Across the world, digital welfare states are on the rise, with data-driven governance transforming the very social fabric of the welfare state. But what does that transformation look like from within?

This dissertation dives into the data-driven transformation of the Dutch welfare system, uncovering how data-driven governance reshapes the governance and delivery of welfare services. It investigates how data-driven governance reshapes the lives of benefit recipients, the work and relational dynamics of frontline bureaucrats within their frontline-screen-level network, the responsibilities of local political actors, and the institutional frameworks in which they operate.

Through a multi-sited qualitative study of Rotterdam's welfare domain, specifically in the area of work and income, the research reveals a world where transparency is elusive, trust is eroding, and power is increasingly embedded in data-driven technologies. Drawing on personal stories, political silences, and institutional blind spots, it exposes the social damage of data-driven governance. It shows how data-driven technologies amplify inequality, obscure accountability, and transform welfare encounters into bureaucratic, impersonal, and often alienating experiences. Even the most sophisticated technologies cannot replace the need for human judgment, empathy, and discretion.

The challenge ahead with data-driven governance is not merely technical, but political, social, and ethical. If the digital welfare state is to serve all citizens fairly, it must be grounded in democratic values, informed by lived experience, and subject to meaningful contestation. This requires reimagining data-driven governance, not as an end in itself, but as a means to genuinely support citizens and uphold the principles of fairness, empathy, and accountability.

This work is both a critical analysis and a call to action: to ensure that in our pursuit of data-driven governance, we do not lose sight of the human values at the heart of public service.

The Digital Welfare State

Margot Kersing

The Digital Welfare State

A multi-sited investigation into the implications of data-driven governance for benefit recipients, frontline bureaucrats, and the municipal government

Margot Kersing

Propositions accompanying the PhD thesis

The Digital Welfare State

A multi-sited investigation into the implications of data-driven governance for benefit recipients, frontline bureaucrats, and the municipal government

1. The digital welfare state cannot be just unless the lived experiences of citizens are structurally embedded in the design, implementation, and evaluation of data-driven technologies. (this thesis)
2. Data-driven technologies reinforce and undermine existing power inequalities in the social domain at the same time. (this thesis)
3. The claim of objectivity in data-driven governance conceals the political and normative choices embedded in the design of data-driven technologies. (this thesis)
4. Without enforceable safeguards for fairness, accountability, and contestability, data-driven governance risks hollowing out the democratic legitimacy of municipal decision-making. (this thesis)
5. Inadequate institutional frameworks risk normalizing discriminatory practices in data-driven welfare systems. (this thesis)
6. Loyal contradiction brings no real change, but activism does.
7. Science is not just another ideology. (Against Paul Feyerabend)
8. Doing a PhD is a dream, but it is simultaneously a precarious job.
9. Listening is the researcher's primary skill, as it is for the performing musician, for meaning emerges as much from silence as from sound, and absence speaks as loudly as presence. (Inspired by John Cage's 4'33")
10. If the metaphorical frontline is used as a performative frame we should ask ourselves: what is the war about and who are they fighting?
11. I have never tried that before, so I think I should definitely be able to do that (Astrid Lindgren, Pippi Longstocking)

The Digital Welfare State

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De digitale verzorgingsstaat
Een multi-sited onderzoek naar de implicaties van data-driven governance voor uitkeringsgerechtigden, frontlijn ambtenaren, en het gemeentebestuur

The Digital Welfare State
A multi-sited investigation into the implications of data-driven governance for benefit recipients, frontline bureaucrats, and the municipal government

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Promotiecommissie:

Promotoren:	Prof.dr. E.A. van Zoonen Prof.dr. K. Putters
Overige leden:	Prof.dr. J.M. Engelbert Prof.dr. I. Wallenburg Prof.dr. A.J. Klievink
Copromotor:	Dr. L.E. Oldenhof

Contents

Chapter 1

Introduction

1. Introduction

In December 2021, a 'Black Book of Welfare Abuses' was discussed in a meeting of a municipal committee of the city of Rotterdam dealing with social welfare benefits. The publication compiled the negative experiences of benefit recipients with the social welfare benefits system. As part of the meeting, five of them were invited to share their personal stories, including a Mrs. Ceylan:

> *'The government should be in service of citizens, right? The government is responsible for the conditions in which we have to live, isn't it?*
>
> *Social welfare benefits seem like a trap you fall into. You come out more damaged than how you entered. That can't be the intention, can it? So much suffering, so much misery. And this still happens today. Just shameless, how civil servants carry out the Dutch Participation Act. Change is, therefore, urgently needed.*
>
> *Firstly, citizens must be given complete insight into their data. And by that, I mean everything: files, notifications, notes, everything the municipality knows and does should be clear and ready when asked for. Nothing should be anonymous or happen without our knowledge. The municipality should be transparent, period.*
>
> *Case managers tend to be, sorry to say, control freaks. I understand that there is a need to check the correctness of information, but this is often done in a very inhumane way. Municipal employees storm into your house with three of them and they turn everything upside down. Your living room, kitchen, bedroom, bathroom, your laundry basket. In a coldblooded and disrespectful way. And that's physical.*
>
> *Who knows what they're doing digitally, with our data to analyze and frame us. These physical and digital checks just need to stop because it's all too much. This should be approached in a different way.*[1] *'*

Picture 1

[1] Statement by Mrs. Ceylan in a procedural meeting of the Committee on Employment, Income, Integration, Debt Approach, and Poverty Reduction at the municipality of Rotterdam (December 22, 2021). Full video available at: https://gemeenteraad.rotterdam.nl/Agenda/Index/f261a3af-99aa-491b-9935-d44a31a12d69

Mrs. Ceylan's statement raises numerous issues. What happened exactly that she feels trapped in the social welfare system, and claims to come out of it more damaged than coming in? How is it possible that a citizen who seeks help from their municipality feels disrespected, and perceives a violation of their dignity and privacy by municipal employees? Is her distrust and observation of a lack of transparency regarding her personal data justified? And what role does digitalization play in this relationship between citizen and municipality?

Mrs. Ceylan personal story and those of others shared in the Black Book and the committee raise important broader questions about how digitalization impacts core principles of the welfare state, such as reciprocity, solidarity, and in particular social insurance in the domain of work and income. Her statement contains all the key elements for my dissertation: actors, systems, laws, physical and digital factors, municipal employees, citizens, public values, the welfare state. In addition, her statement produces concrete suggestions for improvements in the system. Her experiential knowledge provides a personal entry into the theoretical and empirical research of this dissertation examining the question how data-driven technologies reconfigure welfare service provision and governance in the domain of work and income.

It does so on the basis of studying four key sites of digitalization: the site of benefit recipients, the site of individual frontline bureaucrats, the site of municipal government, and the site of institutional frameworks in the Dutch digital welfare state. The aim is to develop a thorough understanding of the municipal workings of the Dutch welfare state, especially of the city of Rotterdam, resulting, not only in a more systematic understanding of the experiences of recipients of the social benefit system, but also in knowledge about those who shape and implement it politically, through policy, and in frontline practice. Together, these perspectives from different sites result in a thorough understanding of the digital welfare state.

In this introduction, I will first sketch the context of data-driven governance in the Dutch digital welfare state and discuss key bodies of literature that have informed my research. I then present the research question, sub questions, and sites, followed by an overview of the research methods, and my personal motivation and reflection. Finally, I present the individual chapters in their logical coherence.

2. Data-driven governance in the Dutch digital welfare state

Governing through data is not solely a Dutch phenomenon. Countries in different parts of the world are transitioning to digital welfare states, and this trend is expected to accelerate in the future (Dunleavy et al., 2006; Eurofound, 2020; Pederson, 2019). Already in 2019, UN rapporteur Philip Alston asserted that the future of welfare is inseparable from digitalization and AI, a prediction that has proven accurate as digital welfare systems continue to expand today (Alston, 2019, p. 21).

In the Netherlands, the decentralization of social policy in 2015, introduced through the Dutch Participation Act, marked a significant shift in municipal responsibilities. The reform, driven by austerity politics in reaction to the economic crisis of 2008, aimed to create a smaller and more service-oriented government. As part of this policy change, Dutch municipalities were charged to provide welfare services both cheaper and more efficiently than the Dutch national state could (Bekkers, 2018; Evers, 2017; Jeffares, 2021 in Hupe, 2022; Kool et al., 2015; Van Zoonen, 2020; Vos, 2024). Data were believed to be crucial for this new mission, as they were expected to translate the complexities of the real world into rational and ordered forms of knowledge (Iliadis and Russo, 2016; Kitchin and McArdle, 2017). This new, reliable and robust knowledge was said to be indispensable for efficient decision-making by government organizations (Clarke and Margetts, 2014; WRR, 2016). Proponents had a strong trust in data as an objective knowledge source, assuming that the collection, analysis, and visualization of data is a neutral process (Boyd and Crawford, 2011; Crawford, 2013; Kool et al., 2015; Pederson, 2019). Using data as an objective knowledge source, rather than relying on the individual judgment of frontline bureaucrats, was seen as a way to eliminate the blind (weak) spots of human judgements, such as bias (Pederson, 2019).

A strong coalition of consultants, medium and large enterprises, municipal innovation departments and welfare associations emerged claiming that widespread experimentation with data-driven technologies such as data warehouses, dashboards, and predictive analytics in the social domain could provide solutions for decentralized operational challenges. This coalition expected that digitalization would enhance efficiency, personalization, and fairness in decision-making in the welfare state (Government of the Netherlands, n.d.; Hastings and Gannon, 2021; Janssen and Estevez, 2013; Jeffares, 2021; OECD, 2016; Van Zoonen, 2019; Weske et al., 2014). However, the fundamental question of whether data-driven governance is necessary and desirable was passed over.

Despite numerous unresolved challenges with data-driven governance in the social domain, Dutch municipalities were committed to steadily progress towards data-driven governance as an essential and accepted practice (Van Zoonen, 2020; VNG/Berenschot, 2018).

In their adoption of data-driven governance, local government and civil service, including those of the city of Rotterdam, used various terms such as 'evidence-based' or 'data-driven governance', 'data-driven steering,' and 'data-driven work' (Eubanks, 2018; Kersing et al., 2022; VNG/Berenschot, 2018; Vogl et al., 2020). In practice, this all more or less means the same, namely that civil servants rely ever more on data and digital information to develop both policies and to guide operational execution, making decisions both about and for systems and citizens.

Within the multitude of terms, this dissertation adopts one term, i.e. 'data-driven governance' for the sake of clarity and consistency. It is used as an umbrella concept to refer to the use of data-driven technologies to govern the behavior of various actors in networks, with a particular focus on citizens, frontline bureaucrats, and municipal government actors.

3. The digital welfare encounter: reconfiguring street-level bureaucracy

Data-driven governance has produced significant changes in civil servants' jobs, especially of those who work at the intersection of municipal systems and citizens, the so-called street-level bureaucrats. Due to the introduction of data-driven governance new functions, roles and task have arisen (Bossen et al., 2019; Jarrahi, et al., 2021; Van Heeswijk, n.d.; Wehrens et al., 2021), which require new skill sets and everyday practices (Hill et al., 2014; Susskind and Susskind, 2015).

Research about these changes have focused on changes in the discretionary spaces of street-level bureaucrats, strategies of acceptance and resistance, and new bureaucratic networks of information, interaction and execution (Breit et al., 2019; Buffat, 2015; Busch and Henriksen, 2018; Busch, 2017; Christin, 2017; De Witte et al., 2016; Fenger and Homburg, 2021; Giest and Raaphorst, 2018; Goto, 2021; Gräfe et al., 2024; Jorna and Wagenaar, 2007; Köktener and Tunçalp, 2021; Meijer et al., 2021; Pareliussen et al., 2022; Tummers and Rocco, 2015; Veale et al., 2018). All of this will be discussed in more detail in the empirical chapters to come. At this point, it is most necessary to point out that not

only their work itself has changed, but, crucial to this dissertation, also their encounters with citizens. The introduction of data-driven governance has, in a relatively short period of time, reoriented street-level bureaucracies towards screen-level bureaucracies, shifting much of the work from direct, in-person interactions to digital interfaces, without fully eliminating face-to-face contact (Bovens and Zouridis, 2002; Hupe, 2022). In other words, while frontline bureaucrats still engage with citizens in person, the encounters have changed from largely face-to-face contact towards increasing digital contact mediated by a computer screen, including digital forms, online applications for welfare, and digital service provision (Breit et al., 2021; Hansen et al., 2018; Jeffares, 2021). In the domain of work and income screen interactions did not fully replace the face-to-face interactions but transformed into a combination of face-to-face and screen encounters (see Hansen et al., 2018). The first contact between a frontline bureaucrat and a potential benefit recipient has moved from a personal face-to-face meeting to a digital transaction. The potential recipient fills in a form that is then read by the frontline bureaucrat. Their interactions further revolve around gathering and checking information, filling gaps in the information, and correcting mistakes in information the municipality has about the citizen. Also, decisions are not fully based anymore on the human discretion of the frontline bureaucrat, but data-driven systems have gained a leading role in decision-making (Bovens and Zouridis, 2002; Hupe, 2022). Tréguer (2021) warns that automatization in governance may lead to substantial losses, particularly in terms of trust in the relationship between citizens and the state. Removing the 'human element' through automation may lead to a rational and impersonal application of rules, ultimately resulting in a form of governance that is detached from the lived experiences of citizens. This so-called 'dehumanized' governance risks reducing citizens to mere objects of government, rather than recognizing them as active political subjects (Tréguer, 2021, in Hupe, 2022). However, besides this general shift, we know little about how exactly the work of street-level bureaucrats and digital welfare encounters has changed in the domain of work and income. This dissertation seeks to address this knowledge gap and enhance understanding of how digitalization reshapes the frontline in the domain of work and income, as explored through the answers to sub-question two, as outlined in chapters three and four.

4. The experiential site of benefit recipients

While data-driven governance and the impact of digitalization on street-level bureaucrats has been relatively well researched, the experiences of benefit recipients with the data-

driven governance of their municipality remain comparatively underexplored. Existing studies tend to focus more on institutional practices and professional perspectives, leaving recipients' lived experiences and perceptions less systematically examined.

The limited existing studies highlight both positive and negative effects of data-driven welfare provision. Reported positive effects typically focus on practical gains from an organizational perspective or assess benefit recipients' experiences through a user experience lens – for example, how accessible or user-friendly applications are, or how easy and convenient clients find them to use (see for example Casey, 2021; Hansen et al., 2018; Hetling, 2014). These studies neglect the broader impact of data-driven governance on benefit recipients' lives and fail to address how it influences their relationship with their municipality, particularly from the benefit recipients' perspective.

Only a handful of studies that examine the experiences of benefit recipients with data-driven welfare provision offer a more comprehensive view. These studies reveal a deep-seated distrust among benefit recipients regarding municipalities' use of predictive analytics, algorithmic decision-making, and further automation of support (Brown et al., 2019; Eubanks, 2018; Van Zoonen, 2020; Van Zoonen et al., 2020). Benefit recipients question the municipality's ability to responsibly manage new data techniques. They report instances where their data was handled carelessly by the municipality, the same information was repeatedly requested, and they were mistreated, pressured, or provided with incorrect information by their municipality (Van Zoonen, 2020; Van Zoonen et al, 2020). Furthermore, benefit recipients whose data are used are neither actively informed nor invited to participate in the development of data-driven initiatives (Van Zoonen, 2020). They have little to no influence over what data is collected about them, nor any means to shape the data-driven governance that they are subjected while affecting their lives. Often, they are unaware that municipalities are even collecting and using their data. When things go wrong, they frequently lack the knowledge and resources to challenge decisions or ask critical questions about how decisions that affect them were made (Brown et al., 2019; Van Zoonen, 2019; Van Zoonen, 2020; Van Zoonen et al., 2020). In the realm of data-driven governance, citizens therefore find themselves in a highly vulnerable position.

In addition to the limited amount of scientific research available, some individuals have published their own unique and deeply personal books to share their experiences as a benefit recipient, such as Gerard Sangers (Sangers, 2021a; Sangers, 2021b) and

Stella de Swart (De Swart, 2021). While these books do not explicitly focus on the experiences of individuals with the data-driven governance of their municipalities, a careful and attentive reader can discern that data-driven technologies frequently play a significant role in many of their interactions with the municipality and in the underlying causes of their problems. These personal stories show the importance of approaching individuals not merely as benefit recipients or through the lens of user experiences, but as people situated within their unique contexts and experienced life worlds. If we truly want to understand the full implications of data-driven governance, we must study the perspective of citizens' lived experiences more thoroughly, capturing the full picture of its impact on their lives.

Furthermore, experiences of benefit recipients with data-driven governance typically come to light after critical reports or scandals surface in the media. Nationally and internationally, numerous examples show how the rise of digital welfare states has led to detrimental consequences for vulnerable citizens (Alston, 2019; Eubanks, 2018; Eurofound, 2020; Pederson, 2019). Governments in Australia, the UK, India, Denmark, Sweden, and the Netherlands have employed algorithms for fraud detection and prediction, resulting in scandals that exposed systemic failures. For example, in Australia, more than half a million benefit recipients were incorrectly demanded to pay back benefits, forcing them into financial hardship, based on an incorrect algorithm (Mao, 2023). In India, low-income benefit claimants were refused access to subsidized food due to administrative glitches in a large biometric identification system, which allegedly led to the death of citizens due to starvation (Ratcliffe, 2019). In the Netherlands, the Dutch Tax Administration wrongly accused 26.000 parents, often with dual nationalities, of benefit fraud using algorithmic decision-making (Amaro, 2021; Henley and Booth, 2020). Such failures have disproportionately affected marginalized and vulnerable groups (Amaro, 2021; Amnesty International, 2024; Henley and Booth, 2020; Lighthousereports, 2024; Mao, 2023; Ratcliffe, 2019; United Nations, 2019).

Similar problems are also evident in Rotterdam's work and income domain, where algorithmic fraud detection systems have raised significant concerns.

One prominent example is the SyRI (System Risk Indication) algorithm, which was employed to detect social welfare fraud. SyRI linked personal data from citizens in various government databases to identify individuals at risk of committing welfare fraud. However, it was heavily criticized by the Dutch Data Protection Authority (DDPA) and

the Council of State for its lack of transparency and potential for discrimination. In 2020, the Dutch Court of The Hague ruled that SyRI violated the European Convention of Human Rights (ECHR), citing concerns over privacy, data protection, and the disproportionate targeting of low-income neighborhoods and marginalized groups, and ordered its immediate halt (Algorithm Watch, 2020; Olsthoorn, 2016).

Another example of algorithmic fraud detection issues in Rotterdam is the 'Benefit fraud analytics project.' Between 2018 and 2021, the municipality used a risk-assessment algorithm to identify and select benefit recipients for re-assessment. In 2021, the Rotterdam Audit Office, in their report 'Colored Technology', warned that the algorithm lacked sufficient attention for transparency and accountability, potentially leading to biased results (Rekenkamer Rotterdam, 2021). Further investigations in 2023 by investigative journalists revealed that the algorithm disproportionately and unfairly targeted young single mothers, significantly increasing their likelihood of being subjected to fraud investigations (Open Rotterdam, 2023; VPRO, 2023).

Despite the growing public awareness sparked by scandals reported by the media, critical reports, and a few personal narratives, existing knowledge about benefit recipients' lived experiences with data-driven governance remains fragmented and incomplete. Personal accounts and journalistic investigations often emerge after harm has occurred, while scientific studies tend to either generalize user experiences, or prioritize institutional and professional perspectives. These sources, while valuable, lack the systematic, in-depth engagement needed to fully understand how data-driven governance shapes the everyday realities, agency, and vulnerabilities of benefit recipients. More empirical research grounded in recipients' lived experiences is essential to grasp the full implications of data-driven governance and to ensure that data-driven innovations in the welfare domain do not deepen existing inequalities. This dissertation seeks to address this gap by foregrounding the voices and perspectives of benefit recipients themselves by answering sub-question one, as outlined in chapter two.

5. Research question

As this dissertation is positioned at the intersection of research about data-governance, street-level bureaucracy and the lived experiences of citizens, it requires theoretical frameworks that draw on the combination of 1) administrative, 2) political and 3) social theories, in particular those on 1) street-level bureaucracy and data-driven governance,

2) the meaning and exertion of power and 3) the social dynamics of citizen state interactions. How these frameworks are specifically deployed extends beyond the scope of this introduction. It will become clear in the site-based empirical chapters that together will answer the central question for this dissertation:

How do data-driven technologies reconfigure welfare service provision and governance at the municipal level?

To answer the research question, the literature discussed has shown how essential it is to consider all relevant actors as well as the institutional context in which they operate (figure 1). Accordingly, I divided the central research question into four sub-questions, each putting a particular set of actors or a context to the fore.

1. *How do citizens experience the use of data-driven technologies by municipalities in the domain of work and income?*

This sub-question aims to uncover how data-driven technologies are experienced and navigated by citizens who depend on municipal welfare services in the domain of work and income. Rather than treating them as passive recipients or mere users of data-driven systems, this question explores how they make sense of, respond to, and deal with the consequences of the data-driven governance of their municipality. It also seeks to understand how data-driven governance shapes their sense of trust, autonomy, and fairness, as well as their ability to contest the data-driven decisions that impact their lives. By focusing on their experiences, this sub-question contributes to a more citizen-centered understanding of data-driven governance.

2. *How is the street-level work of frontline bureaucrats reshaped by the digitalization of welfare in the domain of work and income?*

Data-driven technologies are increasingly used at the frontline in the social domain. So far, the impact of data-driven technologies on frontline bureaucrats is primarily described in terms of curtailing or enlarging their discretionary space to make decisions. It remains unclear however how daily work practices and role identities of frontline bureaucrats change in situ and which norms they develop to work with new data tools. At the same time, in the current public service provision context, their work is becoming less individual and increasingly embedded in networks with other frontline bureaucrats and teams (Groeneveld and Van de Walle, 2011; Loyens, 2019; Noordegraaf, 2011). Despite

this development, so far it remains underexplored how frontline work is reshaped by data-driven technologies in a network context. This question seeks to provide insights into how data-driven work influences the daily work practices, professional role identities, and norms about data-driven work of individual frontline bureaucrats, as well as how data-driven work reconfigures the relational dynamics between frontline bureaucrats within frontline-screen-level networks.

3. *How is the digitalization of welfare in the domain of work and income politically discussed at the municipal level?*

This question aims to explore if and how digitalization of welfare in the domain of work and income is politically discussed. The focus is on local political actors, such as members of the city council, aldermen, the mayor, and members of the advisory committees to the city council. Examining discussions between local political actors gives insight in potential (de)politicization strategies that are used.

4. *How do institutional frameworks such as legal, ethical, and data quality procedures in the Dutch digital welfare state shape tensions over data-driven governance in social welfare?*

Although this research focuses mainly on data-driven governance in the domain of work and income, it is essential to consider the broader institutional context of the Dutch digital welfare state in which digitalization unfolds. Institutional frameworks such as legal, ethical, and data quality procedures in the Netherlands determine how all actors involved are influenced by and influence data-driven technologies. This question seeks to provide insight into how institutional frameworks, such as legal, ethical, and data quality procedures, shape tensions between various actors, such as government agencies, politicians, affected citizens, advocacy groups, and the media, regarding data-driven governance in social welfare. To answer this research question, I examine two illustrative cases where tensions emerge: the childcare benefits scandal, and the Top 400/600 case.

6. Sites and dynamics for investigating data-driven governance of welfare

Figure 1 visualizes the four interrelated sites through which this dissertation investigates how data-driven technologies reconfigure welfare service provision and governance at the municipal level. It illustrates the relational and institutional dynamics between

actors, namely unemployed benefit recipients, individual frontline bureaucrats, frontline bureaucrats in their frontline-screen-level network, and local political actors in municipal government, as well as the institutional framework that shapes their interactions. Each empirical chapter engages with one of these sites in depth, drawing on distinct but connected theoretical perspectives from administrative theory, political science, and social theory. While the chapters separately develop conceptual lenses, they are analytically linked through this shared architecture. The figure underscores that digitalization is not merely a technical intervention, but one that permeates everyday decision-making, professional roles, political accountability, and legal-ethical boundaries. Together, these sites form a multi-sited approach to studying the data-driven governance of the Dutch digital welfare state.

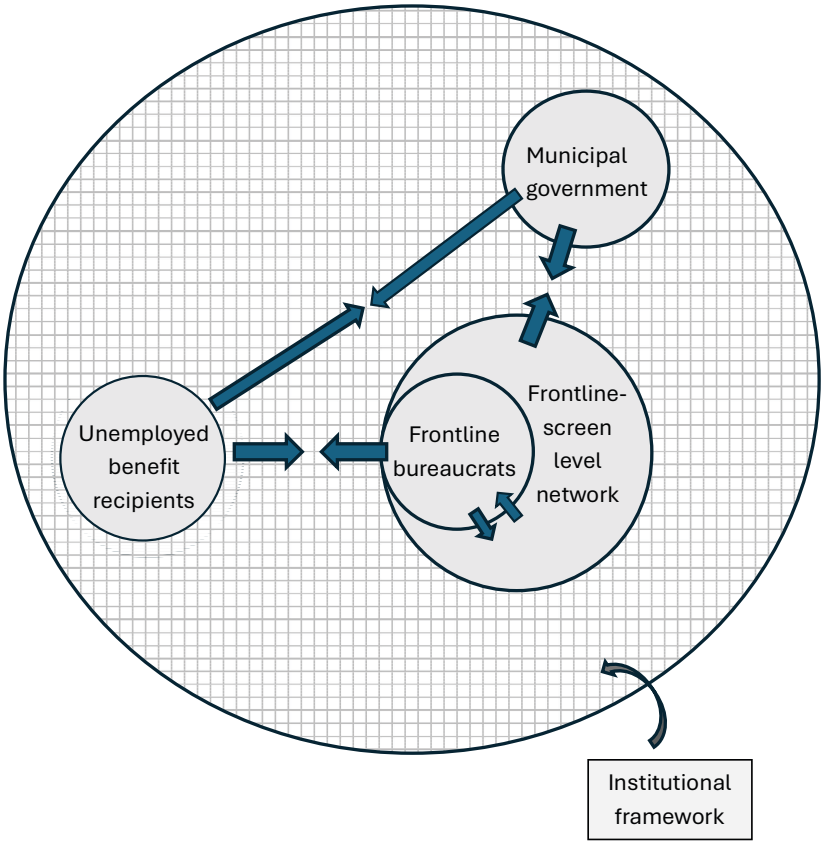

Figure 1 Sites and dynamics for investigating data-driven governance of welfare

7. Design and methods

The analytical approach throughout this dissertation is inductive, qualitative, and iterative, tailored to explore the multifaceted implications of data-driven governance in the domain of work and income. Rather than beginning with a fixed theoretical framework, the analysis is guided by an open and exploratory engagement with the data, moving iteratively between empirical findings and theoretical concepts. Sensitizing concepts from existing literature serve as starting points, but these are continuously reassessed in light of the empirical findings. This grounded yet flexible approach allows for conceptual development and theoretical insights driven directly by empirical findings.

Each sub-question requires its own set of methods; together they qualify as a multiple method design for the whole dissertation, researching various online and physical sites of data-driven governance. Sites are not limited to physical locations but can also include institutional settings, a hybrid combination of online and offline spaces, networks, movements, and symbolic or conceptual spaces (inspired by Liu, 2022 and Marcus, 1995). The selection of sites is based on the involvement of key actors, including unemployed benefit recipients, individual frontline bureaucrats, frontline bureaucrats in the frontline-screen-level networks, and local political actors, as well as the institutional context in which they operate.

The data collected for the whole dissertation consists of interviews, observations, and (secondary) document analysis used in various combinations for the study of each site, depending on what is suitable and feasible. The data encompasses a total of 58 interviews (approximately 65,5 hours of material), nine hours of observations, and extensive document analyses, including an analysis of eight years of municipal government documents. The data collection is conducted between September 2021 and September 2024.

The study draws on both primary and secondary sources and employs multiple methods to address the distinct dynamic of each site. Interviews are conducted with benefit recipients, their representatives and service providers, and frontline professionals, providing insight into the lived experiences and institutional perspectives on data-driven governance. Observations focus on the everyday work practices and relational dynamics of frontline bureaucrats during the implementation of a dashboard in the Work and Income department of the municipality of Rotterdam. Document analysis is used throughout the research, encompassing experience-based stories of benefit recipients, municipal

correspondence, PowerPoint presentations from training workshops, newsletters, a year plan and an evaluation of the implementation of a data dashboard, policy documents, political agendas, meeting minutes, motions, written questions, political commitments, advice, audiovisual recordings of political discussions, reports, news items, and academic studies.

To analyze these materials, both text-analysis software ATLASti (9) and automated text-analysis software ConText (1.2.0) are used. ATLAS.ti (9) supports inductive coding and thematic analysis, while the automated text analysis software ConText (1.2.0) is used to detect patterns and dominant topics in political discussions over a time period of eight years (2016-2023).

This layered approach, combining different types of data and analytical strategies, allows for both breadth and depth. It captures not only the institutional and technological logics behind data-driven governance, but also its ethical, political, and relational consequences as experienced by various actors within the Dutch digital welfare state.

The outcomes of the studies are presented in separate chapters which also contain more detailed and site-specific articulations of theories and methods.

8. Personal motivation and reflection

My motivation to study data-driven governance in public services stems from a deep concern about its impact on ordinary citizens. Having grown up in a so-called ‘achterstandswijk’, and as a first-generation student with a background in public administration and political philosophy, I became acutely aware at a relatively young age of how policies shape people’s lives, especially of those already in vulnerable positions. During my PhD, maintaining critical distance was at times difficult, as listening to the personal stories of benefit recipients affected negatively by data-driven technologies was emotionally challenging. However, these encounters were profoundly important in shaping the direction of my research. My personal experiences of not existing within, or neatly fitting into, the narrow bureaucratic categories and systems, particularly as a non-binary transgender person in a state that recognizes only male and female identities, enabled me to listen openly to their stories and to get to know them not just as ‘benefit recipients’ with all the stereotypical assumptions that come with it, but as individuals in the context of their own life. These experiences shaped my view of the role of research. I do not want my work to disappear into the academic drawer or merely contribute to my

career as 'academic currency.' I believe researchers should foster dialogue and provoke reflection across academic, policy, and public domains. While this dissertation cannot resolve all the issues it addresses, it aims to contribute to a growing body of work that challenges dominant techno-solutionist narratives and opens up space for more just, inclusive, and democratic forms of data-driven governance.

9. Outline of the chapters

Chapter 2

This chapter explores the experiences and coping tactics of unemployed benefit recipients with data-driven welfare provision in the domain of work and income in the Netherlands. It is based on a multiple method design consisting of interviews with benefit recipients, their representatives, and service providers, and a document analysis of experience-based stories of benefit recipients and letters by the municipality. The chapter shows that benefit recipients feel treated like a thief or a toddler and experience an unequal power balance in their relationship with the municipality. This unequal power balance is complicated by the increasing digitalization of welfare provision encounters because it induces a new dynamic of mutual distrust. Benefit recipients use different coping tactics to counter the unequal power balance. Negotiations about the values and ideologies that are embedded in data-driven welfare provision systems became visible through four coping tactics benefit recipients use to deal with the data hunger of their municipality: (a) pleasing, (b) fighting, (c) withdrawing, and (d) calling in auxiliaries. The implementation of data-driven systems in welfare provision results in emotional and administrative burdens for benefit recipients, and in inefficient and expensive data-driven welfare provision for municipalities.

Chapter 3

Where chapter two focuses on the experiential site of benefit recipients, chapter three and four focus on the professional site of individual frontline bureaucrats and their frontline-screen-level-network. Chapter 3 explores how the introduction of a data-driven dashboard reshapes the role identities, work practices, and norms of appropriate behavior of frontline bureaucrats. It is based on a multiple methods design consisting of semi-structured online interviews, ethnographic online observations, and document analysis during the implementation of a data dashboard in the Work and Income department of the municipality of Rotterdam. The chapter reveals two role identities

among frontline bureaucrats: (1) the client coach, and (2) the caseload manager. We show that the implementation of the dashboard stimulates a shift from a client coach role identity towards a caseload manager role identity. This shift is contested as it leads to role identity conflicts among frontline bureaucrats who identify themselves with a client coach role. Furthermore, we establish that the accommodation of the institutional void in which the introduction of the dashboard takes place, is centered around three themes of contestation: (1) data quality, (2) quality of service provision, and (3) data representations.

Chapter 4

Chapter 4 explores the impact of data-driven technologies on professional roles and relational dynamics between frontline bureaucrats, such as work coaches, and screen-level bureaucrats, such as managers and quality officers. This chapter presents a qualitative study of how the relational dynamics in a frontline-screen-level network are reshaped by the implementation of a dashboard in the work and income department of a large Dutch city. The results present the analysis of (1) the discrepancy between the intended scripts and the actual enactment of functions and roles that were introduced during the dashboards' implementation, (2) how frontline bureaucrats navigate tensions caused by contradictory logics due to the implementation of the dashboard, and (3) how the dashboard's implementation reshaped relational dynamics. The results revealed that some frontline bureaucrats resisted using the dashboard because they experienced a tension between their client-driven professional logic and the managerial logic equating client-driven work with data-driven work. This divided frontline bureaucrats into those who didn't experience the tension between the logics and thus embraced the scripts of their new functions and roles, from those who did experience the tension and therefore resisted adopting the scripts of their new functions and roles. This division manifested in two key themes: (1) competition, and (2) the pursuit of autonomy. The dashboard's implementation reshaped the relational dynamics in this frontline network, constituting profound changes in the fabric of organizational life.

Chapter 5

Chapter two, three, and four show that the digitalization of welfare provision is not merely a bureaucratic or technical challenge but also a political one. Yet, despite the far-reaching implications for public accountability and citizen rights, political debate

on these technologies remains scarce. This lack of political debate on data-driven technologies risks eroding democratic legitimacy by obscuring decision-making and impeding accountability mechanisms. In the Netherlands, political discussions on digital welfare within local governments are surprisingly limited, despite evidence of negative impacts on both frontline bureaucrats and citizens. This chapter examines what mechanisms explain *if* and *how* data-driven technologies in the domain of work and income are politically discussed within the municipal government of a large city in the Netherlands, and its consequences. Using a sequential mixed methods design, combining automated text-analysis software ConText (1.2.0) and text-analysis software ATLAS.ti (9), we analyzed documents and video recordings of municipal council and committee meetings from 2016-2023. The results show these discussions are rare in the municipal council, occurring primarily either in reaction to scandals, or in reaction to criticism. Two key discursive factors used to justify limited political discussion are: (1) claims of lacking time and knowledge among council members and aldermen, and (2) distancing responsibility and diffusing accountability. This leads to a 'content chopping' mechanism, where issues are chopped into small content pieces, for example technical, ethical, and political aspects, thereby spreading them into separate documents and discussion arenas. This fragmentation can obscure overall coherence and diffuse critical concerns, potentially leading to harmful effects like dehumanization and stereotyping.

Chapter 6

Chapter six investigates when and how digitalization of welfare can lead to detrimental consequences for citizens. In this chapter we argue that the Dutch digital welfare state currently operates in an institutional void in which legal, ethical, and quality procedures are lacking or ill equipped to address new challenges posed by digital technologies. Based on a secondary analysis of documents, we show how this institutional void empirically manifests itself in the Dutch welfare state by zooming in on two subcases that sparked public controversy in recent years: the childcare benefits scandal that focused on fraud detection and the Top 400/Top 600 that was set-up with the aim of crime prevention. By analyzing these cases, we show how the encroachment of digital logics into the sphere of social welfare can have detrimental consequences for citizens when there is an institutional void. At the end of this chapter, we reflect on how to fill the current institutional void and identify 'soft signals' that could be used as pointers to recognize the potential undesirable consequences of new sphere transgressions.

Chapter 7

Chapter 7 presents the conclusions of this dissertation. It begins by answering the sub-questions and the main research question, followed by a discussion of the theoretical and societal contributions, methodological implications, and a proposed research agenda. The chapter also offers recommendations for data-driven governance and concludes with final thoughts.

Chapter 2

Thief or Toddler: Experiences of unemployed benefit recipients in the Dutch digital welfare state

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Abstract

While data-driven systems play an increasingly important role in the digitalization of welfare provision, responsible implementation remains a challenge. Concerns raised by various societal actors indicate insufficient attention to the impact of data-driven welfare provision on citizens' lives. This research explores the experiences and coping tactics of unemployed benefit recipients with data-driven welfare provision in the domain of work and income in the Netherlands. We used a multiple method design consisting of interviews with benefit recipients, their representatives, and service providers, and a document analysis of experience-based stories of benefit recipients and letters by the municipality. Our findings show that benefit recipients feel treated like a thief or a toddler and experience an unequal power balance in their relationship with the municipality. This unequal power balance is complicated by the increasing digitalization of welfare provision encounters because it induces a new dynamic of mutual distrust. Benefit recipients use different coping tactics to counter the unequal power balance. Negotiations about the values and ideologies that are embedded in data-driven welfare provision systems became visible through four coping tactics benefit recipients use to deal with the data hunger of their municipality: (a) pleasing, (b) fighting, (c) withdrawing, and (d) calling in auxiliaries. The implementation of data-driven systems in welfare provision results in emotional and administrative burdens for benefit recipients, and inefficient and expensive data-driven welfare provision for municipalities.

1. Introduction

Across the world, we see a rapid rise of digital welfare states, and the Netherlands is no exception. The austerity politics after the economic crisis in 2008 and the decentralization of social policy in 2015 increased the popularity of data-driven systems in public service delivery in the Netherlands. The assumption is that it will improve service provision to citizens and result in more efficiency. Increasingly, Dutch municipalities are experimenting with the use of (big) data in the local social domain to deal with their new responsibilities in times of increasing costs and decreasing budgets (Weske et al., 2014; Van Zoonen, 2019; Government of the Netherlands, n.d.).

The transformation in the provision of welfare by western states into digital welfare states is part of a broader turn toward 'new public analytics' (Yeung, 2018a; 2018b) which is characterized by an increasing reliance on data-driven systems. Within the welfare state, data-driven systems increasingly serve as a vehicle for the digitalization of the provision of welfare. They are used to allocate welfare benefits and predict risks of welfare fraud (Kaun and Dencik, 2020; Eubanks, 2018; Kersing et al., 2022). At the municipal level, this shift toward the digital welfare state is characterized by the transition from 'street-level bureaucracy,' wherein decisions are fully based on the human discretion of civil servants, to 'screen-level bureaucracy,' wherein data-driven systems have a leading role in decision-making (Bovens and Zouridis, 2002). In practice this translates to screen-to-screen interaction between civil servants and benefit recipients through digital forms, online applications for welfare, and digital service provision (Kersing et al., 2022; Hansen et al., 2018).

Although Dutch municipalities have ambitious plans with data-driven welfare provision, responsible implementation remains a challenge (Heuberger and Schwab, 2021). It is unclear whether data-driven welfare provision will alter existing public principles of welfare states, such as equality of opportunity, equitable distribution of wealth, and a public responsibility for those unable to avail themselves of the minimal provisions for a good life (Britannica, 2023). Therefore, we focus in this chapter on how the digitalization of welfare unfolds in the Netherlands.

Diverse societal actors in the Netherlands, including knowledge institutes, civil rights groups, and media, criticize the way digital technologies are used to predict the risk of welfare fraud and have voiced concerns that the use of data-driven systems in the domain of social welfare is being deployed without adequate consideration of potential ethical

harms for benefit recipients (Rathenau Instituut, 2018; 2020; Rekenkamer Rotterdam, 2021; VNG, 2021; 2022; Verhoeven, 2019; Algorithm Watch, 2020).

Especially in the city of Rotterdam, which is a frontrunner in the use of algorithms, resistance against the use of digital technologies for fraud detection is on the rise. In 2023, research by investigative journalists revealed that the risk-assessment algorithm of the municipality of Rotterdam discriminated against young single mothers. They had a higher chance of being selected for re-examination for welfare fraud (Open Rotterdam, 2023; Tromp, 2023).

Despite these concerns, there are few empirical in-depth studies, both in the Netherlands and in international research, about the experiences of benefit recipients concerning data-driven welfare provision (Van Zoonen, 2020; Hansen et al., 2018; VNG, 2021; Rathenau Instituut, 2020). Given this gap, we investigate how data-driven welfare provision systems are perceived through the eyes of unemployed benefit recipients in the Netherlands. Through their perceptions of the data-driven welfare provision of their municipality, we provide a unique view on the role of data-driven systems in the transformation toward a digital welfare state and what the societal consequences are for welfare when data-driven systems are integrated into public administration.

We pose the following research question:

What are the experiences and coping tactics of unemployed benefit recipients with data-driven welfare provision in the domain of work and income in the Netherlands?

To answer the research question, we used a multiple method design consisting of interviews with benefit recipients, their representatives, and service providers, and a document analysis of experience-based stories of benefit recipients and letters.

In the second section, we present our theoretical framework, followed by the third, methods section. In the fourth section, the results, we first set the digital scene that characterizes the relation between benefit recipients and civil servants in data-driven welfare provision encounters. Second, we describe how benefit recipients experience these encounters. Lastly, we present the tactics that benefit recipients use to deal with these encounters. In the final section, we discuss our findings.

2. Theoretical framework

In our theoretical framework, we conceptualize the relationship between welfare recipients and civil servants as a negotiated power balance in which data-driven systems play a key role (Kitchin and Dodge, 2014). Data-driven systems constitute ideological manifestations of specific modes of government since various values and ideologies are embedded within them (Foucault, cf. Burchell et al., 1991). For example, the ideology that people should get back to work is based on the idea that working is good and that being dependent on the government for benefits is bad. The implementation of data-driven systems establishes a new power dynamic as both benefit recipients and civil servants negotiate these values and ideologies.

Earlier research shows that the relationship between civil servants and benefit recipients in welfare encounters, even without interference from digital technologies, is a dynamic and at times a conflictual one. There is an unequal power balance in the interaction between benefit recipient and civil servant because the conditions for benefits are set and decided by the state. Scholars disagree to what extent benefit recipients have power to influence this imbalance. Some argue that the discretionary power of civil servants leaves benefit recipients in a vulnerable position because they are dependent on civil servants for the service provision. They emphasize that benefit recipients experience their first welfare encounter as degrading and subordinating (Handler, 1986; 1992; Hasenfeld, 1985; 1987; Hasenfeld et al., 1987; Lipsky, 1980; Prottas, 1979). Others argue that the situation is more nuanced and that benefit recipients have more power than you would expect. By strategically influencing the interaction with the civil servant, they can partially shift the unequal power balance in their favor (Oldenhof and Linthorst, 2022; Soss, 1999; Mik-Meyer, 2017; Mik-Meyer and Villadsen, 2013).

The digitalization of welfare provision creates a new power dynamic in the relationship between benefit recipients and civil servants. We adopt a sociotechnical approach to data-driven systems as a vehicle in this digitalization process of welfare provision that understands data-driven systems as a process embedded within a set of complex relations of human and nonhuman actors (Callon and Latour, 1981; Tatnall, 2003). It both impacts and is impacted by social, economic, cultural, and political processes. Its impact lies in the performative nature of automated decision-making about the allocation of welfare benefits and the prediction of risks of welfare fraud (Kaun and Dencik, 2020; Eubanks, 2018; Kersing et al., 2022).

Empirical work shows that data-driven welfare provision encompasses multiple effects, both positive and negative. For example, Hetling et al. (2014), who studied the online applications for welfare in the American context, found that although welfare clients found online applications to be easier and more convenient, they also felt that the process was impersonal and often inadequate in response to the complexities they faced.

How the power dynamic is perceived by benefit recipients also depends on what the technology is used for. They express more positivity regarding its use in allocating welfare benefits but show less enthusiasm when it's utilized to predict risks of welfare fraud (Hetling et al., 2014; Brown et al., 2019). Especially the use of algorithmic decision-making systems induces a new dynamic of distrust. Brown et al. (2019) studied the concerns of communities that are affected by algorithmic decision-making systems in the context of child welfare services. Their findings indicate a general distrust in the existing system, which contributes to low comfort in algorithmic decision-making. Primary concerns centered around potential biases among case workers involved in the decision process, as well as bias present in the data or the algorithm.

Limited empirical studies exist regarding benefit recipients' experiences with data-driven welfare provision, specifically in the domain of work and income (Van Zoonen et al., 2020; Hansen et al., 2018; Breit and Salomon, 2014). The few studies focusing on data-driven welfare provision in unemployment services and job matching primarily emphasize organizational perspectives rather than the experiences of benefit recipients (for example Casey, 2021; Charleer et al., 2019).

In this research, we focus on the experiences of unemployed benefit recipients to provide insights into how (dis)trust plays a role in the power dynamics between benefit recipients and civil servants, and the performative effect of data-driven systems in this relationship. We build on the insights of a study by Van Zoonen (2020) that investigated the attitudes of unemployed benefit recipients toward the use of big data to improve the reintegration trajectory (Van Zoonen et al., 2020; Van Zoonen, 2020). This study reveals a deep-seated distrust among benefit recipients toward the municipality's use of predictive analytics and further automation of support. They lacked confidence in the municipality's ability to responsibly manage new data techniques. This distrust stems from prior experiences where the municipality handled benefit recipients' data carelessly, repeatedly demanded the same data, mistreated benefit recipients, exerted pressure, and provided them with incorrect information. Interestingly, the research indicated that benefit recipients express

less concern regarding their privacy, as they believe the municipality 'already knows everything about us that there is to know.' Instead, transparency holds greater importance to them, given the belief their privacy was compromised upon applying for social security (Van Zoonen et al., 2020; Van Zoonen, 2020).

This research elaborates on Van Zoonen et al.'s (2020) findings. It remains unclear what the implications of the use of data-driven systems are for the power dynamic between benefit recipients and civil servants. Earlier scholars disagree on whether benefit recipients are helpless victims or if they have limited power to partially influence the unequal power balance to their advantage. By exploring benefit recipients' experiences and interpreting their tactics as negotiations of values and ideologies that are embedded in data-driven systems, this research enriches the existing knowledge on the performative role of data-driven systems in welfare provision and provides nuanced insights into the power dynamics between benefit recipients and civil servants.

3. Methods

3.1 Research Design and Data Collection

We used a qualitative, multiple-method design consisting of in-depth, semi-structured interviews and a document analysis of experience-based stories of benefit recipients and letters from the municipality to benefit recipients.

We conducted 24 in-depth semi-structured interviews with 17 benefit recipients and 7 representatives of service providers. All 24 interviews lasted between 60 and 240 minutes, totalling approximately 31,5 hours of material. Interviews were recorded and transcribed verbatim. We obtained permission for the interviews, the use of quotes, and anonymized the material.

Initially, there were only a few respondents who were willing to do interviews because there is severe anxiety about these topics among benefit recipients due to scandals such as the Dutch childcare benefits scandal (Henley, 2021). New respondents were selected via the snowball method.

Since it was difficult to find benefit recipients willing to talk to us, we decided to also interview representatives and service providers in neighborhood centers that have close contact with benefit recipients so we could also get some indirect insight into the experiences of benefit recipients who were too afraid to talk or didn't speak Dutch

well enough to do an interview. Despite the limitations of potential selection bias, it is possible to inferentially generalize some findings to similar cases, with caution, due to the in-depth interviews.

The interviews explored particular topics more in-depth based on the sensitizing concepts derived from the literature, for example their experiences with the positive and negative effects of data-driven welfare provision, feelings of (dis)trust toward the municipality concerning data-driven working, and their tactics during welfare encounters.

In addition, we conducted a document analysis of experience-based stories of benefit recipients and letters. We analyzed a book (330 pages) written by a benefit recipient, and we analyzed nine letters from municipalities to benefit recipients.

3.2 Data Analysis

The analysis had an explorative inductive approach because it involved iterative to-and-from movement between analytical themes and theoretical concepts. In the first round of open coding, we identified recurring themes in the data with ATLAS.ti. In the second round of axial coding, we organized, linked, and grouped the codes into analytical categories. We started off with sensitizing concepts such as (unequal) power balances, responses, resistance, coping tactics, and (dis)trust based on the literature, and throughout the analysis, we identified and refined certain concepts and themes such as data hunger, digital parallel universe, and the four coping tactics (Neumann, 2014).To ensure data quality we incorporated a member check by sending the transcripts to respondents to verify the information was correct. We used data triangulation by cross-checking the information obtained from the interviews and document analysis. Through researcher triangulation, we ensured that the key themes emerging from the analysis were discussed and further refined.

