for the employees in NAV. The Pilot has been run at local offices, regional offices, and NAV's aid centres. One of the purposes with this project is to find out if this

tool is something NAV should go ahead and invest in. Our informant emphasises that him or her thoughts around this, which was said during the interview: that it doesn't have to be one size fits all, and that there are some who will be able to benefit from the tool, while others will not. Further it is addressed that the licenses are expensive and that if some people find that the product is something for them, the offices themselves must have a budget for it. Still, it will be the IT department that is responsible for the composition of the products, and their job and finding out what kind of packages work. It is this job that we put into what we mean by "Cost benefit analysis". Doing this job will be important in order to have control over the cost, and to be able to see it in the context of the usefulness of the product.

The next two codes are "Lack of economic funds" and "Many resources". The quotes from these two codes are taken from two different informants and contradict each other slightly. The quotes are as followed:

> And what they can achieve, and then it's about testing it within the frameworks we have. There's always a showstopper, so to speak, and that is whether we have the budget to do it. (Central level interviewee)

And:

> And I also think that there are some other frameworks just by virtue of us being a quite large public entity. NAV, that is. This means we have a lot of resources and a large professional environment, allowing us to explore many cases. (Central level interviewee)

The first quote is in context of collaboration between regional and central level actors, and if the regional offices is good at taking initiative. Within this topic the informant says that initiatives can come from all part of the organisation, and when initiatives come, they need to find out what they want to achieve, and then test it within the framework they have in NAV. This is where the challenge around lack of economic funds comes in, and as our informant says, is a real showstopper. Because some projects can be expensive, and NAV does not have the opportunity to

carry out everything. The next quote which is said in the context of AI opportunities in NAV, draws in a different opinion within the topic of *Economic concerns*. Here the informant says that NAV is a large organisation, with many resources and a large professional environment. For this reason, they therefore have the opportunity to explore many cases. This shows that there are also different opinions within central level NAV when it comes to resources related to the economy.

4.2.3 Environmental conditions

The next theme we have developed is what we have called *Environmental conditions* and is about how the outside world effects the introduction of AI in the organisation. It is important for NAV to know about and understand the environmental conditions because it will help them to assess the potential challenges and opportunities for AI implementation. The topic within this theme is similar to the *Economic concerns* one and is only mentioned in the interviews with the central level actors. We think that the reason for this is the same as last time, that the central level actors are responsible and more involved when it comes to implementation of AI and therefore have had more thoughts about this compared to regional level employees. The first code is what we have called: "External data handler concern" and the informant says this:

> We can't turn on something like this until, on one hand, we know what Microsoft says, and on the other hand, we can trust that this is how it is, and that this data won't be misused or fall into the wrong hands. (Central level interviewee)

The context of this quote is the opportunities NAV can have when it comes to using Copilot. The challenge comes from the fact that Copilot is a tool created by Microsoft, and can NAV be confident and trust what Microsoft says about their data handling? This will be a challenge considering that NAV has a lot of sensitive information, and it would be catastrophic if this was misused or went astray. This means, as the informant also mentions, that they cannot use the technology that is mentioned until they are completely sure about these data handling challenges. This shows that NAV is aware of these challenges, and that this is taken seriously.

The next code within this theme is called "Centrally structured". Here, the informant talks about the unique position NAV has thanks to the way the welfare state in Norway is structured, where everything is under the same roof, and that Norway is alone when it comes to have this position. According to the informant, this also makes it possible to see things cross-sectionally in the public sector. The quote is as followed:

> It's quite exciting because we are uniquely positioned in Europe, perhaps even in the world, because we have consolidated so much of the welfare state under one roof. Not many other countries have done this. Even in the countries we like to compare ourselves with, they haven't done it. In Sweden, for example, to receive the same welfare benefits and services that NAV offers, they have equivalent systems, but you have to go through about 20 different agencies to get the same services. They have a more fragmented approach, while we have everything under one roof. This gives us a unique opportunity to see things across different areas, which is exciting. (Central level interviewee)

We think that the fact that the welfare state is as the informant said "under the same roof" is a big advantage for NAV, and that because of this can give them greater opportunities when, for example, it comes to collaboration around the introduction of AI. Although this is a good starting point, the informant also says the following:

> There's also the fact that we know we might have to do things differently going forward. The model we've had up until now—we need to do more with less and all that. So, it's important when doing that to consider how we do it and how we ensure that everyone gets to be part of it. (Central level interviewee)

This quote we have coded as "External efficiency pressure" and is about that in the future we need to do things in a different way than it has been until now. We must change the model, but still make sure that everyone is on board. According to the informant, how this is to be done and how we can ensure that everyone is involved is a challenge we face. We can interpret that these changes

that the informant refers to comes among other factors from the development and implementation of new technology. This is a development that the public sector organisations such as NAV must follow closely and join in on. Falling behind and letting the rest of the society continue without them is far too great a risk.

4.2.4 Legal concerns

The next theme we have developed is *Legal concerns*. This theme focuses on laws and regulations that guides or hinder the introduction of AI in public organisations. Considering legal implications is crucial to ensure responsible and compliant AI deployment, in addition to being able to retain trust among the citizens. This theme has been covered by informants in both the central and regional level interviews. Nevertheless, we can see by looking at the number of references (see Appendix C) that regional employees have 12 references distributed on eight codes. Central level on the other hand has five distributed on four codes. We will start by looking at the codes which is a part of both central and regional level.

The first codes we will look has to do with transparency. There are three codes within this term: "Data transparency", "Decision transparency" and "Transparency by law". Since all these codes has to do with transparency, we think it makes sense to go through them together. The first quote is from one of our informants from central level:

> There are many challenges with fairness and explainability that we've been considering for a while, and what makes it particularly relevant for us is not that it doesn't affect everyone else, but we are highly regulated in NAV, as public administration is. (Central level interviewee)

In this quote our informant mentions that there are challenges around both fairness and explainability which are relevant for NAV, bearing in mind that NAV is a part of administration and is therefore thoroughly regulated. This with explainability and transparency is something our informant believes is required by law.

Our informants from the regional level of NAV says this:

> If it is going to be like this, we need to understand how decisions are made by AI. And when I am so clear that we must be able to provide an explanation, it is because it needs to be so transparent that it can withstand scrutiny and be clear enough for everyone to understand the basis and why the outcome is what it is. (Regional level interviewee)

And:

> I believe that by law, they should be able to receive an explanation of what assessments have been made and what the decision is based on. Yes. I think it's included in the decisions. What assessments have been made and so on, and there is often criticism if there is not a good explanation. (Regional level interviewee)

And:

> Yes, absolutely, this has to do with trust. If someone needs to speak directly with us, we must know the basis for our decisions. (Regional level interviewee)

The first quote has to do with decision transparency. Here our informants says that it is important that if you use AI as a decision tool, you must understand what lies behind that decision. Further the informant says that they must be able to vouch for the decision that is taken, and that the explanation should be understandable so you can understand why the outcome is what it is. The next quote is about transparency and law. Here our informant says that a citizen which use NAV's services has right to get a justification for a decision made in a case that concerns them, and that this is written in NAV's resolution that they should know what assessments have been made. The last quote is about data transparency, and the context of the quote is that NAV should know what data that a decision-making tool bases its answers on. The informant emphasises that this is important because of trust.

Now we look at some perspectives our informants have around operating legally, and challenges related to privacy. Within this, both central and regional level employees have some perspectives worth addressing. The central level says this:

> I think we are going to proceed very cautiously, and overall, we are dependent on people having trust in NAV as a system, that they receive fair decisions, and that we adhere to the laws regulating decisions in NAV. (Central level interviewee)

And this:

> So there are good and extensive discussions before taking that step. And it's true that security trumps everything. It has to be because we want to achieve benefits for those who will use AI, whether it's you receiving services from NAV or for the employees. There need to be clear frameworks for what these tools should be used for, in my opinion. (Central level interviewee)

Our informant mentions that they will move slowly when it comes to adopt and implement AI. This is because they depend on NAV as a system having trust among the population, that the users of NAV's services get what they are entitled to, and that the laws that regulate the resolutions in NAV are followed. The next quote considers that good discussions before making a choice are important and that safety always comes first. It also emerges that in order for the benefits of the tools to emerge, it is important to have clear frameworks for what the tool is to be used for.