4. Results

4.1 Setting the Digital Scene

To be able to ‘do’ data-driven welfare provision, the municipality needs personal data. Therefore, prior to a first face-to-face conversation, digital information forms have to be submitted with personal information about, inter alia, income, possessions, living situation, previous work, diplomas, and financial, physical, and psychological problems. The first conversation with a work coach is usually about checking, adding, and correcting

this information. Respondents expressed frustration about the focus on information instead of personal attention to their particular situation. They report that face-to-face contact is scarce and that most contact consists of submitting online forms, and receiving automatically sent letters.

Benefit recipients perceive these data-gathering practices of the municipality as *data hunger*. One respondent described their experiences with the requests from the municipality for information as a push-and-pull game. The more information you give, the more they will ask, and the more information they have, the more they will have to use against you. To be able to function properly, these data-driven systems need enough data. Therefore, the use of data-driven systems induces data hunger on the side of the municipality. This data hunger is the result of a performative effect of the use of data-driven systems. Data-driven systems are used for collection and registration in the form of digital forms and applications. Once collected, the data are stored in data warehouses and analyzed with data-driven tools, for example, dashboards and predictive analytics, to substantiate existing trends or predict individual behavior (Van Zoonen, 2020). In the domain of work and income, data-driven systems are used to allocate welfare benefits or predict risks of welfare fraud (Kaun and Dencik, 2020; Eubanks, 2018; Kersing et al., 2022).

To what extent the municipality is legally allowed to ask certain information is still a point of discussion because the Dutch Participation Act and the GDPR are at odds. Paragraph 1, Article 17 of the Dutch Participation Act states that 'the person concerned (…) will, on request or on his/her own initiative, issue a statement without delay about all the facts and circumstances of which it is reasonably clear to him/her that they may affect his/her labor participation or the right to assistance.' The term 'reasonably' leaves ample room for individual interpretations of civil servants regarding to what extent they are allowed to ask for certain information. This obligation is at odds with central principles of the GDPR, such as data minimization, limited data retention, purpose limitation, and limited processing (Autoriteitpersoonsgegevens.nl, n.d.). Conflicting demands between the GDPR and the Dutch Participation Act, in combination with digitally induced data demands, leave benefit recipients in a weak juridical position in relation to the municipality. Data-driven systems have a performative effect in the sense that they amplify the power imbalance between benefit recipients and civil servants to the disadvantage of the benefit recipient, as becomes clear from the analysis below.

Most benefit recipients indicate that it is unclear to them why they have to hand in information, what information exactly the municipality has recorded in their digital systems about them, how it is used, and what the goal is of gathering and digitalizing information about their lives. Only some respondents are aware that their information is used to categorize them into certain personas and that this categorization determines the contact frequency with their work coach and what kind of help they get. Respondents who were aware of this expressed frustration over these categorizations:

> *'They make the system with a persona, (…) a persona is kind of an average person, for example, Mohammed has PTSD, what should we do with the Mohammed who has PTSD? (…) But nobody is Mohammed. (…) But then I thought this is exactly the problem, no persona has been made for me. My persona is too complicated for the persona.'* (Respondent 6)

Several respondents emphasized that there is often a disconnection between the digital systems and their day-to-day experiences. The digital systems create a *digital parallel universe* that exists next to their own day-to-day lifeworld. This disconnection caused by the use of data-driven systems has negative performative effects in the real world for benefit recipients. In the earlier example about the creation of personas, the negative performative effect was that civil servants didn't know how to help the people who didn't fit these personas, according to respondents. This incongruence between the parallel digital universe and the everyday lifeworld of benefit recipients creates distrust toward civil servants.

Categorization embedded in digital profiles undermines the basic principles the welfare state is based on. Due to categorization, individuals farthest from the labor market receive the least assistance, which is in contradiction with the principles of equality of opportunity, equitable distribution of wealth, and public responsibility for those unable to avail themselves of the minimal provision for a good life. People who are older or who have been on benefits for a long time are categorized as 'the granite block' that does not move. They are categorized in this way by civil servants because it is unlikely that they will get back into work. For this reason, it is argued that little effort is put into helping these people, as their limited resources are better spent on people who will find a job with a little bit of help. As a consequence, these individuals face the prospect of being permanently in the digital dole queue.

During your entire 'life' as a benefit recipient, information provision is mandatory in order to receive your benefits. Most respondents suspect that their information is mainly used to check if they are not committing fraud, but rarely used to help them find a job. When they are selected for re-examination benefit recipients have to submit bank statements, and sometimes civil servants come by for unannounced house visits. Civil servants are also allowed to go through people's social media accounts to see if they can find suspicious information about other sources of income, unannounced holidays, or living together with a partner. One benefit recipient mentioned that they were asked to log in to their bank account during an appointment with a civil servant so that the civil servant could go through their bank statements. Respondents report that civil servants don't only check income on their bank statements, but that they also comment on and judge their expenses. Benefit recipients experience this as very stressful and disproportionately intrusive on their privacy. These findings show that not only the amount of data collected, but also the way in which the data is collected and how the benefit recipients are treated during the collection reveals a distrustful view of the municipality toward benefit recipients.

4.2 Thief or Toddler

How do benefit recipients experience the quest for information that is increasingly digitally recorded? Most respondents feel that they are treated like a thief or a toddler because they experience an unequal power balance in information exchange. They feel like they are treated like thieves because if they don't provide the information, they feel like the municipality thinks they are probably fraudsters. Conversely, when they ask a civil servant for information, they often don't get it. They feel treated like toddlers because they feel that they are not taken seriously. These experiences of being treated like a thief or a toddler indicate the values and ideologies that are embedded in the process of digital data collection.

In some encounters, benefit recipients feel that they are treated like a *thief*. They get the feeling that the municipality thinks they are probably fraudsters:

> *'(...) the idea that every person entitled to benefits is a criminal. (...) The entire Participation Act is based on the prison system. 'They are all criminals,' that was the mindset. So that also has to do with this data question. There is also that compulsion, you are a slave. You're just a prisoner.'* (Respondent 2)

The first contact with the municipality was perceived by most respondents as unpleasant. They expected to be informed about both their duties and rights but were mainly pointed, in an unfriendly manner, to their duties. Several of the respondents said that they had to attend a group information meeting. During this meeting, a civil servant reminded them of their duties in a way that most of them perceived as unpleasant and threatening. Respondents had the impression that the goal of these meetings was to make them scared to do something wrong.

Furthermore, respondents in certain (but not all) cities experience the language of the automatically sent letters about re-examination they receive from the municipality as threatening. Especially sentences such as 'If we find that you have withheld important information, this may have consequences for your benefit. This can then be terminated and/or reclaimed. In addition, in a situation where important information has been withheld, we must impose a fine that can be as high as the amount of the damage.' In the letters, it is often unclear why they are selected for re-examination and what information is missing. Benefit recipients experience this lack of clarity in combination with a warning as very stressful.

In other encounters, benefit recipients feel that they are treated like a *toddler* by civil servants. They experience frustration over the fact that they have to give all their information to the municipality, but if they ask for information, the municipality doesn't provide it. One of the respondents tried to find out what kind of information the municipality has about them:

> *'I asked the municipality. I say I want to know everything the municipality knows about me. Look, we can't, we can't tell everything. I say why not? From which department would you like to know something? From the tax department, or from… I said from everything, and she says no you can't, you have to choose one. (...) No, you can't. That's too complex, too complicated. (...) If you don't know what there is. You don't get that information because you can't ask for it. And if you can't ask for it but it is there, they won't tell you. Because you have to ask for it if you want information.'* (Respondent 1)

Another respondent, a former benefit recipient who now works as a budget coach at a neighborhood center, found out that benefit recipients are taken less seriously than professionals:

> *'I called as a budget coach, but I also called as a mother. I was not happy about that last one. (…) you are just not taken seriously there. 'What does the mother know?' They really said that to me. 'You don't know that at all.' (…) I wasn't happy about it because as a professional I am still taken more seriously.'* (Respondent 13)

Benefit recipients indicate that they suffer *emotional and administrative burdens* from the data-driven welfare provision system. Many of the benefit recipients say they felt humiliated and denigrated by civil servants because they feel treated as if they are a 'criminal,' 'toddler,' 'fraudster,' 'the loser of the society,' or in Dutch, 'uitkeringstrekker.'[2]

They describe the *emotional burden* as a feeling of loss of privacy and control over their lives. Moreover, the feeling that the municipality limits them in their development is often mentioned during interviews. This indicates an unequal power relation that disadvantages the interests of benefit recipients.

One respondent described the psychological impact of being dependent on the municipality:

> *'You have the feeling that you have lost control of your life. That they are kind of in charge of your life or something and that you should be grateful to them for getting money even though you know it's all wrong, but they actually bring it that way. (…) I think (…) that you also really have to take that psychological element into account, what it does that (...) you are dependent on that organization, that you don't know who to get mad at when things go wrong. That the impact on your life is super big… (…) I kind of have the idea that 10 years of my life my development has stood still or something, and so yes that is of course super intense if you think about it…'* (Respondent 6)

The administrative burden lies mainly in the reversed burden of proof. Respondents argue that since the municipality has more power, they feel that they constantly have to prove that they are not committing fraud.

Another administrative burden is that of constantly checking if the municipality didn't make a mistake in the calculations when people are working part-time. One of the respondents said:

[2] Freely translated to 'welfare leech.'

'The price you pay is very high, but that is just in time, energy, frustration and yes for what? (...) what a hassle for just that money.' (Respondent 6)

4.3 Dealing with the Data Hunger

The digital data collection and profiling create a new power dynamic because both benefit recipients and civil servants negotiate the values and ideologies that are embedded in digital systems for welfare provision. This negotiation becomes visible through four coping tactics that benefit recipients use to deal with the data hunger of their municipality, which can be explained by their experiences during data-driven welfare provision encounters.

The first tactic is *pleasing* the data hunger of the municipality in the hope that they will receive the help they need to get back to work and not lose their benefits. These respondents experience a strong reversed burden of proof. They feel constant pressure to prove that they are not able to work. They come to meetings with their work coach armed with a bag of medicines and letters from doctors and psychologists to prove that they are not able to work. This behavior results from fear of losing their benefits and distrust toward the municipality. They are afraid to make mistakes in providing information to the municipality and that they will lose their benefits. Conversely, they also don't trust the municipality. They want everything on paper to make sure all agreements are clear in case the municipality makes mistakes. Explanations for this behavior come from situations where the municipality was not transparent to them about decisions and/or where the municipality made mistakes, often in combination with a lack of knowledge about how the municipality works.

The second tactic is *fighting* the data hunger of the municipality. These respondents have a combative attitude toward the municipality and describe it as 'putting their spikes up.' They report that if they have to give personal information, they challenge these requests by asking critical questions. They only give information that is strictly necessary and they demand clear agreements in writing in case they have to defend themselves when the municipality makes mistakes. They also try to force personal contact with work coaches because they don't want to be treated as another number in the system, but as a human being. This behavior is based on distrust toward the municipality. They feel the municipality doesn't really know their real situation and makes arbitrary decisions based on incorrect information. The behavior of these respondents is mainly focused on dismantling the *digital parallel universe* and redirecting attention toward face-to-face

reality. Explanations for this behavior come from situations where the municipality had a laconic response, as if they didn't matter, when benefit recipients pointed out they made a mistake, and situations where the municipality didn't explain their decisions.

The third tactic is *withdrawing* from the data-hungry municipality. Respondents describe it as putting a wall up around them, and most of them say that they just want to be left alone by the municipality. They try to avoid giving any personal information. They are often ashamed about their situation and feel uncomfortable discussing their well-being with a work coach they see infrequently and have no personal relation with them. They pay cash as much as possible because it will not be visible on bank statements if the municipality checks them during a re-examination. They do this to avoid getting judgmental comments from civil servants on their expenses. This behavior results from distrust toward the municipality because they feel that they have to share all kinds of information that is irrelevant to their right to an allowance and their efforts to find work. Explanations for this behavior come from situations where they experience the behavior of civil servants as disproportionately intrusive on their privacy and situations where they felt the municipality imposed general reintegration trajectories on them that didn't advance their efforts to find a job or their specific personal situation.

The fourth tactic is *calling in auxiliaries*. Most respondents have the impression that they are taken less seriously by civil servants than professionals. The earlier example of the budget coach who called the municipality both as a budget coach and as a mother illustrates this point. These respondents try to get what they need by asking for help from professionals outside the municipality. For example, they let others call for information or to get their questions answered. This behavior results both from practical considerations, they just want to get things done, as well as feelings of anger and distrust toward the municipality. These feelings of distrust stem from the idea that the municipality doesn't have their best interests at heart and doesn't take them seriously. Explanations for this behavior come from situations where they asked for information from the municipality but didn't get it because the municipality argued it would be 'too difficult' or 'too complicated' for them to understand.

5. Conclusion and discussion

This research shows that the implementation of data-driven welfare provision systems implies ideologies and values with important consequences for citizens' lives and state–citizen relations.

The already unequal power balance in the interaction between benefit recipient and civil servant is complicated by the increasing digitalization of welfare provision encounters because it induces a new dynamic of distrust. Benefit recipients use different coping tactics to counter the unequal power balance in order to suit their own interests. Negotiations about the values and ideologies that are embedded in data-driven welfare provision systems became visible through four coping tactics benefit recipients use to deal with the data hunger of their municipality: (a) pleasing, (b) fighting, (c) withdrawing, and (d) calling in auxiliaries.

Despite the deployment of coping tactics, it is difficult to reduce the power imbalance between recipients and civil servants for two reasons. The first reason is that benefit recipients have a weak juridical position in relation to the municipality, caused by conflicting demands between the GDPR and the Dutch Participation Act. The obligation to provide private information that influences their right to benefits leads to the criminalization of people who don't want to share information that they think is irrelevant to their right to benefits.

Second, it is difficult for benefit recipients to gain insights into the *digital parallel universe* that influences their day-to-day lifeworld in negative ways, let alone question it. Closing the gap between the digital parallel universe and their day-to-day lifeworld is difficult because the municipality is not transparent about the goal and methods of gathering and analyzing personal information.

These reasons are related to two mutually reinforcing kinds of distrust. On the one hand, benefit recipients experience the attitude of the municipality toward them as distrusting, and on the other hand, benefit recipients also develop a distrusting attitude toward the municipality. Because of the amplifying effect of digital data systems, this mutual distrust results in emotional and administrative burdens for benefit recipients, and in inefficient and expensive data-driven welfare provision for municipalities.

Furthermore, the integration of data-driven systems in welfare implies significant consequences for the functioning of the welfare state because it may disrupt the very principles on which the welfare state is based. The findings show that digital profiling disrupts the principle of equality of opportunity and the principle of equitable distribution of wealth. The categorization of people into personas (such as 'the granite block') results in people with the weakest starting positions receiving the least support in re-entering the

workforce. This also leads to the disruption of the principle of public responsibility for those unable to avail themselves of the minimal provisions for a good life. Furthermore, the emotional and administrative burdens the benefit recipients experience as a result of the integration of data-driven welfare provision systems show that the welfare state not only fails to ensure economic well-being for these benefit recipients but also their social well-being.

The implementation of data-driven welfare provision systems is not a technocratic problem but an ideological problem concerning public values. In order to address the problems with underlying values such as the criminal stigma around benefit recipients, mutual distrust, and lack of transparency, it is necessary to stop focusing on fraud detection and to start focusing on good service provision that supports benefit recipients who need it the most.

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Chapter 3

The changing roles of frontline bureaucrats in the digital welfare state: the case of a data dashboard in Rotterdam's Work and Income Department

Abstract

The welfare state is currently undergoing a transition towards data-driven policies, management, and execution. This has important repercussions for frontline bureaucrats in such a 'digital welfare state'. So far, impact of data-driven tools on frontline bureaucrats is primarily described in terms of curtailing or enlarging their discretionary space to make decisions. It is unclear however how daily work practices and role identities of frontline bureaucrats change in situ and which norms they develop to work with new data tools. In this article we present an empirical study about the impact of a data dashboard in the Work and Income department of the municipality of Rotterdam. We answer the following research question: Which role identities, work practices, and norms of appropriate behavior of frontline bureaucrats in the social domain are reshaped by the introduction of a data dashboard? We use a multiple methods design consisting of semi-structured interviews, ethnographic observations, and document analysis. Our results reveal two role identities among frontline bureaucrats: (1) the client coach, and (2) the caseload manager. We show that the implementation of the dashboard stimulates a shift from a client coach role identity towards a caseload manager role identity. This shift is contested as it leads to role identity conflicts among frontline bureaucrats with a client coach role. Furthermore, we establish that the accommodation of the institutional void in which the introduction of the dashboard takes place, is centered around three themes of contestation: (1) data quality, (2) quality of service provision, and (3) data representations.

1. Introduction

In recent years there has been a transition from a welfare state towards a digital welfare state and this is expected to develop further in the future (Pederson, 2019, Eurofound, 2020, Coene et al., 2020, Blauw, 2020). According to Alston, the rapporteur on extreme poverty to the United Nations (UN), 'There is little doubt that the future of welfare will be integrally linked to digitalization and the application of artificial intelligence' (Alston, 2019, p.21). The emergence of a digital welfare state has sparked debate how to appraise the increasing role of data in decision-making.

On the one hand, so-called dataists are convinced that decision-making about the allocation of public services should be based on large data sets and the use of algorithms rather than individual human judgements, therewith assuming that, potentially, weak spots of human judgements, such as personal prejudice will be remedied (Pederson, 2019). There is, furthermore, a strong assumption that the use of data tools will improve service provisions to citizens and result in more efficiency. Dataism is based on positivistic approaches that argue that data, when analyzed in objective ways translate the complexities of the real world into rational and ordered forms of knowledge (Iliadis and Russo, 2016; Kitchin and McArdle, 2017).

On the other hand, relationshipists argue that decision-making about services for citizens should be based on the logic of trust-based relationships between frontline bureaucrats and citizens. In line with critical data scholars, relationshipists problematize the objectivity of data (Iliadis and Russo, 2016). They argue that dataism is too closely aligned with positivist neo-liberal thinking and therefore prone to a naïve instrumental rationality and open to manipulation by vested interests (Kitchin and McArdle, 2017; Kitchin et al., 2015). Relationshipists warn, moreover, that the data transition is not without risks. Badly designed data tools privilege certain groups of people and discriminate others and already disadvantaged groups are subject to more control and surveillance than before (Eubanks, 2018; Maki, 2011; Pleace, 2007; Wachter-Boettcher, 2017). Alston warns that the 'digital welfare state' should move away from 'obsessing about fraud, cost savings, sanctions, and market-driven definitions of efficiency' if it does not want to become a dystopia of control and punishment (2019, p.1). Nevertheless, according to Pederson (2019) it is likely that the dataism model will outcompete the relationshipism model eventually.

We examine the contending claims about data producing better service provisions on the one hand and increased control and efficiency on the other hand, in the context of the decentralization of social policy in Dutch municipalities in 2015. The economic crisis in 2008 affected government finances in the Netherlands to a greater extent than foreseen and since 2010 successive governments have implemented austerity measures to prevent the annual deficit to rise. In 2015 the central government decentralized and reformed social policy in order to create a smaller, service-oriented government. The austerity politics of this decentralization came with a strong pressure for Dutch municipalities to provide services more efficiently. This has led to many experiments with the use of data warehouses, dashboards, and predictive analytics in the local social domain, assuming, in line with the neoliberal idea of 'doing more with less', that this would decrease costs and make the municipal administration more manageable (Government of the Netherlands, n.d.; Van Zoonen, 2019; Weske et al., 2014; Hastings and Gannon, 2021; Janssen and Estevez; 2013). These experiments have happened almost entirely outside the public and political eye, and thus without democratic control. Moreover, they take place in an 'institutional void' in which there are no generally accepted rules and norms according to which policy making and politics is to be conducted. In the absence of clear guidelines, a variety of actors negotiate new norms of appropriate behavior (Hajer, 2003).

In this paper we research how frontline bureaucrats develop new role identities and norms of appropriate behavior around the use of data tools. We define frontline bureaucrats as civil servants that work daily in the field with the wider public in service delivery (Falanga, 2018). So far, impact of data-driven tools on frontline bureaucrats is primarily described in terms of curtailing or enlarging their discretionary space to make decisions (Buffat, 2015; Giest and Raaphorst, 2018). It is unclear, however, how daily work practices and role identities of frontline bureaucrats change in situ and which norms they develop to work with new data tools. By bringing in literature on role identities into the study of frontline bureaucrats we can investigate in more detail how new data tools are adopted in practice and how frontline bureaucrats reconfigure their role identity and develop norms with regards to data use (Goto, 2021; Lifshitz-Assaf, 2018; Zetka, 2001; Barrett et al., 2012; Prasad and Prasad, 1994; Prasad, 1993; Gopal and Prasad, 2000). As literature on changing role identities and professions shows, the implementation of data tools can potentially lead to role conflicts between managers and frontline bureaucrats because the latter feel that data-driven tools have nothing to do with the core business of their profession (Christin, 2017; Doove and Otten, 2018; Breit et al., 2019; Jarrahi et

al., 2021). Some studies even warn that the use of data-driven tools can be harmful to professions as some professions decrease of even disappear (Goto, 2021). Our research examines three related aspects of how frontline bureaucrats in the department of Work and Income of the municipality of Rotterdam work with data-driven tools: (1) role identities of frontline bureaucrats, (2) their work practices, and (3) the development of norms of appropriate behavior around the use of data. Based on a qualitative case study, we answer the following research question:

Which role identities, work practices, and norms of appropriate behavior of frontline bureaucrats in the social domain are reshaped by the introduction of a data dashboard?

This article is organized in five sections. In the first section, we discuss existing relevant research about the influence of the use of data-driven tools on the work of frontline bureaucrats. The second section describes the implementation of the dashboard. The third section describes the research design, data collection, and analysis. The fourth section, the results, present the empirical analysis of the change of work practices and role identity, and the three themes of contestation concerning the norms of appropriate behavior around the use of the dashboard. The final section contains a short summary of the findings and a critical discussion.

2. Theoretical framework

Research about the impact of data-driven work on frontline bureaucrats has examined three dimensions: changing work practices, changes in discretion and changing role identities. However, how these dimensions interrelate is less clear from the literature. Below, we will first describe existing findings with regards to the impact of data-driven work on work practices, discretion, and role identities. We will then point out the interconnection between these dimensions for the purpose of our study and argue that currently there is an institutional void with regards to norm development.

2.1 Work practices

Work practices of frontline bureaucrats can be defined as ‘what they do’ on a daily basis (Reay et al. 2017, in Goto, 2021). Work practices are relevant to study up close because earlier research indicates that the use of data-driven tools influences work practices in different ways. Work practices can indicate whether frontline bureaucrats are reconfiguring their role identity and adopting a certain data-driven tool or not. Their daily behavior,

as portrayed in work practices, moreover, gives an indication of their attitude towards data-driven tools. Studies that focus on daily work practices that frontline bureaucrats develop when confronted with new data tools have indicated that they develop buffering strategies to minimize the impact of data-driven tools on their daily work, for example foot-dragging, gaming, open critique, resistance, not adjusting working methods, noise reduction, and client upbringing (Christin, 2017; Breit et al., 2019; Doove and Otten, 2018; Veale et al., 2018; Breit et al., 2021; Tummers and Rocco, 2015; De Witte et al., 2016; Flügge et al., 2021). Especially buffering strategies can indicate that frontline bureaucrats experience role conflicts because of the implementation of a data-driven tool.

2.2 Discretion

Various studies have analyzed the effect of data-driven tools on the discretion of frontline bureaucrats (Bovens and Zouridis, 2002; Hupe and Hill, 2007; Busch and Henriksen, 2018). There is much research that supports a curtailment thesis by showing how frontline discretion decreases or disappears in the case of large-scale organizational transitions towards data-driven work. It has also been found that data-driven tools are currently unable to grasp the full complexity of the choices frontline bureaucrats make and the information in digital systems rarely seem to add value to their daily work. It, for example, takes up time for training and handling the system (Giest and Raaphorst, 2018). Other research, however, has supported an enablement thesis by showing how the processing of routine information can be automated, which frees up time for more personalized interaction of frontline bureaucrats with citizens (Giest and Raaphorst, 2018). Finally, there is research that finds both constraining and enabling effects on the ability of frontline bureaucrats to exercise discretion (Buffat, 2015; Giest and Raaphorst, 2018), depending on contextual factors such as the degree of social complexity in a case, skills possessed by frontline bureaucrats, and the need for face-to-face contact (Busch, 2017, Jorna and Wagenaar, 2007). In addition, administrative cultures, dominant social norms, and interpretations have influence on the process in which an organization rearranges its working routines around the use of data-driven tools (Meijer et al., 2021).

2.3 Role identity

With work practices and discretion changing due to the introduction of data-driven work, it is likely that the way frontline bureaucrats see their own role as professionals will

alter too. Such role identity pertains to 'the way that professionals see themselves in terms of who they are and what they do' (Reay et al. 2017, in Goto, 2021). It entails different aspects among which the content of work, acquired knowledge, expertise, competencies, or technical skills, but also shared norms and values about appropriate professional behavior as expressed in modes of doing, speaking, and dressing (Wilensky, 1964; Noordegraaf, 2007).

Research has shown that the role identity of frontline bureaucrats contains a strong and deeply ingrained focus on helping citizens, establishing good relations with citizens, and creating good service provisions (Engbersen, 2021; Breit et al., 2019; Homburg and Fenger, 2021; Tummers and Rocco, 2015; Zacka, 2017; Trappenburg et al., 2020). At the same time, frontline bureaucrats need to provide good service provision within certain institutional boundaries and policy frameworks. Because street-level bureaucrats are positioned between the system world as represented by policies and the lifeworld of citizens, they need to balance multiple sometimes conflicting demands. On the one hand they are state agents that are responsible for the lawful execution of the rules and procedures. On the other hand, they are citizen agents that deal with the needs and wishes of citizens and the possible consequences of the procedures for the situation of the citizen. By using their discretionary space, they can balance demands from both the lifeworld and system world. Role conflict seems embedded in the position of frontline bureaucrats, who, as the 'frontline' metaphor suggests function as liaisons between large (public sector) organizations and citizens (Maynard-Moody and Musheno, 2000; Zacka, 2017; Schell-Kiehl and Slots, 2014; Habermas, 1984; 1987; Veldboer, 2019; Movisie, 2019; Tier et al., 2021). In addition, role conflict can also emerge when expectations are incomplete or insufficient to guide behavior or when there is incongruence between expectations and personal characteristics (Biddle, 1986, p.83; Mascini and Doornbos, 2021; Jarrahi et al., 2021).

The introduction of data-driven tools intervenes in the delicate balance frontline bureaucrats have to establish in their daily work (Lifshitz-Assaf, 2018; in Goto, 2021). Not only does it change the relationship with managers (Reay et al., 2017, in Goto, 2021), but their skills sets and norms regarding data and data tools need to be adjusted as well (Susskind and Susskind, 2015; Hill et al., 2014; Ben and Schuppan, 2014; Schuppan, 2014). Work practices like buffering strategies indicate silent opposition as well as open disagreement about the development of norms around the use of data.

2.4 Institutional void

When looking at the interconnections of the above described findings, we notice a rather complex picture of both enabling and disabling effects of the introduction of data-driven tools in the work of frontline bureaucrats. This concerns the complete disappearance of some sorts of work, as well as changing position from 'the street' to 'the screen' (Bovens and Zouridis, 2002). There is a possible diminishment of discretion with some research strongly indicating the contextual contingencies of these effects. Unmistakably new data tools intervene in the role identities of frontline bureaucrats, as they necessitate the acquisition of new skills and a reconfiguration of the balance between the needs of the organization and those of citizens. On top of this, the use of data and data tools themselves require new operational norms and values, for which the public sector and municipalities follow the GDPR and general quality guidelines, but for which there are, as yet few concrete do's and don'ts (Van Zoonen, 2019; 2020).

All of this 'transition work' needs to be done without much policy direction, neither from national nor from local politics and policy makers. We described this situation earlier as an 'institutional void', following Hajer's (2003) identification of the lack of policy and democratic guidelines for new political issues, such as climate change, digital technologies or (big) data. In the absence of clear guidelines, a variety of actors negotiate new norms of appropriate behavior. While Hajer claimed a new and productive balance between the state and civil society in policy making, subsequent authors working with the concept have claimed that the result, instead is poor policy and decision making (cf. Leong, 2017). Regardless of the enhanced or decreased quality of policy and decision making, Bjerregaard and Klitmore (2010) show how the formation of new rules, codes and conventions within a public sector organization undergoing reform comes from the everyday practices and adaptations of frontline bureaucrats.

3. Case description

We studied the implementation and use of a dashboard for the M&A teams (People- and Labor Development), at the department of Work & Income of the municipality of Rotterdam. The city of Rotterdam has the highest number of unemployed benefit recipients, hereafter called clients, in the Netherlands and the main goal of the M&A teams is to help them back to work. The ambition of the Mayor and Aldermen is to decrease the number of clients to 30.000 at the end of 2021 but due to the corona crisis they had to adjust their goals (Gemeente Rotterdam, 2019; 2020a; 2020b).

Three interconnected data dashboards for the M&A teams were introduced in 2021 as part of a broader transition towards data-driven work. The municipality of Rotterdam started their digital transformation to deal with the pressures to provide services more efficiently that resulted from the decentralization of social policy in 2015. As part of their digitalization agenda an extensive data program was launched in 2018 called 'Program Data-driven Work: Data, not words' (Gemeente Rotterdam, 2017).[3] One of the goals was to set up data management systems so that the data quality is guaranteed, monitored, and improved (Veen, 2018).

In line with the efficiency promise 'doing more with less' of data-driven work, the expectation is that by using the dashboard the service provision can be improved and that more clients will find a job. The process manager implemented three interconnected dashboards: the team management dashboard, the quality officer's dashboard, and the work coach dashboard. Even though the dashboard for work coaches has a less visual interface than the other two interconnected dashboards, we focus our investigations on the dashboard for the work coaches because this dashboard is central in the daily work of both work coaches to plan their caseload and team managers who use the dashboard as a monitoring tool.

The information displayed in the dashboards is entered through the main registration database. Figure 1 shows the dashboard with on the left an overview of the caseload, next to that the characteristics of the caseload (age, gender, marital status, etc.), then monitoring details (contact with client, CV, physical and/or mental problems, etc.), and on the right the legenda with definitions.

There are two main ways frontline bureaucrats, in our case work coaches, can use the dashboard: (1) for insight in and control over their caseload, and (2) for matching workshops and vacancies with clients. To explain these two uses we will first describe the path of the client from intake to finding a job. After filling in an online form, a client gets an intake meeting and is then directed to a work coach in a M&A-team. The work coach gathers personal information through an online questionnaire and an initial conversation about gender, age, physical and/or mental problems, and education level, etc. Based on this information the work coach decides what the plan of action will be, what service track the client will fall into, and what the contact frequency will be. If a person has a bigger distance from the labor market workshops can be followed to improve their situation. If someone is job ready the work coach tries to match them with a job.

[3] Referring to the slogan of the football club Feyenoord in Rotterdam: 'Deeds, not words' (Jillissen, 2020).

Figure 1. Dashboard

The first way work coaches can use the dashboard is to get insight in their caseload and prioritize and structure their work accordingly. Work coaches can use filters to track the progress of the client and see if any information is missing, like a plan of action or a CV, but also what the last moment of contact was with the work coach.

The second way work coaches can use the dashboard is to match them with workshops and, as soon as they are job ready, with vacancies. For example, if in a vacancy a driver's license is asked, the work coach can select all the people with a driver's license in their caseload and send them the vacancy.

4. Methods

4.1 Research design and data collection

We studied the introduction of a data dashboard in the department of Work and Income at the municipality of Rotterdam. We followed 12 M&A teams, of which nine teams focused on standard clients and three were specialized (focused on asylum seekers, ex-convicts, and multi-problem clients), that each comprised a team manager, a quality officer, and work coaches. Within each M&A team, a smaller 'Data-driven improvement team' was installed that needs to transfer knowledge on how to work with the dashboard to their team and to pick up signals from their team to improve the dashboard. We used a qualitative multiple method design consisting of semi-structured interviews, ethnographic observations, and document analysis. Data collection took place in September and October 2021.

We conducted 34 semi-structured interviews with actors who were directly involved with the implementation of the dashboard: 16 work coaches, 8 team managers, and 10 quality officers. The interviews explored particular topics in more depth for example how they perceive their own role in the context of the recent implementation of the dashboard, how the use of the dashboard influences their daily work, what they consider responsible use of the data dashboard, if the data in the dashboard reflect their understanding of reality, and if the data in the dashboard say something about the quality of the services they provide. All interviews lasted around 60 minutes and were recorded and transcribed ad verbatim. We asked permission for the interviews, the use of quotes, and anonymized the material.

In addition, we conducted 7 observations (approximately 9 hours) of meetings such as workshops for work coaches, team meetings, and key-user review meetings. The

observations lasted between 30 and 180 min and were translated into fieldnotes. Relevant parts of observations were recorded and transcribed ad verbatim. At the start of an observation the researcher was introduced, the research explained, and participants were asked for consent.

Lastly, we conducted an analysis of documents such as the year plan, newsletters to inform the management team, and policy documents. This resulted in around 129 pages related to the implementation of the dashboard.

4.2 Data analysis

In a first round of open coding, we coded recurring themes in the data with ATLAS.ti. During a second round of axial coding the codes were organized, linked, and grouped into analytical categories. The analysis had an inductive approach because it involved an iterative to-and-from between analytical themes and theoretical concepts. Initially we started off with sensitizing concepts. Throughout the analysis certain concepts and themes were identified and refined (Neuman, 2014).

In the first round of coding, we used ‘role identity’ as a sensitizing concept to interpret the data theoretically while keeping an open mind to new, emerging types of role identities. Initially we created codes like ‘changing role work coaches’ and ‘perceived role work coaches’, that we put in the category ‘role identity work coaches’. Later we redefined codes about the role identity of work coaches in two codes: ‘the client coach’ and ‘the caseload manager’ because these two broad categories of role identities among work coaches emerged inductively from the data. Given the lack of official guidelines in the social domain, we were particularly interested if work coaches, managers, and quality officers developed norms themselves in their daily practice with regards to what they perceive as ‘appropriate’ use of the dashboard. The three themes of contestation concerning norms of appropriate behavior around the use of the dashboard, which the accommodation of the institutional void is centered around, emerged inductively from the data. In the first round of coding, we assigned codes to tensions and discussion points regarding the use of the dashboard, such as ‘tension administrative pressure vs contact frequency with client’, ‘tension high caseload vs personal attention’, ‘focus on data decreases quality of service provision’, ‘data and reality’, ‘interpretation of data’, ‘story behind the data’, etc. Based on these discussion points we were able to distinguish three themes of contestation concerning norms of appropriate behavior around the use of

the dashboard: 'data quality', 'quality of service provision', and 'data representations.' Due to the ongoing development of the dashboard, these norms are not set in stone and are still evolving. The 'institutional void' is not 'filled' yet since actors like work coaches, managers, and quality officers are still 'negotiating' or discussing new norms of appropriate behavior around the use of the dashboard.

We used several strategies to ensure the data quality.

Through method triangulation we crosschecked the information from interviews, observations, and documents. If there were any contradicting facts, we asked the process manager for clarification.

We used data triangulation by crosschecking the information we got in the interviews by interviewing people in different roles, like team managers, quality officers, and work coaches. This allowed us to complement and contrast positive views about the dashboard by actors involved in its implementation, with more critical views of the dashboard among actors that were less involved in the implementation phase.

Through researcher triangulation we ensured that key themes emerging from the analysis were discussed and further refined. The first author collected the data, and the data were discussed and refined in conversations with the other authors.

Furthermore, we incorporated a member check by sending the transcripts to respondents to check if the information was correct, and we incorporated an expert check by presenting the results at four different occasions to experts to get feedback.

It is important to note that the transferability of this research is limited because of the specificity of the case. The research was conducted during the implementation phase of the dashboard, a unique period in a project's lifecycle, during the COVID-19 pandemic, in a Dutch city with the Netherlands' highest number of unemployed benefit recipients. The unique circumstances and specific characteristics of this case influences the results. On the one hand there are more unemployed people due to the COVID-19 crisis which translates into higher caseloads and higher work pressure. On the other hand, the COVID-19 crisis created a window of opportunity to implement the dashboard because of the increase in use of digital tools during the pandemic. Despite the specificity of the case, it is possible to inferentially generalize some findings to similar cases, with caution, due to the thick descriptions made. Moreover, theoretical generalizability is more likely because more generic results are transferable to other contexts (Flick, 2018; Mortelmans, 2020).

5. Results

We will first present two broad categories of role identities among work coaches (the frontline bureaucrats in this case) and explain why work coaches are likely or unlikely to work with the dashboard. Second, we will show how and why the implementation of the dashboard leads to conflicts about the role identity of work coaches. In the last part we show how the accommodation of the institutional void in which the introduction of the dashboard takes place, is centered around three themes of contestation concerning the norms of appropriate behavior around the use of the dashboard (1) data quality, (2) quality of service provision, and (3) data representations.

5.1 Change in role identity

Based on our interviews and observations, we can distinguish two broad role identities among work coaches: (1) the client coach, and (2) the caseload manager. These should not be seen as mutually exclusive but rather as ends on a dimension that reflects the professional's orientation on the organization on the one end, and on the client on the other, as figure 2 shows. A small group of work coaches who are actively involved in the implementation of the dashboard have a caseload manager identity. Most work coaches who are not actively involved in the implementation of the dashboard have a client coach identity.

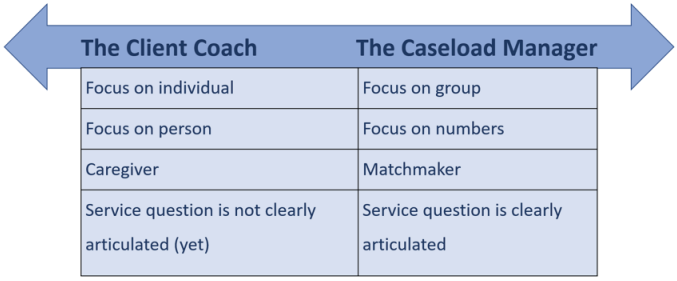

Figure 2. The client coach and the caseload manager

5.1.1 The client coach

Work coaches that perceive their primary role as 'client coach' view personal contact with clients and good service provision as their core business, and as the main aspect of their role identity. They focus on helping the individual person in-depth instead of helping as many people as possible. They are caregivers in the sense that they want to

help people with their process. If the service provision question is not articulated clearly yet, the work coach helps the client to figure out what they need to get back to work.

> *'Some can work with the dashboard and see it as an advantage. Others don't see it as an advantage. And they may also not be able to learn how to use the dashboard. That doesn't say anything about whether they are a good work coach. Not at all. But they just think it's less important. They're like, I'm doing my job. I'm having my conversations. I am there for the clients, and I do everything to make sure they find a job'* (Quality officer).

> *'Some are very focused on the number of people that return to work and others much more on providing service provision. Especially those who focus more on service provision care much less about the numbers. They rely on the contact they have with people.'* (Team manager).

Work coaches with a client coach role identity are unlikely to appreciate and work frequently with the dashboard because they don't see the advantage for the client. We found this especially among the work coaches in the specialized teams that focus on asylum seekers, ex-convicts, and multi-problem clients. Some respondents perceive working with the dashboard as 'mass production' that is particularly detrimental for clients that require more personal attention. These attitudes explain why the specialized teams started at a very late stage with working the dashboard or not at all because they didn't see the benefits of the dashboard.

Although only a small minority of work coaches with the client coach identity refuse to work with the dashboard, others don't report very active use. They execute tasks, for example making the data complete, that the team manager or quality officer gives them out of a sense of duty but don't take any initiative themselves to check if all information is complete or to get insight in their caseload. As a result, they register minimal or no information at all due to other work pressures that they feel need precedence. From our interviews with quality officers it appeared that they noticed that some information is contradictory, incomplete, or incorrect within a file. Some work coaches don't know the exact definition of the terms used in the dashboard and therefore register incorrectly.

During the interviews, most respondents that identified with the client role had difficulty describing concrete examples of how the dashboard contributes to the improvement of service provision. An advantage most respondents agree on is that the dashboard makes

sure that clients will not be forgotten because work coaches can filter in their dashboard which clients they haven't seen for longer than three months and contact them. Some work coaches argue that clients might also be earlier on the radar for a vacancy. But they also feel that they lack the capacities (mainly analytical insight) and digital skills to work with the dashboard yet. This is also acknowledged by some of the work coaches:

> "*But I would have given myself, when it comes to capacities, I would have given myself a 6 out of 10.*" (Work coach).

5.1.2 The caseload manager

Work coaches with a 'caseload manager' identity are more likely to use the dashboard. Personal contact with client is important to them but they are more focused on the group than on the individual. They want to help as many people as possible. They thrive when they have oversight and they enjoy planning, structuring, and prioritizing their work. They feel comfortable managing their own caseload. Keeping track of the numbers in the dashboard gives them a feeling of control. One of the work coaches said:

> "*I have to say that I'm very structured, so that's why I like the dashboard, because yes, I just like keeping track of all the numbers and keeping everything tidy and working with my to-do list, and with my mail. So, I am very much, yes, administratively I am strong, and I also really enjoy doing that*" (Work coach)

These work coaches function best when the client knows what he wants, and this can be matched with the relevant information in the dashboard. When they get a vacancy, they filter the dashboard for potential candidates.

> "*When it comes to job vacancies, I can switch faster. When I see a vacancy for production work, I can immediately see which people I should select, often the men with heavy production work, with a lower education. And you can usually sign them up for the vacancy. And you can select by age*" (Work coach).

Nevertheless, some work coaches say that the information in the dashboard is still too limited to make a good selection for most vacancies because they miss information about work experience, the kind of education, or preferences for certain jobs or branches, skills, capacities, etc. Some of this information is available in the online questionnaire but must be registered manually in the main registration database. This information in the main registration database is not transferred to the dashboard automatically. Work coaches

must manually go through files in the main registration database to find this information. They don't always have time to do this due to the high caseloads and work pressure.

They are motivated to work with the dashboard because they recognized the relation between the input and the output of the dashboard. They see the benefits of the dashboard for organizing their own work as well as for the client. Therefore, they feel more motivated to maintain and improve the quality of the data.

> "*If you add it all up, then the job seeker will of course also benefit from this, because of course we are getting better - It also depends very much on how we fill in our systems, we are of course putting more emphasis on it if your work is data-driven, then the data must of course also be correct and good, complete and registered. And in the end the job seeker will benefit from this, maybe they can find a job faster*" (Work coach).

5.1.3 Role identity conflict

With the implementation of the dashboard, tasks with regards to case management that were previously conducted by team managers are increasingly distributed to work coaches. Having an overview of the total caseload of the team and structuring and prioritizing work have now become tasks that are increasingly seen as part of frontline work. Work coaches are expected to become the director of their own caseload, approach their caseload strategically, plan their work accordingly, and take a more proactive attitude instead of a reactive attitude. This control over- and insight in their own caseload (data) is in line with the digitalization agenda of the municipality towards data-driven work. The dashboard has an enabling role because it is a tool that helps work coaches with a caseload manager identity to deal with their new tasks. The dashboard can analyze data and give an overview of the caseload. This was not possible in the main registration base were finding specific information must be done manually.

Hence, the implementation of the dashboard stimulates a shift from a 'client coach' role identity towards a 'caseload manager' role identity. However, this shift is only partly happening. For work coaches with a caseload manager role identity this generally is a smooth role transition because the new tasks fit in with their perceived role identity. They don't resist this shift. However, this imposed shift does lead to role conflicts for work coaches that identify with the role of client coach because the new tasks don't fit in with their role identity. Work coaches with a client coach identity resist or try to evade this shift. Quality officers and managers recognize this clearly:

> "*Only how do you get them to get that insight, then you also have to be a very good planner. And the team members are mainly emotional people from whom we now suddenly expect that they will view their work very business-like, and work very systematically*" (Quality officer)

Resistance among these client coaches especially arises when working with the dashboard comes at the expense of personal contact with clients. Work coaches say that this is increasingly the case because since the implementation of the dashboard the ratio is on average 70/80% administrative tasks related to the dashboard and 20/30% personal contact with clients. As a result, they worry that clients get less personal attention. This was especially important to them because in a recent evaluation about the service provision clients indicated that personal attention is important to them. This conflicts with their role identity because personal contact with clients is their core business and the main aspect of their role identity. Their solution is to postpone administrative tasks, only register the bare minimum, or don't register at all to carve out some more time for personal contact.

Resistance and role conflicts are further magnified by perceived work pressure that is caused by high caseloads and the distribution of organizational tasks to work coaches. Current caseloads are around 120 people per work coach. Most work coaches said this is too high to know the people in your caseload well and help them properly. A caseload of 80 is considered do-able. Because of this high caseload, quality officers and team mangers stated that most work coaches are in a 'survival mode'. Some work coaches say that they try to deal with the work pressure by helping clients that are job ready first because they require less time. Others mention that they mostly pay attention to the clients that actively seek contact and pay less attention to less vocal and visible clients.

Managers and quality officers, however, are generally convinced that the dashboard offers better solutions than those. Or as the process managers calls it 'Work smarter, not harder!' The idea is that the dashboard can help you work more efficient and thereby lower your caseload.

However, work coaches with a client coach identity argue that the dashboard is not always useful because working with human beings doesn't always allow for planning in advance because there are always urgent things that demand attention. One of the quality officers said:

> *'Of course, there are always several things, signals that go off for things that demand attention, those are of course phone calls from clients, the conversations that have to take place, the administration that has to be done after those conversations, e-mails of course that clients send, and tasks on the action list. Those are several points that simply always have priority for work coaches'* (Quality officer).

While managers argue that the dashboard is a solution to solve the problem of high caseloads and work pressure, work coaches with a client coach identity experience the dashboard as an extra administrative burden that distracts from their core business of personal contact with clients.

5.2 Filling the institutional void

An important assumption behind data-driven work, of which the dashboard for the M&A teams is a part, is that it will enhance the quality of everyday procedures and practices, and make service provision more efficient. However, the concept of 'institutional void' suggests that the organization and its professionals need to establish how exactly these improvements will be realized and turned into new procedures, routines, and norms of appropriate behavior around the use of the dashboard; with the question open as to whether this will really provide better decision making. This is a discussion that the team managers, quality officers and work coaches we followed, also actively engaged in. As we conducted our study at the very first steps of the usage of the dashboard, this discussion about norms of appropriate behavior around the use of the dashboard is far from over and neither has the dashboard become part of standard practice yet. In other words: the 'institutional void' is not 'filled' yet. Nevertheless, it has become clear that the main and overlapping themes of contestation concerning the norms of appropriate behavior around the use of the dashboard are (1) data quality, (2) quality of service provision and, (3) the overall meaning of data representations.

5.2.1 Data quality

The process manager and team managers emphasize that the quality of the data needs to be good because incomplete and incorrect data will make the dashboard a less effective tool. Every week they send the work coaches a list with data missing in the dashboard. Work coaches that have a caseload manager role identity are more committed to ensure good data quality because it fits in with their role identity. They don't experience the

lists and the dashboard as a management tool to control their work but more as a tool that could help them organize their work efficiently. They also experience the monthly conversations with their team manager as a conversation focused on development and improvement instead of control and punishment. It does, however, lead to role conflict among other work coaches whose role identity tends towards a client coach identity because they feel that the requirements of data quality negatively affect their relationship with clients. In response to this trade-off, some work coaches try to balance the need for good data quality and need for client contact. For example, one of the work coaches reported that the first meeting with a new client is about ticking all the boxes the dashboard needs. This also includes information that is according to work coaches not always useful or necessary to help a specific client. Only in the second meeting there is time to really get to know the client and their needs. Some work coaches say they do this to avoid being named on the weekly list of incomplete data. Even though the initial fear of work coaches with a client coach identity that the dashboard was solely a management tool to control their work largely faded, they still try to avoid being named on the weekly list of incomplete data sets. This shows that work coaches alter their work routines due to new performance criteria and the visibility of not meeting criteria in the eyes of peers and superiors. We see a similar notion of 'working for the data' in retail where tasks become data-satisfying rather than people-focused. Strong customer relationships or service are praised but are not a part of formal evaluation or appraisal because it is difficult to capture by data (Evans and Kitchin, 2018).