Now to the regional level employees. The informants there say as follows:

> And if it were to help us and we also had to be sure that we are following the law, there could be some dangerous elements if it actually summarizes things incorrectly or gives us wrong information. To what extent should we then go in and check or control? (Regional level interviewee)

And:

> No, I have no idea. I think at least where I am, people are very concerned with laws, regulations, and privacy. I believe we would need reassurance that this perspective is also taken care of in all of this. That we're not taking risks with something. People don't want to make mistakes. (Regional level interviewee)

And:

> We also see that there are some challenges, perhaps related to privacy and such. For instance, how to use it in NAV and how to comply with the regulations. We understand that it's not necessarily straightforward. (Regional level interviewee)

The first quote has to do with the challenge surrounding whether you can trust what AI says is correct and whether it follows existing legislation. In the next quote the informant believes that many of the case handlers in NAV are concerned with laws, regulations, and privacy. They are afraid of making mistakes. The informant says that they needed to be reassured about this and to be taken care of. The last quote linked to operating legally and privacy is about privacy challenges. The context is how AI can be used in NAV, and the informant says that the technology probably would help them and wish to use it but that they understand that there are some challenges related to privacy and how to use it, and at the same time comply with regulation.

The last aspect within the theme *Legal concerns* has to do with legislation. A code we have found here is "Outdated legislation" and is something that mentioned in interviews with both central and regional level NAV employees. This aspect is about the fact that the legislation around AI is out of date and does not keep up with its progress. The quotes are as follows:

> We are highly regulated in NAV, as public administration is. But we're not entirely sure if the guarantees provided by the laws will hold up against this technology. It challenges us in different ways, right? So, how do we know, for example, that the protection we get through the likestillingsdiskrimineringsloven

> will actually safeguard us and that it provides the protection we need when dealing with AI? (Central level interviewee)

And:

> Where, among other things, there's the issue of being allowed to transcribe meetings between NAV and the user. As of now, we don't have that, because there are some things we still don't know about data sharing. That said, we hope to get there because we know it would be a huge benefit for everyone working with user follow-up. (Central level interviewee)

And:

> The legislation always lags behind developments. (Regional level interviewee)

The first two quotes are from central level employees in NAV. The first quote says that the informant is not sure if the laws that we have today is ready to meet technologies such as AI. This because it challenges in other ways than we have seen before, and how do we know that the protection we get from the laws today will continue to protect us in the face of artificial intelligence. In the next quote the informant comes with an example around transcribing a meeting with NAV and a user of NAV's services. As of today, this is not legal due to the legislation, but that he/she hopes this will change because this will free up time so that they can use more time following up on users. The last quote within this theme is from a regional level informant and is a short one which emphasises that the legislation always is behind the development, something which reflects in the other quotes as well.

By looking at the quotes from the informants we can see that both central and regional level has some perspectives and thoughts around issues related to the theme *Legal concerns*. Within the references that have to do with transparency, we can see that the difference between regional and central is that central level talks about that it is important that NAV thinks about this considering that they are a public actor. The regional level actors talk more about that the users have the right

to a justification if an AI tool has been used, and that this is important because it is legislated, but also to preserve trust among users. The regional level actors address this with the user more than the central actors. When it comes to operating legally and challenges to privacy, we can see that the central level talk about the need to proceed carefully and have good discussions, as well as to set clear frameworks, they therefore show a good understanding of this. The regional level actors are perceived to be a little more uncertain about this, and also point out that they would like to be reassured and looked after when it comes to maintaining personal privacy, something that seems to come from their fear of making mistakes. On this issue of outdated legislation, both central and regional level agrees that the legislation lags behind. Although the central level is a little more detailed in their answers, the regional is also aware of this.

4.2.5 Operation concerns

The theme *Operation concerns* is a group of aspects related to everyday tasks and processes within the organisation and how they likely are going to be influenced by the AI introduction. This includes understanding the potential impact on workflows, job roles, skill requirements, decision-making processes and overall operation efficiency. Assessing the operational aspects helps in identifying areas where AI can bring improvement or challenges.

A natural way to start this theme is to look at what the informants think about today's situation and the pre-condition that is or needs to be put in place before the organisation can implement AI technology. Here we can see that the central level participants are most concerned. They emphasise how it wouldn't be possible to transfer the human touch over to AI and automation tools, conveying a sense of worrying that the human connection can be lost in the services and therefore degrade the quality, which is not acceptable for them.

> But it will always require that there are people behind it, we cannot automate that away. We cannot automate away our meetings. (Central level interviewee)

> Nav cannot rely on AI; we need to talk to people, and we have many elderly people and individuals who do not speak Norwegian. They need us to be there for them and to be able to both write to them and talk to them, so we cannot just rely on AI technology. It doesn't work. (Central level interviewee)

Both actors do agree that there is a potential there to exploit and that the old way of doing the work is unnecessarily cumbersome and includes too much paperwork.

> Considering advisors who have daily contact with users. We have waiting lists, for instance, for getting responses to disability applications and similar matters, and it takes months and sometimes even half a year before you get a response. (Regional level interviewee)

> One spends too much time on tasks that are not directly related to conversations because everything has to be documented. So, if we agree on something, right, it has to be recorded in such a way that it can be recognized that we actually had that discussion about your sick leave, or about your situation, or why you contacted NAV and so on, and it should also be found in the journal. Therefore, it is a lot of work for an advisor to document everything. (Central level interviewee)

Central actors bring up the value of getting a better understanding and help the frontline workers to use it correctly before you start to implement the technology. It is important that they have a good understanding of the AI tools and technology.

> You have to practice those skills. It's not something that just happens. You need to be able to ask the right questions. You really need to be able to use the products quite well, and you need to be able to prompt, that is, to be able to write such leading texts. (Central level interviewee)

> One of the first things we worked on was some guidelines for the use of AI in NAV, so they created an AI guide, and it's a series of questions you have to go through. And if you can answer yes to all of them, then it's fine, but if there are any 'no's, then it's not fine. You have to take a step back and see what needs to be done about it. Maybe you need to conduct a data protection impact assessment to use AI in this example, and then we created some guidelines. So first a guide and then some guidelines. (Central level interviewee)

As seen from the informants we can see that in general the central actors are much more concerned with factors that are in place now, which can influence the introduction of AI. This may stem from a need for a more holistic view from the central actors which have the final responsibility of introducing AI. Or maybe the regional actors are too close to the work and are therefore more concerned on how the AI will affect them and not the other way around.

In this theme there were clearly most mentions of benefits or opportunities seen in AI. The central actors put more weight on general improvement and how this was going to change the way you work. They presented different way the general services could be improved by AI.

> And there is another example. We have many citizens who have come from other countries, either as refugees or asylum seekers, or who have moved here for other reasons, and are not proficient in Norwegian. Then, of course, we are obligated to have an interpreter, and we also have employees who speak another language, even though our working language is Norwegian. And in Copilot, there is an option where I can speak Russian, and you can speak Swedish or Norwegian, and we can communicate with each other, it would translate. And then we wouldn't need that third person. (Central level interviewee)

> And then we have used it to create... We have used it with synthetic data to flag potential issues in text. And then there is also, of course, a possibility in areas like incorrect payments and similar things. Trying to find errors in the material. (Central level interviewee)

While the regional actors put more weight on how AI can help them be more efficient in their work. They were more concerned with emphasizing that there was an opportunity there to be more efficient if AI were implemented the right way.