5.2.2 Service provision

The discussion about data quality feed into wider reflections on the fact that data quality is not the same as quality of the service provision. Especially quality officers and work coaches with a client coach identity emphasize that even if all the data are complete and correct it doesn't necessarily say anything about the quality of the service provision. This is illustrated by the following quote:

> "*I don't doubt those numbers. But do they really represent the quality of the work that someone delivers? Because you can of course enter the number of contacts you had, but how did that conversation go? I'm always curious about how that conversation went with the client. But then I think if you have contact about education and you write yes, I asked that question about education: do you want education? Yes. Full stop in the dashboard. Then I think you talked about*

education and yes, it is a hot item, and the Alderman wants to know all about that, but has someone felt heard and has he told his story? Or do you really know something more about it? Yes, that remains a tension for me" (Team manager).

This quote illustrates the tension a team manager experiences about what the dashboard measures and what it leaves out. The manager acknowledges that, even though the dashboard gives insight in the number of conversations about education, it is unclear if a service is provided in the sense of personal contact and how the client experienced this. This remains unclear because the quality of service provision is difficult to capture in the dashboard.

5.2.3 Data representations

In combination, the conversations and questions about the quality of data and service provision, produce a much wider reflection on the nature of data as representations of the reality of clients. While this is not a discussion that is framed in these terms, it does speak from concrete frustrations that some team managers, quality officers, and work coaches have. We note that only a small minority of respondents are engaged in discussions about representational issues.

A problem that some of them identify and recognize, is that the dashboard gives an incomplete representation of reality because some groups are more visible than others. This is the result of the dashboard missing certain relevant characteristics of the client, for example information about work experience, the kind of education, or preferences for certain jobs or branches, skills, capacities, etc. A potential consequence is that is that more visible groups could get better service provision than invisible groups. One of the work coaches says that single mothers with young children are a visible group that gets plenty of help but that it is unclear if there are any single fathers with young children that need help. One of the team managers says that they are focused on what they think is important but that there is a risk that they have a blind spot for other things that also might be important.

Another problem concerns the facility the dashboard offers to match clients with vacancies. Some work coaches mention that employers often have specific ideas about what kind of employees they want. For example, for a physically demanding work in the port of Rotterdam they want men between 27 and 35. For jobs in healthcare they are often looking for women without children because they are available outside working

hours. Even though it is not allowed to mention age or gender in a job description, work coaches know what kind of employee employers are looking for. Work coaches comply with these wishes because if potential employees don't fit the profile of the employer someone will not get hired and it will also become more difficult to match clients with this employer in the future. They thus make pragmatic decisions that help the employers, themselves and the clients that match the profiles. There is no time nor opportunity for a wider reflection and discussion on the way the nature of the dashboard information and its everyday practical usage excludes clients not fulfilling the limited and sometimes arbitrary criteria of employers.

Despite the above concerns shared by a minority of respondents, most respondents do not concern themselves with representational issues. They primarily view the dashboard as a supporting tool that has a signal function and is used to discuss things that stand out.

6. Conclusion and Discussion

The goal of this research was to explore how the use of a data dashboard reshapes the role identities, work practices, and norms of appropriate behavior of frontline bureaucrats in social domain in Rotterdam. First, we found two categories of role identities among work coaches, (1) the client coach, and (2) the caseload manager. With the implementation of the dashboard the organizational tasks that were previously the responsibility of team managers, such as caseload management, are being distributed to frontline bureaucrats. This leads to role conflicts for work coaches that have a client coach role identity because these new tasks don't fit with their core focus on personal contact with clients. Furthermore, we established that the filling of the institutional void in which the introduction of the dashboard takes place, is centered around three themes of contestation concerning the norms of appropriate behavior around the use of the dashboard (1) data quality, (2) quality of service provision, and (3) data representations.

The diverse reactions towards the dashboard indicates that implementation of data tools is not merely a politically neutral implementation of a technical objective tool. The discussions between caseload managers and client coaches represent the broader societal debate between dataists and relationshipists played out at the frontline. The dashboard in its current form does not fully live up to its neo-liberal efficiency promise of 'doing more with less'. Work coaches with a caseload manager identity experience a feeling of control over their caseload, but not all work coaches experience more efficiency in their work.

Moreover, learning to work with the dashboard and the registration that comes with ensuring the data quality takes up a lot of time. In the perception of work coaches with a client coach identity, this comes at the cost of personal contact with clients. Furthermore, work coaches in specialized teams reject the efficiency promise of 'doing more with less' altogether because of its quantitative evaluation of performance. Their resistance to the dashboard arises from their perception that data-driven approaches are inadequate in solving complex cases.

The discussions about the norms of appropriate behavior around the use of the dashboard with regards to data quality, the quality of service provision, and representational issues also logically stem from the broader societal debate between neo-liberal dataists and the more critical approach of relationshipists. The discussion about the question if data quality says anything about the quality of service provision indicates that there is disagreement about if data can translate the complexities of the real world into ordered forms of knowledge. Quality officers and work coaches with a client coach identity argue, in line with the more critical approach of relationshipists, that even if all the data are complete and correct it doesn't necessarily say anything about the quality of the service provision. Managers and work coaches with a caseload manager identity argue in line with dataists that good data quality is necessary for making the dashboard an effective tool.

Furthermore, from the discussion about the representational issues with the dashboard it becomes clear that the core assumption of dataists that blind spots of human judgement such as personal prejudice will be remedied by data tools does not hold. In our study, team managers warn for tunnel vision due to the use of the data dashboard as some groups become more visible than others. The (in)visibility of certain groups in the dashboard is a perfect example of 'ontic occlusion' where the act of admitting certain data is at the same time an act of excluding other data. One representation of an idea, situation, or event can take precedence and occlude, or block, another representation (Knobel, 2010; Kitchin, 2017). In our case single mothers with young children are a visible group in the dashboard that get the help they need. Other groups, like single fathers with young children are less visible in the dashboard. Groups that don't get the help they need will have more difficulties finding a job, and the longer they are unemployed the more difficult it is to get back to work at all. This shows that the dashboard can potentially have a performative nature because it does not merely describe reality but creates and defines reality (Zook, 2017; Danaher et al., 2017, p.5; Kitchin, 2017). Decisions about what characteristics of clients are included in the dashboard influences how the dashboard represents reality.

The control over gathering and selecting data is a key locus of power and whoever gets to decide this occupies an authoritative position (Zook and Graham, 2007a; 2007b; Zook, 2017; Cobham, 2020; Kitchin, 2021; Beer, 2016). The process manager, the team managers and the data-driven improvement teams have most control over what data is gathered and selected, and therefore have an authoritative position. These are also the people who have a strong caseload manager identity. It is more difficult for a regular work coach with a client coach identity to have influence on what data are gathered and selected. This represents a power struggle between dataists and relationshipists played out at the frontline. This moreover shows that the dashboard is not a neutral tool but has performative and political intervention in the frontline.

Given the initial expectation of some scholars (Pederson, 2019) that dataism is likely to prevail in the digital welfare state, the outcomes of our study are relevant for academia and society.

With regards to academia, our outcomes add to existing knowledge about the meaning of data-driven work for frontline bureaucrats. The findings demonstrate that the introduction of data tools poses a particular problem for frontline bureaucrats because their work takes place at the intersection of the system world of the public sector and the life world of ordinary citizens on benefits. While the data tools are introduced and legitimated as an effort to enhance the quality of service provision, the practical consequence, as our research shows, is that work coaches with a client coach identity perceive that the dashboard comes at the expense of personal contact with clients. Moreover, they perceive being pulled into system directions which inhibits them from connect to life world considerations of citizens needing help.

The societal relevance of our research lies in the new research questions it throws up pertaining to the articulation of the dashboard practices with the experiences of the people dependent on the system. If clients notice that their work coaches are now using a dashboard is presently unclear. How they could benefit is, as a result, a story of bureaucratic imagination rather than an empirical fact. It is here, evidently, that the proof of the pudding of data-driven work is in the eating: how do citizens benefit from data-driven systems, do all citizens benefit or suffer in the same way, do these systems address their own concerns at all? These are the core questions for frontline bureaucrats, regardless of their role identity, and it is with this framework that data systems need to be designed, implemented, and assessed.

Chapter 4

Dashboard-driven change: Reshaping relational dynamics in professional frontline-screen-level networks

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Abstract

Dashboards are increasingly used in public service organizations to enhance service provision and reorganize professional work. However, their impact on professional roles and relational dynamics between frontline professionals, such as work coaches, and screen-level professionals, such as managers and quality officers, remains unclear. This article presents a qualitative case study of a dashboard that was implemented in the work and income department of a large Dutch city. This article examines how the relational dynamics in a frontline-screen-level network are reshaped by the implementation of a dashboard. The results present the analysis of (1) the discrepancy between the intended scripts and the actual enactment of functions and roles that were introduced during the dashboards' implementation, (2) how professionals navigate tensions caused by contradictory logics due to the implementation of the dashboard, and (3) how the dashboard's implementation reshaped relational dynamics. Our results revealed that some professionals resisted using the dashboard because they experienced a tension between their client-driven professional logic and the managerial logic equating client-driven work with data-driven work. This divided professionals into those who didn't experience the tension between the logics and thus embraced the scripts of their new functions and roles, from those who did experience the tension and therefore resisted adopting the scripts of their new functions and roles. This division manifested in two key themes: (1) competition, and (2) the pursuit of autonomy. The dashboard's implementation reshaped the relational dynamics in this frontline network, constituting profound changes in the fabric of organizational life.

1. Introduction

The intensive use of data-driven technologies by public service organizations in recent years indicates a transition towards a digital welfare state (Henman, 2022; Pederson, 2019; Eurofound, 2020). Dashboards are particularly popular in fields such as education, healthcare, work, and income (Jarke and Macgilchrist, 2021; Buttigieg et al., 2017; Kersing et al., 2022). A dashboard is 'a visual display of the most important information needed to achieve one or more objectives; consolidated and arranged on a single screen so the information can be monitored at a glance' (Few, 2004, p. 3). They are used to monitor, predict, measure, analyze, and extract relevant insights from datasets and display this information, sometimes real-time (Few, 2004; Calzon, 2021). It is argued that these insights can help managers and frontline professionals to monitor their work and achieve their goals by making data-driven decisions (Hayward, 2021; Hladni, 2021).

Earlier literature often focuses on whether data-driven technologies hinder or enable the individual work practices of frontline professionals (Buffat, 2015; Giest and Raaphorst, 2018; Busch, 2017) and how they affect competence and professional role identity of frontline professionals (Goto, 2021; Pareliussen et al., 2022; Köktener and Tunçalp, 2021). On the one hand, dashboards are perceived as a potential threat that challenges the professional claim to competence and status, even with the prospect of replacing professionals. For example, a study by Giest and Raaphorst (2018) shows that the disconnect between organizational structures and digital tools threatens the discretionary power and autonomy of public servants and can make daily tasks more complicated and time consuming. On the other hand, they are perceived as welcome enablers that empower professionals to enhance their competence and shape their own professional identity (Goto, 2021; Pareliussen et al., 2022; Köktener and Tunçalp, 2021). Studies show that data-driven technologies enable frontline professionals in their activities because the automation of processing routine information can free up time for more personalized interaction between frontline bureaucrats and citizens (Buffat, 2015).

However, we argue that the focus on the individual frontline professional is too limited because in the current public service provision context, professional frontline work is becoming less individual and increasingly embedded in networks consisting of other professionals, such as managers and quality officers, and is characterized by team-based work (Loyens, 2019; Groeneveld and Van de Walle, 2011; Noordegraaf, 2011). In this article we therefore study the implementation of a dashboard in a network defined

as the intersection of frontline work and screen-level work. The work of frontline professionals is characterized by face-to-face contact with citizens where the dashboard plays a supportive role. The work of screen-level professionals, such as managers, is characterized by office-based work done sitting behind a computer screen, without any direct interaction with citizens (Bovens and Zouridis, 2002). Both frontline professionals, such as work coaches, and screen-level professionals, such as the managers and quality officers, use the dashboard in their daily work.

While there is a considerable body of literature that shows that data-driven technologies can alter relational dynamics between professionals (see, for example, Jarrahi et al., 2021; Kellogg et al., 2020), this literature predominantly emphasizes shifts in power relations. This study seeks to deepen this understanding by unpacking the underlying mechanisms driving these changes. To do so, we draw on professionalization literature, specifically the notions of identity scripts and institutional logics, to get a more nuanced understanding of how relational dynamics in frontline-screen-level networks are reshaped by data-driven technologies. They form the starting point for our analysis of how professionals navigate evolving roles brought about by the implementation of a dashboard that challenges the dominant institutional logics. The notions are particularly useful because they connect contradictory institutional logics, as macro-level constructs, to micro-level individual and group interactions within the organization (Thornton and Ocasio, 2008; Barley and Tolbert, 1997; Bévort and Suddaby, 2016).

Our research question is:

How are relational dynamics in a frontline-screen-level network reshaped by the introduction of a dashboard?

We answer this research question based on a qualitative in-depth study of the implementation of a dashboard at the department of Work and Income at the municipality of Rotterdam in the Netherlands. The main objectives of this dashboard are monitoring the caseload of frontline professionals and matching unemployed benefit recipients with suitable jobs. Unlike typical top-down implementation practices, this dashboard was implemented ‘from the middle’ by a former work coach, thus providing a case that enriches the literature on implementation practices.

This study contributes to a better understanding of how data-driven technologies fundamentally reshape the relational dynamics in public service work. As governments

increasingly digitalize welfare services, understanding these changes in relational dynamics is important because they directly affect the quality of public service delivery and the well-being of both professionals and citizens. This research highlights the need to move beyond a narrow focus of technical implementation. It calls for a critical reflection on how data-driven technologies are implemented, by whom, and with what effects. Ultimately, this research supports the development of more thoughtful, expertise-informed, and service-oriented data-driven governance that acknowledges the social realities of public service work.

In the second section, we position our research within the existing relevant literature. The third section provides a case description. The fourth section describes the research design, data collection, and analysis. The fifth section, the results, presents the empirical analysis of (1) the discrepancy between the intended scripts and the actual enactment of function and roles in practice that were introduced during the dashboards' implementation, (2) how professionals navigate and react to tensions caused by contradictory logics due to the implementation of the dashboard, and (3) how the dashboard's implementation reshaped relational dynamics. In the final section we discuss our findings and formulate recommendations for research and practice.

2. Theoretical framework

Data-driven technologies, such as dashboards, are not merely technical tools but social objects that can reshape organizational structures by altering professional roles and relational dynamics (Barley, 1986). Their implementation often introduces new roles, such as chief information security officers, data protection officers, data technicians, medical scribes, ethical data experts, thereby transforming how organizations operate (Van Heeswijk, n.d.; Wehrens et al., 2021; Bossen et al., 2019; Jarrahi et al., 2021).

These technologies can also alter power dynamics between managers and workers (Jarrahi et al., 2021; Kellogg et al., 2020). In some cases, they create new opportunities to expand managerial control over the workforce, reinforcing pre-existing power dynamics and regimes of control (Kellogg et al., 2020; Shapiro, 2018). Some scholars warn that data-driven technologies commodify and alienate workers, leading to power imbalances (Bucher et al., 2019; Frischmann and Selinger, 2018, in Jarrahi et al., 2021). Workplace monitoring through data-driven technologies can also take a 'retractive form', where monitoring one group can facilitate indirect control over another group (Levy and

Barocas, 2018, p. 1166 in Jarrahi et al., 2021). For example, research by Brayne (2020) shows how algorithmic surveillance technologies used by the police to monitor crime came to be used to surveil police officers themselves, who perceived this as threat to their independence and experiential knowledge.

Conversely, data-driven technologies can also reduce managerial power (Jarrahi et al., 2021). When decision-making is fully delegated to data-driven technologies, managers' influence is limited to the design phase, restricting their ability to develop tacit knowledge from experiential practices. This makes them dependent on technology which ultimately reduces their autonomy, agency, power, and control (Shrestha et al., 2019; Demetis and Lee, 2018).

While much existing research on how these technologies affect power relations from a managerial perspective, this study seeks to deepen such understandings by exploring how frontline professionals experience and navigate evolving roles and relational dynamics brought about by the implementation of the dashboard. To do so, we build on the constructs of *identity scripts* and *institutional logics* as a starting point to analyze our case study.

The concept of *identity scripts* helps connect broad *institutional logics* with the everyday interactions of *individuals* and *groups* within their social contexts (Thornton and Ocasio, 2008; Barley and Tolbert, 1997; Bévort and Suddaby, 2016). Institutional logics are socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules. They shape how *individuals* organize and give meaning to their social reality, and (re)produce social structures (Thornton and Ocasio, 1999, p.804). Positioned between individual agency and broader social structures, institutional logics manifest as roles that professionals enact. In practice, this means that professionals, in order to perform these roles, must build professional identities that align with the dominant logic within their organization (Berger and Luckman, 1967, p. 89-96, 194-200 in Bévort and Suddaby, 2016).

Organizations often contain contradictory institutional logics, such as managerial logics and professional logics. Contradictory logics can create tensions in the day-to-day work. Professionals navigate tensions in different ways, as institutional logics may constrain the behaviors of some while enabling others (Bévort and Suddaby, 2016; Noordegraaf, 2015; Postma, Oldenhof, and Putters, 2015). The introduction of data-

driven technologies further intensifies these tensions, as professionals must adapt to new data-driven technologies that change their roles and competencies.

Data-driven technologies often concentrate data-related competencies within a small group of professionals, leading to unequal access to training and influence. Some professionals gain power and status by developing data-related skills, while others may feel deskilled and excluded. As a result, power within the organization increasingly depends on one's ability to understand and interact with data-driven systems. This affects professionals' sense of autonomy over their work, their ability to make informed decisions, and their capacity for self-reflection (Jarrahi et al., 2019; 2021). For example, frontline professionals, such as teachers, frequently express resistance towards dashboards. They question the ease of use, feel overwhelmed by the amount of information, and feel hindered by the lack of clarity on how data is assembled and imbued with meaning. While some request additional training, others prefer relying on their intuitive expertise for decision-making over data (Rienties et al., 2018; Brown, 2020; Schwendimann et al., 2017; Vanlommel et al., 2017).

The concept of identity scripts also helps to understand interaction patterns at the *group level*. Scripts are 'observable, recurrent activities, and patterns of interaction characteristics of a particular setting' (Barley and Tolbert, 1997). They serve as both mental frameworks and behavioral reflections of logics that guide social interactions between professionals. Scripts shape communication, power relations, and the norms around which behaviors are sanctioned or rewarded (Thornton and Ocasio, 2008; Abelson, 1981; Gioia and Poole, 1984; Goffman, 1983; Barley and Tolbert, 1997). In the context of our case, identity scripts help explain interaction patterns between professionals and provide insight into how they navigate the evolving relational dynamics brought about by the implementation of the dashboard.

We draw on Barley and Tolbert's (1997) four stage model to understand how institutional logics are interpreted and enacted by individuals and groups in our case. These stages are (1) encoding, (2) enactment, (3) replication/revision, and (4) externalization/objectification. This model provides a framework for analyzing how professionals navigate and react to contradictory logics in the workplace. In our case about the implementation of a dashboard, we focus on the encoding and enactment stages because they are most relevant to understanding how the dashboard reshapes professional roles and relational dynamics between professionals.

In the encoding stage, institutional logics are 'encoded' into scripts. This happens, for example, when new professionals are socialized into adopting distinct assumptions about organizational reality through professional norms of conduct (i.e. Covaleski et al., 1998). Institutional principles can also be encoded in scripts in the design of technologies. When a data-driven technology is designed with built-in constraints, it can push users into certain activity patterns. When, for example, a dominant power structure is encoded in the design of a technology, this can force users to engage in activity patterns that reinforce that (Noble, 1984; Shaiken, 1984; Scarbrough, 1993 in Barley and Tolbert, 1997).

In the enactment stage, professionals enact scripts, often unconsciously, through habitual or routinized interactions. At first, this involves formal roles and behaviors, but over time, these interactions become so routinized that it eventually shapes the professional identity of those who perform them (Orlikowski, 2002 in Bévort and Suddaby, 2016). When professionals consciously enact a script, they may justify their actions using standard justifications. The distinction between consciously or unconsciously enactment matters, as institutional change often requires deliberate action rather than mere repeating existing routines (Barley and Tolbert, 1997). This is particularly relevant for the third stage of 'revising' or 'replicating' the institutional logic, and the fourth stage of fully institutionalizing the revised script through ongoing repetition.

3. Case description

We studied the implementation of a dashboard for the M&A teams (People- and Labor Development), at the department of Work & Income of the municipality of Rotterdam. The main goal of this department is to help unemployed benefit recipients back to work. Despite earlier efforts, the city of Rotterdam has the highest density of unemployed benefit recipients (hereafter referred as clients) in the Netherlands. The ambition of the college of Mayor and Alderman was to decrease this number to 30.000 at the end of 2021 but due to the corona crisis this was no longer feasible (Gemeente Rotterdam, 2019; 2020a; 2020b).

The frontline network we studied consisted of twelve M&A teams that each comprised a team manager, a quality officer, and work coaches (Figure 1). There are nine regular teams and three specialized teams. Specialized teams focus on asylum seekers, ex-convicts, and multi-problem clients.

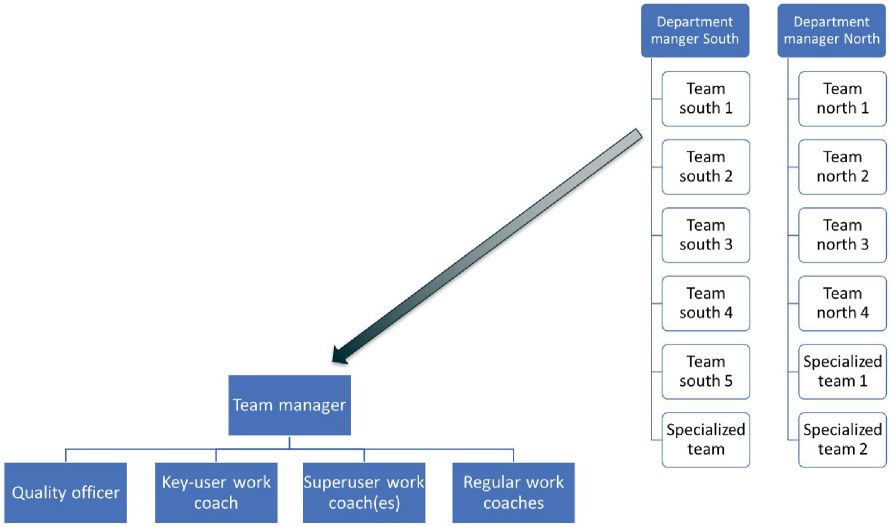

Figure 1. Team structure

Within each M&A team, a smaller Data-driven improvement team was installed that has the task to transfer knowledge on how to work with the dashboard to their team and to pick up signals from their team to improve the dashboard. These Data-driven improvement teams consist of a team manager, quality officer, key-user work coach, and superuser work coach (Figure 2).

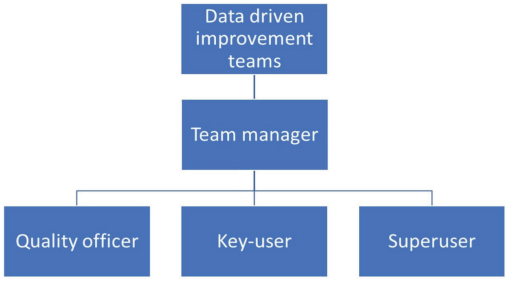

Figure 2. Data driven improvement teams.

The dashboard was introduced in 2021 as part of a broader transition towards data-driven work. Most dashboards are implemented top-down as an efficiency measure, focused on performance management and data-driven decision-making (Yigitbasioglu and Velcu, 2012; Buttigieg et al., 2017). They are presented as solutions for high workloads in education (Jarke and Macgilchrist, 2021), municipal employment services (Kersing et

al., 2022), and shortages of GP's (Jeffares, 2021). Top-down change is based on the assumption that organizations are stable entities and that in order to change, organizations can evolve through a series of necessary phases from the unsatisfactory current state to a desired future state (By, 2005, in Van der Voet, 2014; Bamford and Forrester, 2003, in Van der Voet, 2014). For example, workers should be disciplined into adopting new work methods and responsibilities (Evetts, 2011).

Contrary to common practice our study examines a unique case where the dashboard was implemented from 'the middle'. The process manager used to be a work coach before and adopted an entrepreneurial strategy to influence the work practices and policies within the organization by convincing her former colleagues to hire her to design and implement a dashboard. The trust from the directors of the cluster Work and Income and from the professionals working there because they knew her from her work coach days, gave her some exceptional freedom to implement this dashboard. The dashboard remained in use after the implementation phase, after which the process manager left, and is still operational to this day. Examining such alternative implementation adds to the understanding of dashboard implementation and how it reshapes professional relationships within frontline-screen-level networks.

The dashboard was implemented in three phases with corresponding workshops about how to work with the dashboard. Not all the teams started implementing the dashboard at the same time. The teams that started early were presented by the process manager and themselves as frontrunners or early adapters.

Since the data quality was not sufficient at the start of the implementation, the process manager introduced eight-week sprints to improve the data quality. Each sprint focused on the improvement of a focus area in the dashboard (for example all CVs of clients should be up to date, or all plans of action should be complete, etc.).

The dashboard (Figure 3) is used by work coaches in their daily work, and by team managers and quality officers to monitor the work coaches. It is meant to enable work coaches to realize improvements on the individual level and get more insight in their own caseload. Work coaches can use their dashboard in two ways: (1) for insight in and control over their caseload, and (2) for matching workshops and vacancies with clients. During the intake meeting with a client the work coach gathers personal information about gender, age, physical/mental problems, education level, etc. They then decide on a plan of action and determine contact frequency. Work coaches can also use filters to track the progress of the client, see if any information is missing, and also what the last moment of contact was. As soon as the client is job ready, they try to match the client with vacancies.

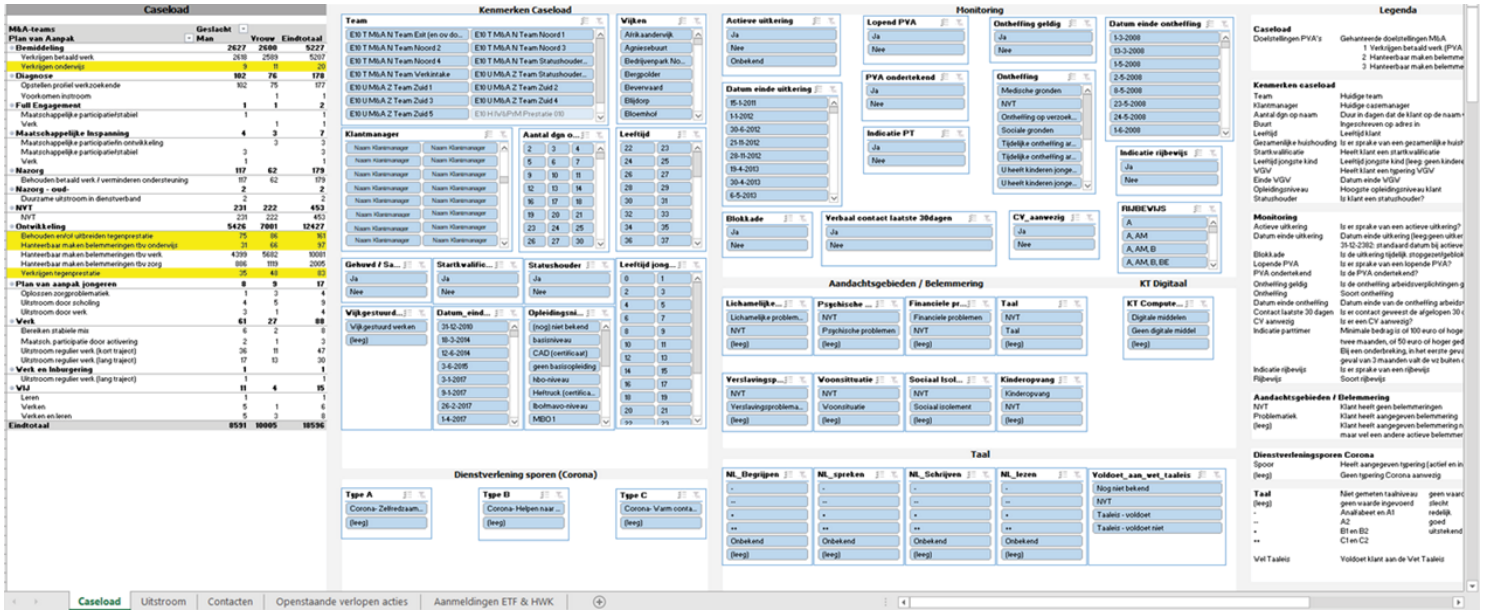

Figure 3. Dashboard

4. Methods

4.1 Research design and data collection

The data was gathered with a qualitative multi-method design consisting of semi-structured interviews, ethnographic observations, and document analysis. The data collection took place in September and October 2021.

We conducted 34 semi-structured interviews with frontline professionals who were directly involved in the dashboard's implementation (Table 1). In line with the evolving literature on professions (e.g. Suddaby and Muzio, 2015; Faulconbridge and Muzio, 2012; Flatøy, 2023; Adams, 2020), we adopt a broad understanding of professionals as individuals embedded within communities of practice shaped by epistemic and moral properties (Abbott, 1998). This includes work coaches, quality officers, and team managers, all of whom are treated as professionals in our analysis. We recognize that the degree of professionalism and exposure to competing logics varies. In this sense, team managers can be understood as hybrid professionals (Noordegraaf, 2007; 2015; Adams, 2020), navigating both managerial and professional logics.

	Regular teams	Specialized teams[1]	Total
Manager	6	2	8
Quality officer	8	2	10
Key-user	4	1	5
Superuser	8	0	8
Regular work coach	3	2	5

Table 1. Overview interview respondents

The interviews explored particular topics in more depth, including respondents' roles in the implementation of the dashboard, the influence of the dashboard on their daily work, and whether and how their responsibilities, tasks, and work relationships changed as a result of new roles and functions introduced by the dashboard. All interviews lasted around 60 minutes and were recorded and transcribed ad verbatim. We asked permission for the interviews, the use of quotes, and anonymized the material.

In addition, we conducted 7 observations (approximately 9 hours) during team meetings where the implementation of the dashboard was discussed, review meetings where key-users discussed points of improvement for the dashboard that they picked up from their teams, and training workshops. Training workshops included sessions for teams learning

to work with the dashboard, for key-users learning how to contribute to the improvement of the dashboard, and for superusers to learn how to transfer their knowledge about the dashboard to their colleagues. The observations lasted between 30 and 180 minutes and were translated into fieldnotes. Relevant parts of observations were recorded and transcribed ad verbatim. At the start of an observation the researcher was introduced, the research explained, and participants were asked for consent.

Lastly, we conducted an analysis of documents (+/- 129 pages) such as the year plan for the implementation of the dashboard, the evaluation of the year plan, PowerPoint presentations from training workshops for teams, key-users, and superusers, newsletters about the implementation of the dashboard, and policy documents related to the broader organizational transition towards data-driven work.

4.2 Data analysis

Initially we started off with inductively coding the material. The findings from this explorative approach are described in Kersing et al., 2022. During this initial inductive coding process, we noticed several themes related to relational dynamics between professionals such as 'roles,' 'tensions,' 'resistance,' 'power,' and 'autonomy,' that we could not pay attention to in the first article due to word limitations. For this article, we therefore revisited both the literature and our empirical data, and recoded our data based on the initial coding from the first article.

In the first round of open coding, we used ATLAS.ti to identify codes related to the recurring themes in the data, i.e. 'roles,' 'tensions,' 'resistance,' 'power,' and 'autonomy'. In a second round of axial coding, we organized, linked, and grouped these codes into analytical categories. Throughout the analysis, these codes and categories were further refined (Neuman, 2014). We elaborate on this process below.

We focused on the theme of 'roles,' as institutional logics manifest through roles within organizations. Initially, we created codes such as 'changing role work coaches: shifting tasks,' 'changing role work coaches: new responsibilities,' 'new role key-user,' 'new function quality officer,' 'changing role team manager,' etc. As the analysis progressed, we redefined these codes, distinguishing between 'roles' and 'functions' as well as between 'intended scripts' and 'actual enactments.' Additionally, we developed more refined codes, such as 'overlapping roles of quality officer and team manager,' to gain a clearer understanding of the process manager's intended changes and how they were enacted in practice.

In addition, we focused on the theme of ‘tensions’ and ‘resistance,’ as contradictory logics can manifest as such in daily work practices. Initially, we created codes related to tensions, such as ‘tension administrative pressure vs contact with client,’ ‘tension client-oriented vs data-driven work,’ and ‘tension high caseload versus personal attention for client.’ Similarly, we created codes related to resistance, including ‘postponing registration,’ ‘passive in workshops,’ and ‘shadow lists.’ In later stages, we refined these codes and grouped them into overarching categories such as ‘client-driven work versus data-driven work.’

Furthermore, we focused on the themes of ‘power’ and ‘autonomy.’ Initially, we created codes such as ‘independence,’ ‘changing relationship team manager and work coach,’ and ‘competitiveness between team managers.’ Later, we grouped these codes about relational dynamics into two broader categories: ‘competitiveness’ and ‘the pursuit of autonomy,’ as these themes emerged most prominently from the data.

We employed multiple strategies to ensure the data quality. First, we applied method triangulation by cross-referencing information gathered through interviews, observations, and documents. In cases where inconsistencies or contradictions arose, we sought clarification from the process manager or other relevant respondents. This allowed us to uncover the discrepancy between the intended scripts and how they were actually enacted in practice. Second, we used data triangulation by interviewing respondents in different functions and roles, including team managers, quality officers, and work coaches. This enabled us to capture diverse perspectives and to both complement and contrast viewpoints regarding the dashboard’s implementation and use. Third, we conducted a member check by sending the transcripts to respondents, allowing them to verify the accuracy of the gathered information. Additionally, we used researcher triangulation to align the codes with the selected text fragments and ensure the identification of relevant themes emerging from the coding process. The first author collected the data, while coding and analysis were conducted in collaboration with the other authors through ongoing discussions.

5. Results

5.1 Dashboard implementation: scripts versus practice

To ensure the successful implementation of the dashboard, the process manager introduced a new function and new roles, each with specific tasks and responsibilities

(Figure 4). However, a gap existed between the intended scripts - how these roles and function were designed to operate – and how they were actually enacted in practice. We present these differences for each role and function. Analyzing how the process manager's intended scripts were taken up or resisted by professionals offers insight into the evolving relational dynamics within the organization.

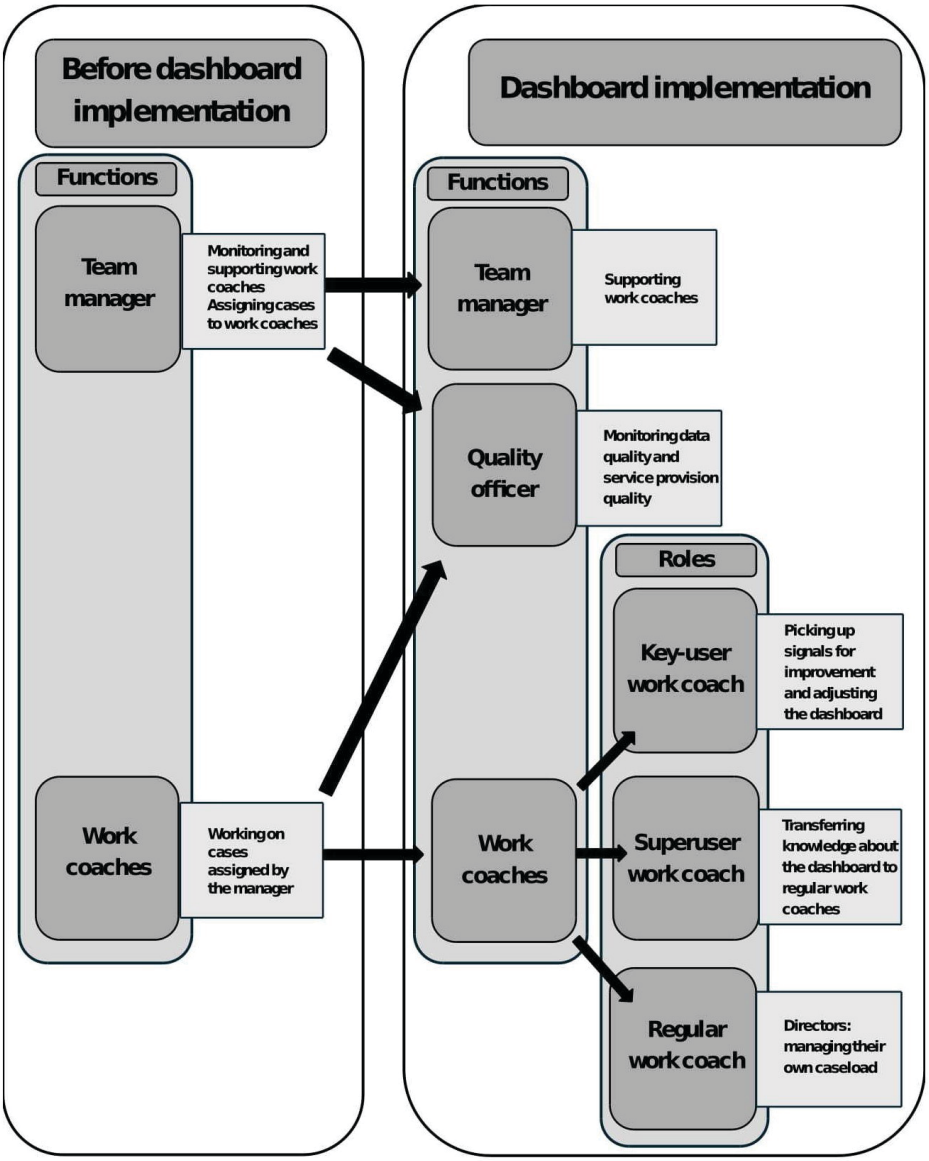

Figure 4. Intended scripts

5.1.1 Building data-driven improvement teams

The process managers installed Data-driven improvement teams within each M&A team (People- and Labor Development).

> '*This movement is not something you, as a team manager, can carry alone. A broader network is needed for this (…) Within this network, the team manager is THE driving force! (…) the team manager is supported by the quality officer, the key user, and the superuser(s). This network, also known as the Data-Driven Improvement Team, is the backbone of this project*.' (Newsletter Data-Driven Working M&A Teams)

These data-driven improvement teams were tasked with transferring knowledge on how to work with the dashboard to their own M&A team and gathering feedback to improve the dashboard. With the implementation of the data-driven improvement teams, the manager introduced a new function of quality officer that was tasked with analyzing, monitoring and coaching their team. In addition to this, existing functions were assigned new roles, such as key-user and superuser roles for more experienced work coaches. By introducing this new function of quality officer and new roles of key-user and superuser, the process manager encouraged co-ownership of the implementation. Most professionals in the Data-driven improvement teams joined voluntarily, driven by a preexisting affinity for data-driven work.

The process manager stimulated positive reactions to the dashboard's implementation by using affirming language, calling a work coach that is up to date with his registration 'the perfect child' and referring to another as 'my favorite tester', fostering a sense of belonging.

5.1.2 Team managers: Supporters of self-managing work coaches?

Team managers were responsible for integrating the dashboard into their team's daily practices which marked a significant shift for work coaches towards self-management and taking responsibility for their own caseload. This was different from the situation prior to the dashboard's implementation.

> '*The number [of cases] (…) was determined (…) by your team manager. So, your team manager gave you 10 files per week, and you made sure they were completed, you know. That's how it went. But now everyone has their own*

caseload, so there's no team manager assigning your work because the work is already there.' (Observation)

The process manager argued that work coaches can have greater control over- and insight in their own caseload, allowing them to prioritize cases based on the information provided by the dashboard, granting them more autonomy in managing their caseload.

This shift for work coaches towards self-management and taking responsibility for their own caseload changed the role of the team managers.

'*The role of the team manager has also somewhat changed because of this. Where it used to be more about diving into a file, looking at what choices you made (...) now, you're very much facilitating through the data, (...) to ensure that they can do their work well, and together you look for where you can score, if I may put it that way.'* (Team manager)

Team managers were expected to adopt a more supportive role, focusing on how work coaches can improve their work. This changed the nature of the monthly conversations and thereby the relational dynamics between team managers and work coaches:

'*My conversations with them have also changed. I no longer dive into the file; it's more about how you are doing, what are you running into, how can we improve together?'* (Team manager)

Initially, many regular work coaches feared that team managers would use the dashboard solely to monitor their performance, concentrating exclusively on the number of people they helped back to work, rather than progress towards durable employability, ensuring long-term employment without a return to benefits after a short period of employment. Although team managers did not focus solely on employment targets, these employment numbers remain still more important than durable long-term employment. A regular work coach explained:

'I have a lot of candidates who are still in development, meaning they are quite far from the labor market. (...) it's a slow process (...) But gradually, I'm getting them moving (...) towards mediation. And then there's still that next step—getting them to actually start working. (...) that's a challenge. And honestly, I don't feel very happy when I look at the dashboard and check the outflow section, (...) But yeah, in the end, it's just a number. I don't place much value on it, and luckily, my

> *team manager doesn't either at the moment (...) But my approach is that every individual deserves support—they're not just numbers or checkboxes, you know? And I find it disappointing that this aspect is still being emphasized so much. I do understand the goal is to have as few people as possible on benefits, but when I help someone out of benefits, I want to make sure they never have to return. And unfortunately, I still see too many candidates coming back'* (Regular work coach)

In this context, the role changes brought about by the dashboard reshape the relational dynamics between team managers and work coaches.

5.1.3 Quality officers: monitoring or supporting?

With the dashboard's implementation, monitoring tasks were shifted from team managers to quality officers, a newly established function dedicated to analyzing, monitoring and coaching their team. Quality officers were tasked with assessing both the data quality and service provision quality at team and individual levels. Previously, team managers had both monitoring and supporting roles. Most quality officers were former work coaches. As part of their monitoring tasks, they sent lists of missing data in the dashboard that needed updating to their team and have conversations with team members about specific cases and missing data.

While team managers were expected to take on a supportive role – helping work coaches to improve their work – and quality officers were tasked with monitoring the data quality and the quality of service provision, the division of supportive and monitoring roles between the quality officer and team manager in practice often deviated from the process manager's original vision:

> '*We have already kind of explicitly agreed that the quality officers are not here to say, 'you are now at 30 percent, and it should have been 80 percent'. That's not my job. That is the manager's job. So, we kind of made a separation in that. And in the conversations that I'm going to have now with the work coaches, I'm going to say, let's look at the dashboard together, to see where you stand. (...) A supportive role (...)*' (Quality officer)

In this case, the monitoring role, formally assigned to the function of quality officer, was informally shifted back to the team manager. However, despite the formal division, neither team managers nor quality officers appeared eager to take on monitoring responsibilities, as they both preferred a more supportive role. The discrepancy between the intended and

enacted roles, along with the informal shifting of monitoring responsibilities, reflects a renegotiation of relational dynamics between quality officers and team managers.

5.1.4 Work coaches: numbers or needs?

The role of work coaches changed as they were expected to adopt a managerial approach, with the process manager characterizing them as 'directors' responsible for managing their own caseloads. This was a significant change from when managers assigned cases. The process manager believed the dashboard supported work coaches to make data-driven decisions, making their job more manageable.

> *'I see that the work coach is currently thinking that it is all a lot of work. It can be a lot because you see it [tasks] separately. You don't see it as a whole. You don't see it as a kind of route a client follows. (...) data will help you with that.'* (Process manager during a workshop)

The process manager also equated client-driven work with data-driven work.

> '*We want to deliver tailor-made solutions (...) And data-driven working offers you the opportunity to do that very quickly with two or three mouse clicks with the dashboard.* (…) *Personal attention, working together with the client, understanding, and meeting the needs of the client. OK. If we keep that in mind, and how do you do that? What do you need? What intervention do you use? And look, it's not about working harder, but about data, or data-driven working, it gives you the opportunity to work smarter.* (Process manager during a workshop)

However, respondents emphasized during interviews that the emphasis on caseload management could overshadow other roles work coaches have, such as being motivators of clients through face-to-face interactions, coaches, or a listening ear. Many felt the dashboard did not enable them to work smarter but instead reduced personal contact with welfare recipients.

> *'I understand that the data needs to be in there, but sometimes it feels like a time-consuming task that maybe an intern could also handle. Yes, if we say we need to have as many conversations as possible, then this is all time that I'm not actually spending with a client.'* (Work coach)

This perceived shift in role expectations indicates a discrepancy between the intended and enacted roles.

5.1.5 Key-users: gaining key positions through dashboard control

The process manager introduced new roles for work coaches with affinity for data-driven work, such as key-users and superusers. Key-users were expected to pick up signals for change from their team and bring these to the review meeting with all key-users. If a modification in the dashboard benefited all M&A teams, such as adding a certain characteristic or information about clients, they could request adjustments to the dashboard from the data team. Most key-users were work coaches with ample previous work experience as a regular work coach. Their membership of the data-driven improvement teams granted them a more authoritative position in relation to other work coaches. Their role and tasks shifted from solely handling cases assigned by the team manager before the dashboard's implementation, to independently managing their caseload in their daily work, and influencing colleagues' work through dashboard modifications in their role as key-user. With their control over what data was gathered and how the dashboard was updated, they played a crucial role in shaping team workflows and decision-making. This shift also changed the relational dynamics within teams, as key-users gained more influence over their peers and blurred traditional hierarchies between team members and managers.

5.1.6 Superusers: superiority over efficiency

Superusers were responsible for transferring knowledge to their team on how to work with the dashboard. Like key-users, most of them already had an affinity for data-driven work and extensive experience as a regular work coach.

> '[*They] help colleagues gain insight. (...) it's not difficult, just a few clicks (...) But there are also people who simply don't get it. And that's totally fine, but then we have [superuser] and [superuser], and they help the colleagues*.' (Team manager)

However, many exceeded their formal role by monitoring regular work coaches, which was formally a task of the quality officers.

> '*I'm a bit competitive, so then I check, okay, what's the score of this person and that person (...) I'm also a superuser, I have to do it. If things aren't going well in my team, then I get called. (...) can you check this? Can you check that? Can you monitor this? And yes, you want to stay ahead of that*.' (Superuser)

One superuser even went as far as monitoring the work of a quality officer:

> *'Secretly I also look in the list that [quality officer] then makes for me, Because I don't want to miss things that he already has seen, and I secretly want to check him. (...) It's double work. (...) I just think it's double, that it's also chewed out and emailed. (...) It's a waste, It's a waste of wor*k.' (Superuser)

Despite the formal hierarchy between them, the superuser prioritized control and power over efficiency, even though it resulted in double work. The dashboard shifted power dynamics, as it enabled superuser to monitor the work of other work coaches and the quality officer. This illustrates how the implementation of the dashboard altered relational dynamics by disrupting traditional hierarchies and redistributing informal authority within teams.

5.2 Navigating contradictory logics: Client-driven versus data-driven work

Our results revealed that professionals experienced conflicting demands due to the tension between professional and managerial logics. We show how the tension manifested in their work and how they navigated the conflicting demands.