> Yes, I believe it could free up a lot of time for us to maybe engage more with the users, right? (Regional level interviewee)

> But I guess they spend maybe 70% of their time on pure administrative tasks in following up with a user. They write things, reports, have some conversations, and so on. But there's a lot of administrative work. So there's very little time left to really engage in job-related activities and follow-up, or towards education. (Regional level interviewee)

They specify one area of improvement that they could see AI helping them with, and that is generating summaries. Some examples mentioned was from meetings with the citizen or making an easier to read summary of a ruling they have made.

> It needs to be created reports and summaries about your work ability in relation to illness, health, family, and all other relevant conditions, and then a report is written for this. I think that using generative AI or some systems for this could have been an opportunity. (Regional level interviewee)

> For example, when we are procuring something, there's 'doffin', and then we sit and read through stacks of offers from service providers, maybe 10-15 of them. And then a person in my team is paid to do that. It's not a good use of time. (Regional level interviewee)

Then central actors go on to presents what they think will be the new way of structuring work that's emerges from using AI technology.

> Those who work a lot in Excel will be able to extract some of the data, but you can ask Copilot to set it up in a different way, to present it so that a ten-year-old can understand it, to create a presentation from it. What other analyses can I get from it that I haven't thought of? And what are the main points I should emphasize? So, it means there are many possibilities. (Central level interviewee)

Both sides have some clear thoughts about the new technology and how it's going to help them improve. The central actors being more familiar with AI have more thoughts about different ways AI can improve the work, and the regional actors saw more opportunities in today's work situation that could be improved.

As a last point we found that the regional informants did bring up some concerns about AI. They were not sure about how well it works with existing tasks and that if it would be integrated the right way.

We also tend to, as humans, think of easy solutions rather than examining what they can actually do. So, specifically for getting people into work, I struggle a bit to see how such a tool can be useful beyond combining or matching a need in the job market with a skill that the candidate has. That matching can, of course, be done with AI. (Regional level interviewee)

They also showed some concerns about how wide the area of responsibility AI are going to have. That it wouldn't be plausible for a person to spot errors because they don't have as wide a knowledge area as the AI.

They won't be able to notice, for example, if you are working with work assessment allowance, that AI has made an odd assessment regarding the basis and assistance allowance. (Regional level interviewee)

Another concern is that they believe human connection is vital in many of the tasks they do, and you can't replace that with some kind of AI. The concern may be based on some fear that this is going to happen without their say.

If I am to help people who have been far removed from the workforce to succeed, the key is the relationship both with the candidate and with the business community. And I don't quite see how that can be replaced by AI. (Regional level interviewee)

Finally, they were concerned with being able to utilize the benefit from the new technology. Expressing a need that the frontline workers need to be able to and want to grab the chances that it gives. There is a lot of potential in the new technology but it's of little value if it's not going to be used properly.

OK, we are streamlining or doing things in a new way that gives us greater flexibility, but then we need employees who want to take advantage of the flexibility that can be achieved. (Regional level interviewee)

In summary, the two groups are both aware that AI will affect operations like everyday tasks. Regional actors had more intimate understanding of the task done on the frontline and talks more about the waste they see in today's situation and that it can be improved upon. Central level perspective comes more from the technology side and describes the potential in the technology and what it can improve. Both describe improvement potential but views it from different angles. Regional level shows some concerns that the use of AI technology will overstep its boundaries and be given too much responsibility which will take away important qualities that humans bring to the services.

4.2.6 Organisation concerns

The theme *Organisation concerns* is a group of aspects describing how AI influences the organisation as a whole and how different parts of the organisation collaborate in the AI implementation process. It involves assessing the organisational structures, communication channels, and readiness for change. Effective collaboration between headquarters and local branches is crucial for successful AI implementation and use.

Both regional and central level actors brought up opportunities if they manage to communicate well in the organisation. The regional actors talked about specific scenarios they saw could benefit from an open communication like getting a higher adoption rate. They felt it was important to make it clearer for them which state the development was in, and particularly if it was an iterative process, to facilitate the benefits.

> We are launching something, but often things are not finished. Things develop while we are working on using them, and we are dynamic in the sense that things are not complete, and we develop as we work, so there is continuous information. (Regional level interviewee)

> Then there would have to be more focus on, like, what's in it for me? How does it benefit me, right? Will it mean that I get a lot more hours freed up each week, right? (Regional level interviewee)

The central level focused on the same aspect but from their perspective. That would be including the many perspectives from involved interest. They were aware how this is linked to better success when implementing a new technology and therefore wanted to get everybody involved.

> But it depends, I mean, before we do such things, there is a process in NAV, and we have close contact with our users through user councils and also internally within the agency, right? In that we discuss it with our union representatives and the co-determination system as well. (Central level interviewee)

> Then we need to include them in the discussions. We involve both the professional side, such as the work and service line or the benefits department or the finance side, in these discussions, in the meetings about how it works. How can we set it up to ensure security and privacy and all that, and then we ask them, what would be optimal for you to get? (Central level interviewee)

The central level has already ways of achieving this more open communication with regional level to get their input.

> We talk to people in previous 'jam sessions' where they can ask anything about Microsoft 365 but also about AI. So we have a direct channel with all employees in NAV, where they can ask anything and get answers. This works very well. (Central level interviewee)

NAV is also getting more perspectives and diverse views, outside the organisation to add to the body of knowledge they have about AI. The collaboration extends to other public organisations that have similar challenges and universities that can help them do research in the field.

And we do collaborate. Fortunately, there are more environments than NAV doing this, so the Data Protection Authority has a sandbox project. (Central level interviewee)

And we also collaborate with the University of Agder precisely to promote the wishes and needs of individual advisors and offices. Can we explore this? Can UiA help explore some areas here? Then it involves initiating various types of research on it. With UiA and preferably in collaboration with the Directorate of Labor and Welfare and the development departments. (Regional level interviewee)

As we can see both central and regional level are aware of the possibilities and opportunities in a well-functioning collaboration. Regional level sees good communication as to be understood by central level and to understand the technology in their context better. Central level sees good communication as being able to get many perspectives and views of the contexts the AI are going to operate in. That means having ongoing dialog and open communication channels to the people who are going to use the technology. It seems that central level lacks in how they communicate how the new technology is going to benefit the regional level employees.

There were also expressed challenges for central and regional level collaboration. They mostly focus on lack of collaboration. Central level describes it as a felt distance between them and the frontline (regional level) as they call it.

I have often thought that there is a certain distance between what happens here in the directorate and the experience of NAV out there on the front lines and in the offices. Many people here can work without having much contact or knowing much about what is out there. (Central level interviewee)

This is confirmed by regional actors that see the same thing and feel a big gap between themselves and central actors.

> In IT development, they live their autonomous lives in the Directorate, so I don't have the same access to it. (Regional level interviewee)

> When NAV IT contacts us asking to come out and shadow someone for a day and maybe interview some of the advisors about parts of the professional system, I always say yes, because we think they are out here far too little. Things that are obvious to us may not be to them since we are too far apart. (Regional level interviewee)

The distance gave other challenges that the central level expressed. Among other things they talked about how it is hard to know how the organisation adopts AI. It doesn't necessarily come from initiative they have enacted, but also through other influences. One example was Microsoft's Copilot, but also other products like ChatGPT are easily accessible nowadays. They don't have the capacity to know all of it, which can be challenging if they have the responsibility of AI adoption.

> Nobody really knows how to handle it, even though we sit here and do a lot of things in-house and have a professional environment that can develop and think about these things, AI has somehow made its way into the local offices through solutions like Microsoft. (Central level interviewee)

> There are many unresolved issues here, and maybe it's like when you are creating a solution, that's what you care about. You don't worry about all the other things, you don't have the capacity for that, right? (Central level interviewee)

Regional actors say it is low technical innovation out in the regional level of the organisation, which means that its central level that needs to be the driver of innovation. Either by doing it themselves or help lowering the bar for innovation in regional spaces.