Most regular work coaches and team members of the specialized teams resisted working with the dashboard because they experienced a tension between their professional logic that demanded client-driven work, and the managerial logic that demanded equating client-driven work and data-driven work. They believed the dashboard distracted from what they saw as the core of their job – personal contact with clients and understanding their needs so they could provide good service. A regular work coach noted:

> *'The feeling was, we're going to work data-driven with people and vulnerable groups. How? [laughs] What's in it for me? That's…yeah, I had some resistance to it at first.'* (Regular work coach)

The process manager wrote in a newsletter update:

> *'During the learning and knowledge workshops for this sprint we came to the following conclusions: That the process is seen as double work. That in some cases employees have not taken note of the formalized work processes. That employees do not always recognize and/or make the link between the work process and the value delivered to the customer as such.'* (Newsletter)

Despite the process manager's aim of equating client-driven working and data-driven working, these professionals resisted this approach, emphasizing the value of in-person interactions with clients. One team manager confirmed this:

> *'For such a work coach it is yes, it is about the job seeker, and yes, they lose sight of those peripheral issues that we consider important.'* (Team manager)

Professionals navigated this tension in diverse ways, which became evident in their daily work practices. Some persisted in their old work methods, such as maintaining unofficial shadow lists, due to skepticism about the dashboard's usefulness. Many indicated that the dashboard imposed a heavy workload but offered little added value, as shown in the following quote of a regular work coach:

> *'I have to be honest, there was a lot of fuss about it, that it involved a lot of work.'* (Regular work coach)

A team manager added that work coaches postponed registering the data in the system:

> *'There was also a bit of resistance, from the fact that they have the idea of doing things twice, that they have to put something in a system that will be replaced and that may not be looked at anymore. (...) It has also been announced that there will be extra administrative support. So, some also think something like, well, I'll wait a bit and then I'll pass on my part and then it will be done.'* (Team manager)

Others did not actively participate in workshops, omitted assigned tasks, or completed them only minimally. This became evident in a conversation between the process manager and a work coach during a workshop:

> *'Process manager: Okay, are you familiar with the worksheet (part of the dashboard)? Who has already discovered it? (...) [Name] your eyes look glazed. Can I deduce from this that you have never seen it?*
>
> *Work coach: yes, I saw it. [Quality officer] also shared it before my vacation, but I haven't worked with it yet.'* (Conversation during observation)

5.3 Relational dynamics

The implementation of the dashboard reshaped relational dynamics, dividing professionals who embraced the scripts of their new function and roles from those who did not, as they experienced a tension between contradictory logics. The relational dynamics between

professionals became visible through two key themes: (1) competition, and (2) the pursuit of autonomy.

5.3.1 Competition

The implementation of the dashboard reshaped relational dynamics between professionals by increasing the visibility of their work, which sparked competitiveness among them. Most members of the Data-driven improvement teams perceived this competitiveness as a positive development. As one key-user explained:

> '*I think that's just a, yes, how should I say it, a healthy competition actually. (...) I have a colleague who, for example, scores very high on a certain component. Well, I find it interesting to go to that person to ask, how come you score higher on that. How do you do it? That is precisely the dashboard. That you can see the differences.*' (Key-user)

In contrast, regular work coaches viewed this competition as threatening. As one work coach observed:

> '*And then of course you can compare yourself to colleagues who work about the same number of hours, so that certainly feels like a struggle. (...) Like a battle. Yes, a kind of competition (...) because you immediately see if such a dashboard is also sent for public view, then you have action points that need to be solved, but also those of colleagues, so in that sense then, yes, then it comes close, then it feels very intimate.'* (Regular work coach)

The competition led to unintended consequences such as cherry-picking. Regular work coaches focused on clients who could be easily helped:

> *'It's not exactly how it should be, but I'll mainly focus on clients who need the most attention. Yes, you do tend to focus on people who are actually going to take steps forward.'* (Regular work coach)

Some regular work coaches felt discouraged by the competition, believing that achieving complete accuracy when working with the dashboard was an unattainable goal:

> *'Of course, they want everyone working with the dashboard to reach a certain level—ensuring that you have full command of it and that everything you do for job seekers is 100% accurate. But naturally, that's never fully achievable*

> *because you're constantly trying to keep up with the facts. Still, you do what you can.'* (Regular work coach)

The dashboard-driven competition also reshaped the relational dynamics among team managers, sparking competition about whose team was in a more advanced phase of implementation and performed best in data quality improvement sprints. Since the data quality was insufficient at the start of the implementation, the process manager introduced 8-week quality improvement sprints to improve the data quality. Each sprint focused on the improvement of the data quality of a specific focus area in the dashboard, such as ensuring all CVs were up to date, or making sure all plans of action were complete, etc. Although the primary goal was not to foster competition, these sprints intensified competition, as team managers in more advanced phases were celebrated by the process manager as frontrunners. One team manager remarked:

> '*I have to say very honestly that if I see that in similar teams with the same number of job seekers, I get a kick out of it to see that we are very close, or even higher in numbers in terms of the amount of unemployed benefit seekers that flow out to a job. It does make me feel good, that's also part of it, I call it a healthy competitive drive. I just like that.'* (Team manager)

5.3.2 The pursuit of autonomy

The implementation of the dashboard reshaped relational dynamics between professionals because the increased visibility of their work affected their autonomy over their work. Regular-, key-user, and superuser work coaches all sought greater autonomy to work independently from each other and their team manager and quality officer. Though their views on whether the dashboard facilitated this varied.

Most key-users and superusers experienced greater control over their own caseload and less dependence on colleagues.

> '*I don't have to ask anyone else for information. I can look it up myself. (...) I always find it annoying to be dependent on someone for anything, so if I want to know something, I like that I can decide for myself*.' (Superuser)

This focus on autonomy sometimes led to unintended consequences, such as registering data to avoid control. A superuser admitted to completing registrations solely to avoid questions from their manager:

> *'Yes, yes, and that's what I mean by filling just for the sake of filling. You did the registration to avoid the control.'* (Superuser)

Key-users perceived transparency and control as positive, as it gave them more insight and control over their own caseload. However, they noticed resistance among regular work coaches, suspecting it stemmed from their perceived loss of autonomy over their work. A key-user reflected:

> '*of course, someone wants to know how you handle your work. What's wrong with that? It's only more transparent, from both sides, I think. Because in the past, people would just say things, and you could never refute them. You didn't have insight in those documents into your caseload – only managers. (...) I see it as positive control – two parties who can just sit down honestly with fair numbers. (...) some colleagues really need to get used to it. Because they have their own little domain, and they don't want anyone to touch it. That's theirs.*' (Key-user)

A team manager confirmed this:

> *'So, at the beginning of the year, my team said: "You know what, I don't know anymore, I've completely lost my sense of autonomy. I'm just updating lists all the time.'* (Team manager)

One of the regular work coaches expressed a passive attitude toward change, engaging only when explicitly asked.

> *'It's always the same with us employees: when something new comes in, we think, okay, they're introducing something again, let's see how long it lasts. Why do I have that mindset? Because often, a new system or method is implemented, and after two years, it just fades away. Then you think, hmm, I guess it actually worked pretty well—why did they drop it? And so, you just go with it, and you think. You know. You are working, you get paid every month, if they ask you questions, you answer, if they don't, you don't.'* (Regular work coach)

This quote suggested a sense of disillusionment and a perceived loss of autonomy over their work, leading to a passive attitude toward organizational changes.

Furthermore, the autonomy of the members of the two specialized teams was reduced because the dashboard primarily catered towards the needs of the regular teams. As a minority, the specialized teams couldn't change anything in the dashboard through the

key-user meetings, as modifications were only made if they were relevant to all teams. One professional noted:

> *'I can imagine that if you deal with 10 regular teams that have certain needs in the dashboard that weighs more than 2 specialized teams have different needs. So that more priority is given to regular teams. (…) it's always a bit unfair, a bit childish, maybe…'* (Professional in specialized team)

The difference in autonomy strained the relational dynamics between the regular teams and the specialized teams. Ultimately, the process manager excluded the two specialized teams from the dashboard implementation process.

6. Conclusion and Discussion

This article shows how the implementation of a dashboard reshapes professional roles and the relational dynamics in a frontline-screen-level network. By shifting the unit of analysis from individual frontline professionals (Jarke and Macgilchrist, 2021; Jeffares, 2021) to frontline-screen-level networks, our study builds on- and contributes to the literature on data-driven technologies in frontline work. This shift enables us to study the interactions among various professionals involved in the dashboard's implementation across the entire frontline-screen-level network, providing insights into the diverse perspectives of professionals regarding their roles and interactions with others. Exploring how the dashboard reshapes the roles of individual professionals via identity scripts, lays the groundwork for analyzing the changing relational dynamics among them. In practice, the dashboard's implementation diffuses distinctions between professional groups, like team managers, quality officers, and work coaches, because it creates freedom for professionals to redefine their own vision of what their profession entails beyond the tasks and responsibilities that the process manager assigned to their role or function (Köktener and Tunçalp, 2021; Pareliussen et al., 2022).

Moving beyond the management-workers dichotomy and top-down implementation approaches (Jarrahi et al, 2021; Kellogg et al., 2020; Yigitbasioglu and Velcu, 2012; Buttigieg et al., 2017), we draw on professionalization literature about identity scripts and institutional logics to provide a nuanced understanding of how a dashboard implemented 'from the middle' reshapes relational dynamics between professionals within frontline-screen-level networks. The difference from a typical top-down implementation lies in the fact that, with this 'from the middle' approach, the process manager did not hold

the traditional power to enforce changes, as seen in studies on management-worker power dynamics (Jarrahi et al., 2021; Kellog et al., 2020). Instead, she focused on forming a 'coalition of the willing' to implement the dashboard, with the expectation that the rest would eventually follow. This coalition was primarily formed through the introduction of the data-driven improvement teams. Our results demonstrate that in this case, where traditional management-worker hierarchies are less pronounced, power dynamics manifest differently, primarily through heightened competition and the pursuit of autonomy. By making caseloads visible to all professionals, the dashboard reshapes hierarchical structures and status dynamics, influencing how professionals positioned themselves relative to one another. Increased visibility fosters competition while simultaneously driving professionals to seek greater independence from their colleagues.

In doing so, our study contributes to the literature by shifting the analytical lens from managerial control to professional relations, showing how data-driven technologies like dashboards operate as social objects that transform not only workflows but also interprofessional dynamics (Barley, 1986). Whereas much of the existing literature focuses on how these technologies reinforce managerial power or alienate workers (Bucher et al., 2019; Frischmann and Selinger, 2018, in Jarrahi et al., 2021), our findings highlight how such technologies can unsettle professional hierarchies and enable new forms of peer-level contestation. Moreover, unlike studies that conceptualize dashboards as tools of surveillance or managerial control (Brayne, 2020; Jarrahi et al., 2021), we show that in 'from the middle' implementations, dashboards can act as catalysts for role renegotiation and the reconfiguration of institutional logics among professionals. This perspective extends prior research by emphasizing the multiplicity of power shifts, beyond managerial oversight, emerging in data-driven environments.

New hierarchies emerge based on how well professionals adapt to the dashboard (building on Jarrahi, 2019; Jarrahi et al, 2020). Professionals who develop data-related skills strengthen their autonomy over their work and gain influence over colleagues who struggle with the dashboard. Conversely, those who fail to adapt or fail to invest in data-related competencies see their status and influence decline.

Additionally, we extend Barley's (1986) work on technology's role in shaping organizational structures, by showing that the dashboard not only reconfigures roles and interactions but also leads to unintended consequences, including cherry picking as a competitive strategy, registering data solely to avoid control from management, and prioritizing control and power over efficiency, resulting in double work.

Limitations of this research primarily stemming from the specificity of this case and its implementation during the COVID-19 pandemic, reduces its transferability. The pandemic's unique circumstances created an opportunity to implement the dashboard due to the rising popularity of digital tools during this period, which may not be representative for non-pandemic periods. Nevertheless, findings can be generalized, with caution, to similar cases. For example, the finding that dashboards influence relational dynamics between professionals within frontline-screen-level networks is generalizable, depending on the organizational structure and the roles and functions therein.

Future research should not only delve further into the influence of data-driven tools on relational dynamics within service organizations but also between different service organizations. Interorganizational dynamics become increasingly important as networks play an important role in attempts to integrate service provision (Loyens, 2019). Recent trends in society, such as regionalization and growing collaboration at the municipal level, particularly in neighborhood-oriented initiatives, are proof of this (Van Pijkeren, 2025; Schuurmans et al, 2022; Huizenga et al, 2023; Oldenhof, 2015). More critically, examining how data-driven tools alter the balance between attention for citizens and data-driven decision-making in public organizations warrants further investigation as current research indicates that this has potential detrimental consequences for the lives of citizens (Alston, 2019; Eubanks, 2018; Kersing et al., 2025; Oldenhof et al, 2024).

Chapter 5

Catching the bad apples to keep up the good work: Dutch municipal government perspectives on data-driven technologies in unemployment

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Abstract

As digital welfare systems expand in local governments worldwide, understanding their implications is crucial for safeguarding public values like transparency, legitimacy, accountability, and privacy. A lack of political debate on data-driven technologies risks eroding democratic legitimacy by obscuring decision-making and impeding accountability mechanisms. In the Netherlands, political discussions on digital welfare within local governments are surprisingly limited, despite evidence of negative impacts on both frontline professionals and citizens. This study examines what mechanisms explain if and how data-driven technologies in the domain of work and income are politically discussed within the municipal government of a large city in the Netherlands, and its consequences. Using a sequential mixed methods design, combining automated text-analysis software ConText (1.2.0) and text-analysis software ATLAS.ti (9), we analyzed documents and video recordings of municipal council and committee meetings from 2016-2023. Our results show these discussions are rare in the municipal council, occurring primarily either in reaction to scandals, or in reaction to criticism. Two key discursive factors used to justify limited political discussion are: (1) claims of lacking time and knowledge among council members and aldermen, and (2) distancing responsibility and diffusing accountability. This leads to a 'content chopping' mechanism, where issues are chopped into small content pieces, for example technical, ethical, and political aspects, and spreading them into separate documents and discussion arenas. This fragmentation can obscure overall coherence and diffuse critical concerns, potentially leading to harmful effects like dehumanization and stereotyping.

1. Introduction

As digital welfare systems rapidly expand within local governments worldwide, understanding their political implications is crucial for both public administrators and citizens (Alston, 2019; Pederson, 2019). Data-driven technologies, including basic registration systems, dashboards, and advanced predictive analytics tools, are increasingly employed to manage social services and streamlining decision-making processes in social welfare. They serve multiple purposes, such as assessing eligibility for benefits, detecting fraud, and allocating resources (Eubanks, 2018; Kersing et al., 2022; Vogl, et al., 2020). Strikingly, data-driven technologies are often framed in technocratic terms as neutral, apolitical, administrative tools focused on efficiency, overlooking their inherent political and social dimensions (Jasanoff, 2005; Winner, 2017).

In the Netherlands, political discussions within local governments about the digitalization of welfare remain surprisingly limited (Kruiter, 2018; Goderie, 2022), even though previous research indicates that the use of data-driven technologies can negatively affect the work of frontline professionals (Kersing et al., 2022) as well as citizens' everyday lives (Kersing et al., 2025; Oldenhof et al., 2024). Only when there is an incident, such as the Dutch childcare benefits scandal, the SyRI social welfare fraud detection algorithm that violated the European Court of Human Rights, or Rotterdam's discriminatory benefit fraud risk-assessment algorithm, the municipal government pays attention to digitalization, but broader political debate on technology has yet to get off the ground (Rathenau Instituut, 2020; Open Rotterdam, 2023; Algorithm Watch, 2020; Henley, 2021).

According to the Association of Dutch Municipalities (VNG) it is necessary for the legitimacy of data projects in the public sector that elected local politicians are more involved in discussing the development of data-driven governance because in digitalization processes public values like transparency, legitimacy, accountability, and privacy are under pressure (Verhoeven 2019 p.7, in VNG 2021; VNG, 2022). A lack of political debate about the use of data-driven technologies can erode democratic legitimacy by obscuring how decisions are made and impeding mechanisms of accountability.

The dualized structure of local government in the Netherlands poses an obstacle to discussions on the responsible use of data-driven technologies, as it is usually viewed as an implementation issue that should be handled by aldermen and civil servants, rather than a political matter (Centre for BOLD Cities, 2023). Current literature provides

limited insight into local politicians' involvement in discussions about processes of digitalization and datafication within bureaucratic organizations but does suggest that there is little interaction between local politicians and civil servants when it comes to data-driven technologies. Civil servants typically develop data projects but only inform or consult local politicians in a relatively late stage when such a project already has led to an actual policy, limiting political oversight (VNG, 2021; Rathenau Instituut, 2018). Local politicians' limited knowledge of data-driven technologies, along with the complexity and abstract nature of these projects, further hinders meaningful engagement (VNG, 2021; Centre for BOLD Cities, 2023). Furthermore, civil servants have shown reluctance to fully inform politicians fearing they may thwart the development of data projects (VNG, 2021).

In this research we explore the underlying mechanisms for the lack of political debate around the use of data-driven technologies by identifying and analyzing discussions in the municipal council of the city of Rotterdam in the Netherlands about the use of data-driven technologies used in the domain of work and income which is responsible for the deployment of social benefits. Despite being a frontrunner compared to smaller municipalities in experimenting with such technologies, it is relatively new in the domain of work and income, and not without problems. In recent years, the municipality has been criticized by the local audit office and investigative journalists for negative consequences for citizens of their use of algorithms in this domain such as privacy issues and unequal treatment based on biased results (Rekenkamer Rotterdam, 2021; Open Rotterdam, 2023). Given that these recent scandals have exposed serious risks of discrimination and accountability failures, the domain of work and income is particularly relevant to focus on. Moreover, unlike domains such as infrastructure where data-driven work is more established, work and income shows a fragmented adoption of data-driven technologies, offering a unique lens on early-stage tensions between technological innovation and fundamental public values.

Therefore, we pose the following research question:

What mechanisms explain if and how data-driven technologies in the domain of work and income are politically discussed within the municipal government of Rotterdam, and what are the consequences?

The aim of this study is to gain insight in *if* and *how* discussions about the use of data-driven technologies were politicized or not. By (de) politicization we refer to the process

of making an issue or identities (in)accessible for public deliberation or contestation (Eliasoph and Lichterman, 2018). (De)politicization theories offer valuable insights into political discussions around the use of data-driven technologies in the domain of work and income. They enable us to investigate three important aspects of political discussions: the *where*, *what*, and *how*. Firstly, *where* discussions are taking place refers to the physical place such as political arenas, agencies, boards, and commissions (i.a. Wood and Flinders, 2014). Secondly, they indicate *what* is discussed. By politicization and depoliticization actors influence *what* issues are up for deliberation and which ones are not (i.a. Wolf and Van Dooren, 2018). Thirdly, thematic types of depoliticization used by actors give an indication of *how* issues are discussed (in a political, economic, technological, ethical, or legal way) (i.a. Zürn, 2013).

To answer this question, we used a sequential mixed methods design combination of automated text-analysis software ConText (1.2.0) and text-analysis software ATLAS.ti (9) to analyze municipal council documents. We took an inductive, exploratory approach analyzing all documents to make sure we would get a general view of how the municipal council discusses data-driven welfare provision both before and after scandals occur.

In the next section, we present our theoretical framework. Then we present our methods. In the fourth, results section, we present our findings. In the conclusion we summarize and critically reflect on our findings.

2. Theoretical framework

Theories on digital transformation in local government indicate that political attention and support for digitalization at the municipal level remain limited (Benfeldt et al., 2018; Kuhlmann and Heuberger, 2023). This lack of engagement is often attributed to lacking capabilities, knowledge, and skills of political leaders (Gasco-Hernandez et al., 2022; Benfeldt et al., 2018). Although political leaders have the potential to steer digital transformation, many lack the expertise to articulate a strategic vision to guide a digital transformation or understand the value-creating potential of data (Gasco-Hernandez et al., 2022; Benfeldt et al., 2018). Consequently, there is minimal political pressure to address the governance of digital transformation at the local level (Benfeldt et al., 2018; Gasco-Hernandez et al., 2022; Kuhlmann and Heuberger, 2023).

Data-driven technologies are often portrayed as neutral, objective tools used to improve efficiency, yet critical scholars emphasize their inherently political nature (Jasanoff,

2005; Winner, 2017). Technologies embed values and hold political properties through their design and implementation (Winner, 2017; Iliadis and Russo, 2016). The ideology of dataism, rooted in neoliberal and positivist thinking, obscures this by framing digitalization as apolitical (Pederson, 2019; Kitchin et al, 2015). This framing enables depoliticization, reducing complex moral and political issues to technical problems handled by data-driven systems (Neubauer, 2011; Rodima-Taylor et al., 2024). As a result, accountability is diffused and democratic oversight diminished, reinforcing inequalities through claims of technological neutrality.

The lack of political engagement in digital transformations aligns with broader concerns raised in the literature on (de)politicization. While (de)politicization literature includes cases in areas such as civil service (e.g., Peters and Pierre, 2005), health care (e.g., Landwehr and Böhm, 2011), and electoral politics (e.g., Majone, 2021), empirical studies addressing (de)politicization involving data-driven technologies remain scarce. Examples include studies on how democracy is undermined by (de)politicization of certain issues through social media algorithms (e.g., Bayamlıoğlu, 2017) and analyses of the extent to which digital citizenship is a (de)politicized construct (e.g., Schou and Hjelholt, 2017). However, there is a knowledge gap regarding explanatory mechanisms behind the lack of political debate surrounding the use of data-driven technologies in the domain of work and income. This study addresses this gap by offering a unique case study that enhances our understanding of (de)politicization mechanisms in discussions about data-driven technologies within this domain. We use the notion of (de)politicization as an analytical lens to explore the underlying mechanisms that contribute to the limited political debate around the use of data-driven technologies in the domain of work and income.

2.1 (De)politicization as a lens for analyzing political discussions

Since we aim to explore *if* and *how* data-driven technologies are at all politically discussed by the municipal government, we use Eliasoph and Lichterman's (2018) interaction-centered approach to cultures of politics which focuses on interactions between actors in institutions, formal organizations, or informal settings, as a starting point to assess *if* and *how* issues are made political. Rather than assuming that some issues are inherently more political than others they argue that people, groups, or institutions acting in concert can politicize and depoliticize issues or people. They argue that cultures of politics are shared methods of politicizing or depoliticizing. Politicizing meaning 'action, collective

or individual, that makes issues or identities into topics of public deliberation or contestation.' This is not a one-way street. Actors can also depoliticize issues by 'making once-salient issues or identities inaccessible to deliberation or contestation' (Eliasoph and Lichterman, 2018). It is therefore important to remain attentive to the dynamic movement of issues in and out of public debate over time, assuming that repoliticization, understood as countering depoliticization by bringing an issue back into deliberation, may also occur (Skoog and Svensson, 2023).

(De)politicization types are particularly useful for our analysis because they indicate three important aspects of political discussions: the *where*, *what*, and *how* of discussions on the political level. Firstly, *where* discussions are taking place. Here we mean the physical place such as political arenas, agencies, boards, and commissions. Secondly, they indicate *what* is discussed. Through (de)politicization mechanisms actors influence what issues are up for deliberation and which ones are not. Thirdly, thematic types of depoliticization give an indication of *how* issues are discussed. How actors thematically frame issues indicates if issues are discussed in a political, economic, technological, ethical, or legal way.

While (de)politicization is often viewed as a deliberate strategy to make certain issues (in)accessible to deliberation, we conceptualize it as a phenomenon that emerges from interactions between actors and institutions within specific contexts, either intentionally or unintentionally. We acknowledge that (de)politicization may also result from limitations within the political context - such as governmental norms, habits, structures, and limited resources - that shape local politicians' actions. Therefore, we refer to these phenomena as (de)politicization types or mechanisms rather than strategies, as they are observable phenomena rather than necessarily intentional actions. Since we 'observe' (de)politicization types that the documents showed us, we refrain from attributing intentionality to them.

With these adaptations in mind our initial analysis was guided by two types of (de) politicization: (1) governmental depoliticization and (2) discursive depoliticization (Wood and Flinders, 2014).

2.1.1 Governmental (de)politicization

Governmental depoliticization refers to the delegation of issues from the political arena towards the administrative arena (Wood and Flinders, 2014). One approach, known as

'the politics of ABC,' involves shifting decision-making power to at arm's-length entities such as agencies, boards, and commissions (Wood and Flinders, 2014; Etherington and Jones, 2018; Flinders and Buller, 2006). Another form, known as 'rule-based' depoliticization, refers to delegating authority to judicial structures or technocratic rule-based systems. The introduction of new rules and regulations 'binds the hands' of politicians because it limits their discretion (Flinders and Buller, 2006; Wolf and Van Dooren, 2018). A third type involves distancing personal responsibility and blurring accountability by diffusing the responsibility across a range of interdependent actors (Wood and Flinders, 2014). It implies that politicians use 'the problem of many hands' as described by Thompson (1980) on purpose to blur accountability structures (Wood and Flinders, 2014; Etherington and Jones, 2018). In practice, however, (de)politicization is not a one-way street. A study of 11 municipalities in Sweden shows that, while politicians often depoliticize issues, public administrators also actively repoliticize issues (Skoog and Svensson, 2023).

2.1.2 Discursive (de)politicization

In discursive depoliticization ideas and language play an important role because it relies on language and framing to shift issues from and to different domains, thus altering their content (Wood and Flinders, 2014). Discursive depoliticization can restrict deliberation on certain topics, as the way language is used and issues are framed can diminish opposition by making alternative views appear 'irrational' (Wood and Flinders, 2014; Wolf and Van Dooren, 2018). Through strategically manipulating the framing, the political significance of an issue may be downplayed. Emphasizing certain aspects while downplaying others and framing an issue in a neutral or technical language can reduce its political relevance.

Discursive depoliticization of issues can also occur through thematic types of framing, where an issue is moved from or to functionally different spheres, such as the political, economic, religious, legal, educational, or scientific sphere (Kreuter, 2020; Jessop, 2014; Zürn, 2013). Issues may be depoliticized through the processes of technocratization or economization. Conversely, politicization is defined as moving an issue into the political sphere from another sphere (Zürn, 2013, p. 21; Kreuter, 2020).

2.1.3 Combining (de)politicization types

In practice, a combination of governmental and discursive depoliticization types can be used by actors. For example, first, a complex political issue is framed as a technical

or administrative problem that requires expert knowledge and solutions (discursive depoliticization). Then, secondly, political debate is sidelined by delegating the issue to agencies, boards, and commission (governmental depoliticization) (Wood and Flinders, 2014; Flinders and Buller, 2006; Skoog and Svensson, 2023). This discursive framing typically emphasizes reliance on expert knowledge, enabling politicians to depoliticize contentious issues by deferring issues to non-elected technocrats or specialized consultants, thereby distancing themselves from personal responsibility (Barbi, 2018).

3. Methods

3.1 Research design and data collection

We used a sequential mixed methods design using automated text-analysis software Context (1.2.0) and text-analysis software ATLAS.ti (9) to analyze documents and video recordings of municipal council and committee meetings (Figure 1).

We took an inductive, exploratory approach to make sure we would get a general view of how the municipal government discusses the use of data-driven technologies in the domain of work and income both before and after scandals occur over a period of 8 years (2016-2023). This approach avoids bias towards extreme and exceptional cases by capturing routine discussions, while still recognizing the analytical value of scandals in revealing (clashing) values, political struggles, assumptions, metaphors, and hidden bureaucratic practices (Pinch and Leuenberger, n.d.).

The collection of data involved manually downloading all relevant documents from the municipal government information system websites (Figure 1). From the municipal council (terms 2014-2018, 2018-2022 and 2022-2026) all agendas and all meeting minutes were collected. From the three municipal council committees in the domain of work and income, the WIPV committee (2014-2018), the WIISA committee (2018-2022), and the WIOSSAN committee (2022-2026), all agendas and all motions, written questions, political commitments, and advice in the domain of work and income were collected. The council can establish committees consisting of councilors and non-council members, that prepare decisions of the municipal council on certain topics, for example work and income, advises them, and engage with the mayor and aldermen (ProDemos, n.d.; Gemeenteraad van Rotterdam, n.d; politiekeambtsdragers.nl, n.d.). All documents and video recordings are publicly available on the municipal government information system websites.

Since the data collection resulted in a vast volume of documents, totaling thousands of pages, which was too large for manual analysis, we first employed automated text analysis software (Context 1.2.0) to make a selection, followed by a more in-depth qualitative text analysis with ATLAS.ti (9) (figure 1).

Firstly, we analyzed the material using automated text-analysis software Context (1.2.0) (Figure 1). The topic modeling and corpus statistics analysis with ConText gives insight in *if* data-driven technologies are discussed in the municipal council meetings and the municipal committee meetings, and *what* is discussed.

Secondly, we analyzed a selection of the material more in-depth using text-analysis software ATLAS.ti (9) (Figure 1). This analysis gives insight in *how* data-driven technologies are discussed. The selection was based on preliminary desk research and critical events. We paid special attention to events that occurred in the period 2016 until 2023 and sparked public and/or political debate.

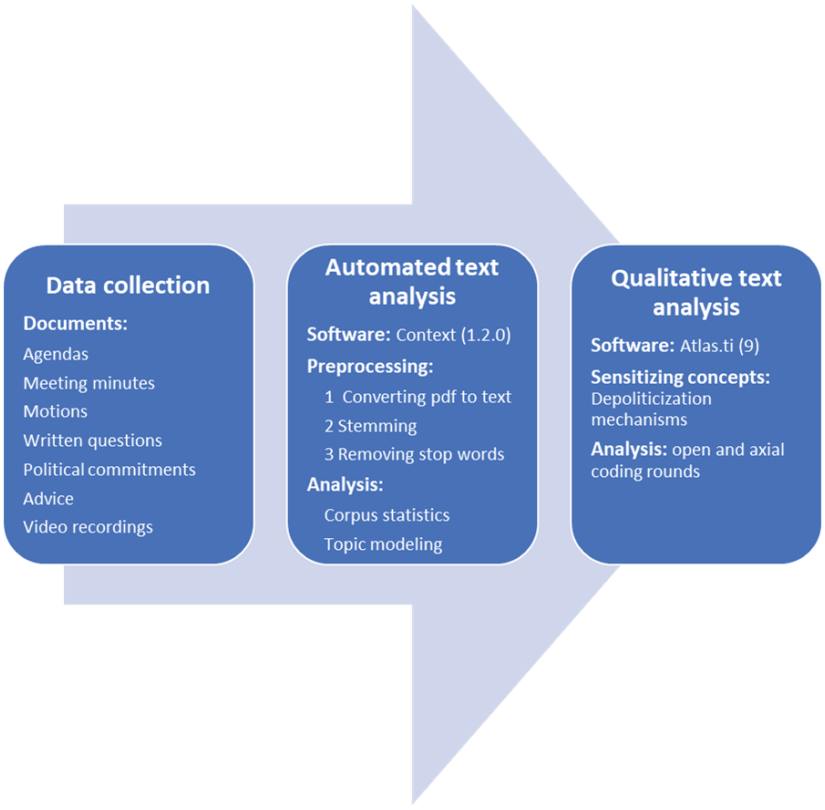

Figure 1. Sequential mixed methods design

3.2 Data analysis

3.2.1 Automated text analysis

We used automated text-analysis software Context (1.2.0) to analyze documents of municipal council and committee meetings (Figure 1).

After manually downloading all pdfs and converting them to text files, we cleaned and pre-processed the documents (1) by applying stemming to remove plurals and endings of verbs, and (2) removing the stop words (noise words). Our analysis included Corpus Statistics and Topic Modeling.

Corpus Statistics shows for each word (1) the word frequency (how often a word occurs in the text corpus), (2) TF-IDF score (how words are distributed in documents), and (3) ratio/percentage of text a word is occurring in (See for example Table 1). High TF-IDF scores indicate that a word is very frequent in some documents but appears in fewer text documents overall. Low TF-IDF scores indicate noise words.

Term	Frequency	TF*IDF	Ratio of texts occurring in
aanbestedingsproce	2	5,48E+02	0.10526316
aanbevelingen	7	9,83E+02	0.31578946
aangaan	1	3,59E+02	0.05263158

Table 1. Example of corpus statistics results

We manually went through all the corpus statistics lists and identified words that could indicate a discussion about data-driven technologies in the domain of work and income. We manually crosschecked the documents to confirm if these words occurred in relevant discussions. An overview over the years of all the words that were related to data-driven technologies in the domain of work and income were visualized in charts such as charts 1 and 2.

Topic Modelling (based on LDA) uncovers sets of words that may constitute distinct topics in a corpus. ConText displays (1) the topic number, (2) the weight, and (3) the topic members (see for example table 3 and 4). The topic number indicates how well the topic fits the data. The topics are automatically decreasingly sorted by fit. The weight indicates how well topic members fit the topic. Relatively high values represent better fitting topics. The topic members are words that together form a theme. Each theme is

represented as a vector of words, which are sorted based on their strength of association with a topic. We chose the topic numbers based on the size of the bodies of the texts.

3.2.2 Qualitative text analysis

We selected documents for the qualitative text analysis with ATLAS.ti (9) based on preliminary desk research and identification of critical events that occurred from the automated text-analysis.

We inductively coded the material with the (de)politicization types as sensitizing concepts. We coded the material in the first round of open coding, followed by a second round of axial coding (Neuman, 2014).

In the first round of open coding, we used depoliticization types as sensitizing concepts to interpret the data while keeping an open mind to new codes. While some codes aligned with the sensitizing concepts, other codes revealed depoliticization types that were not present in the literature, such as 'content chopping.'

In a second round of axial coding, we organized, linked, and grouped codes into categories like 'lacking knowledge,' 'content chopping', and 'dehumanizing.' During this round we identified relationships between codes and categories. For example, how categories such as 'lacking time' and 'lacking knowledge' are related to 'distancing responsibility and diffusing accountability', and how they in tandem can lead to 'content chopping'.

Keeping an open mind allowed us to also identify risks by grouping codes into categories such as 'dehumanizing people' and 'stereotyping'.

We used several triangulation strategies to ensure the data quality.

Firstly, we used method triangulation by using different methods and software to minimize retrieval bias (Grimmer et al., 2022). A potential risk was that discussions included terminology that differed from our expectations, which could lead to missing important discussions. To mitigate this, we cross-checked results from the corpus statistics and topic modeling done with ConText (1.2.0) with the results from the qualitative analysis with ATLAS.ti (9).

Secondly, we used data triangulation by crosschecking information from different sources to avoid resource bias (Grimmer et al., 2022). We cross-checked the information gathered through the document analysis and the video recordings. The recordings

provided valuable context for discussions in the committee meetings because there were no ad verbatim meeting minutes from committee meetings.

Thirdly, through researcher triangulation we discussed and refined our findings. The first author collected, analyzed, and coded the data, which were then discussed in conversation with the other authors. (Mortelmans, 2020).

4. Results

4.1 Reacting to scandals and criticism '…and proceeds with the order of the day'

Our results show that while data-driven technologies are used in the domain of work and income, there are rarely discussions (answering the *if* question) in the municipal council on *how* the data-driven technologies are used (Table 2, chart 1). Chart 1 shows the only instances in eight years of 150 municipal council agendas where words related to data-driven technologies in work and income appear in the corpus statistics. In 2016, 2017, 2018, and 2020 no words related to the use of data-driven technologies in work and income occur in the corpus statistics and topic modeling. On the rare occasions that data-driven technologies are discussed in the municipal council it is discussed either (1) in reaction to scandals, or (2) in reaction to criticism (Tabel 2, Chart 1).

While municipal council members occasionally raise critical questions, formal ethical reflections on data-driven technologies are mostly described in reports from external audit organizations such as the municipal ombudsman, the Rotterdam Audit Office, and the Concern Auditing. Internal reflections focus primarily on technical issues within committees (Table 2, Chart 2).

Chart 2 displays all instances over eight years in 143 committee agendas where words related to data-driven technologies in work and income appear in the corpus statistics. These instances peak in similar periods as in the municipal council agendas, with similar topics. However, the committee agendas contain a greater number and specificity of words, indicating that discussions occur more frequently and detailed within the council committees (Table 2, chart 2).

Timeline 2016-2023

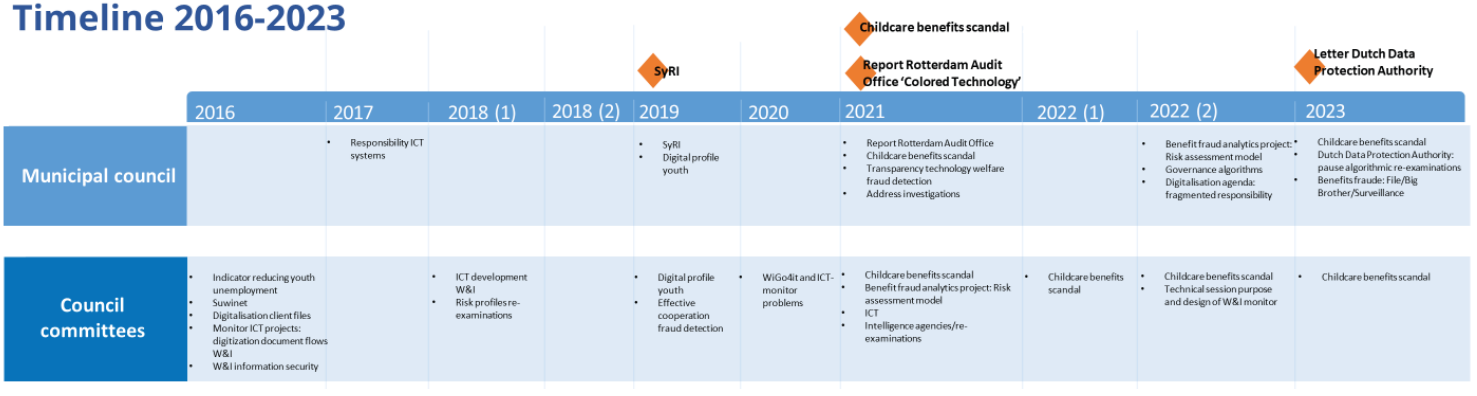

Table 2. Timeline 2016-2023 topics discussed in the municipal council and council committees

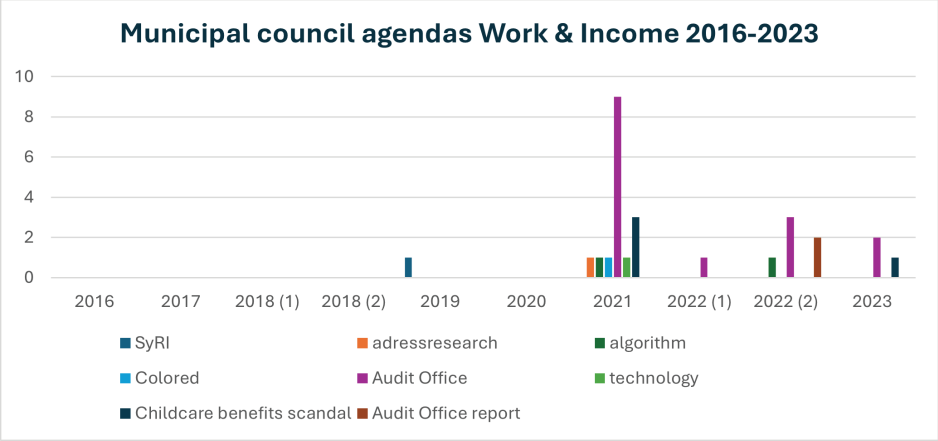

Chart. 1 Corpus statistics municipal council agendas work & income topics 2016-2023

Over time, most discussions about scandals and critical reports shifted towards municipal council committees, employing governmental depoliticization mechanisms such as the 'politics of ABC.' For example, the discussion about the Benefit frauds analytics project (Box. 1) was shifted from the council to committee meetings (Charts 1, 2). Furthermore, scandals and critical reports involving externally developed data-driven technologies (e.g., SyRI, childcare benefits scandal algorithm) tend to be discussed in council meetings, while those involving internally developed technologies (e.g., the analytics benefit fraud project) are primarily addressed in committee meetings (Charts 1, 2).

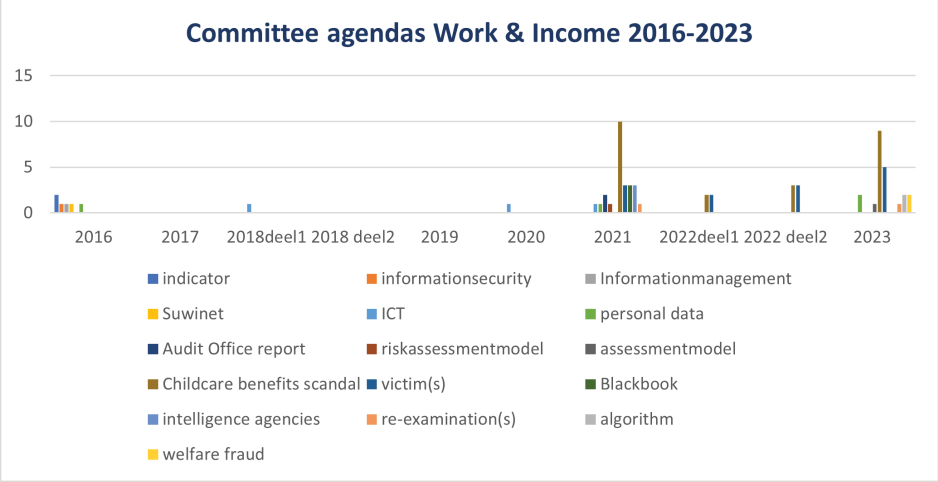

Chart. 2 Corpus statistics committee agendas work & income topics 2016-2023

The topic modeling analysis supports the corpus statistics results, showing that discussions about data-driven technologies in work and income are rare. From 193 agendas and meeting minutes spanning 150 municipal meetings over eight years, only 2 relevant topics emerged. The relatively low topic numbers (13 and 14 out of 20) indicate that these topics received significantly less attention compared to other topics (Figure 2).

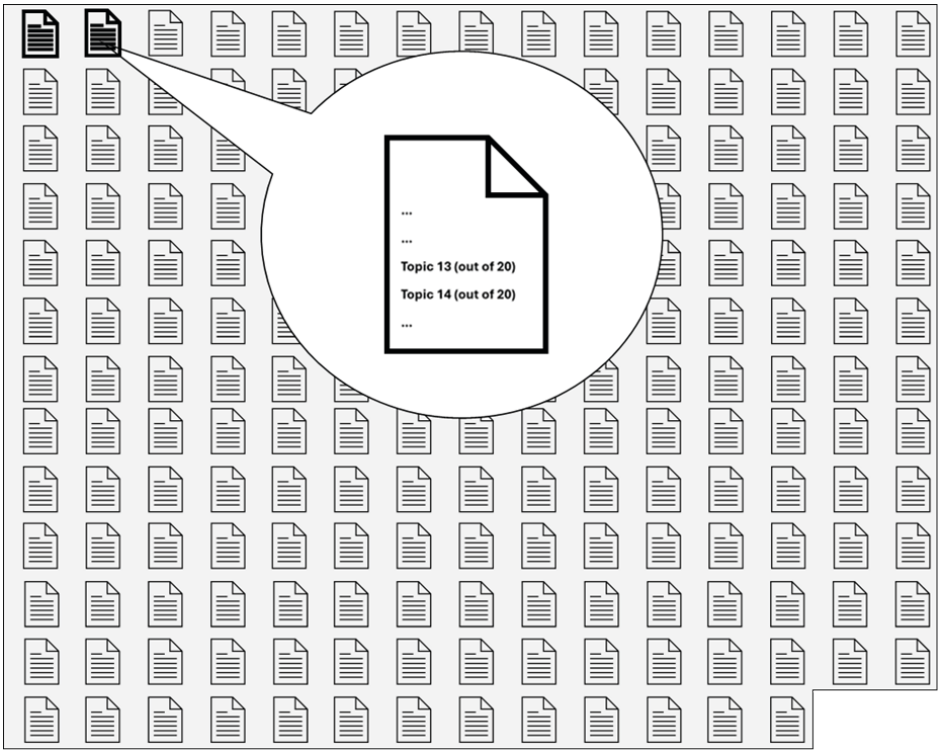

Figure 2. Visualization of 2 relevant topics in 193 documents period 2016-2023

The first topic appears in council meeting agendas in 2022, where the words 'governance' and 'algorithms' refer to a new governance approach for governance of sensors, data applications, and AI (Table 3).

2022			
Council/committee	**Topic number**	**Weight**	**Topic members**
Municipal council	Topic13	0.06783026801395055	Coolsingel - propose - proposed - tertaal - income - strong - algorithm - governance - compensation - joint -

Table 3. Topic modeling agendas 2016-2022

The second topic occurs in agendas of committee meetings in 2023 (Table 4) and refers to two committee meeting agendas listing a letter from the Dutch Data Protection Authority (hereafter DDPA). In this letter, the DDPA raises concerns about the risk-assessment algorithm used in the Benefit fraud analytics project (Box. 1), requiring the municipality to submit a report on the impact of the algorithm.

2023			
Council/committee	**Topic number**	**Weight**	**Topic members**
WIOSSAN committee	Topic14	0.043671178741395277	June – spring memorandum – summer recess - plans - algorithm – personal data - revised - work - Wednesday - committee -

Table 4. Topic modeling agendas 2016-2023

4.2 Barriers to discussion

Our inductive analysis revealed two discursive factors that are used to justify limited and shifting political discussion towards council committees: (1) claims of lacking time and knowledge, and (2) distancing responsibility and diffusing accountability.

4.2.1 Lack of time and knowledge

Both council members and aldermen claim to have limited time and knowledge to do their job. Earlier research indicates that even though aldermen have a full-time paid position, whereas council members don't, both experience high work pressure and insufficient knowledge and skills to do their job properly (ProDemos, n.d.; Boonstra, 2024; Raad voor het openbaar bestuur, 2018; 2020).

During discussions both aldermen and council members indicate that most of them lack sufficient knowledge to critically question data-driven technologies, often resorting to various depoliticization mechanisms to deal with this knowledge gap. Although they are aware of these limitations, they do not indicate whether or how they plan to allocate more time or address the knowledge gap, potentially using these constraints as a convenient justification to depoliticize the topic of data-driven technologies. We illustrate this de-politicization mechanism with the Benefit fraud analytics project (Box 1).

In a response letter to the Concern Auditing's recommendations on improving the transparency around the risk-assessment model in the benefit fraud analytics project, the alderman writes:

> "The note aims to provide you with the necessary clarity, albeit concise, about the (further) development and use of the risk assessment model. Because this involves complex mathematical matters, it remains difficult to fully understand how the model works. I find it crucial that we work with scientifically substantiated programming and internationally validated software, but above all: expert employees." (Letter alderman, August 25th, 2021)

By describing it as a 'complex mathematical matter' the alderman shifts the issue from the ethical sphere (lack of transparency), towards the mathematical sphere.

By acknowledging that 'it is difficult to fully understand how the model works' the alderman employs the depoliticization mechanism of distancing responsibility, by diffusing the responsibility among various actors such as programmers, software makers, and expert employees.

The alderman shifts the issue towards the scientific sphere by referencing 'scientifically substantiated programming,' and an authoritative international community that can 'validate software', while also moving the issue from the political to the bureaucratic arena by emphasizing working with 'expert employees.'

Box 1: Benefit fraud analytics project

The municipality of Rotterdam used a benefit fraud risk-assessment algorithm from 2018 until 2021 to select benefit recipients for re-assessment.

In 2016, the municipality hired Accenture to develop a pilot model that assigns individual benefit recipients a risk score that indicates potential welfare fraud. People with the highest scores are selected for re-examination.

In 2018 the municipality implemented an improved version. After an evaluation Accenture indicates that detecting fraud is difficult but that the model can predict 'unlawfulness': the likelihood of issues with benefits (Open Rotterdam, 2023, Klaassen and van Dijk, 2023).

In 2021, the Rotterdam Audit Office warned in their report 'Colored Technology' that the algorithm can lead to biased results because attention for transparency and responsibility was lacking (Rekenkamer Rotterdam, 2021).

In 2023, investigative journalists revealed that the algorithm unfairly targeted young single mothers, increasing their chance of being re-examined for welfare fraud (Open Rotterdam, 2023).

4.2.2 Distancing responsibility and diffusing accountability

Political discussion is further limited by the formal separation of responsibility for content and process of data-driven technologies: the 'organization' alderman is responsible for ICT systems, while the 'sector-specific' alderman is responsible for ensuring the system's use and cultivating a culture where necessary adjustments or new releases are requested. This division separates the responsibility for the design and use of ICT systems. The organization alderman stated:

> "I am not responsible for whether a benefit is paid correctly, although I am responsible for the system. The sector-specific alderman is responsible for and involved in the functioning of a cluster." (Aldermen in municipal council meeting in 2017)

In this discussion it was also mentioned that sector-specific aldermen typically lack sufficient ICT knowledge, making it a logical choice to further delegate responsibility to the organization alderman or to technical sessions in committee meetings. In this context, the delegation of responsibility results from the division of tasks within the organization.

Concerns were raised about the diffusion of accountability. A council member remarked that 'it's always useful to outline responsibilities on paper, but the problem is that it's just paper.' It was concluded that shared responsibility repeatedly leads to issues. As one council member aptly summarized the problem of many hands (Thompson, 1980): 'When responsibility is shared among many, it effectively falls on no one.'