We can come up with initiatives and such, but there is very little technology testing locally here that we do ourselves, originating from initiatives from, for example, NAV Kristiansand, or NAV Grimstad, or Mandal, or Lindesnes, or elsewhere. There is little of that. (Regional level interviewee)

As we can see both actors are aware of challenges to collaboration and AI. It is the big gap between the actors that are making collaboration and communication difficult. Central actors point out that it is important that they are on top of introduction of AI and this is difficult because of lack of resources. Regional level knows that it is the central actors that are spearheading the innovation on the field, and all this makes it harder when it comes to a successful introduction of AI.

Regional level describes that as a rule of thumb all technical innovation is developed at central level. They further say that any new idea needs to be brought centrally to be developed to something real. Which is how the organisation has structured it.

No, basically all services are developed centrally in the Directorate of Labor and Welfare. It is the IT department there that manages all our systems and these product areas; they are both developers, owners, and operators. So, when they create something, they are responsible for making it completely finished, implementing it, and then operating and developing it afterward. (Regional level interviewee)

It can be a thought or an idea, but it must then be brought in a way to the research environment, and into the directorate that way, or to the directorate. Then they must take up the idea and think that this is something we want to pursue further. (Regional level interviewee)

And when it is time to implement what has been developed, regional level likes the idea of pilot project and have an ambassador to champion the project.

It must be tested in a small-scale pilot at an office. (Regional level interviewee)

So, if you set this up with dedicated people who want to test it and give them good knowledge, you can use them as ambassadors, and if it is to be rolled out on a larger scale, it must be like a rocket where you think of this ambassador role for the next 5 years related to this. (Regional level interviewee)

Through this structuring regional level sees a top-down pattern. This leads to them being more in the dark regarding the development of new technologies like AI. They exemplify this by mentioning the product teams that has been used to organise the central level of the organisation.

In the opposite direction, it is still somewhat, not strange, but somewhat unknown to the average NAV offices. Not just to the employees, but to the entire NAV office. How are they set up in the directorate in these product areas, these eight product areas? How are they organised, and who gets access there, and how can we participate and influence? I think very few know anything about that. (Regional level interviewee)

Regional level expresses a wish for nuance about the success of these product teams. They mentioned an example issue, that a task is so wide it touches more than 2 product teams, and that can make it hard to work towards a common goal, since they are so autonomous. Central actors seem aware of the problem and talks about how this could be counteracted with common tools and framework which is specifically made for it.

It might be wise to explore more within these product areas because they are somewhat established in their operations, living their own lives. If they have goals that intersect with three of these product areas. Then it's not as straightforward anymore because it's not just one person responsible, but three you have to deal with. And they are somewhat isolated, not in a closed world, but they live a bit in their own world in there. (Regional level interviewee)

Creating a toolbox and a culture for asking the right or important questions and providing assistance to do this correctly, without hindering autonomy, is what we are trying to do. This is also an attempt to answer how we do this autonomously, or at least an attempt to address it. How can we ensure a common direction in a distributed system? I don't know if we've solved it, because we haven't. (Central level interviewee)

Central also talks about that these product teams having the autonomy to choose how they want to approach the use of AI. They have interdisciplinary teams that makes it easier to work closer together with legal and domain expert, which makes the implementation more responsible.

Now we are going to use AI to do this. The team can choose to do it; the team can choose another solution. It's not like it was a few years ago in NAV, where there was an AI lab experimenting with it. Now it's a bit more open, and the team that my colleague and I are part of is, in a way, a response to the opportunities it provides. You can scale in a completely different way when the team can choose for themselves and select the solution that is best for those who are close to the problem—they may understand it better than anyone else. That's part of the idea here how to ensure they do it in a responsible and effective manner. (Central level interviewee)

Centrals level point of view of how the organisation is structured is different from regional levels. While regional actors feel a little bit left in the dark, central actors brings up points like how they strive to consult with them on the frontline(regional).

But we absolutely work with those on the frontline, and it's important that they help shape the solutions since we are creating the solutions for them. I don't know whether the experience is like that, but it has been the intention, and it's an expressed goal at least. It's a goal and intention in everything from the development teams. (Central level interviewee)

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> We have a lot of dialogue with them when we are unsure about something, and we think about how we can make the workday easier for those working at NAV offices, assistive technology centers, and other front-line services. So we must include them in the discussions. (Central level interviewee)

Regional level shares this view of how beneficial it is to have a close collaboration with central level, and that it is important for them and the project that they are being consulted.

> Yes, I think that's wise. We have been doing agile development for years now, and we see that those of us closest to the user, benefit the most when things flow well and are developed accordingly. Yes, it makes us most efficient and makes sense for the user as well, so I would think that if NAV adopts this, those who actually interact with the people it affects should also be involved in it. (Regional level interviewee)

In general, the two sides of the organisation share the opinion that it is useful to involve the regional level into the central level development of new technologies. It seems that central level is stopping the communication flow earlier than what the regional level would like. Which leaves more of the responsibility to central, because regional doesn't have enough information to be sure they have delivered the right information that is needed to use AI in their work. Another consequence is that the regional level doesn't know where the organisation stands in the introduction and use of AI. These two combined leads to regional actors having a hard time seeing the value it brings them.

4.2.7 Technology concerns

The *Technology concerns* theme encompasses the technological aspects of AI introduction. This includes considerations such as the selection of tools, platforms, and integration with existing systems. Understanding the technology landscape and keeping up with technological advancements is essential for successful AI implementation.

From the data we can see that it's only central level that have brought up different systems and products that involve AI. They usually give a short description of the technology in context of some opportunity. For example AI enhanced products they want to make themselves.

> Take for example, finding information on our pages. Instead of having to search yourself, maybe there could be a copilot for general use, where you can ask, 'Where do I find information about sick pay?' or 'As a student, am I entitled to sick pay?' or 'Am I entitled to holiday pay when I have a summer job?' Those types of questions, making it easier to find the information instead of searching on your own. (Central level interviewee)

Or products that have an integrated AI functionality.

> Services where AI is built in, for example, as a service available on the internet like these language models, ChatGPT, and similar tools, and they are also built into commercial tools. So that's one aspect of it, how it's integrated into everyday use. You have AI contributing to code generation, for instance, if someone is programming, and that side of it. (Central level interviewee)

Or they talk about the scope of the program, like a decision support system.

> Something that often comes up is decision support for advisors. And it's not a completely settled area. But it could be an idea to have, let's say, help from some sort of AI-like tool to get another recommendation or support when helping

> people try to get into work. For example, what types of measures might be useful
> or... Yes, there are many small decisions made by advisors in NAV. (Central
> level interviewee)

Regional level hasn't talk about the product and systems that involves AI specifically, but just in the context of other concerns in the organisation. This may be explained by the facts that the people that work centrally are educated technologists, and it's their job to be informed on the topic. The regional level employees aren't supposed to know what is out there and available in the AI space.

Both regional and central level are concerned with bias in the system. Central level with what they can't predict being the biases.

> That AI actually discriminates in ways it is supposed to protect against? It could
> be that it discriminates in completely different ways, right? And that we put
> things into a system that is not sufficiently thorough. There are many such things
> we think about. (Central level interviewee)

And regional level brought up specific cases tied to their work where they could see bias occur.

> But sometimes there are target groups that might be somewhat discriminated
> against because they are caught in that loop, and then you need to be able to
> remove some variables to get a more universal answer. Let's say you are a third-
> language immigrant, but you have a high master's degree and high education,
> and then that variable among immigrants actually creates barriers for the
> recommendations. (Regional level interviewee)

Regional level did explain this bias problem with the "Shit in, shit out" saying. That meaning the data or information you get from AI is as good as the data you use to train it on. In this case that would be some kind of data that misrepresent the real world.

It repeats both the good and the bad. It's just the sum of experiences. For example, they tried to use it in the legal system in the USA to get more impartial verdicts, but it just repeated all the mistakes that had been made. It judged just as racially biased as a human would because it was based only on the knowledge that was put into it. (Regional level interviewee)

And 'shit in, shit out,' right? So, wrong assessments are something we struggle with. We have a robot in NAV, but a human is always monitoring it. The robot makes mistakes, if it processes garbage in then garbage comes out. So, things like that can go very wrong. (Regional level interviewee)

Central level talked about problem with the technology that they could see. Among other things was the language barrier. Since the organisation is a Norwegian public organisation, they need AI technology you can use with the Norwegian language.

It still hasn't been released in Norwegian, and we think that's a prerequisite for using AI in Norwegian organisations where Norwegian is the main language. It has to be in Norwegian, and we haven't gotten that yet, so it's a prerequisite for us to start testing it. (Central level interviewee)

Central level did also mention the problem of the access of unwanted data. They were concerned that in some way the models would get access to their data and use it for training. This would be highly problematic.

Another area is what data it scrapes, meaning where it searches. Is it accessing data that we don't want it to access? (Central level interviewee)

And then there's the extreme focus on the security of the data, ensuring that we, as users, can be confident that the data remains internal and is not shared with unauthorized persons, and so on. (Central level interviewee)

As a last concern regional level talked about how they were sceptical of how well the new technology could be integrated with existing systems, and that some systems could be outdated and hinder integration of AI.

> When new IT systems have been introduced, it's always been promised that they would replace all or many of the existing systems, but they just end up being one more system, right? We never seem to get out of that loop. So, we feel that it takes a long time before the benefits actually materialize, and with agile development on top of that, a year can pass, a lot has happened, and we have actually gained more time, but it hasn't been noticed because it's been small changes all along. (Regional level interviewee)

> But there is an old logistics system with gears that turn, and then we have something called Infotrygd. It's dangerous to start pressing anything there because suddenly, a billion kroner has been stopped from transferring, right? (Regional level interviewee)

As a pattern we can see that the actors are concerned how the challenges will be handled up the delivery chain. The regional level is worried that central doesn't understand the challenges with the existing system they use, and central level is worried the products they license isn't transparent in how it uses the data it has access to.

The implementation of AI hasn't gotten that far yet. They are still in the early stage of the adoption of AI. Central level is very aware of this and talks about how they only have been taking this seriously over the last couple of years.

> We don't have many AI solutions that are deployed to the offices yet. (Central level interviewee)

A couple of years ago, NAV started to look into AI, but it was mostly about understanding what it actually is, what it can be used for, what these large language models are, what is required, and what about security. There was a lot of this kind of stuff that took a long time to figure out and get familiar with the landscape. (Central level interviewee)

They go on further and describe how as an organisation they are led by an ambitious leader that wants to be on the forefront of using AI. One of them mentions an area they think it's easy to implement AI, as a start.

And we have a top leader, who wants NAV to be at the forefront in the public sector when it comes to using artificial intelligence, both for our employees and internally. (Central level interviewee)

I'm thinking about child benefits, for example. It's a fairly straightforward decision. If you have a child, you are entitled to child benefits. And there can be simpler processes around that, which can support inclusion and reduce exclusion. It can also make the workday easier for NAV employees by using, for instance, copilots like Microsoft Copilot. (Central level interviewee)

In general, we can see that central level have had much more to say specifically around technology. This is possibly because they have more knowledge about it and are the one responsible for the introduction of AI. Regional level did mention some worries they had concerning AI but didn't talk that much more about it.

4.3 NAV compared to other public sector actors

To get a broader perspective on how far NAV has come in their introduction of AI and thoughts around AI, we have chosen to interview employees in two other public organisations, this to compare their perspectives against NAV. Besides looking at how far they have come we will look at similarities and differences in the way they collaborate. The organisations we have interviewed is Kripos which is a police agency under the Ministry of Justice and Police, and Helfo an agency under the Directorate of Health. Both are distributed organisations, with operations in several locations around the country.

First, we will look at how far they have come with the implementation of AI compared to NAV. When it comes to AI in Kripos and how far they have come with the introduction, our informant says the following:

> There's not much AI yet in the police force and not on a large scale. There's a lot of testing and trying to implement it, but it's not yet in large-scale use in actual production systems and such. (Kripos)

And:

> We've actually made quite limited progress with AI and machine learning in the police force, and there has been relatively little initiative in that regard in the past. More initiatives started to emerge only in the last year. (Kripos)

And:

> But exactly how it should be communicated to the public, I'm a bit unsure about. So far, we've made little progress in actual real-world use; it's been more about testing and such. So, we still have some way to go to find good use cases or to find the proper forms. (Kripos)

Our informant talks about the entire police organisation when he goes into this with AI introduction. All three quotes emphasizes that the police haven't got far with the AI. The organisation is early in the adoption phase. Nevertheless, our informant had several thoughts about how the organisation could use AI, and many similarities were mentioned regarding the area of use that we have seen in NAV.

Our informant in Helfo says this when it comes to introducing AI:

> The first thing is, in a way, that we're still not entirely done with the job of cleaning up our data. (Helfo)

And:

> We're at a level where we're still just organising our data in a way that makes it possible to even consider using artificial intelligence. That's where you have to start. (Helfo)

And:

> Yes, because we have pilots now. Artificial intelligence is really stretching it, but we're using automation and pattern recognition to create some simple guidance products, and we have pilots that we're testing on healthcare providers, and they're having an immediate effect. And that's where they have enough faith in it to put it into operation. (Helfo)

We can also see that AI is in an early phase at Helfo too. Our informant says that they are still in a phase where they are cleaning and organising their data, but that they are doing some pilots. Where they use pattern recognition to create some simple products but emphasize that calling it artificial intelligence is stretching it a bit far. Regarding thoughts about the use of AI, our informant, who works in a department that deals with the follow-up of health bills, says that there would be a need to be able to predict where you might experience errors or abuse of these bills.

This is something that shows that Helfo also has thoughts about how AI can contribute to their organisation.

Although Helfo and Kripos (Police) have made some small progress with AI, it is clear that they have not progressed as far as NAV. This probably also comes partly from the fact that NAV is a much larger organisation, and in addition has more resources set up for the development of the technology. Our informant from Kripos also says the following:

> We're trying to learn from NAV, for example, and others who are a bit further along in maturity in these areas. (Kripos)

This shows that NAV leads as an example of an organisation that has progressed further in development and that can provide inspiration and advice to other public organisations.

We will now look at how Helfo and Kripos collaborate around the introduction of AI. Our informant from Kripos says as follows when it comes to collaboration:

> Unfortunately, we don't have enough contact with the districts. So, we probably have quite a bit of room for improvement there. Part of the reason might be that there's a bit too much distance between what's happening in the various units or different places in the country, and that we don't have good enough communication with those who are out in the districts. (Kripos)

And:

> But often, with these AI initiatives so far, they have mostly emerged centrally without much connection to the districts, so there we probably have a lot of room for improvement. We want what we create to be accessible, and right now, when we're working at Kripos, it's very specialized for what Kripos does. But we want to be able to offer it to the entire police force and out in the districts. However, we still have some way to go for the districts to be able to benefit from the AI initiatives happening centrally. (Kripos)

And:

> Setting up more workshops or having digital meetings could help. For example, the entire police force could be notified that people from all different districts can be part of the meeting, contribute with their input and needs. (Kripos)

Our informant says that the cooperation between the central level and the districts could be better, and that unfortunately there is a lack of contact. It is pointed out that part of the reason for this lies in the fact that there is often too much distance between what is happening in the various units around the country, and that external communication is too poor. When it comes to initiative taking, our informant says that most of it has happens centrally, and that the initiatives are therefore specialized towards what Kripos is doing. This means that there is a long way to go when it comes to the districts being able to benefit from the AI initiatives that take place centrally. In the last quote we can see that the informant believes that one way to go for better collaboration could be to include the districts more by setting up workshops and having more digital meetings so that they can contribute with input.