4.3 Content chopping

The claims of lacking time and knowledge combined with lacking responsibility lead to a depoliticization mechanism that we call 'content chopping.' We define this as chopping an issue into small content pieces, for example technical, ethical, political, or executive aspects, and spreading them into separate documents and discussion arenas. Thereby obscuring the overall coherence of an issue which diffuses critical concerns. The mechanism of content chopping has clear parallels in science and technology studies, where scholars have shown how complex issues are often fragmented in ways that undermine holistic political discussions (Chambers, 2023; Thoreau and Delenne, 2012). We will illustrate the mechanism of content chopping with the Benefit fraud analytics project (Box 1).

In 2021, the Concern Auditing provided advice requested by the municipal council about the risk assessment model. This advice included the recommendation to improve the lacking transparency regarding the use of the risk-assessment model. In a response letter the alderman explains which steps have been taken in the past period and which actions are planned in the coming period. In this letter, content chopping occurs, with the different aspects of the issue spread across multiple documents.

The first document mentioned in his letter is a note named 'Explanation of the operation of the risk assessment model' that has the aim of explaining how the model works. The technical aspects of the model are isolated from other aspects in this note.

The second document named 'Re-examination Work and Income (background, working methods, re-examination methods)' explains how re-examinations are carried out. The alderman writes that because this document already explains how re-examinations are carried out this will not be discussed in the note about how the risk assessment model works. Hereby the policy aspects of this model are isolated from the technical aspects in this document.

A third document is a letter that discusses 'increasing the *human dimension* when carrying out re-examinations.' In this letter the ethical aspects of the model are isolated from technical and policy aspects. However, this letter is nowhere to be found in the council information system or outside of it.

4.4 Risks of content chopping

Content chopping can especially be harmful when different aspects are separated from each other because when these aspects are not coherently discussed, one aspect can become more prominent and take precedence over other aspects. The main risks of content chopping are that it can lead to (1) dehumanizing people, and (2) stereotyping.

4.4.1 Dehumanizing

We use the benefit fraud analytics project (Box 1) to illustrate how content chopping can lead to dehumanizing people, which we understand as abstracting issues to the point where human elements are lost. In this case different aspects were dispersed across separate discussion arenas and documents, with a strong focus on the technical aspects compared to other aspects (see 5.3).

Another follow up to the Concern Auditing's recommendations about transparency in the benefit fraud analytics project were presentations in two technical sessions of the committee by two data analysts. In the first session focused on explaining how re-examinations are carried out, while the second session aimed to explain the workings of the fraud risk prediction algorithm.

In the second technical session, characteristics of benefit recipients were replaced by characteristics of apples in an example to explain how the algorithm works. In an attempt to simplify the complex topic for council members, the two data analysts used an unfortunate comparison likening potential fraudulent benefit recipients to 'apples used to make applesauce,' implying that certain characteristic lead to its unsuitability for sale and its processing into apple sauce. They explain how they, based on looking at characteristics of twelve apples in the table, created a decision tree to figure out which apples are likely to end up in the applesauce and which ones will get stickered and sold separately (figure 3). The data analyst in a reflection on their attempt said:

> "What stands out about our attempt? That with a few rules, we can still fairly well categorize apples. (…) But also, that none of the rules we've come up with are flawless (…) And what also stands out, at least for us, is that this was somewhat, well, randomly looking at that table, figuring out what could be selected. So, we just searched randomly.' (Data analyst, technical session in 2021)

He does not express any worries about the potential consequences of apples being miscategorized, nor about benefit recipients that are unfairly flagged as potentially fraudulent and invited for a re-examination conversation based on an algorithm that does not function properly. Isolating the technical aspects within a technical session leaves little room for reflection on ethical aspects, such as the social impact on benefit recipients' lives, and ensuring equal treatment and fairness. The metaphor, referring to the 'one bad apple can spoil the barrel' saying, illustrates the dehumanization of benefit recipients. While crushed apples taste quite good, crushed citizens certainly do not.

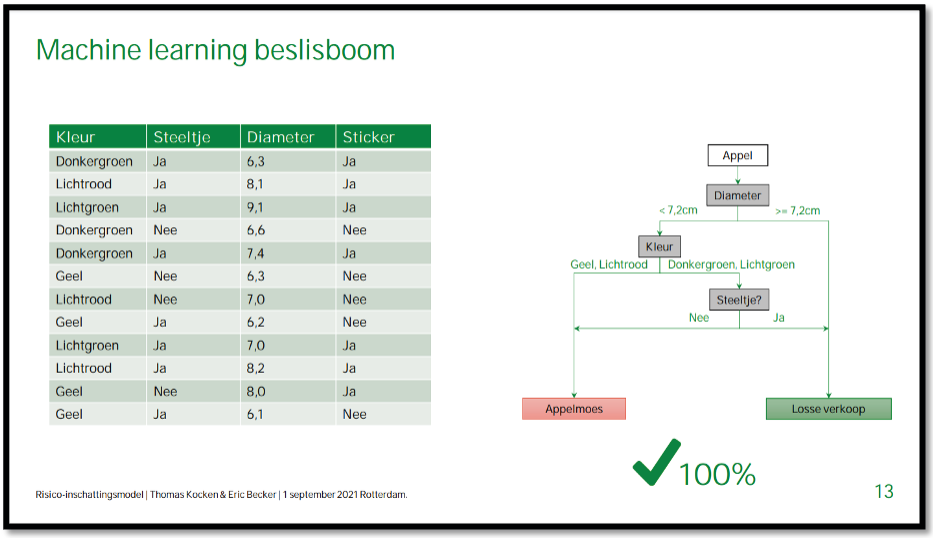

Figure 3. PowerPoint slide technical session

4.4.2 Stereotyping

Another risk of content chopping is that it can reinforce stereotypes, such as the assumption that individuals from certain ethnic or racial groups are more likely to commit benefits fraud. This was particularly evident in 2018 during a municipal council discussion on whether Turkish Dutch welfare recipients were more likely to conceal foreign assets. Content chopping can lead to the embedding of human biases in data-driven technologies through stereotyping, particularly when a dominant political perspective overshadows ethical and scientific aspects. We illustrate this with the risk profile foreign assets case (Box 2) in which negative attitudes toward Turkish Dutch recipients became embedded in the design of a risk profile.

Box 2: Risk profile foreign assets

In 2019, the alderman of Work and Income wants to set up an experiment in collaboration with the International Bureau Fraud Information (IBF) which is part of the Institute for Employee Benefit Schemes (UWV), and the Social Insurance Bank (SVB). The aim is to investigate how the detection approach to find concealed foreign assets can become more effective. In this experiment a risk profile is used to select people for re-examination. The risk profile is based on characteristics such as non-Dutch country of birth, repeated residence abroad, and spending over 28 days abroad annually.

In 2018, the motion 'Decisive action against undisclosed foreign assets' was discussed in the municipal council. This motion claims that 'an estimated 20% to 30% of Turkish Dutch welfare recipients conceal foreign assets.' During the discussion, council members criticized these statements, as they were based on research conducted by a foreign commercial agency, whose reliability was questionable. Moreover, these figures did not align with trustworthy studies conducted in the Netherlands. The alderman warned:

> "The only thing I see is that people are merely copying headlines [from the study], thereby creating their own version of reality. (…) And based on that self-created reality, we are being asked to completely overhaul our policy."

These discussions reveal an ongoing political struggle over the stereotyping of welfare recipients who are likely to commit fraud. In this case the stereotype concerns fraudulent Turkish Dutch recipients. Throughout this discussion, the dominant political perspective threatens to overshadow scientific and ethical aspects, such as basing policy on trustworthy scientific research. This is also reflected in the design of data-driven technologies aimed at detecting fraud because eventually characteristics such as 'country of birth is not the Netherlands,' 'residence abroad has been established on several occasions,' and 'priority for job seekers who spend more than 28 days abroad per year' were used to determine the risk profile.

In 2021 the Socialist Party challenged this stereotype by publishing a 'Black book on welfare abuses' in which they write:

> "On the one hand we see a municipality that spends millions on combating fraud, on the other hand we see millions being cut back on job guidance. For example, the council invests in the discriminatory experiment to detect foreign assets. However, there was no question of foreign assets. Yet benefits have been stopped because, among other things, Rotterdam residents did not respond to the invitation" (SP Rotterdam., 2021, p. 5).

They counter the stereotype of Turkish Dutch recipients by replacing it with a stereotype of vulnerable individuals who don't get the support they need in their job search. They counter the dominant political perspective by bringing ethical aspects, such as equal treatment and non-discrimination, and executive aspects, such as cutbacks on job guidance and Rotterdammers not responding to invitations, back into the discussion. In a response letter, the alderman denies any discrimination but ultimately yields to the criticism, leading to the decision to stop using distinctions based on country of birth.

This case illustrates how human biases, such as negative attitudes toward Turkish Dutch benefit recipients, can become embedded in the design of data-driven technologies like this risk profile when a dominant political perspective overshadows ethical and scientific considerations. The stereotype of fraudulent Turkish Dutch recipients frames the discussion in a way that makes a more neutral, individualized perspective- one that treats welfare recipients as human beings – less accessible. Adhering to a stereotypical conception of welfare recipients obscures a nuanced understanding of their identities. However, in this case, the negatively stereotyping of Turkish Dutch recipients eventually failed because reintroduction of scientific and ethical aspects into the discussion lead to the exclusion of distinctions based on country of birth.

4.5 Governance of algorithms: efforts to prevent applesauce

In 2022 a new governance approach for sensors, data applications, and AI was introduced (Table 3) in response to a report by the Rotterdam Audit Office about transparency and responsibility issues in algorithm use (Rekenkamer Rotterdam, 2021, Box. 1). This governance approach includes instruments to ensure transparent and responsible algorithm use. One of the instruments that was introduced was an algorithm registry with the aim of ensuring transparent communication with citizens about algorithm use. Additionally, an algorithm expert has been appointed to provide technical, ethical, legal, and informational perspectives on algorithms. This algorithm expert also advises the newly created Algorithm Advisory Board, an external committee reporting to the executive council. Furthermore, a Human Rights and Algorithm Impact Assessment (IAMA) instrument facilitates balanced discussions among relevant actors in the development phase of algorithmic applications. Lastly, awareness initiatives for individual employees include presentations on what algorithms are, how and where they are used, and which risks and safeguards there are, along with separate roundtable discussions on ethical dilemmas in practice.

While Rotterdam's recent efforts represent progress toward responsible data-driven governance, they largely depend on expert input and procedural safeguards. It remains unclear how these measures foster democratic oversight and stimulate meaningful political engagement. This raises important questions about what re-politicization could look like in local democracies. Beyond resisting depoliticization mechanisms like content chopping, it involves addressing the normative and societal dimensions of data-driven governance. Re-politicization requires creating space for political struggle and collective

deliberation, rather than reducing data-driven governance to technical or administrative matters. This involves not only improving council members' technical knowledge but also strengthening their willingness and capacity to engage with the broader societal implications.

5. Conclusion and discussion

The goal of this research was to gain insight in what mechanisms explain *if* and *how* the use of data-driven technologies in the domain of work and income are politically discussed in the municipal government of Rotterdam, and what the consequences are. Our findings confirm earlier research suggesting limited political attention to digitalization (Benfeldt et al., 2018; Kuhlmann and Heuberger, 2023), showing that discussions in the municipal council are rare and occur primarily in response to scandals, or in reaction to criticism from audit offices.

In line with previous studies, our analysis shows how (de)politicization mechanisms, such as distancing responsibility and content chopping, explain the limited political debates around data-driven technologies in work and income (Bayamlıoğlu, 2017; Schou and Hjelholt, 2017; Wood and Flinders, 2014). This study also contributes to new insights by broadening the conceptualization of (de)politicization as an emergent phenomenon shaped by interactions between actors and institutions within specific contexts. By emphasizing observable mechanisms rather than intentional strategies of actors and considering the influence of structural and resource constraints on political actions, we expand the application of (de)politicization mechanisms beyond the deliberate strategies to include unintentional dynamics within political processes.

Political discussions about these data-driven technologies should not be limited to responses to scandals and criticism, especially given the risk of embedding human biases, such as negative stereotypes, into these systems throughout all phases of their existence, as seen in the Risk profile foreign assets case (box 2). When the different aspects of an issue, such as political, technical, scientific, executive, and ethical aspects, are not discussed coherently, crucial values like justice, privacy, transparency, accountability, and autonomy for citizens risk being sidelined. Without coherent discussions on current and future applications, these technologies may perpetuate harm, effectively trapping groups of citizens in negative stereotypes embedded in their design. Our findings thereby confirm concerns raised in earlier literature that digitalization can lead to dehumanization,

bias, and a lack of empathy in public service provision (Ranchordas, 2021; Alston, 2019; Vogl et al., 2020), underscoring the urgent need for more political engagement and value-sensitive approaches to data-driven governance.

Political leaders play a crucial role in steering digital transformation and thereby safeguarding values in discussions about data-driven technologies (Verhoeven 2019, p.7, in VNG 2021; VNG, 2022; Gasco-Hernandez et al., 2022). However, in line with earlier research (Gasco-Hernandez et al., 2022; Benfeldt et al., 2018) our research shows that both aldermen and council members indicate that most of them currently lack sufficient knowledge and insight to engage in meaningful political discussions about the design and impact of these technologies. Time and knowledge constraints, due to the part-time nature of council positions make it understandable that technical aspects are often deferred to experts. Yet, despite recognizing these limitations, they don't articulate plans to address them, suggesting that appeals to limited time and knowledge may serve as a convenient rationale for depoliticizing the topic of data-driven technologies. Additionally, audit offices function only to a limited extent, as issues with data-driven technologies are typically brought to light through their critical reports, often only after harm to citizens has already occurred. Eventually, the recurring problems with responsible use of algorithms that occurred in our document analysis, led in 2022 to the introduction of a new governance approach for sensors, data applications, and AI. While the instruments of this approach are a step in the right direction and provide a solid foundation for further progress in ensuring responsible use of algorithms, future evaluation and research are needed to determine their effectiveness in preventing future problems.

In line with prior studies, we argue that it seems insufficient to only reflect on the limited time, knowledge, and responsibilities of council members and aldermen, as these problems ask for a more rigorous revision of the governmental norms, habits, and structures (Centre for BOLD Cities, 2023; Rathenau, 2018; 2020; Belhaj, 2020; VNG, 2021; 2022; Jasanoff, 2005; Winner, 2017). Our analysis shows that current governmental norms and habits, which treat data-driven technologies primarily as tools and confine discussions to the technical sphere, are inadequate for ensuring responsible use of data-driven technologies in work and income.

While our systematic analysis offers insight into how municipal discussions on digitalization have evolved over time, it captures only part of the institutional context. Relying solely on textual documents and video recordings limits our understanding

of politicians' perspectives on their own intentions, and informal interactions and discussions. Although we recommend interviews for future research, it is important to take into account potential inaccuracies due to memory limitations or political motivations, particularly with sensitive topics or scandals.

Our understanding of the institutional context is also constrained by incentive bias, as strategic behavior may shape what is formally documented (Grimmer et al., 2022). While transparency makes documents accessible, it may also incentivize local politicians to shift sensitive discussions to informal settings. This absence of contextual information can hinder a complete understanding of informal interactions and discussions outside formal meetings, and should be explored in future research.

Our findings are context-specific and should be interpreted with awareness of their limited transferability. Rotterdam's pragmatic, innovation-driven culture, and its working-class history likely influence both the development and reception of data-driven technologies. Additionally, the absence of direct mayoral elections in the Netherlands shapes the political accountability landscape, with potential implications for how data-driven policy is debated and contested. These contextual factors limit the direct transferability of findings to cities with different political systems and civic cultures.

Future research should examine the media's dual role as a watchdog and a catalyst for public debate during data-related scandals, such as SyRI and the Benefit fraud analytics project. On the national level, media coverage during the childcare benefits scandal not only exposed government misconduct but also faced criticism for amplifying public outrages in ways that influenced policy responses and interventions (Parlementaire Enquêtecommissie Fraudebeleid en Dienstverlening, 2024). However, the media's interactions with local politicians during municipal-level data-driven technology scandals remain under-researched.

Finally, we highlight the need to investigate how (un)reliable knowledge shapes local political debates. Our findings suggest that inadequate knowledge about data-driven technologies and reliance on research of questionable reliability, such as in the risk profile foreign assets case, can lead to unjust and unequal treatment of citizens, underscoring the need for trustworthy knowledge in municipal policymaking.

Chapter 6

Sphere transgressions in the Dutch digital welfare state: causing harm to citizens when legal rules, ethical norms and quality procedures are lacking

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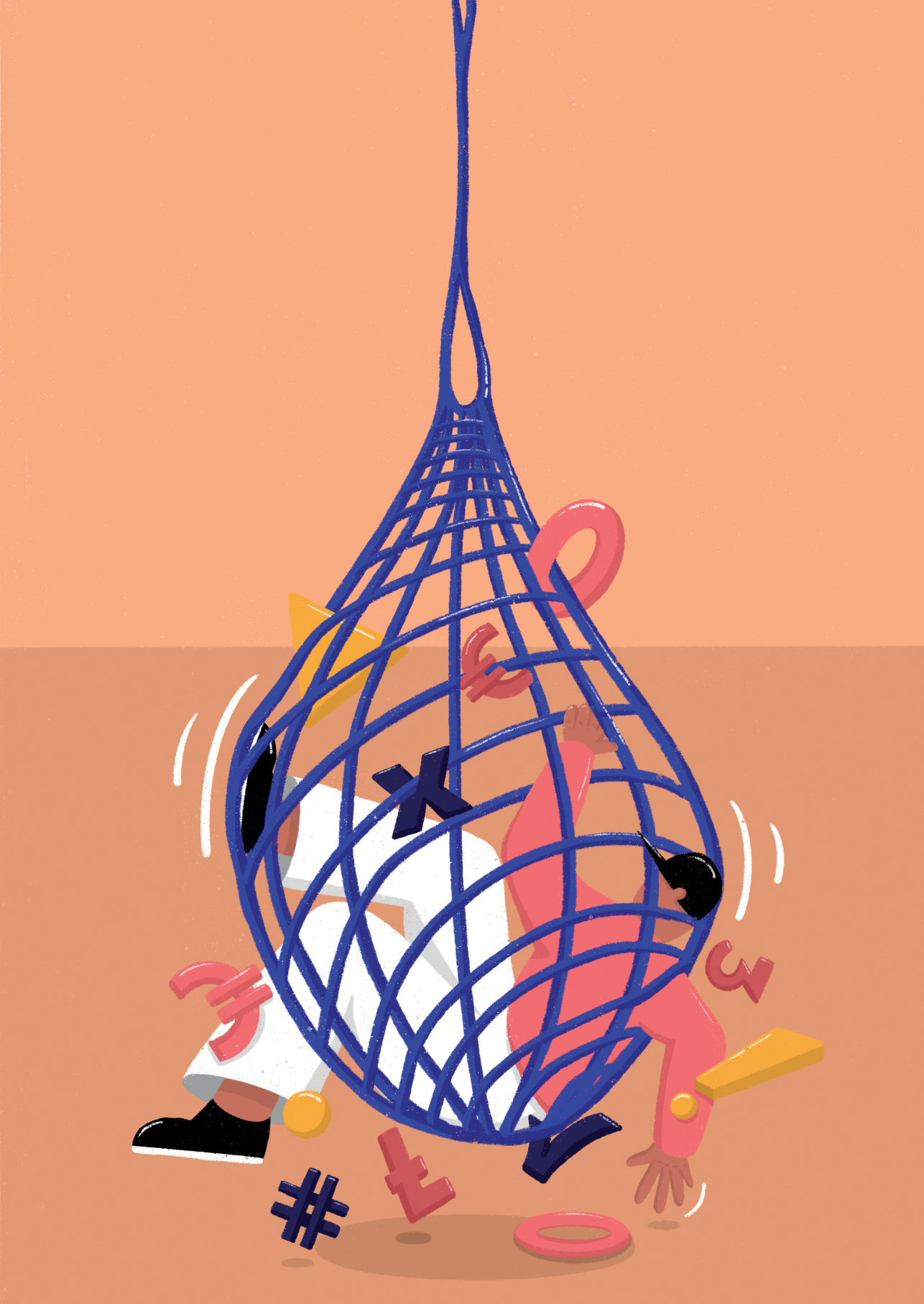


Abstract

Welfare states across the world increasingly experiment with the use of big data and algorithms in the name of efficiency gains and fair decision-making. However, recent public scandals in various countries show persistent problems with how digital welfare states operate at the cost of vulnerable populations. Problems include systemic forms of discrimination, increasing levels of surveillance, stigmatization, and restricted access to public benefits. Rather than viewing these problems as instances of technical implementation hurdles, we argue that digital welfare states currently operate in an institutional void in which legal, ethical, and quality procedures are lacking or ill equipped to address new challenges posed by digital technologies.

Based on a secondary analysis of documents, we show how this institutional void empirically manifests itself in the Dutch welfare state by zooming in on two subcases that sparked public controversy in recent years: the childcare benefits scandal that focused on fraud detection and the Top 400/Top 600 that was set-up with the aim of crime prevention. By analyzing these cases, we show how sphere transgressions - understood as the encroachment of digital logics into the sphere of social welfare - can have detrimental consequences for citizens when there is an institutional void. We end with reflections on how to fill the current institutional void and identify ‘soft signals’ that could be used as pointers to recognize the potential undesirable consequences of new sphere transgressions.

1. Introduction

Across the world, we see the rapid rise of digital welfare states in which digital technologies and algorithms are used to automate decisions about the allocation of welfare benefits and predict risks of welfare fraud (Eubanks, 2018; Hansen et al., 2018; Kersing et al., 2022; Ratcliffe, 2019; Vogl et al., 2020; Zouridis et al., 2020). Although the digitalization of welfare states is usually justified in terms of more efficiency, personalization, and fair decision-making (Jeffares, 2021; OECD, 2016), recent public scandals in various countries show otherwise. In the UK, the introduction of the Universal Credit System led to large-scale maltreatment of citizens whose benefits were unrightfully terminated or postponed (United Nations, 2019). In the US, screening tools that ranked families according to their likely risk of child neglect and abuse generated racially biased results and a high number of wrong assessments (Eubanks, 2018). In India, low-income benefit claimants were refused access to subsidized food due to administrative glitches in a large biometric identification system, which allegedly led to the death of citizens due to starvation (Ratcliffe, 2019).

Given these public scandals, there are growing concerns about the consequences of decision-making in digital welfare states for vulnerable citizens that are increasingly under surveillance (Alston, 2019; Dencik et al., 2018; Eubanks, 2018). Recently, the United Nations Rapporteur for extreme poverty and human rights Philip Alston, warned that there is a 'grave risk of stumbling zombie-like into a digital welfare dystopia' (2019, p. 2), in which citizens are increasingly being surveilled and restricted in their access to benefits without having the possibility to opt out of the digital system or to get due process when they are unjustly labeled as having committed fraud. In this development, digital welfare states seem to operate in a 'human rights free zone' (ibid., p. 13). In this zone, (local) governments are often keen to conduct data experiments in cross-organizational networks and public-private partnerships without a clear democratic mandate and institutional checks and balances (Dencik et al., 2018; Grimmelikhuijsen and Meijer, 2022; Postma and De Oude, 2021; Van Zoonen, 2020). The scope of these data experiments ranges from the building of data warehouses and dashboards that transform the work of street-level bureaucrats into screen-level work to predictive analytical tools to prevent fraud (Kersing et al., 2022; Van Zoonen, 2020; Well et al., 2023).

Rather than viewing recent public scandals resulting from data experiments as implementation problems that can be overcome by technical fixes in the system, we

argue that these problems are more fundamental in nature and deserve analytical attention beyond the technical (Peeters and Widlak, 2018). According to various authors, current welfare states operate in an 'institutional void' in which legal, ethical, and quality procedures are lacking or insufficient to address the new challenges posed by the introduction of digital technologies (Alston, 2019; Dencik et al., 2018; Postma and De Oude, 2021; Rekenkamer Rotterdam, 2021; Van Bueren and Klievink, 2017; Van Zoonen, 2020). The concept of institutional void, which was originally developed by Hajer (2003) to analyze how constitutional rules of classical modernist political institutions are no longer providing answers to new wicked challenges, has been used by other scholars to study socio-technical developments, such as digitalization, that tend to 'move faster than existing institutions can keep up with' (Van Bueren and Klievink, 2017, p. 3). In a situation of an institutional void, the growing influence of the digital into public welfare may potentially cause harm to citizens. Drawing on the work of Walzer and Sharon (Walzer 1983; Sharon, 2021a) on sphere transgressions, and Schildt's notion of the logic of digitalization (Schildt, 2022), we understand the encroachment of the digitalization logic as a transgression into the sphere of welfare. There is a broad variety of potential detrimental consequences of such a sphere transgression that may occur in the case of an institutional void, such as increasing levels of surveillance of vulnerable populations, discrimination, stigmatization, and restricted access to benefits (Alston, 2019; Amnesty International, 2021; Eubanks, 2018; Giest, 2021; Well et al., 2023). However, it is still unclear to what extent and how these consequences are precisely interconnected to current institutional voids in welfare states.

To better understand how institutional voids manifest themselves in concrete settings and how sphere transgressions - in a situation of an institutional void - can cause harm, we zoom in on the digital welfare state in the Netherlands as an empirical case. Compared to more extreme cases such as the United States and India (Eubanks, 2018; Ratcliffe, 2019), on first sight the Netherlands could be considered a less salient case due to its reputation of being a welfare state with sufficient checks and balances in place. However, there is increasing criticism about digitalization of the Dutch welfare state as a consequence of various public scandals that have been picked up internationally too (Amnesty International, 2021; Giest, 2021; Henley and Booth, 2020). It is therefore worthwhile to investigate the Dutch welfare state in light of these recent public scandals. Although a focus on public controversies can create a bias by focusing on extreme situations, it can at the same time be analytically productive because controversies shed light on existing norms, struggles and bureaucratic practices that normally stay under the radar (Pinch and Leuenberger, n.d.).

Our analysis of the Dutch digital welfare state is based on a document analysis of two subcases in the Dutch digital welfare state that have received public attention: (1) the childcare benefits scandal, and (2) Top 400/Top 600 that identifies youth at risk of criminalization. Although there is a variety in terms of the intensity of the public debate (the first case being the most discussed), each subcase has been discussed in political debates on a national and/or local government level. In both cases, public organizations have provided the initiative to implement digital technologies. Due to a lack of transparency, it is unclear to what extent these public organizations have worked together with tech companies in designing and implementing digital technologies that are central in the two subcases. For the document analysis, we made a secondary analysis of existing reports, news items and academic studies. Based on this analysis, we a) provide a sketch of the recent institutional context of the Dutch digital welfare state, b) give insights into how the logic of digitalization transgresses into the sphere of welfare in the two subcases, c) show in which ways an institutional void has manifested itself in the two subcases and how this causes harm to citizens, d) provide reflection on how to fill the institutional void, thereby potentially reducing the harmful consequences of sphere transgressions, e) and identify potential pointers for recognizing undesirable consequences of new emerging sphere transgressions early on, which can be relevant beyond the Dutch setting.

2. Sphere transgressions, the logic of digitalization and institutional voids

The notion of sphere transgression was originally developed by Walzer who based his theory of justice and equality on the autonomy of spheres in which different society goods, such as education, welfare, wealth, friendship, political power, etc. are distributed. Walzer argues that a just society is one where advantage in one sphere cannot be converted into dominance in another. Transgressions between spheres can be considered as a form of tyranny (Walzer, 1983; Sharon, 2021a). Building on Walzer's conceptualization, Sharon further develops the concept of sphere transgressions to analyze the transgression of the digital sphere into the sphere of health. She argues that advantages in the sphere of digital goods are currently being converted into advantages in other spheres such as health, medicine, and politics by Big Tech companies (Sharon, 2021a). An example of such an advantage is that 'technical expertise -in terms of data collection, data analytics and infrastructure development- which confers them (companies) a clear and legitimate

advantage in the sphere of digital goods, is currently converted into advantages in other spheres' (Sharon, 2020b, p. 50).

Compared to healthcare, the argument of sphere transgressions may apply even more to the sphere of social welfare, which is less institutionally regulated when it comes to the use of data. In this article, based on empirical cases in the Dutch welfare state, we investigate how a sphere transgression is taking place in the sense that advantages in the digital sphere, such as efficient standardization or automated decision-making, are converted into advantages in the sphere of welfare (e.g., smarter forms of surveillance), thereby crowding out practices and values that are central to the sphere of welfare, such as personalized care, face-to-face encounters, individual attention, and the need to empower people to the best of their abilities.

Since the digital sphere is a relatively new and broad concept, we operationalize the practices, norms, and values of this sphere by using the logic of digitalization (Schildt, 2022). In line with Schildt (ibid., p. 235), we define the logic of digitalization as 'involving a new set of interconnected managerial beliefs and norms, organizational practices, and diverse material and social structures that together complement and challenge the established logics in organizations and institutional fields.' The logic of digitalization can be characterized by two central organizing principles: 'The pursuit of *digital omniscience*- the efforts to represent and conceive the world through digital data- and *digital omnipotence*- the efforts to bring activities inside and outside organizations under the control of information systems' (ibid.). When these two organizing principles are present in practice, it can be argued that the digital logic manifests itself as a sphere transgression into the sphere of welfare. This raises the question whether existing rules and regulations in the sphere of welfare are fit to deal with the new digital logic and are able to protect existing values of social welfare, such as person-centered care, empowerment, do no harm, and individual face-to-face attention.

As Hajer (2003, p. 175) has argued, the concept of institutional void, can shed light on situations in which 'there are no clear rules and norms according to which politics is to be conducted and policy measures are to be agreed upon' and where they no longer seem to provide answers to new challenges in our societies. Sphere transgressions, in this case understood as the encroachment of the logic of digitalization into the sphere of social welfare, can cause harm in a situation of an institutional void. We operationalize the concept of institutional void, following Van Zoonen (2020), by looking at the

question whether existing legal, ethical, and quality frameworks are able to address new challenges posed by the use of digital technologies. We examine the legal and ethical frameworks, referring to the lacking (legal) 'rules' and (ethical) 'norms' in Hajer's definition of the institutional void (2003). Additionally, we include quality frameworks because, as Van Zoonen (2020) argues, adhering to data quality frameworks is necessary for responsible data use. We used the following operational definitions of frameworks: a) legal frameworks can refer to the rule of law and basic principles of administrative law (e.g. the obligation to motivate decisions, prohibition of arbitrariness, proportionality and due diligence) as well as the existence of effective complaint procedures, b) ethical frameworks can refer to Human Rights Treaties and internal ethical procedures of organizations, c) quality procedures refer to protocols how data should be collected, analyzed and shared within and between organizations and with the public in an accountable way. Data scientists work with quality measures stating that data must be FAIR (findable, accessible, interoperable, reusable), FACT (fair, accurate, confidential, transparent), that the infrastructure must be ROBUST (resilient, open, beneficial, user-oriented, secure, trustworthy), and data projects should meet the human-oriented data standard of SHARED values (an abbreviation referring to the principle that data projects should not reinforce existing inequalities and should support citizens from diverse backgrounds in a positive way) (Van Zoonen, 2020). When examples of quality measures like these are in place, it could help, in combination with legal and ethical frameworks, to limit- or to a certain extent even fill- an institutional void.

3. The context of the digital welfare state in the Netherlands

The Dutch welfare state is experiencing a significant shift toward automated decision-making and Artificial Intelligence in public service delivery. Various bureaucratic organizations, including departments of work and pension, social security agencies, and tax authorities, rely on inter-organizational data exchange about citizens to manage citizens' benefit eligibility and detect potential welfare fraud (Henley and Booth, 2020). This digital transformation has led to the emergence of a 'digital cage,' in which both citizens and bureaucrats are caught by the disciplining logic of digitalization (Peeters and Widlak, 2018).

Although human decision-making of 'frontline' bureaucrats based on individual cases and face-to-face interactions remain crucial in certain welfare sectors like youth care, social care, and social support, the digitalization of work is becoming more prevalent as

tools such as data dashboards and risk profiling tools are gaining ground (Hupe, 2022; Kersing et al., 2022; Van Zoonen, 2020). In this development, discretion of frontline bureaucrats is gradually being redirected towards judging 'complex' cases that do not fit into predetermined categories and require more information and human judgment (Giest and Klievink, 2022; Peeters and Widlak, 2018).

Recent policy changes have created momentum for further digitalizing the Dutch welfare state on a local level. Due to recent decentralizations of social care and support (2015), Dutch municipalities have become responsible for ensuring support for vulnerable youth, older persons, and people with mental or physical challenges. Municipalities need to carry out these new responsibilities under challenging circumstances: with reduced budgets in times of public sector austerity and personnel shortages (Linthorst and Oldenhof, 2020). While initially the decentralizations were framed as an opportunity for personalized services (Oldenhof and Linthorst, 2022), increasingly face-to-face encounters are replaced by digital solutions due to rising caseloads and personnel shortage (Kersing et al., 2022).

Despite governments and tech companies positively framing the use of digital technologies as a 'win-win' situation' for cost savings, efficiency gains, and personalized services for citizens, many smaller municipalities lack the in-house capacity and technical know-how to design and operate digital technologies (VNG, 2022). It is questionable whether they are in the position to critically question and reflect on this positive framing of the digitalization of local welfare. Smaller municipalities often lack the expertise to formulate the right legal, organizational, and ethical conditions in their contracts with private companies to ensure control over the development of technologies and the safeguarding of public values (ibid.). Moreover, local governments themselves have also acknowledged that the institutional embedding of the use of digital technologies, such as algorithms, is still lacking. For example, the municipality of Rotterdam, the second largest city in the Netherlands, notes that: "working with algorithms is a relatively new terrain. This implies that the methods and safeguards have not fully operationalized yet" (Rekenkamer Rotterdam, 2021, p. 13).

Even though the national government and larger municipalities issued an algorithm register and set up algorithms oversight boards, this does not cover the whole breadth and impact of digitalization that is currently taking place in the sector. Moreover, attention for safeguarding values in governance usually focuses on privacy (via the GDPR), neglecting other crucial values such as fairness and legitimacy (ibid.).

In this Dutch policy context of increasing digitalization with still limited institutionalization of new quality procedures, and ethical and legal frameworks, a variety of public controversies have emerged in recent years that require further attention.

4. Methods

We selected the childcare benefits scandal and the Top 400/600 as cases for further analysis. Both cases a) are located in the domain of Dutch welfare and social care, b) have experienced recent public controversy due to the use of digital technologies, and c) are information rich due to public debates on the local and/or national level.

The two subcases have similarities, yet also contain sufficient variety as they bring to light different risks/harms of sphere transgressions, here understood as the encroachment of digital logics into the world of social welfare. The Top 400/600 shows how the logic of digitalization encroaches into the sphere of welfare through a spillover of *system-level* data exchange between multiple organizations (police, social work, local government) into *street-level* surveillance of young people. Furthermore, the case shows a unique blurring of boundaries between the logics of care and punishment: information collected by street coaches is used to help youngsters but can also criminalize them. Compared to the Top 400/600 case where the inputs and workings of the algorithm were to a large extent visible to programmers and civil servants, this was not the case in the childcare benefits scandal. The black box algorithm in this case could change its workings autonomously and independently from its programmers which had important consequences for transparency and accountability.

We conducted a desk research based on secondary analysis of available documents. Different types of sources were used to be able to triangulate different standpoints in the debate and represent the views of the various actors. Firstly, academic sources such as academic articles, academic reports, and studies. Secondly, reports, such as reports by knowledge institutes, monitoring bodies of the government, or reports of collectives of researchers, journalists, and activists. Thirdly, newspaper items, such as newspaper items from several Dutch and international newspapers and websites. Fourthly, the category ‘other’, for all other sources, such as government websites, websites of Dutch civil rights organizations, news items of collectives, video material, etc. In table 1, an overview is provided of the number of sources per case categorized by type of source. The document analysis took place between October 2022 until March 2023.

Source/Case	Childcare benefits scandal	Top 400/Top 600
Academic sources	Number: 1 Sources: • University of Antwerp (n.d.)	Number: 3 Sources: • De Koning (2016) • De Koning (2017) • Uchida (2014)
Reports	Number: 3 Sources: • Amnesty International (2021) • Netherlands Court of Audit (2020) • Parlementaire ondervragingscommissie Kinderopvangtoeslag (2020)	Number: 3 Sources: • Eerste Kamer der Staten-Generaal (2022a) • Eerste Kamer der Staten-Generaal (2022b) • Jansen (2022)
Newspaper items	Number: 10 Sources: • Amaro (2021) • Frederik (2020) • Henley (2021) • Hofs (2021) • Klein (2019a) • Klein (2019b) • Kleinnijenhuis (2018) • Markus (2020) • NOS (2021) • RTL Nieuws (2015)	Number: 3 Sources: • Binnenlands Bestuur (2022) • Groenendaal (2014) • NL Times (2019)
Other	Number: 1 • Van Rij (2022)	Number: 8 Sources: • Controlaltdelete (n.d.) • Fair Trials (2021) • Gemeente Amsterdam (2016) • Gemeente Amsterdam (n.d.a) • Gemeente Amsterdam (n.d.b) • NPO 3 (2020) • Peled (2022) • Peled (2020)
Total	Number: 15	Number: 17

Table 1. Overview of sources per case

For each case we analyzed, we first present a short description of the main events. Secondly, we give insights into how the transgression of the logic of digitalization into the sphere of welfare takes place. To describe to what extent algorithms led to automatic decision-making (arbiter) or were used as support (aids) in addition to human discretion of bureaucrats, we used the conceptual distinction between decision-aids and decision-arbiters (Elyounes, 2021). Lastly, we show in which ways the institutional void manifested itself in that institutional setting and how it caused harm for citizens. In the discussion, we reflect on how to fill the institutional void, thereby reducing undesirable

consequences of sphere transgressions, and we identify potential pointers for recognizing undesirable consequences of new emerging sphere transgressions early on.

5. Case analysis

5.1 The Dutch childcare benefits scandal

Between 2005 and 2019, the Dutch Tax Administration wrongly accused 26.000 parents, often with dual nationalities, of benefit fraud using algorithmic decision-making (Amaro, 2021; Henley, 2021).

Childcare benefits, introduced in 2004 under the Childcare Act, are overseen by The Ministry of Social Affairs and Employment. However, the responsibility for their implementation falls under the Tax Administration, which is part of the Ministry of Finance (Frederik, 2020). In 2006, the Netherlands Court of Audit warned for problems with the General Act on Means-tested Benefits because it did not include a hardship clause that allowed for exceptions to be made should the prescribed procedures be unreasonable or unfair (Netherlands Court of Audit, 2020).

In reaction to fraud committed by a number of Bulgarian migrants (Frederik, 2020; RTL Nieuws, 2015) a Fraud Management Team (CAF) was formed to identify fraudulent childminding agencies and fraudulent benefits recipients. After using algorithmic tools, 2,200 families received the label ‘Deliberate intent/Gross negligence’, most of them having a dual citizenship. The childcare allowance of groups of parents was stopped without individual assessment or explanation. Families had to pay back the allowances and were refused personal payment arrangements.

5.1.1 Sphere transgression

The Tax Administration used a risk-detection algorithm to process social security documents from parents. If the algorithm found small administrative shortcomings, e.g., a box wrongly filled or an omitted signature, childcare allowances were automatically discontinued (University of Antwerp, n.d.). Additionally, a self-learning, black box, risk-scoring algorithm autonomously selected childcare allowance recipients for further audits. It derived risk-factors from the analysis of known positive and negative fraud cases, and independently made changes to how it worked without explicit programming by the programmers. The inputs and workings remained invisible to the civil servants using the system (Amnesty International, 2021; University of Antwerp, n.d.).

The implementation of these algorithms demonstrate the transgression of the logic of digitalization as it shows the pursuit of digital omniscience to represent and conceive the world through digital data. Furthermore, it demonstrates the pursuit of digital omnipotence by seeking control over the activities inside (work processes of civil servants) and outside (citizens) the organization through information systems.

Despite this sphere transgression, authorities downplayed the importance of the digital logic in decision-making. For example, the Tax Administration claimed manual checks were conducted before adding someone to the list and that allowances were not automatically terminated. Additionally, the Ministry of Finance stated that people who were suspected of fraud were not indefinitely treated as such but only for a specific period that a civil servant should manually set, extend, and stop in the system (NOS, 2021). Formally, this system can therefore be viewed as a decision-aid system that allows for human discretion to some extent.

However, in practice it appeared to primarily work as an arbiter system, meaning that the system makes the decision (Elyounes, 2021) with bureaucrats seldom questioning it. A notable exception is a civil servant at the Tax Administration who wrote a critical report about the lack of fairness of decisions to automatically terminate benefits of citizens without proper explanation or attention for proportionality. Despite sharing this critical report internally, this civil servant was consistently dismissed: “don’t get involved in policy matters, mind your own work.” And: “even if you are right, you will never win this. You will never win against the government.” (Klein, 2019b). The automatic cessation of benefits without individual assessment, and the fact that both programmers and civil servants didn’t know its exact workings, and seldom questioned it, indicates that a decision-aid system de facto was mostly used as a decision-arbiter system.

5.1.2 Institutional void

Throughout this case, the logic of digitization challenges the established welfare sphere logics, such as responsive support and attention for personal circumstances, due to the institutional void in which legal, ethical, and quality frameworks were not sufficiently able to deal with the risks of algorithmic decision-making.

Legally, the Tax Administration violated the legal obligation to motivate decisions by using a self-learning black box algorithm. This obstructed accountability and transparency because programmers, civil servants, and victims did not know exactly how it worked. Consequently, it remained unclear who can be held accountable for decisions based on this algorithm.

Furthermore, the absence of a hardship clause led to the infringement of the principle of proportionality. Small mistakes had big consequences because if the algorithm found small administrative shortcomings benefits were automatically discontinued (University of Antwerp, n.d.).

The Tax Administration also infringed on the due process principle by terminating benefits without giving reminders or a second chance to provide the correct information (Klein, 2019a). Some parents were unaware of being labeled as having committed fraud, impeding their ability to contest it (NOS, 2021).

Ethically, the Tax Administration did not assess human rights risks before implementing the risk classification algorithm. The Dutch Data Protection Authority described their work as unlawful, discriminatory, and improper. They found three violations of the GDPR: processing dual nationality, using first nationality for risk classification models and using first nationality for organized crime detection (Hofs, 2021; Markus, 2020).

Furthermore, emails, meeting minutes, and work instructions surfaced in which Tax Administration civil servants made racist statements. In 2022, the State Secretary for Finance acknowledged this institutional racism: 'These practices around the allocation of benefits could result in different groups of citizens having a higher chance of being selected for a manual assessment, and thus led to an unintentional inequality in treatment between people. (…) this applied (…) to Dutch people with low incomes and single people, but it also applied to people with a different nationality (…) This therefore qualifies as a form of institutional racism as described by The Netherlands Institute for Human Rights' (Van Rij, 2022, p. 4).

The quality procedures were deficient due to opaque data analysis using the black box algorithm. The algorithm could autonomously select childcare allowance recipients for further audits, and it could change its workings autonomously and independently from programmers. This led to transparency and accountability issues because it was unclear how and why recipients were selected for audits. This is in contradiction with FAIR and FACT principles which state that data applications should be accessible and transparent.

Moreover, the quality procedures were deficient because using dual nationality as a fraud proxy reinforced existing inequalities. This is in contradiction with the FACT principle because using dual nationality as a fraud proxy is inaccurate. Furthermore, the use of dual nationality as a fraud proxy is in contradiction with the human-oriented SHARED values

which refer to the principle that data projects should not reinforce existing inequalities and should support citizens from different backgrounds in a positive way.

The growing influence of the digital logic -left unchecked by existing rules and norms- resulted in far-reaching undesirable consequences for welfare recipients, such as financial hardship, stress and mental problems and out-of-home placement of children (Parlementaire ondervragingscommissie Kinderopvangtoeslag, 2020).

5.2 The Top 400/Top 600

The city of Amsterdam uses predictive algorithms such as Top 400 and Top 600 to prevent crime incidents (Controlaltdelete, n.d.; Uchida, 2014).

Launched in 2012, the Top 600 program, developed in collaboration with the police and social services, aims to reduce the number of high impact crime incidents by intervening in the lives of individuals aged 21 or older who are perceived as 'high risk' by the algorithm. Criteria for inclusion are prior arrest as a high-impact crime suspect; contact with the Public Prosecution Service, and a sentence for a punishment (Gemeente Amsterdam, n.d.a).

Expanding in 2015, the Top 400 identified a group of minors under 16 displaying behavior causing public nuisance, without having committed serious offenses. Top 400 is a risk modeling and profiling system run by the municipality alongside with police, prosecutors, youth work, street coaches, neighborhood organizations, and social services (Fair Trials, 2021; Jansen, 2022; Gemeente Amsterdam, 2017; n.d.b). Street coaches from welfare organizations collect information about specific youth at the municipality's request. When they are discussed by social care workers, the police, the probation office, and other agencies are present. This shows a clear blurring of boundaries between the logics of care and punishment (Fair Trials, 2021).

5.2.1 Sphere transgression

This case shows a growing influence of the digital logic into the sphere of welfare. System-level data exchange practices between multiple organizations (police, social work, local government) can be seen as the pursuit of digital omniscience because there is an effort to represent and conceive the world through digital data.

The spill-over of these system-level data exchange practices into increasing street-level surveillance of young people indicates the pursuit of digital omnipotence because of the increasing efforts to bring the daily life of young people under the control of information systems (Schildt, 2022). Formally, the risk classification model is designed as a *system-aid* that still allows for human judgements by civil servants. However, when civil servants act upon the outcomes of these models as if they are true facts (Elyounes, 2021), this may suggest that these models are de facto system arbiters, leading to potential stigmatization of youngsters as criminals by default. The norms and values of the welfare sphere such as social support and inclusion appear to be instrumentally used for the purposes of crime prevention and surveillance. Earlier research by De Koning (2017) describes how police officers respond to complaints about nuisance: 'They ask for their IDs, call into the precinct, and hear that four of them are in the Top 600. The uniformed police will then probably say, 'Hey guys, you're in the Top 600. We don't have anything on you now, but mind you, we're keeping an eye on you'. So, yes, they do get that stamp among police officers, and I can imagine they don't like it' (ibid., p. 549).

5.2.2 Institutional void

Existing legal, ethical, and quality frameworks fail to counterbalance the negative consequences of the institutional logic of digitalization in this case.

Legally, the municipality and the police infringed on the principle of proportionality because including youngsters on the Top 400 list that didn't actually commit a crime may lead to subjecting them to severe sanctions and interventions.

In 2016, the municipality also violated the obligation to motivate decisions by failing to provide reasons to parents why the algorithm identified 125 minors as potentially 'high risk' and including them on the Top 400 list (Controlaltdelete, n.d.; Jansen, 2022). Furthermore, the municipality violated the principle of due process because parents who requested help from the municipality often received no response or were misinformed. Consequently, they were unable to contest the municipality's decision and defend themselves (Peled, 2022; 2022).

Ethical procedures were lacking as no assessment of human rights risks was conducted. More than one third of the individuals on the Top 600 list are of Moroccan descent (NPO 3, 2020) residing predominantly in Dutch Moroccan populated areas (De Koning, 2016; 2017; NL Times, 2019). A 2022 report by the Parliamentary Committee highlighted that

'people with an ethnic origin have an increased chance of being stopped by the police and therefore have more often a 'note' in their police file' (Eerste Kamer der Staten-Generaal, 2022a; 2022b). Consequently, they are disproportionately affected by laws involving police files, including the Top 400 and 600 (Controlaltdelete, n.d.; Jansen, 2022). Civil rights organizations warn that structural discrimination based on ethnic and socio-economic grounds will find its way into these systems (Fair Trials, 2021).