Helfo on the other hand says that the collaboration between the different offices works well. Our informants says that they have worked in different office for many years, and that communication and collaboration has worked well across the geographical distances. The informant also emphasized that they have gone from previously working in silos to working more holistic. It is important to emphasize that Helfo is a much smaller organisation than NAV, and this about collaboration will be reflected in that.

As we have seen, collaboration is also a challenge in other public organisations. We can particularly see similarities between what is said in the interviews we have had with NAV and the interview we have had with Kripos. Among both organisations, it is mentioned that the central and regional collaboration, or in Kripos's perspective, the districts could have been better. It is said that there is a perceived distance between the central and regional level, and a certain lack of initiative from the districts. Both organisations are aware that this is a challenge and come up with suggestions for improvement. The reason why this is a challenge we see in NAV and Kripos, but

not Helfo, probably lies in the fact that Helfo is a smaller organisation, and that cooperation is therefore easier. [2]

ChatGPT (OpenAI, 2024) was in this chapter used to translate the interview quotes from Norwegian to English.
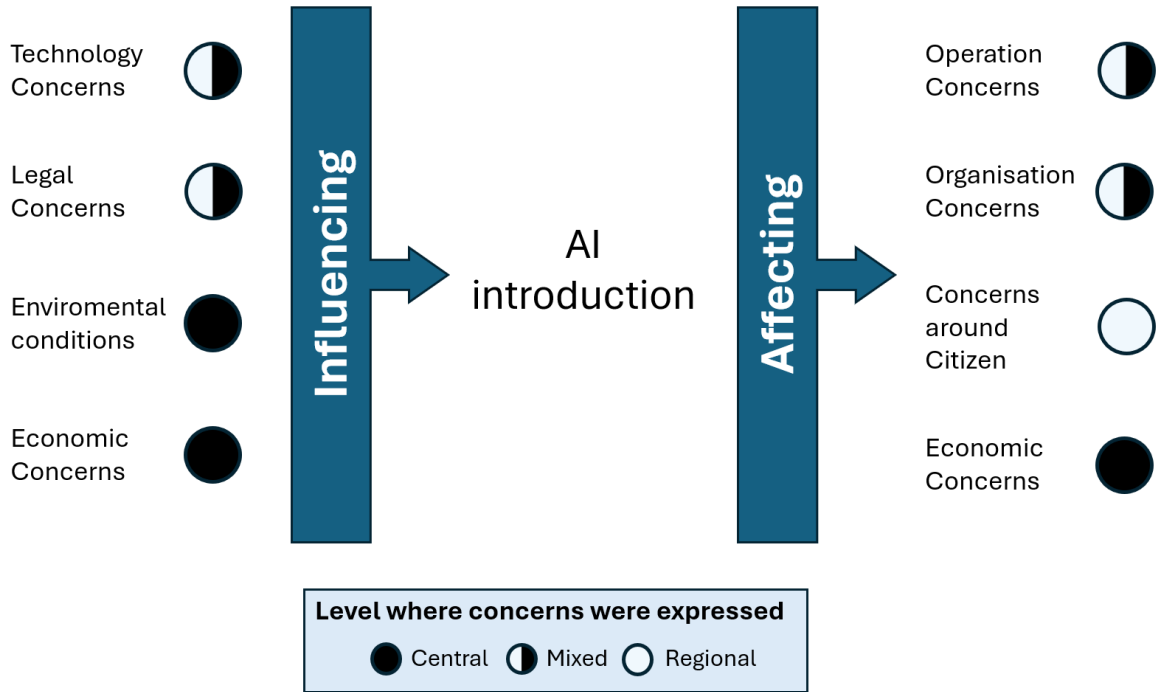
4.3 A framework based on the findings

Figure 8: A framework based on the findings.

The framework includes all the concerns identified in the empirical material showing their relationship with AI introduction. There are concerns about factors that influence AI introduction (left side) and also concerns related to effects of AI introduction (right side). The circles indicate at which level (central, regional or both) the different concerns were expressed during the interviews. A black circle illustrates central level, white circle illustrates regional level and black and white is a mix of both. A detailed overview of the related codes and quotations per level can be found in Appendix C.

The framework shows what type of concerns is either influencing AI introduction or being affected by it. It is important we believe to identify these to successfully introduce AI. To manage this task, it is important to involve the whole organisation to get a complete overview of the factors and

concerns involved. The framework shows where in the organisation actors have concerns with which theme. It is interesting to note that there are variations across levels

5. Discussion

In this chapter we will discuss our findings and link this back to the literature. We have organised this in three parts, *Benefits, Risks and Challenges*, and *Strategies.* These are the same topics we identified in our literature review. We will look at what our empirical data analysis shows within these areas and discuss if there are any similarities or differences between the central and regional actors. Overall, a key learning from our study is that it is important to take into account both the perspective of the regional and central actors in order to develop the comprehensive understanding needed for the introduction of AI. At the end of this chapter, we will go through the limitations of our study.

5.1 Insights of this study and comparison with previous research

5.1.1 Benefits

There are many benefits that are promised with the new AI technologies, and to get the value, you need to be aware of the opportunities. In the public sector there have been found problems such as shortage of resources, scale of operations and standardization of government delivery systems (Dwiwedi et al., 2021). It's also found new opportunities to solve them with AI technology like through new technologies such as AI voice robots (Wang et al., 2021).

The benefits expressed by our informant have been in line with these earlier discoveries. They have gone further into how they see that AI can help them and their organisation to achieve their goal.

Central level has a better understanding of the bigger picture, seeing benefits in environmental condition and Economic concerns. This are important for NAV to be aware of according to the central informants because it influences how easy it is to develop AI for the organisation.

Van Noordt and Misuraca (2022) expresses how AI will have an important role in the reshaping government operation and interactions with citizens. NAV isn't an exception in this case and the informants have had many things to say about the benefits that they see when using AI and its

influence on how they are going to operate. Both regional and central level see a lot of possibilities. Central level discusses the opportunities and benefits from the technology point of view and sees the opportunities AI has. Regional level talks about where they see improvement opportunities in today's task and speculate that AI can help. Both talks about the same thing but comes at it from a different angle. As long as they manage to listen to each other they will get a result that really fits the organisation well and will help them reap the benefits.

To make this possible they need to communicate well. In an organisation the informants did point out that common communication spaces are an area the introduction of AI could benefit from, e.g. forums where they share experiences and feedback. Central level is careful to include the regional level when it comes to collecting data on how the task is done. Regional level agrees but wishes to be included further in the process. They say that they lack a good understanding for where the organisation is regarding new AI development and need more information about it to understand how the new tools and technologies would help them in their day-to-day work. A greater understanding would help the introduction of AI and ensure better value from its use.

5.1.2 Risk and Challenges

The next topic we will look at is risks and challenges. Knowing the risks and challenges that the organisation might meet is essential for a successful introduction of AI. Being aware of challenges that one encountered is something that is addressed in both Alshahrani et al. (2021) and Dwivedi et al. (2021). After our interviews with NAV, we have gained a good impression of their thoughts on challenges. This is something that has characterized the answers we have received from both regional and central level employees, and it seems from their perspectives that both parties are aware of challenges and risks that can come within an AI. Even though it is addressed by both parties, we can see a certain difference in what they come up with.