Quality procedures for the Top 400 data analysis appear inadequate because they are not in line with the FACT principle. They are not accurate because there is merely a focus on correlations between the variables and not on causal relationships. The Top 400 uses non-criminal data such as 'serious care signals' in its risk models, including absence from school or not finishing school; involvement in domestic violence as a victim, witness, or suspect; high-risk people in the environment; as well as mere suspicion of involvement with crime without actual evidence (Gemeente Amsterdam, n.d.b). Minimal contact with the police, varying from ID checks to arrests, even without any conviction, can place individuals on the list (Controlaltdelete, n.d.; Fair Trials, 2021; Jansen, 2022). A concerned lawyer warned the system has become a self-fulfilling prophecy. Being listed increases the risk of being arrested. Moreover, even if the police find no incriminating evidence, individuals still get a note in their file. The more notes one receives, the higher on the list one gets (Fair Trials, 2021; Groenendaal, 2014). The Top 400 and Top 600 fail to adhere to the FACT and SHARED principle, resulting in unfair consequences for listed individuals. The Top 400 and Top 600 deeply impact youngsters' lives, subjecting them to police and enforcement action such as arrest and regular home checks, constant surveillance, and stigmatization (De Koning, 2017; Peled 2020; 2022).

6. Conclusion and discussion: filling the institutional void and identifying pointers for spotting undesirable consequences of new emerging sphere transgressions

Across the world, digital welfare states are experiencing challenges with using digital technologies in inclusive ways (Eubanks, 2018; Ratcliffe, 2019; United Nations, 2019). The Dutch welfare state is no exception. In fact, the analysis of two recent controversial cases in the Dutch digital welfare state -the childcare benefits scandal and the Top 400/ Top 600- reveal a clear institutional void. Existing legal, ethical, and quality frameworks did not sufficiently address the new challenges posed by the use of algorithms to detect risk of welfare fraud or criminal behavior. First, legal principles of administrative law,

such as the imperative to motivate decisions to citizens and enact due diligence, are increasingly difficult to adhere to due to the use of black box systems that contain self-learning algorithms, as was done by the Dutch tax authorities. Since civil servants cannot assess the accuracy of the input and fairness of the output of these systems, legal principles risk becoming empty shells. This risk increases even further when automated decision systems that are initially presented as decision-aids for civil servants become de facto decision-arbiters when civil servants can no longer understand their workings and implications (Elyounes, 2021). Second, the cases show that ethical frameworks were not used proactively beforehand to assess the risks of using new algorithms and risk models, such as discrimination. Third, quality frameworks for assessing the data quality (i.e., the timeliness, completeness, and correctness of the dataset) did not appear to be in place or were ineffective. As for example the Top 400/Top 600 case shows, incorrect proxies were used that led to inconclusive correlations and the broadening of inclusion criteria stretched beyond the safety domain: even to such an extent that victims of crimes rather than perpetrators were included in the risk models too.

The digital sphere transgression had detrimental consequences for vulnerable citizens dependent on the state for benefits because there currently is an institutional void in the Dutch digital welfare state. They experienced increased levels of surveillance, discrimination, stigmatization, wrongful termination of benefits, and the new acquisition of debts due to pay-back policies that were based on inaccurate information. These harms inflicted upon citizens have been publicly acknowledged by politicians, judges, and policymakers in the case of the benefit scandal. However, In the case of the Top 400/ Top 600 case, key politicians have continued their support for the use of risk models to prevent criminal behavior despite concerns for discrimination and stigmatization of young people that have not committed serious crimes.

To prevent the harmful impact of digital sphere transgressions on the lives of vulnerable citizens, it is necessary to fill the current institutional void. This cannot be done by imposing a quick fix as institutions change incrementally. It is therefore crucial that various actors in the field engage in institutional work by (re) developing legal, ethical, and quality frameworks and embedding these frameworks in daily organizational routines and norms (Lawrence and Suddaby, 2006). This institutional embedding ensures that frameworks do not become paper tigers but are used as living documents that enable reflection on the consequences of sphere transgressions and can be mobilized by actors as a counterbalance against harmful consequences.

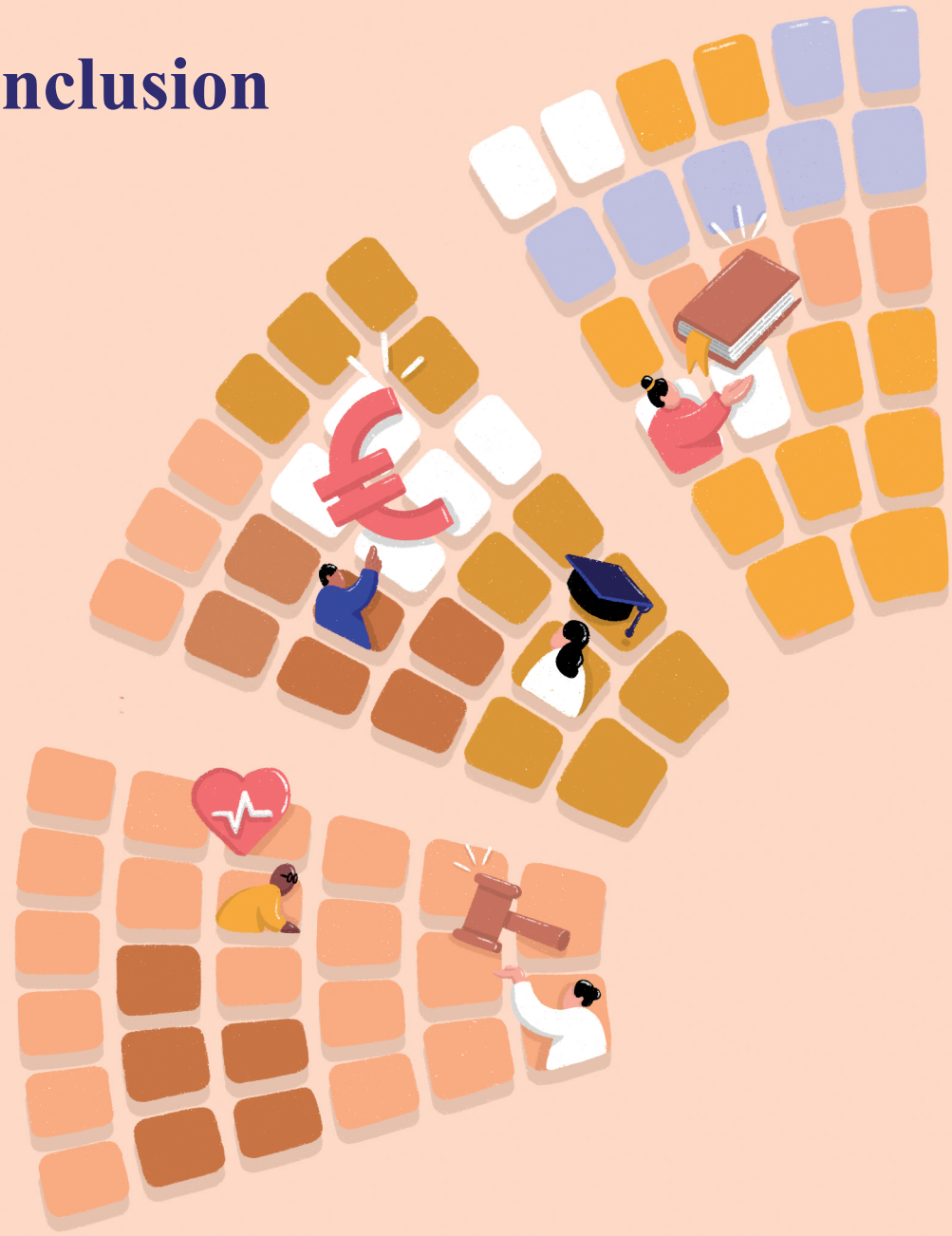
When developing and institutionally embedding legal, ethical and quality frameworks, it is crucial to take into account the relation between government and citizens and invest in different forms of legitimacy as defined by Grimmelikhuijsen and Meijer (2022): input legitimacy (translating the preferences of citizens as expressed in democratic processes into the design and use of algorithms), throughput legitimacy (setting up and adhering to legal and fair processes to ensure fairness about the way outcomes are achieved) and output legitimacy (ensuring that the use of algorithms contributes to the realization of values that citizens find important). To ensure these different forms of legitimacy, the current dominant fraud prevention logic that prevails in many digital welfare states needs to shift towards more service-oriented values and social rights of citizens. In this light, special rapporteur of the UN Alston recently urged governments to stop 'obsessing about fraud, cost savings, sanctions, and market -driven definitions of efficiency, the starting point should be on how welfare budgets could be transformed through technology to ensure a higher standard of living for the vulnerable and disadvantaged' (2019, p. 2). To ensure that preferences and values of citizens are taken into account, it is necessary to go beyond the usual methods such as surveys and democratic elections, where data transitions are usually not a very prominent topic on the political agenda. Alternative more experimental methods include qualitative data dialogues, games to increase data awareness, virtual data walks, and data commons (Van Zoonen, 2020). Some municipalities and public service providers have already started to work with these methods, although it is still at a very early stage and needs to be further developed.

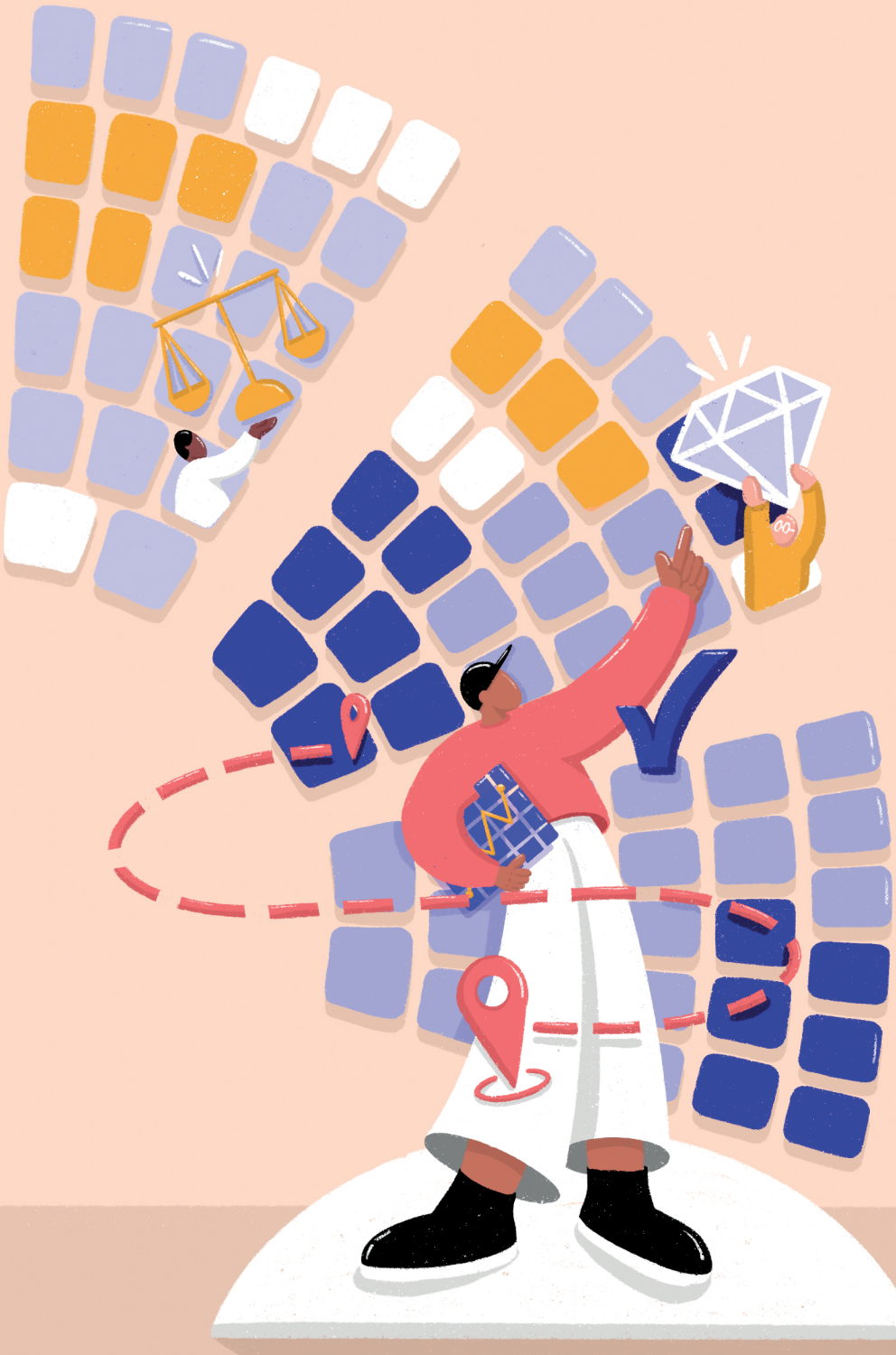
Even when the institutional void is successfully addressed and reduced in the coming years, there are always risks of undesirable consequences of new emerging sphere transgressions coming up as digital technologies rapidly develop in unforeseen ways. Based on the analysis of the two Dutch subcases, we can distill early 'soft signals' that pointed towards emerging problems in the system, yet were ignored for too long, thereby leading to full-blown public controversies. These soft signals can be used as pointers for recognizing undesirable consequences of new sphere transgressions early on. First, when civil servants experience an implicit 'this does not feel right feeling', as we have seen in the childcare benefits scandal case, this may be considered as a soft signal pointing towards potential unethical routines or decision-making in the organization. Second, when citizens experience the bureaucratic system as a digital cage rather than a helping support system (see for example Peeters and Widlak, 2018), as we have seen in both cases, this can be considered a soft signal too. This soft signal can become a hard signal

when the burden of proof is placed on the shoulders of citizens to challenge decisions without having information on what grounds decisions have been made in the first place, thereby making complaint procedures ineffective (see also Eubanks, 2018). Third, boundary blurring between domains, such as care and crime prevention in the Top 400/ Top 600 case, can be a soft signal. When actors in digital welfare states are able to recognize soft signals like these and act upon them, much potential harm to citizens can potentially be prevented.

Chapter 7

Conclusion





1. Results

I started this dissertation with the personal story of Mrs. Ceylan, which illustrates the potential negative consequences citizens may face when the digitalization of welfare provision fails. Rather than simply responding with indignation to the municipality's actions and leaving it at that, such personal stories became the starting point for my research guided by the central research question:

How do data-driven technologies reconfigure welfare service provision and governance in the domain of work and income?

The main contribution of this dissertation lies in providing a more comprehensive and holistic understanding of the systemic governance dynamics underlying these individual experiences. Each chapter showed the complex dynamics of data-driven governance within a specific site, highlighting the roles of key actors, including unemployed benefit recipients, individual frontline bureaucrats, other frontline bureaucrats in the frontline-screen-level network such as managers and quality officers, and local political actors, alongside the institutional frameworks in which they operate (Figure 1). The chapters were guided by the following sub-questions:

1. *How do citizens experience the use of data-driven technologies by municipalities in the domain of work and income?*

2. *How is street-level work of frontline bureaucrats reshaped by the digitalization of welfare in the domain of work and income?*

3. *How is the digitalization of welfare in the domain of work and income politically discussed at the municipal level?*

4. *How do institutional frameworks such as legal, ethical, and data quality procedures in the Dutch digital welfare state shape tensions over data-driven governance in social welfare?*

In section 1.1 through 1.5, I first address the sub-questions, followed by answering the central research question. Figure 1 plays a central role in structuring this conclusion. It serves not only as a visual synthesis of the analytical architecture of this dissertation, but also as a guide for organizing the final analysis. The figure connects the empirical sites and the actors within them, making visible how each group experiences and shapes the digitalization of welfare differently. I discuss each site in relation to the others,

showing how their interactions collectively shape the evolving landscape of data-driven governance. Sections 2 through 7 discuss the theoretical and societal contributions of this dissertation, reflect on its methodological implications, and outline a proposed research agenda. The chapter closes with recommendations for data-driven governance and some final thoughts.

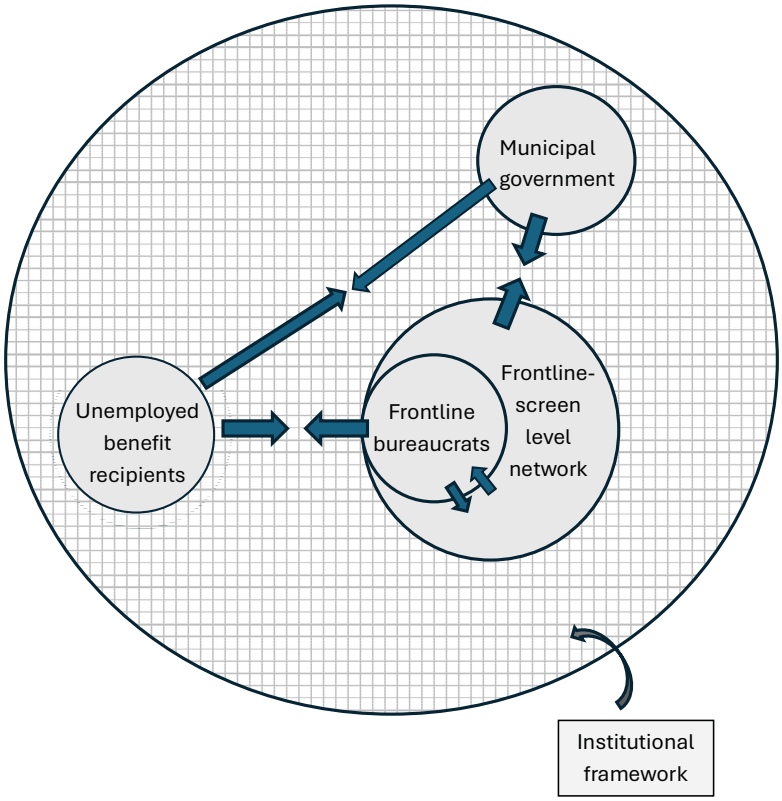


Figure 1 Sites and dynamics for investigating data-driven governance of welfare

1.1 The experiential site of benefit recipients

Sub-question 1: *How do citizens experience the use of data-driven technologies by municipalities in the domain of work and income?*

One of the key findings is that data-driven governance further amplifies the existing distrust and unequal power balance that benefit recipients already experience with their municipality. Mrs. Ceylan's concern about 'what they're doing digitally, with our data

to analyze and frame us' is also reflected in the experiences of the benefit recipients interviewed for chapter two. While such dynamics in benefit recipient-frontline bureaucrat interactions are not new since benefit conditions are set and decided by the state (Hasenfeld 1985; 1987; Jeffares, 2021; Lipsky, 1980; Mik-Meyer, 2017; Oldenhof and Linthorst, 2022; Soss, 1999), the role of data-driven technologies in these relations marks a recent and significant development (Eubanks, 2018).

Although Mrs. Ceylan, like the benefit recipients I interviewed, understands the reciprocal obligations associated with receiving benefits, she describes municipal employees as 'control freaks' and the process as 'inhumane.' Chapter two shows how data-driven work in the domain of work and income affects citizens' experience of reciprocity and social solidarity. While the macro-level social contract remains unchanged, working citizens pay taxes in return for social security when they become unemployed, on the micro level, recipients report an increased data hunger of the municipality and a lack of transparency. To function data-driven technologies require complete, correct, and up-to-date data. Therefore, the use of data-driven technologies leads to data hunger of the municipality in the experience of benefit recipients. They often feel pressured to share personal data without knowing what is collected, why, or how it's used.

The legal boundaries of what municipalities can ask from citizens remain contested, as the Dutch Participation Act and the GDPR are at odds. The Participation Act obliges recipients to disclose any information that may 'reasonably' affect their eligibility, granting frontline bureaucrats discretionary space to require a lot of data. This conflicts with GDPR principles such as data minimization and purpose limitation (Autoriteitpersoonsgegevens.nl n.d.), placing citizens in a legally vulnerable position.

While being in a legally vulnerable position, benefit recipients increasingly struggle to claim their rights as new obligations, such as mandatory voluntary work, are imposed in exchange for support. Many respondents feel the reciprocal relationship has become unbalanced, feeling that they are required to give more than they receive, while being kept in the dark about how their data is used. As shown in chapters two and six, and earlier research (Van Zoonen, 2020; Van Zoonen et al., 2020) benefit recipients want more transparency and control over their data.

In response, benefit recipients develop coping tactics to deal with the data hunger of their municipality. Whether it involves oversharing personal information to prove their inability to work, critically questioning data requests, avoiding data disclosure altogether,

or seeking assistance from external professionals to navigate the municipal system, these strategies reflect a pervasive sense of distrust and a fear of sanctions or benefit loss. Ultimately, these experiences show that citizens often perceive data-driven technologies as systems that increase pressure, uncertainty, and vulnerability in their interactions with the municipality, revealing a fundamental disconnect between the ambitions of data-driven governance and how it is actually experienced on the ground.

1.2 The professional site of street-level bureaucrats and their network

Sub-question 2: *How is street-level work of frontline bureaucrats reshaped by the digitalization of welfare in the domain of work and income?*

1.2.1 Reshaping street-level interactions

Data-driven technologies fundamentally reshape how street-level bureaucrats engage with citizens. Chapters two and three both show that these encounters increasingly revolve around gathering, verifying, and correcting data about citizens. Chapter three shows that with the implementation of a data-dashboard, the job of work coaches shifts towards caseload management, with a strong focus on gathering data about recipients to help them back to work, instead of personal face-to-face contact. This shift represents both a quantitative transformation that aims for greater efficiency and speed, and a qualitative one, as it redefines the core content and character of public encounters. This not only limits the professional discretion to provide tailored support but can also erode trust, as recipients experience the interaction as bureaucratic and impersonal.

1.2.2 Reshaping role identities and relational dynamics

Data-driven technologies also reshape the role identities of frontline bureaucrats and their professional relationships. Chapter three reveals two role identities among frontline bureaucrats: the client coach, who prioritizes personal contact with benefit recipients and tailored support, and the caseload manager, who focuses on reducing the number of recipients in their caseload by focusing on quick returns to the labor market. The implementation of the dashboard stimulates a shift towards the caseload manager role identity. While frontline bureaucrats who identify as caseload managers are generally positive about the dashboard because they feel the dashboard enables them to do their work better, for frontline bureaucrats that identify as client coaches this leads to a role

identity conflict. They argue that this shift distracts attention from the core of their job: providing meaningful, personalized support to citizens. This shift in role identity essentially means that personal attention for citizens is increasingly replaced by a focus on the number of quick returns to the labor market. As a consequence, some frontline bureaucrats experience work alienation, as the values embedded in their daily routines no longer align with the motivations for entering public service. This can diminish job satisfaction and potentially affect the quality of support offered to citizens, especially those that require more attention due to complex problems.

This role shift also changes the relational dynamics between frontline bureaucrats. Chapter four shows that frontline bureaucrats are increasingly divided between those who embrace the managerial, data-driven logic and those who resist it due to a perceived conflict with their client-centered values. These clashing logics complicate cooperation within frontline teams and reshape how frontline bureaucrats position themselves in their work.

The increased visibility of their work through the dashboard sparks competition. While supporters view this as positively as it allows them to learn from each other, resisters perceive it negatively and feel pressured by unrealistic performance expectations. Visibility of their work also alters perceptions of autonomy. Most key-users feel more in control of their caseload and less reliant on colleagues or managers, while regular work coaches experience a loss of autonomy, as they feel forced to only focus on updating lists. The dashboard also reshapes power dynamics because frontline bureaucrats who have the knowledge and skills to adjust to working with data-driven technologies gain power and status relative to frontline bureaucrats who lack these competencies. For example, access to all the data through the dashboard enables superuser work coaches to bypass formal hierarchies, monitoring not only regular work coaches but also quality officers.

These developments can foster innovation, peer learning, and a sense of ownership, but they may also lead to internal tensions, fragmentation within teams, and reduced collaboration. Over time, such divisions may erode trust within teams, marginalize frontline bureaucrats who resist the dominant data-driven logic, and weaken collective responsibility for citizen-centered service provision.

1.2.3 The knowledge condition for responsibility

Another key finding is that data-driven technologies complicate frontline bureaucrats' ability to take responsibility for their decisions. Chapters three and four show that some

frontline bureaucrats with data-related skills and knowledge feel supported in their work by data-driven technologies, while others struggle to understand how the dashboard works due to lacking analytical skills, knowledge, or motivation to use it responsibly. Similarly, chapter six shows that for the civil servants that used the self-learning, black box, risk-scoring algorithm in the childcare benefits case, the inputs and workings of the algorithm remained invisible (Amnesty International, 2021; University of Antwerp, n.d.).

These issues relate to broader reflections on what constitutes trustworthy knowledge in data-driven governance and how this affects the knowledge conditions under which frontline bureaucrats are expected to act responsibly. They must possess sufficient knowledge to make informed decisions and understand the consequences of their actions in order to be held responsible (Thompson, 1980). In chapter three, this concern surfaces in discussions about whether good data quality leads to better service, and whether the dashboard accurately reflects reality. The lacking data quality of the dashboard at the time of the implementation affected the epistemic knowledge condition of the frontline bureaucrats negatively, making responsible decision-making difficult. There was a partly successful attempt to tackle these issues during the implementation of the dashboard by educating work coaches through workshops and by updating all relevant data in sprints.

As a consequence, the uneven distribution of knowledge can lead to asymmetries in responsibility: those who lack understanding may rely on data-driven technologies without fully grasping their implications, while those with expertise may bear a disproportionate burden of responsibility. Over time, this can erode frontline bureaucrats' confidence in their own judgment, create a sense of alienation from their work, and ultimately undermine core elements of vocational commitment and public service ethos, such as professional autonomy and integrity.

Moreover, when frontline bureaucrats cannot fully understand, question, or justify decisions generated or supported by data-driven tools, this undermines the transparency and accountability essential to democratic governance. It means that decisions with real, often life-changing consequences for citizens are made without clear lines of accountability, which weakens both professional legitimacy and democratic trust. In times of increasing reliance on opaque algorithms and diminishing public faith in institutions, such erosion of accountability is not just a technical or managerial flaw, but a political problem. It signals a deeper crisis at the intersection of vocation and democracy.

When neither frontline bureaucrats nor citizens can meaningfully contest or understand how decisions are made, the democratic fabric itself is put under strain.

1.3 The site of municipal government

Sub-question 3: *How is the digitalization of welfare in the domain of work and income politically discussed at the municipal level?*

Chapter five shows that political discussions about data-driven technologies used in the domain of work and income in the municipal council are rare and typically reactive to scandals or criticism. These discussions are fragmented through the mechanism of 'content chopping', where technical, ethical, and political aspects of an issue are separated and spread into separate documents and discussion arenas. This fragmentation obscures the broader picture, weakens critical oversight, and increases the risk of unintended consequences such as dehumanization and stereotyping of citizens.

1.3.1 The knowledge condition for responsibility

Political discussions remain limited as council members claim to have limited time and knowledge to critically question data-driven technologies. They often resort to depoliticization mechanisms, including distancing personal responsibility and diffusing accountability to programmers, software developers, and expert municipal staff. While political actors acknowledge their limited digital literacy, they rarely articulate concrete steps to overcome this knowledge gap, nor do they commit to investing time or resources to enhance their understanding. This suggests that references to time and knowledge constraints may function as convenient rationales for depoliticizing the use of data-driven technologies in the domain of work and income. This finding adds nuance to prior research, which indicates that local politicians' limited knowledge of data-driven technologies hinders meaningful engagement (Centre for BOLD Cities, 2023; VNG, 2021).

1.3.2 Political-administrative power relations

The limited engagement of local politicians with data-driven technologies not only shapes whether and how the digitalization of welfare in the domain of work and income is politically discussed but also reveals and reshapes political-administrative power dynamics.

Chapter five illustrates how two data analysts have more technical knowledge about data-driven technologies than local politicians, explaining the workings of a fraud risk prediction algorithm in two technical sessions. However, their explanations focused narrowly on the technical aspects, without reflecting on broader ethical or societal implications, such as the risk of misclassifying individuals as high risk and triggering unjust re-examination procedures. This technocratic approach illustrates that, in the absence of political leadership, responsibility for guiding the digital transformation of welfare governance effectively shifts to a technically skilled but small group of frontline bureaucrats, raising concerns about democratic oversight and ethical reflection.

In other cases, certain politicians show interest in data collection when it serves their electoral aims. For example, chapter three highlights frontline bureaucrats reporting political pressure to collect data in the lead-up to elections. Work coaches were urged by an alderman to initiate conversations about education with benefit recipients. While intended to explore opportunities for training or education programs, a team manager questioned whether the number of such conversations provide insights into the quality of these conversations. Specifically, whether the benefit recipients felt heard and supported during these conversations. In the context of upcoming elections, quantitative indicators such as the number of education conversations can serve to showcase an alderman's achievements, potentially boosting their chances of re-election. This dynamic raises concerns about the instrumental use of data for political gain, which may undermine the meaningfulness of interactions between frontline bureaucrats and citizens, and can challenge the integrity of welfare provision.

Although civil servants are expected to execute policies impartially in line with the principle of administrative neutrality (Weber, 1918), they have some capacity to question policies and engage in loyal contradiction (Bovens, 1996; Twijnstra and de Graaf, 2013; Van der Meer and Dijkstra, 2021). However, their concerns are not always acknowledged or acted upon. In chapter six, an example is discussed of a civil servant at the Dutch Tax Administration who, during the childcare benefits scandal, flagged concerns about the lack of fairness in the automatic termination of benefits without proper explanation or attention to proportionality. His warnings were consistently dismissed. In fact, he was warned that he would never win against the government (Klein, 2019b). This illustrates how data-driven governance may exacerbate potential power asymmetries in political-administrative relations, further constraining the already limited capacity of civil servants to raise ethical concerns about data-driven technologies.

1.4 The site of institutional frameworks in the Dutch digital welfare state

Sub-question 4: *How do institutional frameworks such as legal, ethical, and data quality procedures in the Dutch digital welfare state shape tensions over data-driven governance in social welfare?*

Institutional frameworks such as legal, ethical, and data quality procedures shape how actors engage with data-driven technologies. When institutional frameworks are lacking, underdeveloped, or inadequate to address new challenges posed by data-driven technologies, tensions will occur between various actors as they negotiate the normative boundaries of what constitutes responsible use of data-driven technologies. Chapter six illustrates this through the childcare benefits scandal and the Top 400/600 case, where data-driven decision-making sparked contestation over its legitimacy and impact. These sites of contestation reveal how the absence of appropriate institutional frameworks creates an institutional void that undermines principles of transparency, accountability, and fairness, thereby hindering the responsible and equitable implementation of data-driven technologies.

This becomes evident in chapter six, about the Dutch childcare benefits scandal. Legally, the use of the black box algorithm obstructed the obligation to motivate decisions, undermining transparency and accountability. Without a hardship clause and no opportunity to rectify errors, the legal principles of proportionality and due process were violated. Moreover, ethical guidelines were lacking because the Tax Administration did not assess human risks before implementing the risk classification algorithm. The Dutch Data Protection Authority later concluded that the system was unlawful, discriminatory, and in violation of the GDPR, particularly through the use of dual nationality as a risk indicator (Hofs, 2021; Markus, 2020). Internal documents, including emails, meeting minutes, and work instructions, revealed racist assumptions among civil servants. In 2022, the State Secretary for Finance acknowledged that these practices amounted to institutional racism (Van Rij, 2022). Quality procedures failed because the algorithms' self-learning nature violated principles such as FAIR (data must be findable, accessible, interoperable, and reusable) and FACT (data must be fair, accurate, confidential, and transparent), and the use of dual nationality as a risk proxy contradicted SHARED values (an abbreviation referring to the principle that data should not reinforce existing inequalities and should support citizens from diverse backgrounds in a positive way).

This case exemplifies how weak or absent institutional safeguards enable discrimination of citizens with a non-Dutch nationality to become embedded in algorithmic systems. It also illustrates how such failures produce normative tensions between those who believe fraud is more likely among individuals with a non-Dutch nationality and those who reject these ideas. Poorly functioning institutional frameworks not only undermine accountability but also contribute to the normalization of biased assumptions about risk and nationality, reinforcing structural inequalities within data-driven welfare governance.

Similarly, in the Top 400/600 predictive policing programs in Amsterdam, underdeveloped legal, ethical, and data quality frameworks shape tensions around data-driven governance by blurring boundaries between care and control. Information collected by street coaches, intended to support youth exhibiting problematic behavior, is also used to criminalize them. 'Care signals' such as absence from school or dropping out can increase a young person's ranking on the Top 400/600 list, potentially categorizing them as 'high risk' for future criminal activity, even in the absence of a criminal offence. The inclusion of minors and young adults on risk lists without criminal convictions demonstrates a legal overreach that violates principles of proportionality and due process. Parents were not adequately informed about why their children were flagged, nor were they given the means to contest decisions, leaving affected families in a position of powerlessness. Ethically, there was no assessment of human rights risks before deploying the system, despite clear evidence that ethnic minorities, especially Dutch Moroccan youth, were disproportionately targeted. This reinforces pre-existing structural discrimination and undermines principles of equality and inclusion. The quality of the data and models used is also questionable; risk scores are based on correlations rather than causal links and often include vague indicators such as 'serious care signals' or 'minimal police contact', which can lead to stigmatization and systemic bias.

These weaknesses in the institutional framework foster a climate of distrust among youth, communities, professionals, (frontline) bureaucrats, and government actors. They create tensions between those who frame data-driven surveillance as necessary for public safety, and those who view it as an infringement on civil rights and a pathway to institutional discrimination. This case, however, shows that in the absence of adequate safeguards, the dominance of data-driven technologies in welfare and justice comes at an untenable cost: the erosion of democratic core values such as transparency, fairness, and accountability.

While I initially sought to answer this sub question by analyzing the two empirical cases in chapter six, it became evident that the other sites explored throughout this dissertation (see figure 1) are not only social, organizational, and institutional sites but also sites of contestation, where tensions, negotiations, and power dynamics unfold.

One key site of contestation is the interaction between benefit recipients and frontline bureaucrats, where the values and ideologies embedded in digital welfare systems are negotiated. This negotiation becomes visible through the four coping tactics employed by benefit recipients to cope with the data hunger of their municipality. These include oversharing personal information to demonstrate their inability to work, critically questioning data requests, trying to avoid giving data altogether, and seeking assistance from external professionals to navigate the municipal system to get things done. Each of these tactics reflects a form of contestation to the data-driven logic imposed by the municipality. Digitalization complicates recipient-frontline bureaucrat encounters by further reinforcing mutual distrust, which manifests in a push and pull game of contestation.

Another site of contestation emerges among frontline bureaucrats, who must navigate the norms and expectations introduced by data-driven technologies like dashboards. They negotiate what constitutes norms of appropriate behavior around the use of the dashboard in relation to three themes: data quality, service quality, and data representations. These themes become points of friction where different frontline bureaucrats negotiate the implications of the dashboard. The results show how they navigate and negotiate these norms, positioning the dashboard as a normative site where frontline bureaucrats define and contest how the dashboard should be used and how it relates to their work with benefit recipients.

The implementation of the dashboard also reconfigures professional roles, reshaping interactions and power dynamics within frontline-screen-level networks, and prompts ongoing negotiation about behavioral norms across the entire network. A discrepancy emerges between how intended scripts prescribe various roles for data-driven frontline bureaucrats, and the actual enactment of these roles in practice. This disconnect gives rise to contestation as frontline bureaucrats resist, adapt, and negotiate their position in relation to the scripts. Some resisted using the dashboard because they disagree with the managerial logic that equates client-driven work with data-driven work. Others did not experience this tension and embraced the new roles and functions. This divergence

created a split among these two groups of frontline bureaucrats, which manifested in two key themes: (1) competition between colleagues over performance metrics, and (2) the pursuit of professional autonomy. By making caseloads visible to all frontline bureaucrats, the dashboard increased competition among colleagues, while simultaneously driving them to seek greater autonomy over their work and independence from their colleagues. These diverging responses illustrate how, in the absence of clear institutional frameworks, frontline bureaucrats are left to navigate and negotiate emerging behavioral norms themselves, intensifying tensions around legitimacy, accountability, and the appropriate use of data-driven technologies in everyday practice.

Contestation is also relevant to discuss in relation to the political site of municipal government. Municipal council and committee meetings are sites where one would expect political contestation taking place over whether and how data-driven technologies in work and income should be used. However, these discussions barely took place and if they did, only in reaction to scandals. The absence of fundamental political discussions (see also Slemon, 2025) suggests that digitalization is not prioritized until it becomes a crisis. This chapter reveals how content chopping serves as a mechanism of depoliticization by fragmenting discussions into technical, ethical, and political aspects, and distributing responsibility across different actors, ultimately hindering meaningful political engagement with data-driven technologies in the domain of work and income.

Across these different domains, contestation of data-driven technologies is essential to ensure their responsible use and to prevent potential harm. However, as demonstrated across the chapters of this dissertation, current mechanisms for contestability remain inadequate. Ensuring meaningful contestability of data-driven technologies constitutes a major challenge for the future of democratic and responsible data-driven governance.

1.5 Central research question

Central research question: *How do data-driven technologies reconfigure welfare service provision and governance at the municipal level?*

This dissertation demonstrates that data-driven technologies reconfigure welfare service provision and governance through dynamic interactions across four key sites: the experiential site of benefit recipients, the professional site of street-level bureaucrats and their frontline-screen-level network, the political site of municipal government, and the site of institutional frameworks in the Dutch digital welfare state (see figure 1). These

sites are not isolated but interdependent, and the tensions and negotiations between them shape how digitalization unfolds in practice.

Within the site of benefit recipients, data-driven technologies reconfigure welfare service provision and its governance by creating a dissonance between the macro-level ideals of the participation society and micro-level realities of the Dutch welfare state. While the participation society emphasizes personal responsibility of citizens, the benefit recipients I interviewed for chapter two increasingly encounter an intrusive, controlling government and a lack of transparency about how their data is used, hindering their ability to take control of their lives and fulfill the personal responsibility expected of them. As chapters two and five demonstrate, data-driven governance complicates the ideal of responsible active citizenship by creating barriers to transparency and trust, ultimately challenging the core principles of the participation society.

Although previous research has highlighted both positive and negative citizen experiences with data-driven welfare provision (see for example Brown et al., 2019; Hetling et al., 2014; Van Zoonen, 2020), this dissertation reveals predominantly negative experiences among a specific target group: benefit recipients subject to the punitive logic of the Dutch Participation Act. This finding reflects not only the data-driven technologies themselves, but also the broader institutional and legal context in which they operate. The negative outcomes are shaped by a strict and enforcement-driven interpretation of welfare policy that amplifies the harms of datafication.

While these findings are not transferable to all public sector domains, they do underscore the importance of context. In other areas of the social domain, where policies are less punitive or data-driven technologies are used more supportively, they may well yield more positive outcomes. Exploring those possibilities lies beyond the scope of this dissertation but raises important questions for future research and policy development.

Secondly, within the site of street-level bureaucrats and their frontline-screen-level network, data-driven technologies reconfigure welfare service provision and governance because they reshape the frontline in the domain of work and income in various ways. They alter how frontline bureaucrats engage with citizens, their daily work practices, role identities, professional functions, and reconfigure the relational dynamics between frontline bureaucrats within the organization. Some frontline bureaucrats, particularly those with a caseload manager identity, appreciate how data-driven technologies like

the dashboard help them organize and prioritize their work more efficiently. Others, especially those who identify as client coaches, experience it as a burden because working with the dashboard conflicts with their relational, human-centered approach to service delivery. Chapters three and four further reveal how the dashboard redistributes knowledge unevenly, creating asymmetries among frontline bureaucrats that reinforce power imbalances, empowering those with technical expertise while disempowering others. Collectively, these changes shift attention away from the needs of benefit recipients and toward a measurable, controllable organization that seeks not only to govern citizen behavior but also to steer the actions of frontline bureaucrats.

Thirdly, within the political site of municipal government, data-driven technologies reconfigure welfare service governance because they reshape political-administrative relationships. Limited engagement from local politicians influences whether and how digitalization in the domain of work and income is politically discussed, while also revealing and altering power dynamics. Chapter five shows that in the absence of political interest and leadership, responsibility for digital transformation shifts to a small group of technically skilled civil servants, which raises concerns about democratic oversight and ethical reflection. In other cases, political interest intensifies around elections, as shown in chapter three, where frontline bureaucrats reported pressure to collect performance data for political gain. Chapter six shows that although civil servants expressed concerns about the fairness of data-driven technologies, these concerns are not always taken seriously or acted upon. These examples highlight how the use of data-driven technologies can deepen existing asymmetries in political-administrative power in various ways and pose potential risks for democratic accountability.

Fourthly, within the site of institutional frameworks in the Dutch digital welfare state, data-driven technologies reconfigure welfare service provision and governance. When legal, ethical, and quality procedures are lacking, underdeveloped, or inadequate to address new challenges posed by data-driven technologies, various actors will negotiate the normative boundaries of what constitutes responsible use of data-driven technologies. Across all different sites explored in this dissertation, sites of contestation emerge where tensions, resistance, and power dynamics unfold in response to the implementation of data-driven technologies.

Within the site of benefit recipients contestation arises from the legally vulnerable position of benefit recipients, shaped by the tension between the GDPR and the Dutch

Participation Act. To cope with the municipality's data hunger, recipients employ various coping tactics such as oversharing, resisting data requests, or seeking external support, which reflects their struggle to navigate a system that often lacks transparency and fairness.

The site of frontline street-level bureaucrats and their network shows how frontline bureaucrats question if data quality says anything about the quality of the service provision for benefit recipients but their worries are not taken fully into account because they are in a less powerful position than frontline bureaucrats who fully embrace and adopt data-driven work.

The political site of municipal government reveals political struggles over whether and how data-driven technologies in the domain of work and income are politically discussed, showing that data-driven technologies are often depoliticized until a scandal erupts.

The site of institutional frameworks in the Dutch digital welfare state revealed how victims of the childcare benefits scandal and the Top 400/600 tried to contest the decisions based on data-driven technologies. Yet the institutions responsible for implementing or overseeing these systems failed to adequately hear or respond to their concerns, highlighting a breakdown in accountability, legal protection, and democratic responsiveness.

To summarize, this dissertation shows that data-driven technologies fundamentally reconfigure both welfare service provision and governance at the municipal level. In terms of service provision, these technologies reshape frontline work, professional identities, professional relational dynamics, and citizen-state interactions. In terms of governance, they shift power dynamics among frontline bureaucrats and in political-administrative relations, diffuse political oversight, and expose gaps in legal and ethical frameworks. Together, these dynamics raise pressing questions about democratic control, fairness, and responsibility.

What becomes clear is that these changes are often unfolding quietly and without sufficient public and political awareness. The adoption of data-driven technologies in welfare provision has far-reaching consequences that go beyond what was initially anticipated and reflected upon. Yet, municipalities and politically responsible actors have not adequately adapted their practices or fulfilled their responsibilities in response to these developments. This lack of proactive engagement risks undermining the integrity

of welfare governance and calls for a more deliberate and ethically grounded approach to the data-driven governance of welfare.

2. Theoretical contribution

The main theoretical contribution of this dissertation lies in its holistic approach to understanding data-driven governance in the domain of work and income in the Dutch digital welfare state. Rather than isolating a single perspective, it reveals how individual experiences, institutional frameworks, and political-administrative dynamics intersect across multiple sites.

To conceptualize these dynamics, the dissertation operationalizes the digital sphere (Sharon, 2021; Walzer, 1983) and advances the concept of the 'logic of digitalization' (Schildt, 2022) as a way to understand how data-driven technologies embed and enact normative assumptions, and thereby reshape governance. It further advances the concept of the institutional void (Hajer, 2003) by examining whether existing legal, ethical and quality frameworks are able to address new challenges posed by data-driven technologies in welfare governance. By connecting lived experiences of citizens, institutional logics, and systemic design, this thesis shows the importance of examining how systemic design choices and institutional voids shape welfare governance in ways that are difficult to contest or even perceive.

A holistic approach required a combination of bodies of literature on street-level bureaucracy, data-driven governance, theories on power, and social dynamics of citizen-state interactions. While these literatures often operate in parallel, this study demonstrates their interdependence by showing how data-driven technologies mediate relationships, shape professional roles, and influence institutional structures across multiple levels of governance. This comprehensive view challenges fragmented analyses and emphasizes the need to study data-driven governance not through one lens, but as a complex messy field where some actors navigate more successfully than others.

First, this dissertation contributes to the intersection of street-level bureaucracy and data-driven governance literature by advancing our understanding of how data-driven technologies, such as dashboards, not only reshape the interconnected dimensions of daily practices, discretion, and role identities in street-level bureaucracy work (Giest and Raaphorst, 2018; Goto, 2021; Tummers and Rocco, 2015), but also the broader relational dynamics within frontline-screen-level networks.

By extending the analytical focus beyond the individual to what this dissertation terms frontline-screen-level-networks (Jarke and Macgilchrist, 2021; Jeffares, 2021), this thesis moves past the traditional management-workers dichotomy and top-down implementation approaches (Buttigieg et al., 2017; Yigitbasioglu and Velcu, 2012). This broader perspective enables a more comprehensive understanding of how multiple actors interact around the implementation of a dashboard across the entire frontline-screen-level network, highlighting the diversity of professional roles, perspectives, and relationships involved. These insights refine existing theories of how data-driven technologies alter organizational structures (Barley, 1986) by showing how the dashboard reconfigures professional roles and interactions.

Second, this dissertation deepens theoretical insights into the meaning and exertion of power in the digital welfare state (a.o. Eliasoph and Lichterman, 2018; Jarrahi et al., 2021; Kitchin and Dodge, 2014). It shows that power is not only exercised hierarchically but is continuously negotiated, contested, and reshaped through everyday practices, relational dynamics, and systemic processes. By examining the interconnected sites (see figure 1), including citizen-state interactions, frontline bureaucrat networks, and municipal governance structures, this dissertation uncovers how power operates across different sites of the digital welfare state.

At the citizen-state interface, benefit recipients navigate the data hunger of their municipality through coping tactics that renegotiate power dynamics. Contributing to theories of citizen-state interactions (a.o. Kitchin and Dodge, 2014; Mik-Meyer and Villadsen, 2013; Mik-Meyer, 2017; Oldenhof and Linthorst, 2022), it illustrates how data-driven technologies actively shape power and trust between recipients and frontline bureaucrats. The analysis reveals how recipients use coping tactics to negotiate the normative values embedded in data-driven technologies, such as efficiency over empathy, standardization over discretion, and a focus on measurable outcomes like labor market reintegration. This study moves beyond binary views of recipients as either passive victims or fully autonomous agents, but as actors in ongoing negotiations of power and meaning. It offers a more nuanced perspective on how power is exercised, resisted, and refined in data-driven contexts.

Within the frontline-screen-level network site, data-driven technologies provoke competitive dynamics and struggles for autonomy over their work. These interactions illustrate that power is not static, but relational and shaped by how actors position

themselves and one another within evolving data-driven and networked contexts. This contributes to literature on digital bureaucracy, professional discretion, and power dynamics (a.o. Brayne, 2020; Jarrahi et al., 2021), showing how data-driven technologies reconfigure workplace hierarchies and influence how frontline bureaucrats relate to one another and their work.

At the municipal government site, the dissertation adds a systemic layer to this understanding by showing how power and responsibility are fragmented and often diffused in municipal government. It shows that political discussions about data-driven technologies in municipal government are typically fragmented through mechanisms like content chopping, while limited digital literacy and lacking interest in data-driven technologies among local politicians contributes to a technocratic shift in power towards a technically skilled small group of civil servants. This contributes a nuanced and contextualized account to the existing literature (a.o. Eliasoph and Lichterman, 2018; Skoog and Svensson, 2023) of how power in the digital welfare state operates not just through visible decision-making, but also through subtle organizational and discursive processes that shape what is considered governable and debatable in the digital welfare state.

Bringing these bodies of literature together enables a more comprehensive understanding of how power is enacted and experienced in data-driven welfare governance. The insights show that power in the digital welfare state is not monolithic but multifaceted. While studies of citizen-state interactions often focus on micro-level encounters, and research on professional discretion and organizational power tends to emphasize meso- and macro-level dynamics, this dissertation show how these levels are interdependent. It demonstrates that data-driven technologies act as mediators across these sites, linking individual experiences to institutional logics and political structures. This integrative approach contributes a layered and relational conceptualization of power, advancing theoretical debates on data-driven governance by showing how data-driven technologies transforms not only practices and relationships but also the normative foundations of welfare provision.

The third strand of contribution lies in connecting the everyday lived experiences of citizens to the broader institutional and technological shifts in welfare governance. While much literature on citizen-state interactions focuses on micro-level encounters, this dissertation emphasizes how data-driven technologies shape those encounters and redefine the terms of engagement.

Through benefit recipients' stories, this dissertation shows how individuals navigate data-driven systems that increasingly prioritize quantifiable outcomes over personal context. These experiences illuminate the emotional, relational, and moral dimensions of interacting with a digital welfare state, highlighting not only frustration or alienation, but acts of quiet negotiation, meaning-making, and resilience. Importantly, this dissertation does not treat these experiences in isolation but connects them to institutional logics and systemic design. It makes a conceptual contribution by exposing the way in which citizen-state interactions unfold is embedded into data-driven technologies such as algorithms, dashboards, and other classification systems, and through lacking institutional frameworks. In doing so, this dissertation bridges abstract theoretical concepts with empirical aspects, contributing to a more grounded and operational understanding of how data-driven technologies reshape social interactions between citizens and the state, not only by altering procedures, but by changing what is considered acceptable, knowable, and governable in welfare contexts.

In conclusion, together these bodies of literature offer an integrated lens for understanding data-driven governance as a relational, multi-sited, and normatively charged transformation. Where research on street-level bureaucracy often ends at the frontline, and studies of power or governance remain abstract or top-down, this dissertation brings together these perspectives with insights from literature on data-driven governance and social dynamics of citizen-state interactions. By integrating these bodies of literature, it demonstrates how data-driven technologies do not merely automate welfare administration, but actively reshape the relational fabric of the digital welfare state. This dissertation challenges siloed perspectives and demonstrates the interdependence of micro-, meso-, and macro-level processes by showing how data-driven technologies mediate interactions between citizens and frontline bureaucrats, shape relational dynamics among frontline bureaucrats, redefine professional roles and responsibilities, and embed new forms of control and accountability within political administrative structures. In doing so, this study offers a theoretical synthesis that moves beyond fragmented analyses and provides a critical foundation for rethinking how we can conceptualize and govern data-driven welfare systems as multi-layered, relational, and power-laden domains.

3. Societal contribution

This dissertation contributes to three urgent societal debates surrounding the digital welfare state: (1) the erosion of core welfare principles, (2) the transformation of frontline public service delivery, and (3) democratic data-driven governance.

3.1 Erosion of core welfare principles

Across Europe, concerns are growing that digitalization may undermine, rather than strengthen, the foundations of the welfare state (Alston, 2019; Pederson, 2019). This dissertation empirically supports those concerns by showing how data-driven technologies can reinforce inequality, shift responsibility onto vulnerable citizens, and erode trust in government institutions. In particular, the use of automated categorization and decision-making tools disproportionately affects people in precarious socio-economic positions, thereby undermining core principles of the welfare state, such as the principles of equality of opportunity, equitable distribution of wealth, and public responsibility.

Data-driven technologies create a 'digital parallel universe' in which people are categorized in personas that disproportionately disadvantage people who are already in vulnerable positions, limiting their chances of re-entering the workforce. Instead of supporting citizens in need, these data-driven technologies often place administrative and emotional burdens on them. Respondents describe this emotional burden as a feeling of loss of privacy and control over their lives. Many express feelings of dependency on the municipality and frustration at being hindered in their personal development by their municipality. These experiences illustrates how data-driven technologies, even when designed to support these people, can unintentionally exacerbate feelings of disempowerment and exclusion.

This emotional burden aligns with what Heerings et al. (2022b) term the 'burden of support': the unintended negative consequences of support systems that, despite good intentions, can lead to feelings of failure, abandonment, and being misunderstood. This is particularly the case when too much responsibility is placed on individuals or when their support needs are overshadowed by a narrow focus on strengths and recovery. As a result, the welfare state therefore not only fails to ensure economic well-being of its citizens but also their social and psychological well-being.

The societal risk associated with the erosion of core welfare principles becomes most evident when data-driven governance lacks adequate legal, ethical, and data quality frameworks. Vulnerable citizens have suffered from heightened surveillance, discrimination, stigmatization, wrongful benefit termination, and debt due to flawed data-driven technologies. While some harms were acknowledged in the childcare benefits scandal, continued political support for predictive risk models, such as in the Top 400/600 case, raises concerns about the normalization of discriminatory practices in data-driven governance.

These findings align with ongoing policy discussions about the risk of exclusion and discrimination through data-driven technologies, as raised in the 'Agenda for Digital Fundamental Rights and Ethics 2022-2016' of The Association of Netherlands Municipalities (VNG, 2022) and echoed in the report 'Valuable digitalization' by the Rathenau Institute (Rathenau Instituut, 2018). They also resonate with European-level concerns, as expressed in by the European Commission's 'Digital Decade 2030' strategy, which calls for an inclusive and human-centered digital transformation (European Commission, n.d.).

This dissertation contributes to these debates by calling for more humane, inclusive approaches for data-driven governance and stronger institutional frameworks to ensure data-driven governance reinforces, rather than undermines, the core principles of the welfare state. Moving forward, it is imperative to re-center data-driven governance around human dignity, relational care, and democratic accountability. Only by doing so we can ensure that data-driven governance serves the public good rather than undermining it.

3.2 The transformation of frontline public service delivery

The digitalization of welfare has often been framed as a vehicle for innovation and efficiency (Janssen and Estevez, 2013; OECD, 2016). However, this dissertation shows that data-driven technologies not only reshape how services are delivered but also fundamentally alter the nature of frontline public service work. Data-driven technologies influence how frontline bureaucrats relate to benefit recipients, how they understand their roles, and how they collaborate with other frontline bureaucrats in their organizational network.

Rather than simply enhancing efficiency, data-driven technologies such as dashboards reconfigure the encounters between frontline bureaucrats and benefit recipients. Data-driven technologies affect the ability of frontline workers to bridge the gap between the governance context of their municipality and the lived experiences of benefit recipients. While intended to improve service delivery, these data-driven technologies can unintentionally undermine personal contact and human connection with benefit recipients, elements that are essential for building trust and understanding in welfare provision. This disconnect risks reducing complex human needs to data points, thereby weakening the relational foundation of social support.

Moreover, data-driven technologies like dashboards reshape professional roles and relationships within frontline-screen-level networks. By allowing equal access to

caseloads, the dashboard blurs boundaries between roles such as work coaches, team managers, and quality officers. While this can empower frontline bureaucrats to redefine their tasks beyond top-down assignments, it can also alter hierarchical dynamics and foster competition. These changes challenge established norms of collaboration and reshape how professional roles and responsibilities are negotiated in increasingly digitalized environments.

The insights of how data-driven technologies fundamentally alter the nature of frontline public service work contribute to national and European discussions about the future of work in a digitalized public sector. The Dutch Social and Economic Council (SER, 2025) stresses the importance of safeguarding *menswaardig werk* (dignified work) in the face of AI adoption, calling for a human-centered, value-driven approach that supports workers' autonomy, development, and inclusion. Similarly, the European Economic and Social Committee (2024) highlights that digitalization transforms how frontline public services are delivered, urging transparency, human oversight, and investment in training to ensure that AI enhances rather than erodes the quality and inclusiveness of public service work.

This dissertation contributes to these discussions by emphasizing the need for a more reflective and critical approach to data-driven transformation in the welfare state. Data-driven technologies are not neutral tools but active agents that shape how care and support are delivered, how frontline bureaucrats relate to benefit recipients, and how they interact with one another. Their design and implementation must align more closely with the human-centered realities of welfare workers and must be guided by the lived experiences of benefit recipients. To truly support inclusive and dignified public service delivery, data-driven technologies must strengthen personal contact between frontline bureaucrats and benefit recipients, uphold professional values and autonomy, and foster meaningful relationships among frontline bureaucrats. This means investing in human-centered data-driven technologies that enhance, rather than hollow out, the social foundations of frontline public service delivery.

3.3 Democratic data-driven governance

Finally, this dissertation contributes to debates about democratic legitimacy, political accountability, and ethical oversight in the data-driven governance. It shows that in some extreme cases, such as the Dutch childcare benefits scandal, bureaucrats who raise ethical

concerns about harmful algorithms, can face resistance or silencing, which reflects power asymmetries between bureaucrats and political leaders.

This dissertation underscores the need for proactive and inclusive political debate on the role of data-driven technologies in social welfare. Reacting only to scandals overlooks how stereotypes and systemic biases can become embedded in data-driven systems. Without transparent and coherent political deliberation, key democratic values, fundamental values such as justice, privacy, transparency, accountability, and citizen autonomy risk being sidelined.

These concerns are echoed in the Rathenau Institute's reports (2018; 2020) on the role of municipal councils in digital transformations, which call for political awareness, institutional checks, and citizen engagement. The Association of Netherlands Municipalities also stresses that responsible data-driven governance requires clear political ownership and ethical accountability (VNG, 2021). In their report, the VNG emphasizes the importance of continuous dialogue between politicians and civil servants, and the necessity of political control over data projects that needs to go beyond formal approval and include active oversight of their societal consequences. Strengthening this interaction and embedding ethical reflection in decision-making processes is essential to ensure democratic legitimacy in the digital welfare state.

This dissertation supports those calls by offering grounded empirical evidence of how data-driven governance without adequate oversight can compromise core democratic principles, highlighting the need for a more responsible, value-driven approach to the development and governance of data-driven tools in public services.

3.4 Digitalization as a social transformation

In sum, this dissertation shows that the digitalization of welfare is not merely a technical development. It is a fundamental social and societal transition. As a result, injustice has emerged without clear responsibility. What truly matters -human dignity, relationships, and democratic accountability- has too often been overlooked. Throughout this dissertation, it becomes clear how data-driven technologies can reinforce inequality, reduce meaningful human contact, reshape professional relationships, and blur democratic oversight. These findings contribute to national and European debates about fairness, inclusion, and accountability in the digital age. They urge policymakers, system designers, and politicians to critically reflect on the role of data-driven technologies in

public services and to work toward more humane, transparent, and accountable data practices that uphold the social and ethical foundations of the welfare state.

4. Methodological implications

Flexibility in research methods was crucial in adapting to the specific circumstances studied in each chapter, shaping both the strengths and limitations.

The methods sections reveal that the number of interviews conducted with unemployed benefit recipients is significantly lower than those with other respondents. Many benefit recipients didn't want to participate because they feared participating could harm their relationship with the municipality. They reported personal negative experiences with their municipality, and client councils warned me that there is a widespread mistrust towards municipalities caused by the childcare benefits scandal, SyRI, and other algorithmic systems. To address this challenge, I adopted a multi-method approach, including interviews with benefit recipients, and representatives and service providers that maintain close contact with them, and an elaborate document analysis of experience-based stories of benefit recipients, letters benefit recipients received from their municipality, public scandals, critical reports, news articles, and municipal government documents in chapters two, five and six. By triangulating diverse sources, this research provides a coherent picture of how benefit recipients experience data-driven governance.

One of the strengths of this dissertation is that it addresses a gap in the existing literature with regard to the impact of data-driven technologies in the domain of work and income. However, this focus may limit the transferability of the findings. The domain of work and income is shaped by the logic of the Participation Act which has been described as punitive and out of balance (Kampen et al., 2020). Therefore, the technologies used are not only designed to help benefit recipients but also to detect fraud. This combination of support and fraud may differ from other domains like social welfare or healthcare, where the emphasis is often on harm prevention or fostering equal opportunities. These distinct underlying logics of fraud detection affect how data is used and with what consequences for citizens. Still, the findings may be transferable to contexts that similarly combine support and control, such as the Top 400/600 algorithm used by the City of Amsterdam, discussed in chapter six.

The study described in chapters three and four was conducted entirely online due to COVID-19 restrictions (September and October 2021) in Rotterdam, the Dutch city

with the highest number of unemployed benefit recipients. The pandemic created a window of opportunity to implement the dashboard because of the increasing use of digital tools during the pandemic, and the increase in unemployment that resulted in higher caseloads and work pressure for frontline bureaucrats. While these exceptional conditions may initially seem to limit transferability to non-crisis contexts, it is important to note that by the time data collection took place, more than 1,5 years into the pandemic, online communication had become deeply embedded in the professional routines of the respondents. The use of online interviews and observations did not significantly hinder the depth of the data collected. In fact, remote interviews facilitated quick and easy access to a large number of frontline bureaucrats. As digital work environments have since then become a normalized and enduring aspect of professional life, the findings are not only relevant to crisis context but may also be cautiously considered transferable to similar settings where online tools and remote collaboration are standard practice (Mortelmans, 2020). For example, the finding that dashboards influence relational dynamics between frontline bureaucrats within frontline-screen-level networks is transferable to similar settings, depending on organizational structures and roles.

The studies in chapters three, four, and five were conducted in Rotterdam, a city known for its pragmatic, hands-on culture summed up by the slogan ‘no words, but deeds’. The city of Rotterdam also sees itself as a frontrunner in experimenting with data-driven technologies, embracing the slogan ‘no words, but data’ (Jillissen, 2020). Rotterdam’s history as a working-class city with a strong innovation focus may have shaped the specific development of the data-driven technologies studied, as well as how frontline bureaucrats and benefit recipients perceive the use of data-driven technologies. This may limit the direct transferability of the findings to cities with different cultures, laws, political structures, or priorities. However, the underlying mechanisms, such as how data-driven technologies influence role identities and relational dynamics within frontline networks and the reduction of face-to-face encounters, may apply to similar settings. These insights contribute to a broader understanding of the impact of data-driven technologies across local public service contexts.

5. Data-driven governance: A research agenda

One of the benefit recipients I interviewed, Gerard Sangers, a self-proclaimed experiential expert who has authored two hefty books about his experiences as a benefit recipient, frequently criticizes the publication of new reports, studies, and media coverage. As he

put it: ‘Why another report? Don’t we already know this? We’ve known this for years. Why does nothing change?’

While I share his frustration over the persistent lack of structural reform, I do see the added value in more reports, studies, and media attention over the years. Incremental change is only possible when these issues receive sustained attention, the underlying mechanisms that perpetuate systemic problems are thoroughly unpacked, and concrete entry points for improvement are clearly identified. Therefore, I propose the following research agenda to guide future inquiry into more constructive dynamics of data-driven welfare governance.

First, future research should develop a more holistic understanding of data-driven governance dynamics. While this dissertation offers a significant step in that direction by examining multiple sites, it also has its limitations. For example, it primarily captures how certain actors *perceive* their interactions with other actors, rather than the interactions themselves. Moreover, other key elements also remain underexplored, including the dual role of the media as a watchdog influencing policy responses and as a catalyst for public debate; the growing dependence of municipalities on big tech companies; and informal political negotiations that take place beyond formal decision-making arenas. These all offer critical entry points for future research that will contribute to a more holistic understanding of data-driven governance.

Second, to fully understand data-driven governance, future research must focus more on the lived experiences of citizens, capturing the full impact of data-driven governance on their lives, not just as benefit recipients, but as individuals with complex, social, emotional, and economic realities. This requires a sustained, long-term research agenda, and the development of a dedicated field of study called ‘Citizen-centered Data Sciences’, focused on citizens’ everyday encounters with data-driven governance. Similar to emerging fields such as Patient Sciences in healthcare governance, which center patient narratives (Akrouh et al., 2024; Berg et al., 2024; Van de Bovenkamp, 2024), the study of data-driven governance should prioritize citizens’ experiences with equal depth and rigor. This shift is essential to counterbalance the current dominance of system-centered research and realign governance with its foundational purpose: serving the public.

Third, future research should explore further how data-driven technologies blur boundaries between care and control, particularly in contexts where welfare and law enforcement

intersect. As seen in chapter six in the Top 400/600 case, predictive algorithms intended to support youth also enabled surveillance and criminalization. Similarly, Virginia Eubanks (2018) shows how data from the Homeless Management Information System intended to match homeless people with appropriate housing was shared with law enforcement to criminalize them. Personal data given to receive help was used to track them, issue fines for survival behavior such as sleeping in a public park, and generate arrest warrants when they were unable to pay fines. These cases show how data-driven tools designed for care became means of surveillance and punishment. Understanding the mechanisms and underlying logics that blur the boundaries between care and control is essential for assessing broader implications and for preventing harmful outcomes.

Chapter two through six show that while data-driven governance is contested across all studied sites, such contestation rarely leads to change or improvement. Future research should investigate what makes contestation of data-driven governance successful, and how public institutions such as municipalities receive, respond to, or even actively seek out dissent. Inspiration can be drawn from the model of agonistic pluralism (Mouffe, 1999) in dealing with conflicting views and values in our pluralistic society. The core idea of agonistic pluralism is that in diverse societies, people will always have conflicting views and values, and that a healthy democracy should not suppress these differences but encourage ongoing contestation, allowing different groups to challenge power, express dissent, and push for change, while remaining committed to shared democratic principles. An important aspect is that opponents should be recognized as legitimate participants in the democratic process rather than enemies that should be defeated or excluded. Other lines of research that can be deepened are how civil servants can engage in reflective contestation, described in the literature as loyal contradiction (Bovens, 1996; Twijnstra and de Graaf, 2013; Van der Meer and Dijkstra, 2021), collective moral craftmanship (Heres, 2023), and political social work (Berg, 2025; Bhattacharya, 2025; Lane and Pritzker, 2017; Young, 2024). Understanding the factors that enable or hinder constructive contestation is essential for strengthening responsible data-driven governance.

A last promising direction for future research is to explore how data-driven technologies, while potentially amplifying bias and discrimination, can also be used to expose systemic discrimination. As data-driven systems scale decision-making processes, they can make patterns of systemic discrimination more visible and traceable through data trails, statistical patterns, and system outputs that can be audited, analyzed, and

contested, offering new tools for resistance and reform. Examples from data activism illustrate this potential, with activists, researchers, and journalists turning the very data-driven technologies that amplify discrimination into mechanisms for accountability. For example, ProPublica's investigation of the COMPAS algorithm used in the U.S. criminal justice system to predict recidivism, revealed that the algorithm disproportionately labeled Black defendants as high-risk compared to white defendants. The investigation used statistical analysis of algorithmic outcomes to make invisible biases visible and contestable (Angwin et al., 2016). In the U.S., researcher and activist Joy Buolamwini exposed how commercial facial recognition systems from IBM, Microsoft, and Amazon performed much worse on darker-skinned and female faces than on lighter-skinned male faces, forcing these companies to publicly acknowledge and fix their biases (Hardesty, 2018). In the Netherlands, activists, lawyers, and researchers challenged the SyRI welfare fraud detection algorithm that disproportionately targeted people in poor and immigrant neighborhoods, which was eventually banned by court ruling based on privacy and discrimination concerns (Algorithm Watch, 2020; Olsthoorn, 2016). Future research should investigate more thoroughly how data-driven systems might paradoxically help expose structural inequalities by making their mechanisms and effects more transparent. This line of inquiry could contribute to developing data-driven technologies and governance frameworks that not only mitigate harm but also actively support accountability, fairness, and structural reform.

6. Recommendations for data-driven governance

When we look ahead 10 to 15 years and consider the future of data-driven governance through the lens of this research, the outlook is troubling when no changes are made to how we use data. The experiences of Mrs. Ceylan and other citizens are not isolated incidents but early signals of broader societal impacts, especially given the accelerating adoption of advanced technologies such as AI. Understanding the dynamics of data-driven governance is essential to steer clear of any further data-driven disasters, because just improving the technologies will not solve the foundational problems in data-driven governance.

A core challenge is the absence of a level-playing field in the realm of data-driven governance. Data-driven governance often fails to integrate administrative insights and bureaucratic expertise of bureaucrats at various levels, or the lived experiences and preferences of citizens by default (Van Zoonen, 2019). For most frontline bureaucrats,

politicians, and citizens, data-driven technologies remain largely invisible and incontestable. To restore the level-playing field, contestability needs to be restored as a core principle of data-driven governance. The encouraging news is that we, collectively, have the opportunity to reimagine and reshape a digital welfare state that is just, inclusive, and free from harm for all citizens.

My proposed overarching strategy to reshape the future digital welfare state is to restore contestability by ensuring that various actors in the governance context, including but not limited to benefit recipients, frontline bureaucrats, policymakers, local political actors, are meaningfully involved, heard, and equipped to influence data-driven governance, while simultaneously re-centering the logic of person-centered public service delivery. In the following section, I offer concrete recommendations to support this strategy.

My first recommendation is to restore personal control of citizens. If the government expects individuals to take personal responsibility within the participation society, it must ensure that citizens are truly empowered to do so (see also WRR, 2023). This requires active facilitation by politicians, policy makers, and civil servants. A crucial first step is granting individuals greater control over their own data. This should go well beyond merely providing access, as currently happens in healthcare through patient records. Citizens should have a personal digital vault for their data and be able to give, or withdraw explicit consent for its use, including specifying how their data may be used, which types of (meta) analyses are permitted, and how data-driven outcomes may or may not influence decisions about them. However, this individual control cannot be absolute. In some exceptional cases, such as crisis situations, public safety concerns, or in times of war, governments may justifiably require access to specific data in the public interest. Therefore, individual data control must always be embedded within clearly defined institutional frameworks that transparently outline when, why, and under what conditions such exceptions apply. These frameworks must be grounded in democratic principles such as proportionality, necessity, non-discrimination, and accountability. In this way, individual autonomy is strengthened, protected, and meaningfully supported by institutional safeguards, without disregarding the collective interest and legal realities of public governance. This approach avoids placing the full burden of responsibility on citizens and instead promotes a balanced model of shared responsibility between individuals and the state.

This is important because at present, most people lack sufficient digital literacy to exercise meaningful control over their data. As a result, they are not adequately equipped

to assume the level of personal responsibility expected of them in a participation society. This poses a fundamental challenge, not only for education but also for democratic citizenship itself. In a digital welfare state, where the boundaries between public service and surveillance are increasingly blurred, digital literacy is not a luxury but a necessity. It is essential for individuals to understand how to protect themselves, not only from commercial actors like Big Tech, but also from the potential overreach of government institutions.

While some public institutions, such as libraries and municipalities, offer digital literacy or cybersecurity courses, mainstream education rarely prepares citizens to critically navigate the complex power dynamics of the digital welfare state. Education must go beyond technical skills and teach citizens how to become informed, autonomous participants in the datafied society. This includes knowledge of one's rights and obligations regarding personal data, and the ability to contest negative consequences of data-driven governance constructively and effectively.

Importantly, this is not only relevant at the point of contact with public services but reflects a broader societal shift in the nature of citizenship. As data-driven technologies increasingly shape access to work, welfare, and participation, digital literacy becomes essential for inclusion and equality. It is a lifelong task that extends across generations and settings, from schools and workplaces to civic institutions (see also SER, 2025). As the workforce ages and career spans lengthen, ensuring digital competence among older adults is crucial: not only for maintaining employability but also for civic agency. Thus, the promotion of digital literacy must be understood as part of a broader societal transition, toward a digitally capable, critically aware, and rights-conscious citizenry.

To restore personal control of citizens, professional proximity of frontline bureaucrats is essential. Supporting citizens in regaining control over their lives requires that frontline bureaucrats maintain a close, empathetic engagement with citizens, understanding their lived experiences not merely as benefit recipients but as whole persons. Rather than enrolling them in standardized re-integration trajectories or relying solely on extensive data collection that leads to assumptions about their needs or what is best for them, they must engage in genuine, person-centered practices. Promising examples of such approaches include street-doctor Michelle van Tongerloo's emphasis on the fundamental question 'How can I help you?', and researcher Marjolijn Heerings' participatory qualitative method called 'Ask us!', which seeks to improve care relationships in long-

term healthcare through direct engagement with clients (Heerings et al., 2022a; Stichting Lekker Geven, 2022). Both illustrate that instead of passively accepting the perceived status quo, frontline bureaucrats can actively return to what is truly needed and desirable to strengthen citizens' personal control. I strongly recommend revitalizing the ethos of professional proximity among frontline bureaucrats and grounding their practices in methods that are responsive to the actual needs of citizens.

Another key challenge for future data-driven governance lies in equipping frontline bureaucrats and other civil servants with the critical skills needed to assess, question, and contest data-driven technologies. One-off training programs for this are not sufficient. These capabilities must be deeply embedded in their daily work routines through structured reflection, peer learning, and regular intervision. Professional development should focus on re-centering the logic of public service delivery as the guiding principle, enabling frontline bureaucrats to make holistic assessments, beyond the narrow responsibilities of their direct tasks. This includes assessing whether data-driven technologies genuinely improve services and whether the data provides an accurate representation of reality or merely constructs a disconnected digital parallel universe. In line with one of the main central recommendations of the SER, this dissertation underscores the need to foster a continuous life-long learning culture around AI and other data-driven technologies (SER, 2025).

Continuous professional development is therefore not just a technical necessity, but a democratic imperative. The impact on digitalization on political-administrative power relations, as discussed in this dissertation, shows that values such as integrity, justice, and equality are affected by how technologies are implemented and governed. The assumption that data-driven services are neutral must be challenged. This calls for stronger political leadership, ethical reflection, and the integration of normative questions into both policy design and professional training.

A holistic approach across the entire governance context is essential for responsible data-driven governance. While conducting algorithmic checks at the outset and audits at the end are important, they are insufficient on their own. The use of data-driven technologies demands an ongoing moral dialogue and a case-by-case, context-sensitive assessment of their application. Data-driven governance is not a linear process with a clear beginning and end, rather, it is continuous and requires constant reflection, what may also be termed sustained contestability.

This dissertation has shown that, in practice, responses to contestation often involve efforts to downplay or erase critical perspectives, rather than meaningfully engage with them. A recent example of a more constructive approach can be found in the City of Amsterdam, where a collaborative process with citizens led to the development of the 'Amsterdam Vision on AI' (Gemeente Amsterdam, 2024). This initiative aims to guide the ethical, trustworthy, and human-centered use of AI technologies. While these kinds of examples represent a step in the right direction, it should be regarded as only an initial effort. Truly responsible data-driven governance must be an ongoing, iterative process, embedded in institutional culture and practice.

7. Final thoughts

This dissertation examined how data-driven technologies reconfigure welfare service provision and governance. While considerable attention is devoted to the unresolved challenges data-driven technologies present, data-driven governance is often treated as a generally accepted practice. As a result, the more fundamental question of whether data-driven governance is necessary and desirable has faded into the background. It is time to bring that question back to the center of the public and academic debate. As this research has shown, data-driven systems can obscure accountability, amplify inequality, and even the most sophisticated technologies cannot replace the need for human judgment, empathy, and discretion (yet). As Lipsky (2010, p. 161) put it: 'The nature of service provision calls for human judgement that cannot be programmed and for which machines cannot substitute' (2010, p. 161). The challenge ahead with data-driven governance is not merely technical, but political, social, and ethical. If the digital welfare state is to serve all citizens fairly, it must be grounded in democratic values, informed by lived experience, and subject to meaningful contestation. This requires reimagining data-driven governance not as an end in itself, but as a means to genuinely support welfare service and citizens.

References

Abbott, A. (1998). Professionalism and the future of librarianship. *Library Trends, 46*(3), 430–443.

Abelson, R. P. (1981). Psychological status of the script concept. *American Psychologist*, *36*(7), 715-729. https://doi.org/10.1037/0003-066x.36.7.715

Adams, T. L. (2020). Professional employees and professional managers: conflicting logics, hybridity, and restratification. *Journal of Professions and Organization*, *7*(1), 101–115. https://doi.org/10.1093/jpo/joaa005

Akrouh, N., Wehrens, R., Scholtes, E., and Van De Bovenkamp, H. (2024). Beyond the Queue: exploring waiting practices in the stories of patients with breast cancer. *Health Expectations*, *27*(6). https://doi.org/10.1111/hex.70086

Algorithm Watch (2020, April 6). *How Dutch activists got an invasive fraud detection algorithm banned.* Algorithm Watch https://algorithmwatch.org/en/syri-netherlands-algorithm/

Alston, P. (2019) *Digital Welfare States and Human Rights. Report of the Special Rapporteur on Extreme Poverty and Human Rights.* United Nations. https://undocs.org/A/74/493

Amaro, S. (2021). *Dutch government resigns after childcare benefits scandal.* CNBC. https://www.cnbc.com/2021/01/15/dutch-government-resigns-after-childcare-benefits-scandal-.html

Amnesty International (2021). *Xenophobic machines. Discrimination through unregulated algorithms in the Dutch childcare benefits scandal*. Amnesty International Ltd. https://www.amnesty.nl/content/uploads/2021/10/20211014_FINAL_Xenophobic-Machines.pdf?x42580

Amnesty International (2024) *Denmark: Coded Injustice. Surveillance and discrimination in Denmark's automated welfare state.* Amnesty International. https://www.amnesty.org/en/documents/eur18/8709/2024/en/

Angwin, J., Larson, J., Mattu, S., and Kirchner, L. (2016, May 23) *Machine Bias. There's software used across the country to predict future criminals. And it's biased against blacks.* ProPublica. https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing

Autoriteitpersoonsgegevens.nl. (n.d.). *Sociaal domein.* https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/overheid/sociaal-domein

Bamford, D. R., and Forrester, P. L. (2003). Managing planned and emergent change within an operations management environment. *International Journal of Operations & Production Management*, *23*(5), 546–564. https://doi.org/10.1108/01443570310471857

Barbi, G. N. (2018). The Depoliticization of the Political: An Arendtian Account of Expertise in Politics. *Raisons Politiques*, *2*, 75-96. https://doi.org/10.3917/rai.070.0075

Barley S. R. (1986). Technology as an occasion for structuring: evidence from observations of CT scanners and the social order of radiology departments. *Administrative science quarterly*, *31*(1), 78–108.

Barley, S. R., and Tolbert, P. S. (1997). Institutionalization and Structuration: Studying the Links between Action and Institution. *Organization Studies*, *18*(1), 93-117. https://doi.org/10.1177/017084069701800106 (Original work published 1997)

Barrett, M., Oborn, E., Orlikowski, W. J., and Yates, J. (2012). Reconfiguring Boundary Relations: Robotic Innovations in Pharmacy Work. *Organization Science*, *23*(5), 1448-1466. https://doi.org/10.1287/orsc.1100.0639

Bayamlıoğlu, E. (2017). Depoliticization in the digital infosphere: when communication runs counter-democratic. In *Digital Democracy in a Globalized World* (pp. 100-120). Cheltenham, UK: Edward Elgar Publishing. https://doi.org/10.4337/9781785363962.00012

Beer, D. (2016) *Metric Power.* Basingstoke: Palgrave Macmillan. https://doi.org/10.1057/978-1-137-55649-3

Bekkers, H. (2018, 27 June) *Gemeente: rijk moet tekorten sociaal domein bijpassen.* Binnenlands Bestuur. https://www.binnenlandsbestuur.nl/financien/gemeenten-compensatie-voor-tekort-sociaal-domein

Belhaj, B. (2020) *Raadsleden. Maak beleid over digitalisering.* iBestuur. https://ibestuur.nl/artikel/raadsleden-maak-beleid-over-digitalisering/

Ben, E.R. and Schuppan, T. (2014) E-Government innovations and work transformations: Implications of the introduction of electronic tools in public government organizations. *International Journal of Electronic Government Research*, 10 (1), 1-17. https://doi.org/10.4018/ijegr.2014010101

Benfeldt, O., Persson, J. S., and Madsen, S. (2018). Why governing data is difficult: Findings from Danish Local Government. In *Smart Working, Living and Organising: IFIP WG 8.6 International Conference on Transfer and Diffusion of IT, TDIT 2018, Portsmouth, UK, June 25, 2018, Proceedings* (pp. 15-29). Springer. https://doi.org/10.1007/978-3-030-04315-5_2

Berg, J. (2025). *Position paper: Sociaal werk als reflectieve beleidspraktijk in de veranderende verzorgingsstaat.*

Berg, J., L. Oldenhof, K. Putters, J. van Wijngaarden (2024). Which client is worthy of using discretion? Analysing storytelling practices of street-level bureaucrats in interdepartmental settings. *Journal of Social Policy*. 1-20. https://doi.org/10.1017/s0047279424000199

Berger, P. L., and Luckmann, T. (1967) *The Social Construction of Reality*. London: Penguin.

Bévort, F., and Suddaby, R. (2016). Scripting professional identities: how individuals make sense of contradictory institutional logics. *Journal of Professions and Organization*, *3*(1), 17–38. https://doi.org/10.1093/jpo/jov007

Bhattacharya, R. (2025). *Political Social Work Principles*. India: Educohack Press.

Biddle, B. J. (1986). Recent Developments in Role Theory. *Annual Review of Sociology*, *12*(1), 67-92. https://doi.org/10.1146/annurev.so.12.080186.000435

Binnenlands Bestuur (2022). *Halsema houdt vast aan aanpak Top 400.* Binnenlands Bestuur. Https://www.binnenlandsbestuur.nl/sociaal/halsema-houdt-vast-aan-aanpak-jongeren-op-weg-naar-de-misdaad

Bjerregaard, T., and Klitmoller, A. (2010). Frontline Problem Solvers: The Structuring of Frontline Service Work. *International Journal of Public Administration*, *33*(8–9), 421–430. https://doi.org/10.1080/01900692.2010.483351

Blauw, S. (2020, February 5th) *Overal ter wereld misbruiken staten persoonsgegevens. In Nederland steekt de rechter daar nu een stokje voor.* De Correspondent. https://decorrespondent.nl/10943/overal-ter-wereld-misbruiken-staten-persoonsgegevens-in-nederland-steekt-de-rechter-daar-nu-een-stokje-voor/159250349302-00edad60

Boonstra, W. (2024, January 18th) *Er is geen wethoudersschool.* Binnenlands Bestuur. https://www.binnenlandsbestuur.nl/bestuur-en-organisatie/zet-een-normneer-voor-reflectie-en-gezondheid?tid=TIDP5323458X21867A1F950B4CB588239B373A9C295FYI5&utm_campaign=BB_NB_Wekelijks&utm_medium=email&utm_source=binnenlandsbestuur

Bossen, C., Chen, Y., and Pine, K. H. (2019). The emergence of new data work occupations in healthcare: The case of medical scribes. *International journal of medical informatics*, *123*, 76-83. https://doi.org/10.1016/j.ijmedinf.2019.01.001

Bovens, M. (1996). Conflicting loyalties: ethical pluralism in administrative life. *International Journal of Public Administration*, *19*(11–12), 2195–2211. https://doi-org.vu-nl.idm.oclc.org/10.1080/01900699608525183

Bovens, M. and Zouridis, S. (2002). From Street-Level to System-Level Bureaucracies: How Information and Communication Technology is Transforming Administrative Discretion and Constitutional Control. *Public Administration Review*, 62(2), 174–184. https://doi.org/10.1111/0033-3352.00168

Boyd, D., and Crawford, K. (2011). Six Provocations for Big Data. A Decade in Internet Time, Symposium on the Dynamics of the Internet and Society, September 2011. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1926431

Brayne, S. (2020) *Predict and surveil: Data, discretion, and the future of policing*. New York: Oxford University Press.

Breit, C., Egeland, C. and Løberg, I.B. (2019) Cyborg bureaucracy: Frontline work in digitalized labor and welfare services. In Pederson, JS and Wilkinson, A (eds), *Big Data. Promise, Application and Pitfalls*, Vol. 2019. Northampton, MA: Edward Elgar Publishing, pp. 149–169.

Breit, E. and Salomon, R. (2014). Making the Technological Transition – Citizens' Encounters with Digital Pension Services. *Social Policy & Administration*, 49(3), 299–315. https://doi.org/10.1111/spol.12093.

Breit, E., Egeland, C., Løberg, I. B., and Røhnebæk, M. T. (2021). Digital coping: How frontline workers cope with digital service encounters. *Social Policy & Administration*, *55*(5), 833-847. https://doi.org/10.1111/spol.12664

Britannica, T. Editors of Encyclopaedia (2023, November 3). Welfare state. *Encyclopedia Britannica*. https://www.britannica.com/money/topic/welfare-state

Brown, A., Chouldechova, A., Putnam-Hornstein, E., Tobin, A. and Vaithianathan, R. (2019, May). Toward algorithmic accountability in public services: A qualitative study of affected community perspectives on algorithmic decision-making in child welfare services. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (CHI 2019), May 4–9, 2019, Glasgow, Scotland UK. ACM, New York, NY, USA, 12 pages. https://doi.org/10.1145/3290605.3300271

Brown, M. (2020). Seeing students at scale: How faculty in large lecture courses act upon learning analytics dashboard data. *Teaching in Higher Education*, 25(4), 384-400. https://doi.org/10.1080/13562517.2019.1698540

Bucher, E., Fieseler, C., and Lutz, C. (2019) Mattering in digital labor. *Journal of Managerial Psychology* 34(4): 307–324. https://doi.org/10.1108/JMP-06-2018-0265

Buffat, A. (2015) Street-Level Bureaucracy and E-Government. *Public Management Review*. Vol. 17(1): 149-161. https://doi.org/10.1080/14719037.2013.771699

Burchell, G., Gordon, C. and Miller, P. (1991). *The Foucault effect: Studies in governmentality*. University of Chicago Press.

Busch, P.A. and Henriksen, H.Z. (2018) Digital discretion: A systematic literature review of ICT and street-level discretion. *Information Polity* 23: 3-28. https://doi.org/10.3233/ip-170050

Busch, P.A. (2017) The role of contextual factors in the influence of ICT on street-level discretion. In *50th Hawaii International Conference on System Sciences (HICSS)*, Big Island (HI) 2017, pp. 2963–2972.

Buttigieg, S. C., Pace, A., and Rathert, C. (2017). Hospital performance dashboards: a literature review. *Journal of Health Organization and Management, 31*(3), 385-406. https://doi.org/10.1108/jhom-04-2017-0088

By, R. T. (2005). Organisational change management: A critical review. *Journal of Change Management, 5*(4), 369–380. https://doi.org/10.1080/14697010500359250

Callon, M. and Latour, B. (1981). Unscrewing the Big Leviathan: how actors macrostructure reality and how sociologists help them to do so. In Knorr Cetina, K. and Cicourel, A. V. (eds.), *Advances in social theory and methodology. Toward an integration of micro and macro-sociologies*. Routledge & Kegan Paul, pp. 277–303.

Calzon, B. (2021, August 20th) An introduction to data dashboards: meaning, definition & industry examples. The Datapine Blog. https://web.archive.org/web/20220926193222/https://www.datapine.com/blog/data-dashboards-definition-examples-templates/

Casey, S.J. (2021). Towards digital dole parole: A review of digital self-service initiatives in Australian employment services. *Australian Journal of Social Issues*. https://doi.org/10.1002/ajs4.156

Centre for BOLD Cities (2023) *Dit is de echte slimme stad.* Whitepaper. https://doi.org/10.59490/mg.89

Chambers, S. (2023). Deliberative democracy and the digital public sphere: Asymmetrical fragmentation as a political not a technological problem. *Constellations*, *30*(1), 61-68. https://doi.org/10.1111/1467-8675.12662

Charleer, S., Gutiérrez, F. and Verbert, K. (2019). Supporting job mediator and job seeker through an actionable dashboard. *Proceedings of the 24th International Conference on Intelligent User Interfaces*. https://doi.org/10.1145/3301275.3302312.

Christin, A. (2017). Algorithms in practice: Comparing web journalism and criminal justice. *Big Data & Society*, *4*(2). https://doi.org/10.1177/2053951717718855 (Original work published 2017)

Clarke, A., and Margetts, H. (2014). Governments and Citizens Getting to Know Each Other? Open, Closed, and Big Data in Public Management Reform. *Policy &Amp; Internet, 6*(4), 393-417. https://doi.org/10.1002/1944-2866.poi377

Cobham, A. (2020) *The Uncounted*. Polity Press, Cambridge.

Coene, J., Ghys, T., Hubeau, B., Marchal, S., Remmen, R., Vandenhole, W., and Van Haarlen, A. [red.] (2020) *Armoede en Sociale Uitsluiting. Jaarboek 2020*. Universitaire Stichting voor Armoedebestrijding (USAB). Acco Leuven/Den Haag. https://medialibrary.uantwerpen.be/files/99421/2005b248-42b0-4934-96de-e5b6bbc19ed8.pdf

Controlaltdelete (n.d.). *Top 400 aanpak is discriminerend.* Controlaltdelete. Https://controlealtdelete.nl/articles/top400-aanpak-is-discriminerend#gsc.tab=0

Covaleski, M. A., Dirsmith, M. W., Heian, J. B., and Samuel, S. (1998). The Calculated and the Avowed: Techniques of Discipline and Struggles Over Identity in Big Six Public Accounting Firms. *Administrative Science Quarterly*, *43*(2), 293. https://doi.org/10.2307/2393854

Crawford, K. (2013, April 1). *The hidden biases in big data*. Harvard Business Review. http://blogs.hbr.org/2013/04/the-hidden-biases-in-big-data/

Danaher, J., Hogan, M. J., Noone, C., Kennedy, R., Behan, A., De Paor, A., Felzmann, H., Haklay, M., Khoo, S.-M., Morison, J., Murphy, M. H., O'Brolchain, N., Schafer, B., and Shankar, K. (2017). Algorithmic governance: Developing a research agenda through the power of collective intelligence. *Big Data & Society*, *4*(2), 205395171772655. https://doi.org/10.1177/2053951717726554

De Koning, A. (2016). Tracing anxious politics in Amsterdam. *Patterns of Prejudice*, 50 (2), 109-128.

De Koning, A. (2017). 'Handled with care': Diffuse policing and the production of inequality in Amsterdam. *Ethnography*, *18*(4), 535-555. https://doi.org/10.1177/1466138117696107 (Original work published 2017)

De Swart, S. (2021) *Armoede krijg je gratis*. Stella de Swart. ISBN: 9789090345376

De Witte, J., Declercq, A., and Hermans, K. (2016). Street-Level Strategies of Child Welfare Social Workers in Flanders: The Use of Electronic Client Records in Practice. *British Journal of Social Work*, *46*(5), 1249-1265. https://doi.org/10.1093/bjsw/bcv076

Demetis, D., and Lee, A. S. (2018). When humans using the IT artifact becomes IT using the human artifact. *Journal of the Association for Information Systems*, *19*(10), 5. 929-952. https://doi.org/10.17705/1jais.00514

Dencik, L., Hintz, A., Redden, J. and Warne, H. (2018). *Data scores as governance: investigating uses of citizen scoring in public services. Project report*. Data Justice Lab: Cardiff University.

Doove, A. and Otten, D. (2018, November). *Verkennend onderzoek naar het gebruik van algoritmen binnen overheidsorganisaties*. CBS. https://www.cbs.nl/nl-nl/maatwerk/2018/48/gebruik-van-algoritmen-door-overheidsorganisaties

Dunleavy, P., Margetts, H., Bastow, S., and Tinkler, J. (2006) New Public Management Is Dead—Long Live Digital-Era Governance, *Journal of Public Administration Research and Theory*, Volume 16, Issue 3, July 2006, Pages 467–494, https://doi.org/10.1093/jopart/mui057

Eerste Kamer der Staten-Generaal (2022a). *Gelijk recht doen*. *Hoofdrapport*. [report] https://www.eerstekamer.nl/overig/20220614/hoofdrapport_gelijk_recht_doen_een/f=/vltshvc8s7zo_opgemaakt.pdf

Eerste Kamer der Staten-Generaal (2022b). *Gelijk recht doen. Deelrapport Politie*. [report] https://www.eerstekamer.nl/overig/20220614/gelijk_recht_doen_deelrapport_4/f=/vltshvitmawd_opgemaakt.pdf

Eliasoph, N., and Lichterman, P. (2018). *Making things political. In Routledge Handbook of Cultural Sociology* (pp. 469-477). Routledge.

Elyounes, D. (2021). "Computer says no!": The impact of automation on the discretionary power of public officers. *Vanderbilt Journal of Entertainment and Technology Law*, 23(3), 451.

Engbersen, R. (2021, October 5th) *Gebrek aan continuïteit in de uitvoering van de bijstand is een groot probleem.* Sociale vraagstukken. https://www.socialevraagstukken.nl/interview/paul-van-der-aa-en-rik-van-berkel-het-zou-handig-zijn-als-klantmanagers-zicht-zouden-hebben-op-kennis-vanuit-wetenschappelijk-onderzoek/

Etherington, D., and Jones, M. (2018). Re-stating the post-political: Depoliticization, social inequalities, and city-region growth. *Environment and Planning A: Economy and Space*, *50*(1), 51-72. https://doi.org/10.1177/0308518X17738536 (Original work published 2018)

Eubanks, V. (2018). *Automating inequality. How high-tech tools profile, police and punish the poor.* St. Martin's Press.

Eurofound (2020) *Impact of digitalization on social services*. Luxembourg: Publications Office of the European Union.

European Commission (n.d.) *Europe's Digital Decade: digital targets for 2030.* https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

European Economic and Social Committee (2024) *AI for public services, organization of work, more equal and inclusive societies*. https://www.eesc.europa.eu/en/news-media/press-summaries/ai-public-services-organisation-work-more-equal-and-inclusive-societies?utm_source=chatgpt.com

Evans, L. and Kitchin, R. (2018) A smart place to work? Big data systems, labour, control, and modern retail stores. *New Technology, Work and Employment 33*(1): 44-57. https://doi.org/10.1111/ntwe.12107

Evers, G. (2017). *Datagedreven Sturing in gemeenten*. Den Haag: A&O fonds

Evetts, J. (2011). A new professionalism? Challenges and opportunities. *Current sociology*, *59*(4), 406-422. https://doi.org/10.1177/0011392111402585 (Original work published 2011)

Fair Trials (2021). *Automating injustice: The use of artificial intelligence and automated decision-making systems in criminal justice in Europe* [report]. https://www.fairtrials.org/app/uploads/2021/11/Automating_Injustice.pdf

Falanga, R. (2018) Frontline bureaucrat. In: Farazmand A. (eds) *Global Encyclopedia of Public Administration, Public Policy, and Governance*. Springer, Cham. Https://doi-org.eur.idm.oclc.org/10.1007/978-3-319-31816-5_664-1

Faulconbridge, J. R., and Muzio, D. (2012) Professions in a Globalizing World: Towards a Transnational Sociology of the Professions, *International Sociology*, 27/1: 136–52.

Fenger, M. and Homburg, V. (2021) Dilemma's bij gegevensuitwisseling in de frontlinie van de uitvoering van beleid in het sociaal domein. Erasmus University Rotterdam. https://www.instituutgak.nl/onderzoek/kennisbank/dilemmas-bij-gegevensuitwisseling-in-de-frontlinie-van-de-uitvoering-van-beleid-in-het-sociaal-domein/

Few, S. (2004) *Dashboard confusion.* Perceptual Edge. https://www.perceptualedge.com/articles/ie/dashboard_confusion.pdf

Flatøy, C. A. (2023). I am not an employee, am I then a professional? Work arrangement, professional identification, and the mediating role of the intra-professional network. *Journal of Professions and Organization, 10*(2), 137-150.

Flick, U. (2018) *An introduction to qualitative research*. 6th Edition. Sage.

Flinders, M., and J. Buller (2006) Depoliticization: Principles, tactics, and tools. *British Politics, 1*(3): 293–318. https://doi.org/10.1057/palgrave.bp.4200016

Flügge, A.A., Hildebrandt, T., and Holten Møller, N. (2021) Street-level Algorithms and AI in Bureaucratic Decision-Making: A Caseworker Perspective. Proceedings of the ACM on Human-Computer interaction, Volume 5, Issue CSCW1, No: 40, pp. 1-23.