Within the theme *Citizen concern*, we can see that the regional actors are afraid that AI can have consequences for elderly people and other "low competent" people without a large network. They are afraid that these people are losing contact points and not being able to fully engage. This with challenges linked to the users of NAV's services is something that is not addressed by the central

actors, which we believe comes from not being as close to the user as the regional actors. Within the theme *Legal concerns*, we can also see a difference. The regional actors point out here that case handlers are concerned about legislation, regulations, and privacy, and that they are afraid of making mistakes. This shows that they are aware that challenges related to these areas exist and are something that must be taken seriously. These are challenges that are also highlighted as important in Dwivedi et al. (2022). The central actors on the other side point to challenges linked to the themes of *Economic concerns* and *Environmental Condition*, where the regional actors do not mention anything. The fact that they can see more challenges related to economic around an AI initiatives, and how external factors challenge the introduction of AI to NAV, shows us that they have broader view of challenges than the regional actors.

Gesk and Layer (2022) emphasises this with the importance of trust, and a need for research of public trust by human. Trust is something that also is brought up in our interviews. Both the regional and central actors bring up trust as an important factor for a successful adoption. The regional level talks about it in context of using decision making as a tool in NAV when it comes to casework. It is emphasised by the informant that the employee that uses this tool have to understand what lies behind the decision and can vouch for the outcome. It is said that one must be able to do this to maintain the trust of the users of NAV's services. This with challenges around algorithmic decision making is also a topic that is addressed in van Noordt and Misuraca (2022). They also say that they are afraid that the human touch is going to diminish and that this can affect the trust the public has to NAV. Among the central level informants, trust is mentioned as an important factor. It is brought up that NAV is completely dependent on trust among population, and that for this to happen the system must provide good decisions to the users and NAV needs to follow the laws that regulate the resolutions. The way they believe they can meet this risk is to proceed cautiously around the implementation and use of artificial intelligence.

Although the employees of NAV have different factors they emphasize when it comes to challenges and risks, we can see that it is something they have given thought to, which is positive. This also points to the research gap proposed by Mikalef et al. (2020) that there are certain factors that differentiate between national and regional actors around the adoption of AI, as we can see

here, perspectives around challenges and risks. We believe that the responses of central and regional actors complement each other well, and that listening to each other and collaborating on how to best meet the challenges that exist would be positive for NAV.

5.1.3 Strategies

The last topic we will discuss is Strategies. The articles identified in our literature review consists of strategies, frameworks, and guidelines. We will emphasize this when we look at the findings from our study and want to look at what our informants say about this. In addition, we are going to include this with collaboration as an important point, as it is also an important one for having a successful introduction of AI.

In the article from Maragno et al. (2023) they emphasize this with the importance of strategies for organisational adoption and use. This is something we can link to our findings. The regional actors talk about this with a better understanding of the technology, and how they can benefit from it. They emphasize a desire to be able to use AI so that they can become more efficient in their work, and therefore free up time for more important tasks. They are emphasizing this with the fact that there are many opportunities with AI, but that in order to benefit from the technology, it is important that the technology is implemented correctly, which needs a good plan to be able to be implemented in a good way. This shows that the regional actors have both a willingness to start using the technology, but also an understanding that a good plan must be present for successful introduction.

The central actors bring up that understanding AI, and helping the frontline workers to use the technology correctly is important, this emphasises the importance of having a plan. Understanding AI and realizing that there are also risks associated with it, is important. Wirtz et al. (2022) addresses this and gives us a framework that refers to risks within categories such as *technological risks,* and *informational and communicational*. These are areas NAV should focus on, and using a framework would therefore be useful and necessary.

Both the central and regional level have thoughts about AI in NAV and how it can help the organisation to improve. We can still see a difference in that the central actors are more concerned

with how AI can improve the work, while the regional actors see more opportunities for how technology can help their work today. Here, just as in the previous topic, the various parties complement each other, and a collaboration would have helped a lot. This takes us on to collaboration and how important it is to have a good plan for a successful introduction to AI.

Both the regional and central actors says that better communication will lead to more opportunities. They are both bringing up this aspect, from their own perspectives. Having open communication between central and regional level, and that both actors is involved, they both agree is a good procedure for the best possible introduction of the technology. They have both expressed that there is a slight lack of cooperation between the parties, and that this is because there is a gap between them. Trying to establish a better dialogue will probably lead to closer cooperation. So, developing a goal they can work towards and a strategy to follow can be a good way to go. Selten and Klievink (2024) says in their article that it is important to acknowledge that AI adoption is influenced by context specific factors and therefore need tailored strategies. This is something that NAV must keep in mind and therefore needs to spend time developing a strategy that suits them as best as possible.

5.2 Limitation

The informants making up the regional group are mainly from Agder. While the sizes of the cities and towns vary, there are no informants from a large city. Actors from other larger cities may possibly have other perspective than the representatives we have interviewed, and it's therefore possible that we haven't gotten the full range of perspectives from the regional level in this study. This is also true for other regions in Norway, which may have other unique situations or experiences do to it being in a different region. While there could be differences there shouldn't be significant ones. Since NAV is public, they are required by law to have the same offer everywhere and should therefore operate similarly.

Another limitation is how relevant the findings is for other public organisations. The case organisation is a large organisation with many local offices spread around the country, with a lot of the work includes face to face meetings with the citizen. Other public organisation may not have

a physical presence everywhere or mainly have their citizen encounters digitally or they can be a much smaller organisation. These are all variables that if they differ from the case will impact the fit of the findings to their context.

Although we did not find the biggest differences between NAV, Kripos and Helfo especially when it comes to the perspectives around collaborations, it may still be that other public organisations contains bigger differences than the ones we have studied.

6. Conclusion

In this qualitative study we have been looking at the differences of perspectives from central and regional levels in NAV when it comes to AI introduction. We have conducted semi-structured interviews with central and regional employees. In addition to this we have attended a workshop on data use in the public sector and had interviews with two other public organisations (Kripos and Helfo) to get a broader perspective on how far NAV has come in the use of AI and how the collaboration is compared to them.

To answer our research question on what differ in perspectives of AI introduction, we will answer our sub-questions. The first one which has to do with the challenges and opportunities, they both have some perspectives. Regional level actors talk about challenges related to the citizens; the user of the services NAV provides. This is not mentioned by the central level interviewee, which may come from the fact that the regional employees work closer with the citizens compared to central level and have therefore more to say about this. It is also mentioned challenges related to legislation, regulation and privacy and that caseworkers are afraid of making mistakes. The central level actors mention challenges related to economic and environmental conditions. The reason for that this is mentioned by them and not the regional actors come from the fact that the central actors have a broader perspective when it comes to the adoption of AI. The reason for this is probably because it is them that are implementing the technology. Both the actors bring up the importance of trust by the population, and that it is a risk not having the trust of the citizens. The regional level actors are more concerned that the human touch is going to diminish, and this can then affect the trust the public has to NAV. The central level actors talk about it in the context of transparency issues. On opportunities the actors talk about the same, and they have both loose ideas about specific areas and tasks. Central level had a little bit more to say about internal improvement possibilities where they could use AI.

On the next question which is about inter-organisational collaboration around the introduction of AI. Both the actors understand the importance of good collaboration and emphasises that effective communication is a benefit for NAV. Regional level talked about how the collaboration falls a

little short when it comes to the communication part. Central level comes and investigate how regionals interest can be integrated with the new technology and stops informing regional level about the project when they have gotten the information they need. It's a one-way flow of information, which can result in, according to the regional level, that they don't understand the value of the new technology and the introduction will therefore suffer. Regional actors aren't able to guarantee that the information about their work is good enough, because of the lack of information they are getting about the new technology. This problem is somewhat met with the interdisciplinary teams, but regional actors still express a concern too which degree of understanding that central actors can have about the nature of their work. If the regional level had a better understanding of the technology and how NAV can use it, they would be able to contribute more accurate information about their work. Both levels of the organisation says that there is today a lack of collaboration between them, and by looking at their responses we can see they are complementing each other. Implementing better communication is a good starting point which will lead to better collaboration.

6.1 Implications

The findings from this research have some implication for future research in this field. It shows that, as Mikalef et al. (2022) suggested about difference in regional and central levels, there are some differences in views about AI introduction between regional - and central level actors. They raise difference concerns and have different view on the context the technology would be used in. To get a better understanding of AI introduction in a public organisation you need to be aware of this. A bigger quantitative study is needed to confirm the findings. It would have to include a wider sample of regional actors to confirm that it is not only our sample that experienced what we found.

Another way to go is to see if these findings manifest in other public organisations. Are they relevant in a less distributed organisation or a smaller organisation?

There are also some practical implications. The findings show a disparity in views about the introduction of AI. The central actors that may lead the effort for AI must take in the opinions and stated challenges from the regional actors. A key implication for public organisations is that they

need to better communicate internally across levels to ensure a shared understanding and the development of common visions about AI.

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Appendix A – Letter of consent

Vil du delta i forskningsprosjektet

"Bruk av AI i NAV"?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å kartlegge utfordringer ved AI i NAV. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål
Prosjektet er vår masteroppgave som skal gjennomføres i løpet av våren. Den har som hensikt å finne ut av hvilke utfordringer NAV må ta hensyn til når de skal ta i bruk AI-teknologi.

Hvem er ansvarlig for forskningsprosjektet?
UiA er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Fordi du jobber i NAV.

Hva innebærer det for deg å delta?
Det innebærer å delta i et ca. 45 min. langt intervju.

Det er frivillig å delta?
Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.
Fra UiA er det Johannes Halvorsen og Magnus Lonebu som vil ha tilgang til lydopptaket. Lydfilene vil være nummerert og det vil ikke være annen personopplysning knyttet direkte til dem.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?
Prosjektet vil etter planen avsluttes 30.06.2024. I den sammenheng vil lydfilen bli slettet. Transkripsjonen av intervjuet vil være anonymisert.

Hva gir oss rett til å behandle personopplysninger om deg?
Vi behandler opplysninger om deg basert på ditt samtykke.
På oppdrag fra UiA har Sikt – Kunnskapssektorens tjenesteleverandør vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter
Så lenge du kan identifiseres i datamaterialet, har du rett til:
- å få innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende
- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

UiA ved Polyxeni Vassilakopoulou, polyxeni.vasilakopoulou@uia.no
Vårt personvernombud: Trond Hauso, Personvernombud@uia.no

Hvis du har spørsmål knyttet til vurderingen som er gjort av personverntjenestene fra Sikt, kan du ta kontakt via:

Epost: personverntjenester@sikt.no eller telefon: 73 98 40 40.

Med vennlig hilsen

(Forsker/veileder)

Polyxeni Vassilakopoulou   Johannes Halvorsen   Magnus Lonebu

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- Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet Bruk av AI i NAV, og har fått anledning til å stille spørsmål. Jeg samtykker til:

☐ å delta i intervju

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

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(Signert av prosjektdeltaker, dato)

Appendix B – Interview guide

Innledende spørsmål

1. Hvem er du og hva er din stillingstittel og beskrivelse i NAV?
2. Er du teknologi optimist med tanke AI

Intervjuspørsmål

3. Har du noen tanker om hvordan AI kan bli brukt i NAV?
    a. Hvordan vil AI påvirke arbeidet i NAV?
    b. Er det noen muligheter eller utfordringer som er spesielt relevant for NAV

4. Hvilke oppgaver vil bli påvirket av AI tror du?
    a. Hvem vil gjøre de forskjellige oppgavene tror du? AI eller personer eller en blanding?
    b. Er det noen oppgaver/ type oppgaver som er spesielt utfordrende å bruke sammen med AI teknologi?
    c. Hva mener du må gjøres for at allmennheten skal beholde tilliten til NAV når dere bruker AI verktøy?
    d. Er det nok å regulere bruken gjennom lovverket? (kursing i etikk, holdningskampanjer rettet mot allmennheten)

5. Hvordan vil AI-teknologien bli implementert? (Organisatoriske hensyn / prosessene)- ikke teknisk.
    a. Vil ansatte bli involvert i utviklingen?

b. Hvordan er samarbeidet mellom de sentrale partene og de regionale når det kommer til implementering?

c. Har de regionale kontorene vært involvert i diskusjonen rundt tidligere IKT-investeringer/ implementeringer?

    i. Hvordan har dette vært i forbindelse med AI?

d. Hva slags anbefalinger tenker du er viktig å trekke frem for å inkludere regionale og sentrale perspektiver og behov?

    i. Hva annet type tiltak kan øke engasjementet til alle involverte?

e. Er det noe annet du tror vil være viktig å vite om når man tar i bruk AI fra et regionalt/sentralt perspektiv? f.eks. knyttet til pilotprosjekter, utrullingsplaner mm.

6. Er det noe mer du vil tilføye?

7. Har du noen flere kandidater som vi kan snakke med?

Appendix C – table of quotes

Tables showing number of quotes from regional level and central level in every code.

Concerns around citizens

Nr.	Code	Central	Regional
1.	Clearer communication to target demographics	0	1
2.	Lov competence exclusion	0	2
3.	Unforeseen social consequences	0	2
4.	Use government benefit	0	1
5.	Recommendation improvement	1	1

Economic concerns

Nr.	Code	Central	Regional
1.	Cost benefit analysis	1	0
2.	Lack of economic funds	1	0
3.	Many resources	1	0

Environmental conditions

Nr.	Code	Central	Regional
1.	External data handler concerns	1	0
2.	External efficiency pressure	1	0
3.	Norwegian context	1	0
4.	Centrally structured	1	0

Legal concerns

Nr.	Code	Central	Regional
1.	Data transparency	1	1
2.	Decision transparency	0	1
3.	Transparency by law	0	1
4.	Operate legally	1	2
5.	Privacy constraints	0	2
6.	Safety first	1	0
7.	Outdated legislation	2	1

Operation concerns

Nr.	Code	Central	Regional
1.	Analog work	2	0
2.	Old way of structuring work	2	2
3.	Require understanding of AI use	1	0
4.	Usecase guidelines	1	0
5.	Internal service improvement	8	0
6.	Improved potential	0	3
7.	Efficiency improvement	2	5
8.	Generated summaries	0	3
9.	New way of structuring work	4	0
10.	Doubt of the usability	0	1
11.	Lack of control on information integrity	0	2
12.	Lack of human touch	0	2
13.	Utilize the benefit	0	1

Organisation concerns

Nr.	Code	Central	Regional
1.	Communicate regional value to improve adoption	0	1
2.	Communicate continuous development	0	1
3.	Many interests input	4	0
4.	Open internal communication	1	0
5.	Collaboration outside the organisation	1	1
6.	Lack of collaboration	3	4
7.	Lack of adoption control	1	0
8.	Lack of capacity	1	0
9.	Low regional technical innovation	0	1
10.	Central development	0	1
11.	Rigged for central innovation	0	1
12.	Implementation	0	2
13.	Top-Down understanding	0	1
14.	Autonomous team vs a common goal	1	1
15.	Autonomous team accountability	1	0
16.	Regional consulting	2	4

Technology concerns

Nr.	Code	Central	Regional
1.	AI enhanced product	1	0
2.	Application with integrated AI	3	0
3.	Decision support systems	1	0
4.	Bias in job recommendation	0	2
5.	Unforeseen bias	1	0
6.	Shit in, shit out	0	5

7.	Language barrier	1	0
8.	Unwanted data access	3	0
9.	Low system integration	0	1
10.	Outdated systems	0	2
11	Early stage of the adoption	1	0
12.	Ambitions to be early adopters	1	0
13.	Start with low hanging fruit	1	0