Frederik, J. (2020). *Duizenden gedupeerden maar geen daders: Zo ontstond de tragedie achter de toeslagenaffaire.* De Correspondent. Https://decorrespondent.nl/10628/tienduizenden-gedupeerden-maar-geen-daders-zo-ontstond-de-tragedie-achter-de-toeslagenaffaire/3623624719792-130d655d

Frischmann, B., and Selinger, E. (2018). *Re-Engineering Humanity.* Cambridge, UK: Cambridge University Press. https://doi.org/10.1017/9781316544846

Gasco-Hernandez, M., Nasi, G., Cucciniello, M., and Hiedemann, A. M. (2022). The role of organizational capacity to foster digital transformation in local governments: The case of three European smart cities. *Urban Governance*, 2(2), 236-246. https://doi.org/10.1016/j.ugj.2022.09.005

Gemeente Amsterdam (2017) Halfjaarmonitor Top 400/600 Actiecentrum Veiligheid en Zorg. https://openresearch.amsterdam/nl/page/61334/halfjaarmonitor-top-400-600-actiecentrum-veiligheid-en-zorg

Gemeente Amsterdam (2024) *Amsterdamse Visie op AI.* Gemeente Amsterdam. https://www.amsterdam.nl/innovatie/amsterdamse-visie-ai/

Gemeente Amsterdam (n.d.a). *Top600*. https://www.amsterdam.nl/bestuur-organisatie/organisatie/overige-organisatieonderdelen/acvz/top600/

Gemeente Amsterdam (n.d.b). *Top400.* Https://www.amsterdam.nl/bestuur-organisatie/organisatie/overige/acvz/top400/

Gemeente Rotterdam (2017) *Jaarstukken 2017*. https://web.archive.org/web/20201020144835/https://jaarstukken2017.rotterdam.nl/p204648/ontwikkelingen

Gemeente Rotterdam (2019*) Mensenwerk Duurzaam aan de slag. Beleidskader Participatieweg 2019-2022.* https://rotterdam.raadsinformatie.nl/document/7744608/2/19bb16744

Gemeente Rotterdam (2020a) *Eerste herziening programma werk en inkomen. Arbeidsparticipatie – werk.* https://web.archive.org/web/20221130073330/https://www.watdoetdegemeente.rotterdam.nl/eersteherziening2020/programmas/werk-en-inkomen/arbeidsparticipatie-werk/

Gemeente Rotterdam (2020b) *Oplegger eerste herziening 2020*. https://www.watdoetdegemeente.rotterdam.nl/eersteherziening2020/Oplegger-eerste-herziening-2020-definitief.pdf

Gemeenteraad van Rotterdam (n.d.) *Over de gemeenteraad.* Gemeenteraad van Rotterdam. Retrieved from: https://gemeenteraad.rotterdam.nl/Help

Giest, S. (2021). Citizens 'on mute' in digital public service delivery [blog]. *Data & Policy*. https://medium.com/data-policy/citizens-on-mute-in-digital-public-service-delivery-part-2-31782751eae5

Giest, S. and Klievink, B. (2022). More than a digital system: How AI is changing the role of bureaucrats in different organizational contexts. *Public Management Review*, 26 (2), 379-398. https://doi.org/10.1080/14719037.2022.2095001

Giest, S. and Raaphorst, N. (2018) Unraveling the hindering factors of digital public service delivery at street-level: the case of electronic health records. *Policy Design and Practice*, Vol. 1: 2, 141-154. https://doi.org/10.1080/25741292.2018.1476002

Gioia, D. A., and Poole, P. P. (1984). Scripts in Organizational Behavior. *Academy of Management Review*, *9*(3), 449-459. https://doi.org/10.5465/amr.1984.4279675

Goderie, B. (2022) *Digitale agenda grotendeels afwezig bij gemeenteraadsverkiezingen*. Fontys. https://www.fontys.nl/nieuws/digitale-agenda-grotendeels-afwezig-bij-gemeenteraadsverkiezingen/

Goffman, E. (1983). The Interaction Order: American Sociological Association, 1982 Presidential Address. *American Sociological Review*, *48*(1), 1. https://doi.org/10.2307/2095141

Gopal, A., and Prasad, P. (2000). Understanding GDSS in Symbolic Context: Shifting the Focus from Technology to Interaction. *MIS Quarterly*, *24*(3), 509. https://doi.org/10.2307/3250972

Goto, M. (2021). Collective professional role identity in the age of artificial intelligence. *Journal of Professions and Organization, 8*(1), 86-107. https://doi.org/10.1093/jpo/joab003

Government of the Netherlands (n.d.) *Decentralization of government tasks*. Government.nl. Available at: https://www.government.nl/topics/municipalities/decentralisation-of-government-tasks (accessed 12 December 2024).

Gräfe, P., Marienfeldt, J., Wehmeier, L. M., and Kuhlmann, S. (2024). Changing tasks and changing public servants? The digitalisation and automation of public administrative work. *Information Polity*. https://doi.org/10.1177/13837605241289773

Grimmelikhuijsen, S., and Meijer, A. (2022). Legitimacy of Algorithmic Decision-Making: Six Threats and the Need for a Calibrated Institutional Response. *Perspectives on Public Management and Governance*, *5*(3), 232-242. https://doi.org/10.1093/ppmgov/gvac008

Grimmer, J., Roberts, M. E., and Stewart, B. M. (2022). *Text as data: A new framework for machine learning and the social sciences*. Princeton University Press.

Groenendaal, E. (2014). *Top 1000 zal averechts werken*. Parool. https://www.parool.nl/nieuws/top-1000-zalaverechts-werken~b1b2874f/

Groeneveld, S. and Van de Walle, S. (2011). Introduction. In S. Groeneveld and S. Van de Walle (Eds), New steering concepts in public management (pp. 1–8). Bingley, UK: Emerald Group.

Habermas, J. (1984). *The theory of communicative action, volume one: Reason and the rationalization of society*. London: Heinemann.

Habermas, J. (1987). *The theory of communicative action, volume two: Lifeworld and system: A critique of functionalist reason*. Cambridge: Polity Press.

Hajer, M. (2003) Policy without polity? Policy analysis and the institutional void. *Policy Sciences* 36(2), 175-195. https://doi.org/10.1023/a:1024834510939

Handler, J.F. (1986). *The conditions of discretion: Autonomy, community, bureaucracy*. Russell Sage.

Handler, J.F. (1992). Discretion: Power, quiescence, and trust. In K. Hawkins (ed.), *The uses of discretion* (pp. 331–360). Clarendon.

Hansen, H.-T., Lundberg, K. and Syltevik, L.J. (2018). Digitalization, Street-Level Bureaucracy and Welfare Users' Experiences. *Social Policy & Administration*, 52(1), pp.67–90. Doi: https://doi.org/10.1111/spol.12283.

Hardesty, L. (2018, February 11) *Study finds gender and skin-type bias in commercial artificial-intelligence systems.* MIT News. Available on: https://news-mit-edu.vu-nl.idm.oclc.org/2018/study-finds-gender-skin-type-bias-artificial-intelligence-systems-0212

Hasenfeld, Y. (1985). Citizens' Encounters with Welfare State Bureaucracies. *Social Service Review*, 59(4), 622–635. https://doi.org/10.1086/644335.

Hasenfeld, Y. (1987, September). Power in social work practice. *Social Service Review*, 61, 469–483. https://doi.org/10.1086/644463

Hasenfeld, Y., Rafferty, J.A. and Zald, M.N. (1987). The Welfare State, Citizenship, and Bureaucratic Encounters. *Annual Review of Sociology*, 13(1), 387–415. https://doi.org/10.1146/annurev.so.13.080187.002131.

Hastings, A. and Gannon, M. (2021) Absorbing the shock of austerity: the experience of local government workers at the front line. *Local Government Studies* https://doi.org/10.1080/03003930.2021.1996357

Hayward, E. (2021, June 9) *The starter guide to dashboards.* Klipfolio. https://www.klipfolio.com/blog/starter-guide-to-dashboards#:~:text=There%20are%20three%20types%20of,operational%2C%20strategic%2C%20and%20analytical.

Heerings, M., Van de Bovenkamp, H., Cardol, M., and Bal, R. (2022a). Ask us! Adjusting experience-based codesign to be responsive to people with intellectual disabilities, serious mental illness or older persons receiving support with independent living. *Health Expectations*, *25*(5), 2246-2254. https://doi.org/10.1111/hex.13436

Heerings, M., Van de Bovenkamp, H., Cardol, M., and Bal, R. (2022b). Burden of support: a counter narrative of service users' experiences with community housing services. *Disability & Society*, *39*(3), 743–766. https://doi-org.vu-nl.idm.oclc.org/10.1080/09687599.2022.2087490

Henley, J. (2021). *Dutch government faces collapse over child benefits scandal*. Guardian. https://www.theguardian.com/world/2021/jan/14/dutch-government-faces-collapse-over-child-benefits-scandal

Henley, J. and Booth, R. (2020). *Welfare surveillance system violates human rights, Dutch court rules*. The Guardian. https://www.theguardian.com/technology/2020/feb/05/welfare-surveillance-system-violates-human-rights-dutch-court-rules

Henman, P. (2022). Digital Social Policy: Past, Present, Future. Journal of Social Policy, 51(3), 535-550. https://doi.org/10.1017/s0047279422000162

Heres, L. (2023). Collectief moreel vakmanschap: Over de integriteit van het lokaal bestuur. Erasmus School of Social and Behavioural Sciences (ESSB).

Hetling, A., Watson, S. and Horgan, M. (2014). 'We Live in a Technological Era, Whether You Like It or Not.': Client Perspectives on Online Welfare Applications. *Administration & Society*, 46(5), pp.519–547. Doi: https://doi.org/10.1177/0095399712465596.

Heuberger, M. and Schwab, C. (2021). Challenges of Digital Service Provision for Local Governments from the Citizens' View: Comparing Citizens' Expectations and Their Experiences of Digital Service Provision. In Bergström, T., Franzke, J., Kuhlmann, S. and Wayenberg, E. (eds.), *The Future of Local Self-Government*. Palgrave Macmillan, pp.115–130. https://doi.org/10.1007/978-3-030-56059-1_9.

Hill, H., Schuppan, T., and Walter, K. (2014) Rethinking E-Government from below: New skills for the working level? In 13th Annual International Conference on Digital Government Research, College Park, MD, pp. 264–265.

Hladni, M. (2021, March 3) *What is a data dashboard? Definition, benefits, and examples*. Databox. https://databox.com/what-is-a-dashboard#type

Hofs, Y. (2021). *In hoeverre speelde racisme een rol in de toeslagenaffaire? De Tweede Kamer zoekt antwoorden.* De Volkskrant. Https://www.volkskrant.nl/nieuws-achtergrond/in-hoeverre-speelde-racisme-een-rol-in-de-toeslagenaffaire-de-tweede-kamer-zoekt-antwoorden~b2d6804b/

Huizenga, S., Oldenhof, L., Van de Bovenkamp, H., and Bal, R. (2023). Governing the resilient city: An empirical analysis of governing techniques. *Cities, 135*, 104237. https://doi.org/10.1016/j.cities.2023.104237

Hupe, P. (2022). Going viral: public encounters and digitalization. In P. Hupe (ed.), *The politics of the public encounter. What happens when citizens meet the state*, pp. 211-234. Cheltenham UK and Northampton MA: Edward Elgar Publishing.

Hupe, P. and Hill, M. (2007) Street-level bureaucracy and public accountability. *Public Administration*. Vol. 85, No. 2, (279-299). https://doi.org/10.1111/j.1467-9299.2007.00650.x

Iliadis, A., and Russo, F. (2016). Critical data studies: An introduction. *Big Data & Society*, *3*(2). https://doi.org/10.1177/2053951716674238

Jansen, F. (2022). *Top 400. A top-down crime prevention strategy in Amsterdam. The Public Interest Litigation Project*. [report]. https://racismandtechnology.center/wp-content/uploads/20221101-data-justice-lab-top400-report.pdf

Janssen, M., and Estevez, E. (2013). Lean government and platform-based governance—Doing more with less. *Government Information Quarterly*, *30*, S1-S8. https://doi.org/10.1016/j.giq.2012.11.003

Jarke, J., and Macgilchrist, F. (2021). Dashboard stories: How narratives told by predictive analytics reconfigure roles, risk and sociality in education. *Big Data & Society*, *8*(1). https://doi.org/10.1177/20539517211025561

Jarrahi, M. H. (2019). In the age of the smart artificial intelligence: AI's dual capacities for automating and informating work. *Business Information Review*, *36*(4), 178-187. https://doi.org/10.1177/0266382119883999

Jarrahi, M. H., Newlands, G., Lee, M. K., Wolf, C. T., Kinder, E., and Sutherland, W. (2021). Algorithmic management in a work context. *Big Data & Society*, *8*(2). https://doi.org/10.1177/20539517211020332

Jasanoff, S. (2005). *Technologies of humility: Citizen participation in governing science* (pp. 370-389). VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-322-80692-5_17

Jeffares, (2021). *The virtual public servant*. *Artificial intelligence and frontline work.* Cham: Palgrave MacMillan.

Jessop, B. (2014) *Repoliticising depoliticisation: theoretical preliminaries on some responses to the American fiscal and Eurozone debt crises*. Pol Polit 42(2):207–223

Jillissen, R. (2020, April 28th) Geen woorden maar data! Shared Business. https://web.archive.org/web/20220804190000/https://sharedbusiness.nl/2020/04/28/geen-woorden-maar-data/

Jorna, F. and Wagenaar, P (2007) The Iron Cage Strengthened? Discretion and Digital Discipline. *Public Administration*. 85 (1): 189–214. https://doi.org/10.1111/j.1467-9299.2007.00640.x

Kampen, T., Sebrechts, M. J., Knijn, T., and Tonkens, E. H. (2020). *Streng maar onrechtvaardig. De bijstand onder de loep*. Van Gennep.

Kaun, A. and Dencik, L. (2020). Datafication and the Welfare State: An Introduction. *Global Perspectives*, 1(1), 12912. https://doi.org/10.1525/gp.2020.12912

Kellogg, K. C., Valentine, M. A., and Christin, A. (2020). Algorithms at work: The new contested terrain of control. *Academy of management annals, 14*(1), 366-410. https://doi.org/10.5465/annals.2018.0174

Kersing, M., Oldenhof, L., Putters, K., Van Zoonen, L. (2025) Thief or Toddler: Experiences of unemployed benefit recipients in the Dutch digital welfare state. In: Galis, V., and Vlassis, V-S. (Eds) *Digitalization, Data and Welfare: Sociotechnical Approaches to Service Delivery.* Edward Elgar Publishing Ltd. ISBN - 978 1 0353 3814 6

Kersing, M., Van Zoonen, L., Putters K., Oldenhof, L. (2022) *The changing roles of frontline bureaucrats in the digital welfare state: The case of a data dashboard in Rotterdam's Work and Income department*. Data & Policy, 4. https://doi.org/10.1017/dap.2022.16

Kitchin, R. (2017) Thinking critically about and researching algorithms. *Information, Communication and Society 20*(1): 14–29. https://doi.org/10.1080/1369118x.2016.1154087

Kitchin, R. (2021) The Data Revolution. 2nd edition. Sage, London.

Kitchin, R. and Dodge, M. (2014). *Code/space: Software and everyday life*. MIT Press.

Kitchin, R., and McArdle, G. (2017). Urban data and city dashboards: Six key issues. In *Data and the City* (pp. 111-126). Routledge.

Kitchin, R., Lauriault, T.P. and Gavin McArdle (2015) Knowing and governing cities through urban indicators, city benchmarking and real-time dashboards, *Regional Studies, Regional Science*, 2:1, 6-28.

Klaassen, S. and van Dijk, R. (2023) *Fouten herstellen we later wel. Hoe de gemeente een dubieus algoritme losliet op rotterdammers.* Vers Beton. https://www.versbeton.nl/2023/10/fouten-herstellen-we-later-wel-hoe-de-gemeente-een-dubieus-algoritme-losliet-op-rotterdammers/?share_code=FaCxzYtOdVdE

Klein, P. (2019a). *Toeslagenaffaire: Belastingdienst zat ouders veel langer dwars.* RTL Nieuws. Https://www.rtlnieuws.nl/nieuws/nederland/artikel/4955021/toeslagenaffaire-belastingdienst-menno-snel-kinderopvang-nationale

Klein, P. (2019b). *Misstanden bij belastingdienst tot aan hoogste ambtelijke top genegeerd.* RTL Nieuws. Https://www.rtlnieuws.nl/nieuws/nederland/artikel/4918881/toeslagenaffaire-belastingdienst-klokkenluider-menno-snel

Kleinnijenhuis, J. (2018). *Belastingdienst werkte ouders die recht hadden op kinderopvangtoeslag bewust tegen.* Trouw. Https://www.trouw.nl/nieuws/belastingdienst-werkte-ouders-die-recht-hadden-op-kinderopvangtoeslag-bewust-tegen~bf13daf9/

Knobel, C. P. (2010). *Ontic occlusion and exposure in sociotechnical systems*. University of Michigan.

Köktener, B., and Tunçalp, D. (2021). Old game, new rules and 'odd friends': Digitalization, jurisdictional conflicts, and boundary work of auditors in a 'big four' professional service firm. *Journal of Professions and Organization*. https://doi.org/10.1093/jpo/joab016

Kool, L.J., Timmer, J., and van Est, R. (2015) *De datagedreven samenleving – Achtergrondstudie*, Rathenau Instituut. https://www.rathenau.nl/sites/default/files/Rapport_Datagedreven_samenleving_Rathenau%20Instituut.pdf

Kreuter, J. (2021). Climate Engineering as an Instance of Politicization. In *Springer Climate* Springer International Publishing. https://doi.org/10.1007/978-3-030-60340-3

Kruiter, A. (2018) *Gemeenteraadsverkiezingen: dit thema wordt onderbelicht door alle politieke partijen. Brainwash, podium voor onverwachte ideeën.* Brainwash. https://www.brainwash.nl/lees/politiek/2018/gemeenteraadsverkiezingen-dit-thema-wordt-onderbelicht-door-alle-partijen.html

Kuhlmann, S., and Heuberger, M. (2021). Digital transformation going local: implementation, impacts and constraints from a German perspective. *Public Money & Management*, *43*(2), 147-155. https://doi.org/10.1080/09540962.2021.1939584

Landwehr, C. and Böhm, K. (2011) Delegation and institutional design in health-care rationing. *Governance, 24*, 4, 665–88.

Lane, S. R., and Pritzker, S. (2018). *Political Social Work* Springer International Publishing. https://doi.org/10.1007/978-3-319-68588-5

Lawrence, T. B., and Suddaby, R. (2006). Institutions and institutional work. In S. R. Clegg, C. Hardy, T. B. Lawrence and W. R. Nord (Eds.), *Sage handbook of organization studies* (pp. 215-254). London: Sage.

Leong, C. (2017). Hajer's institutional void and legitimacy without polity. *Policy Sciences*, *50*(4), 573-583. https://doi.org/10.1007/s11077-017-9301-5

Levy, K. and Barocas, S. (2018) Privacy at the margins – Refractive surveillance: Monitoring customers to manage workers. International Journal of Communication Systems 12: 23.

Lifshitz-Assaf, H. (2017). Dismantling Knowledge Boundaries at NASA: The Critical Role of Professional Identity in Open Innovation. *Administrative Science Quarterly*, *63*(4), 746-782. https://doi.org/10.1177/0001839217747876

Lighthousereports (2024) *Sweden's Suspicion Machine.* https://www.lighthousereports.com/investigation/swedens-suspicion-machine/

Linthorst, E., and Oldenhof, L. (2020). Maatwerk aan de keukentafel: Van 'hoera' begrip tot betwiste norm. *Nederlands Tijdschrift voor Bestuursrecht (NTB)*, 209(8), 511-521. https://carelabrotterdam.nl/wp-content/uploads/2021/10/Linthorst-en-Oldenhof-2020.-Maatwerk-aan-de-keukentafel-NTB2020_209.pdf

Lipsky, M. (1980). *Street-level bureaucracy: dilemmas of the individual in public services*. Russell Sage Foundation.

Liu, R.-F. (2022). Hybrid ethnography: Access, positioning, and data assembly. *Ethnography, 0*(0). https://doi-org.vu-nl.idm.oclc.org/10.1177/14661381221145451

Loyens, K. (2019). Networks as unit of analysis in street-level bureaucracy research. In *Research handbook on street-level bureaucracy.* (pp. 351-369) Edward Elgar Publishing.

Majone, G. (2001). Nonmajoritarian Institutions and the Limits of Democratic Governance: A Political Transaction-Cost Approach. *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift Für Die Gesamte Staatswissenschaft*, *157*(1), 57–78. http://www.jstor.org/stable/40752249

Maki, K. (2011). Neoliberal Deviants and Surveillance: Welfare Recipients under the watchful eye of Ontario Works. *Surveillance & Society*, *9*(1/2), 47-63. https://doi.org/10.24908/ss.v9i1/2.4098

Mao, F. (2023, July 7) *Robodebt: Illegal Australian welfare hunt drove people to despair*. BBC. https://www.bbc.com/news/world-australia-66130105

Marcus, G. E. (1995). Ethnography in/of the world system: The emergence of multi-sited ethnography. *Annual review of anthropology, 24*(1), 95-117. http://www.jstor.org/stable/2155931

Markus, N. (2020) *Belastingdienst werkte zeer kritische Autoriteit Persoonsgegevens tegen*. Trouw. Https://www.trouw.nl/binnenland/belastingdienst-werkte-zeer-kritische-autoriteit-persoonsgegevens-tegen~b69beed9/

Mascini, P. and Doornbos, N. (2021) Roldynamiek binnen juridische professies. *Recht der Werkelijkheid*. 2021-2, p.3-15.

Maynard-Moody, S. and Musheno, M. (2000) State agent or citizen agent: two narratives of discretion. *Journal of Public Administration Research and Theory.* Vol. 10 (2): 329-358. https://doi.org/10.1093/oxfordjournals.jpart.a024272

Meijer, A., Lorenz, L., and Wessels, M. (2021). Algorithmization of Bureaucratic Organizations: Using a Practice Lens to Study How Context Shapes Predictive Policing Systems. *Public Administration Review*, *81*(5), 837-846. https://doi.org/10.1111/puar.13391

Michael Veale, Max Van Kleek, and Reuben Binns. 2018. Fairness and Accountability Design Needs for Algorithmic Support in High-Stakes Public Sector Decision-Making. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. Association for Computing Machinery, New York, NY, USA, Paper 440, 1–14. https://doi.org/10.1145/3173574.3174014

Mik-Meyer, N. (2017). *The Power of Citizens and Professionals in Welfare Encounters* Manchester University Press. https://doi.org/10.7228/manchester/9781526110282.001.0001

Mik-Meyer, N. and Villadsen, K. (2013). *Power and Welfare: Understanding Citizens' Encounters with State Welfarehelp_outline*. Routledge.

Mortelmans, D. (2020) *Handboek kwalitatieve onderzoeksmethoden*. Acco.

Mouffe, C. (1999). Deliberative Democracy or Agonistic Pluralism? *Social Research, 66*(3), 745–758. http://www.jstor.org/stable/40971349

Movisie (2019, December 4th) *De social professional: zowel state agent als citizen agent.* Movisie. https://www.movisie.nl/artikel/sociaal-professional-zowel-state-agent-citizen-agent

Netherlands Court of Audit (2020). *Toeslagen: Lessen uit 15 jaar onderzoek Algemene Rekenkamer*. Https://www.rekenkamer.nl/publicaties/kamerstukken/2020/02/13/toeslagen-lessen-uit-15-jaar-onderzoek-algemene-rekenkamer

Neubauer, R. (2011). Neoliberalism in the Information Age, or Vice Versa? Global Citizenship, Technology, and Hegemonic Ideology. *TripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, *9*(2), 195-230. https://doi.org/10.31269/triplec.v9i2.238

Neuman, W.L. (2014) *Social Research Methods: Qualitative and Quantitative Approaches*, 7th Edn. Essex: Pearson New International.

NL Times (2019). *Amsterdam to focus more on drug crimes in approach to young repeat offenders.* NL Times. https://nltimes.nl/2019/02/12/amsterdam-focus-drug-crimes-approach-young-repeat-offenders

Noble, D. (1984) *Forces of production: A social history of industrial automation*. New York Knopf.

Noordegraaf, M. (2007). From "pure" to "hybrid" professionalism: Present-day professionalism in ambiguous public domains. *Administration & society*, *39*(6), 761-785.

Noordegraaf, M. (2011). Risky Business: How Professionals and Professional Fields (Must) Deal with Organizational Issues. *Organization Studies*, *32*(10), 1349-1371. https://doi.org/10.1177/0170840611416748

Noordegraaf, M. (2015). Hybrid professionalism and beyond: (New) Forms of public professionalism in changing organizational and societal contexts. *Journal of Professions and Organization*, *2*(2), 187-206. https://doi.org/10.1093/jpo/jov002

NOS (2021). *Fiscus werkte al veel langer met zwarte lijsten, en bij meer toeslagen.* NOS Nieuws. Https://nos.nl/artikel/2371281-fiscus-werkte-al-veel-langer-met-zwarte-lijsten-en-bij-meer-toeslagen

NPO 3 (2020). *Ajouad en de Top 600* [documentary]. NTR.

OECD (2016), *Digital Government Strategies for Transforming Public Services in the Welfare Areas*, OECD Digital Government Studies, OECD Publishing, Paris, https://doi.org/10.1787/0d2eff45-en.

Oldenhof, L. (2015). *The Multiple Middle: managing in healthcare*. [Doctoral Thesis, Erasmus University Rotterdam]. Erasmus Universiteit Rotterdam (EUR). http://hdl.handle.net/1765/77995

Oldenhof, L. and Linthorst, E. (2022). Public encounters and the role of citizens' impression management. In: P. Hupe (ed.), *The politics of the public encounter. What happens when citizens meet the state*, pp. 189-209. Edward Elgar Publishing.

Oldenhof, L., Kersing, M., and van Zoonen, L. (2024). Sphere transgressions in the Dutch digital welfare state: causing harm to citizens when legal rules, ethical norms and quality procedures are lacking. *Information, Communication & Society*, *27*(15), 2704–2720. https://doi-org.vu-nl.idm.oclc.org/10.1080/1369118X.2024.2358163

Olsthoorn, P. (2016) *Big Data voor fraudebestrijding Working Paper nr. 21*. WRR/Amsterdam University Press, Den Haag/Amsterdam. https://www.wrr.nl/publicaties/working-papers/2016/04/28/big-data-voor-fraudebestrijding

Open Rotterdam (2023, March 28) *Europarlementariërs verbijsterd over gebruik algoritme door Rotterdamse gemeente*. https://openrotterdam.nl/europarlementariers-verbijsterd-over-gebruik-algoritme-door-rotterdamse-gemeente/

Orlikowski, W. J. (2002). Knowing in Practice: Enacting a Collective Capability in Distributed Organizing. *Organization Science*, *13*(3), 249-273. https://doi.org/10.1287/orsc.13.3.249.2776

Pareliussen, B., Æsøy, V., Giskeødegård, M.F. (2022) Professions, work, and digitalization: Technology as means to connective professionalism, *Journal of Professions and Organization*, 9(1), Pages 100–114. https://doi.org/10.1093/jpo/joab023

Parlementaire Enquêtecommissie Fraudebeleid en Dienstverlening. (2024). *Blind voor mens en recht: Eindverslag van de Parlementaire Enquêtecommissie Fraudebeleid en Dienstverlening*. [report] Tweede Kamer der Staten-Generaal. https://www.tweedekamer.nl/kamerstukken/detail?id=2024Z02942&did=2024D06757

Parlementaire ondervragingscommissie Kinderopvangtoeslag (2020). *Ongekend onrecht*. Tweede Kamer der Staten-Generaal [report]. Https://www.tweedekamer.nl/sites/default/files/atoms/files/20201217_eindverslag_parlementaire_ondervragingscommissie_kinderopvangtoeslag.pdf

Pederson, J.S. (2019) The digital welfare state: dataism versus relationshipism. In Pederson, J.S. and Wilkinson, A. Eds. (2019) *Big Data. Promise, Application and Pitfalls*. Edward Elgar Publishing.

Peeters, R. and Widlak, A. (2018). The digital cage: Administrative exclusion through information architecture - The case of the Dutch civil registry's master data management system. *Government Information Quarterly,* 35 (2), 175-183. https://doi.org/10.1016/j.giq.2018.02.003

Peled, N. (2022). 'Waarom staat mijn zoon op die lijst?' De Groene Amsterdammer, 46, https://www.groene.nl/artikel/waarom-staat-mijn-zoon-op-die-lijst

Peled, N. (director) (2020). *Moeders* [documentary]. 2DOC https://www.2doc.nl/documentaires/2022/11/moeders.html

Peters, G. and Pierre, J. (2005) *Politicisation of the civil service in comparative perspective: The quest for control*, London: Routledge

Pinch, T. and Leuenberger, C. (n.d.). *Studying scientific controversy from the STS perspective.* Paper presented at the EASTS conference *Science Controversy and Democracy*. National Taiwan University.

Pleace, N. (2007). WORKLESS PEOPLE AND SURVEILLANT MASHUPS Social policy and data sharing in the UK. *Information, Communication & Society*, *10*(6), 943-960. https://doi.org/10.1080/13691180701751171

Politieke ambtsdragers.nl (n.d.) Ministerie van Binnenlandse zaken en koninkrijksrelaties. https://www.politiekeambtsdragers.nl/bestuurslagen/gemeente/commissies#:~:text=De%20raadscommissie%20bereidt%20de%20besluiten,een%20vergoeding%20voor%20hun%20werkzaamheden.

Postma, J. and De Oude, H. (2021). *Gebruik algoritmes ethisch, of gebruik ze niet.* NRC. https://www.nrc.nl/nieuws/2021/11/10/gebruik-algoritme-ethisch-of-niet-a4065005

Postma, J., Oldenhof, L., and Putters, K. (2014). Organized professionalism in healthcare: articulation work by neighbourhood nurses. *Journal of Professions and Organization*, *2*(1), 61-77. https://doi.org/10.1093/jpo/jou008

Prasad, P. (1993) Symbolic processes in the implementation of technological change: A symbolic interactionist study of work computerization. *Academy of Management Journal,* 36/6: 1400-29.

Prasad, P. and Prasad, A. (1994) The ideology of professionalism and work computerization. *Academy of Management Journal*, 36/6: 1433-58.

ProDemos (n.d.) *De organisatie.* ProDemos. https://www.rotterdam.nl/en/city-government

Prottas, J.M. (1979). *People-processing: The street-level bureaucrat in public service bureaucracies*. Lexington Books.

Raad voor het openbaar bestuur (2018, March 20th) *Voor de publieke zaak. Over een aanlokkelijk perspectief voor de decentrale volksvertegenwoordiger.* https://www.raadopenbaarbestuur.nl/documenten/publicaties/2018/03/20/voor-de-publieke-zaak

Raad voor het openbaar bestuur (2020, November 5th) *Goede ondersteuning, sterke democratie. Over de ondersteuning van decentrale volksvertegenwoordiging.* https://www.raadopenbaarbestuur.nl/documenten/publicaties/2020/11/05/goede-ondersteuning-sterke-democratie

Ranchordas, S. (2021). *Empathy in the digital administrative state*. Duke LJ, 71, 1341.

Ratcliffe, R. (2019). *How a glitch in India's biometric welfare system can be lethal*. The Guardian. https://www.theguardian.com/technology/2019/oct/16/glitch-india-biometric-welfare-system-starvation#:~:text=Activists%20have%20tracked%2013%20cases,shocked%20the%20country%20in%202017.

Rathenau Instituut (2018). *Waardevol digitaliseren – Hoe lokale bestuurders vanuit publiek perspectief mee kunnen doen aan het 'technologiespel'* (auteurs: Est, R. van, E. de Bakker, J. van den Broek, J. Deuten, P. Diederen, I. van Keulen, I. Korthagen and H. Voncken).

Rathenau Instituut (2020). *Raad weten met digitalisering – Hoe de gemeenteraad kan sturen op de maatschappelijke impact van digitale technologie* (auteurs: Das D., P. Faasse, B. Karstens en P. Diederen).

Reay T. Goodrick, E., Waldorff, S. B. and Casebeer, Aet al. (2017) Getting Leopards to Change Their Spots: Co-creating a New Professional Role Identity. *Academy of Management Journal, 60*/3: 1043–1070.

Rekenkamer Rotterdam (2021). *Gekleurde technologie. Verkenning ethisch gebruik algoritmes.* Rekenkamer Rotterdam. https://rekenkamer.rotterdam.nl/wp-content/uploads/2020/11/R.P.20.06-gekleurde-technologie.pdf

Rienties, B., Herodotou, C., Olney, T., Schencks, M., and Boroowa, A. (2018). Making sense of learning analytics dashboards: A technology acceptance perspective of 95 teachers. *International Review of Research in Open and Distance Learning, 19*(5), 187–202. https://doi.org/10.19173/irrodl.v19i5.3493

Rodima-Taylor, D., Campbell-Verduyn, M., and Bernards, N. (2024). Repoliticizing the technological turn in sustainability governance: Moralities, power, space. *Environment and Planning C, 42*(5), 699-707. https://doi.org/10.1177/23996544241258858

RTL Nieuws (2015). *De Bulgarenfraude: Hoe zat het ook alweer?* RTL Nieuws. https://www.rtl.nl/nieuws/nederland/artikel/1173981/uitspraak-bulgarenfraude-hoe-zat-het-ook-alweer

Sangers, G. (2021a) *Met dank, door MijnOverheid bij de Voedselbank*. Gerard Sangers. ISBN: 9789464067729

Sangers, G. (2021b) *De mening van… een uitkeringstrekker*. Gerard Sangers. ISBN: 9789464430103

Scarbrough, H. (1993) Problem-solutions in the management of information systems expertise. *Journal of Management Studies*, *30*(6), 939-955. https://doi.org/10.1111/j.1467-6486.1993.tb00473.x

Schell-Kiehl, I., and Slots, L. (3 juni, 2014) *Hoe ervaren bijstandsgerechtigden re-integratietrajecten? Kloof tussen leefwereld en systeemwereld.* Sozio, No.33. https://www.researchgate.net/profile/Ines-Schell-Kiehl/publication/278032714_Sozio_3_juni_2014_33/links/557abbe808aee4bf82d55e7f/Sozio-3-juni-2014-33.pdf

Schildt, H. (2022). The institutional logic of digitalization, in Gegenhuber, T., Logue, D., Hinings, C.R.(B). and Barrett, M. (Ed.), *Digital transformation and institutional theory* (Research in the Sociology of Organizations, Vol. 83), pp. 235-251. Bingley: Emerald Publishing Limited. https://doi.org/10.1108/S0733-558X20220000083010

Schou, J., and Hjelholt, M. (2017). Digitalizing the welfare state: citizenship discourses in Danish digitalization strategies from 2002 to 2015. *Critical Policy Studies*, *13*(1), 3–22. https://doi.org/10.1080/19460171.2017.1333441

Schuppan, T. (2014) E-Government at work level: Skilling or De-skilling? *47th Hawaii International Conference on System Sciences*, Waikoloa, HI, USA, 2014, pp. 1927-1934, doi: 10.1109/HICSS.2014.244.

Schuurmans, J. J., Van Pijkeren, N., Bal, R., and Wallenburg, I. (2020). Regionalization in elderly care: what makes up a healthcare region?. *Journal of Health Organization and Management*, *35*(2), 229-243. https://doi.org/10.1108/jhom-08-2020-0333

Schwendimann, B. A., Rodriguez-Triana, M. J., Vozniuk, A., Prieto, L. P., Boroujeni, M. S., Holzer, A., Gillet, D., and Dillenbourg, P. (2017). Perceiving Learning at a Glance: A Systematic Literature Review of Learning Dashboard Research. *IEEE Transactions on Learning Technologies*, *10*(1), 30-41. https://doi.org/10.1109/tlt.2016.2599522

SER (2025) *AI en werk. Samen naar een werkende toekomst met AI*. https://www.ser.nl/-/media/ser/downloads/adviezen/2025/ai-en-werk.pdf

Shaiken, H. (1984) *Automation and labor in the computer age.* New York: Holt, Rinehart, and Winston.

Shapiro, A. (2017). Between autonomy and control: Strategies of arbitrage in the "on-demand" economy. *New Media & Society*, *20*(8), 2954-2971. https://doi.org/10.1177/1461444817738236

Sharon, T. (2021a). From hostile worlds to multiple spheres: towards a normative pragmatics of justice for the Googlization of health. *Medicine, Health Care and Philosophy*, *24*(3), 315-327. https://doi.org/10.1007/s11019-021-10006-7

Sharon, T. (2021b). Blind-sided by privacy? Digital contact tracing, the Apple/Google API and big tech's newfound role as global health policy makers. *Ethics and Information Technology*, 23(Suppl 1), 45-57. https://doi.org/10.1007/s10676-020-09547-x

Shrestha, Y. R., Ben-Menahem, S. M., and von Krogh, G. (2019). Organizational Decision-Making Structures in the Age of Artificial Intelligence. *California Management Review*, *61*(4), 66-83. https://doi.org/10.1177/0008125619862257

Skoog, L., and Svensson, P. (2022). Hidden policy conflicts? Administrative strategies to manage depoliticisation. *Acta Politica*, *58*(4), 819-836. https://doi.org/10.1057/s41269-022-00266-3

Slemon, A. (2025). Absences and Silences in Critical Discourse Analysis: Methodological Reflections. *International Journal of Qualitative Methods*, *24*. https://doi.org/10.1177/16094069251321250

Soss, J. (1999). Welfare Application Encounters. *Administration & Society*, *31*(1), 50-94. https://doi.org/10.1177/009539999400935493

SP Rotterdam. (2021). *Zwartboek misstanden bijstand*. SP Rotterdam. Retrieved from: https://gemeenteraad.rotterdam.nl/Reports/Document/5ed67278-3187-4ba0-92d1-7b34b150d010?documentId=f7d30697-3c5d-4bba-9aec-4ca8ee28148e

Stichting Lekker Geven (2022) *Over ons*. https://lekkergeven.nl/over-ons

Suddaby, R., and Muzio, D. (2015). Theoretical Perspectives on the Professions. In L. Empson, D. Muzio, J. P. Broschak, C.R. Hinings (eds) *The Oxford Handbook of Professional Service Firms*, pp. 25–47. Oxford University Press.

Susskind, R., and Susskind, D. (2015). *The Future of the Professions* Oxford University Press. https://doi.org/10.1093/oso/9780198713395.001.0001

Tatnall, A. (2003). Actor-network theory as a socio-technical approach to information systems research. In *Socio-technical and human cognition elements of information systems*. IGI Global, pp. 266–283.

Thompson, D. F. (1980). Moral Responsibility of Public Officials: The Problem of Many Hands. *American Political Science Review*, *74*(4), 905-916. https://doi.org/10.2307/1954312

Thoreau, F., and Delvenne, P. (2012). Have STS fallen into a political void? Depoliticisation and engagement in the case of nanotechnologies. *Política & Sociedade*, *11*(20). https://doi.org/10.5007/2175-7984.2012v11n20p205

Thornton, P.H. and Ocasio, W. (2008) 'Institutional Logics', In R., Greenwood, C., Oliver, K., Sahlin, and R., Suddaby (eds.) *The Sage Handbook of Organizational Institutionalism*, 1st edn., pp. 99–128. London: Sage.

Thornton, P. H., and Ocasio, W. (1999). Institutional Logics and the Historical Contingency of Power in Organizations: Executive Succession in the Higher Education Publishing Industry, 1958– 1990. *American Journal of Sociology*, *105*(3), 801-843. https://doi.org/10.1086/210361

Tier, M. van der, Hermans, K., and Potting, M. (2021). Social workers as state and citizen-agents. How social workers in a German, Dutch and Flemish public welfare organisation manage this dual responsibility in practice. *Journal of Social Work*, *22*(3), 595-614. https://doi.org/10.1177/14680173211009724

Trappenburg, M., Kampen, T., and Tonkens, E. (2019). Social Workers in a Modernising Welfare State: Professionals or Street-Level Bureaucrats?. *The British Journal of Social Work*, *50*(6), 1669-1687. https://doi.org/10.1093/bjsw/bcz120

Tréguer, F. (2021). IA et réforme de l'État: vers des bureaucraties sans humains? AOC: Analyse Opinion Critique, 12 November.

Tromp, R. (2023, March 6). *Fraude-algoritme op de snijtafel.* Argos. https://www.vpro.nl/argos/lees/onderwerpen/algoritme/2023/fraude-algoritme-op-de-snijtafel-rotterdam-verdenkt-vooral-jonge-moeders.html

Tummers, L., and Rocco, P. (2015). Serving Clients When the Server Crashes: How Frontline Workers Cope with E-Government Challenges. *Public Administration Review*, *75*(6), 817-827. https://doi.org/10.1111/puar.12379

Twijnstra, A., and de Graaf, G. (2013). Young loyalties: Loyalty conceptions and loyalty conflicts of young Dutch and English public administrators. *Operant Subjectivity, 36*(2), 73-92.

Uchida, C. D. (2014). Predictive policing. In G. Bruinsma and D. Weisburd (Eds.), *Encyclopedia of criminology and criminal justice* (pp. 3871–3880). New York, NY: Springer.

United Nations (UN) (2019). *Report of the Special Rapporteur on extreme poverty and human rights*. General Assembly. undocs.org/A/74/493.

University of Antwerp (n.d.) *The toeslagenaffaire. Netherlands: childcare allowance scandal* [report]. https://web.archive.org/web/20230128184921/https://www.uantwerpen.be/en/projects/aitax/publications/toeslagen/

Van Bueren, E., and Klievink, B. (2017). Institutionele leegte: nieuwe bronnen, nieuwe uitdagingen. *Bestuurskunde*, 26(3), 3-14.

Van de Bovenkamp, H. (2024, Nov 15). Patientenwetenschappen: verhalen ophalen, vertalen en laten meebepalen. Erasmus School of Health Policy & Management (ESHPM).

Van der Meer, F. M., and Dijkstra, G. S. (2021). The latitude for loyal contradiction and public leadership: a conceptual and comparative approach. *International Journal of Public Leadership*, *17*(4), 301-312.

Van der Voet, J., Groeneveld, S., and Kuipers, B. S. (2013). Talking the Talk or Walking the Walk? The Leadership of Planned and Emergent Change in a Public Organization. *Journal of Change Management*, *14*(2), 171-191. https://doi.org/10.1080/14697017.2013.805160

Van Heeswijk, J. (n.d.) *Wat is het verschil tussen een CISO en een fg?* TUV Nederland. https://www.certificering-keuring.nl/wat-is-het-verschil-tussen-een-ciso-en-een-fg

Van Pijkeren, N. (2025) Caring Geographies. The region as a place of care. [Doctoral Thesis, Erasmus University Rotterdam]. Erasmus Universiteit Rotterdam (EUR).

Van Rij, M.L.A. (2022, May 30). *Nadere verzoeken fraude signalering voorziening* [Letter of government]. Https://open.overheid.nl/documenten/ronl-03b6af146c17b4f7163cb7cd12d9cc92e514b2c2/pdf

Van Zoonen, L. (2019). Opnieuw fatale remedies: Een kritische reflectie op datatransities in het sociaal domein. *Sociologie*, *15*(1). https://doi.org/10.5117/soc2019.1.002.vanz

Van Zoonen, L. (2020). Data governance and citizen participation in the digital welfare state. *Data & Policy*, *2*. https://doi.org/10.1017/dap.2020.10

Van Zoonen, L., Schokker, L., Schuring, M., Knoef, M., Burdorf, A., Yildiz, B., van Kooij, M., Moors, F. (2020) *Wat werkt voor wie? Resultaten van het onderzoek naar de inzet van big data voor het verbeteren van het re-integratietraject*. Leiden-Delft-Erasmus Centre for BOLD Cities.

Vanlommel, K., Van Gasse, R., Vanhoof, J., and Van Petegem, P. (2017). Teachers' decision-making: Data based or intuition driven?. *International Journal of Educational Research*, *83*, 75-83. https://doi.org/10.1016/j.ijer.2017.02.013

Veen, R.F. van (2018, December) *Geen woorden maar data. Programma Datagedreven Werken.* [Powerpoint presentation] Gemeente Rotterdam. https://web.archive.org/web/20220804045822/https://docplayer.nl/149071859-Geen-woorden-maar-data.html

Veldboer, L. (2019, November 25th) *Sociaal werk: niet politiseren maar laveren*. Sociale vraagstukken. https://www.socialevraagstukken.nl/take-back-the-balance/

Verhoeven, K. (2019). TechVisie 2.0. Den Haag: D66. In VNG (2021), *Op weg naar een datagedreven gemeente. Randvoorwaarden voor verantwoord datagedreven bestuur* (auteurs: van den Berg, D., Schaefer, M.T., Muis, I., de Graaf, L., Banning, R., Klein, S.).

VNG (2021) *Op weg naar een datagedreven gemeente. Randvoorwaarden voor verantwoord datagedreven bestuur* (auteurs: van den Berg, D., Schaefer, M.T., Muis, I., de Graaf, L., Banning, R., Klein, S.)

VNG (2022). *Agenda digitale grondrechten en ethiek 2022-2026. Van disbalans naar harmonie in een vernieuwde democratische rechtsstaat* [policy agenda]. https://vng.nl/sites/default/files/2022-02/agenda_digitale_grondrechten_en_ethiek_2022-2026.pdf

VNG/Berenschot (2018) Datagedreven sturing bij gemeenten. https://www.berenschot.nl/media/u25i5zds/managementsamenvatting_datagedreven_sturing_bij_gemeenten_002-1.pdf

Vogl, T. M., Seidelin, C., Ganesh, B., and Bright, J. (2020). Smart Technology and the Emergence of Algorithmic Bureaucracy: Artificial Intelligence in <scp>UK</scp> Local Authorities. *Public Administration Review*, *80*(6), 946-961. https://doi.org/10.1111/puar.13286

Vos, S. (2024, 18 december) *Ook voorbij het ravijnjaar is het perspectief somber*. Binnenlands Bestuur. Visited at: https://www.binnenlandsbestuur.nl/financien/zorgen-over-gemeentefinancien-niet-weggenomen

VPRO. (2023). *Fraude-algoritme op de snijtafel: Rotterdam verdenkt vooral jonge moeders.* Argos. https://www.vpro.nl/argos/lees/onderwerpen/algoritme/2023/fraude-algoritme-op-de-snijtafel-rotterdam-verdenkt-vooral-jonge-moeders.html

Wachter-Boettcher, S. (2017) *Technically Wrong: Sexist Apps, Biased Algorithms, and Other Threats of Toxic Tech.* New York, NY: WW Norton & Company.

Walzer, M. (1983). *Spheres of justice: A defense of pluralism and equality*. New York: Basic Books.

Weber, M. (1918). Politik als Beruf. Gesammelte Politische Schriften (Muenchen, 1921) (pp. 396-450). Originally a Speech at Munich University, Munich: Duncker & Humblodt.

Wehrens, R., Stevens, M., Kostenzer, J., Weggelaar, A. M., and de Bont, A. (2021). Ethics as Discursive Work: The Role of Ethical Framing in the Promissory Future of Data-driven Healthcare Technologies. *Science, Technology, & Human Values*, *48*(3), 606-634. https://doi.org/10.1177/01622439211053661

Well, L., Currie, M., and Stewart, J. (2023). Surveillance, Discretion and Governance in Automated Welfare. *Science & Technology Studies*. https://doi.org/10.23987/sts.100490

Weske, U., Leisink, P. and Knies, E. (2014). Local government austerity policies in the Netherlands: the effectiveness of social dialogue in preserving public service employment. *Transfer: European Review of Labour and Research*, 20(3), 403–416. https://doi.org/10.1177/1024258914538206.

Wilensky, H. L. (1964). The Professionalization of Everyone?. *American Journal of Sociology*, *70*(2), 137-158. https://doi.org/10.1086/223790

Winner, L. (2017). *Do artifacts have politics?* In Computer ethics (pp. 177-192). Routledge.

Wolf, E. E. A., and Van Dooren, W. (2018). Conflict reconsidered: The boomerang effect of depoliticization in the policy process. *Public Administration*, *96*(2), 286-301. https://doi.org/10.1111/padm.12391

Wood, M., and Flinders, M. (2014). Rethinking depoliticisation: beyond the governmental. *Policy & Politics*, *42*(2), 151-170. https://doi.org/10.1332/030557312x655909

WRR (2016) *Big Data in een vrije en veilige samenleving*. WRR. Amsterdam University Press.

WRR (2023). *Grip. Het maatschappelijk belang van persoonlijke controle*. WRR-rapport 108. Den Haag: WRR.

Yeung, K. (2018a). Algorithmic Government: Towards a New Public Analytics? Paper Presented at *Ethical and Social Challenges Posed by Artificial Intelligence*, Cumberland Lodge, Windsor, UK.

Yeung, K. (2018b). Algorithmic regulation: A critical interrogation. *Regulation & Governance*, *12*(4), 505-523. https://doi.org/10.1111/rego.12158

Yigitbasioglu, O. M., and Velcu, O. (2012). A review of dashboards in performance management: Implications for design and research. *International Journal of Accounting Information Systems*, *13*(1), 41-59. https://doi.org/10.1016/j.accinf.2011.08.002

Young, B. (2024). *Political social work practice: Translating social work skills for political participation*. Waveland Press.

Zacka, B. (2017) *When the state meets the street. Public Service and Moral Agency*. The Belknap Press of Harvard University press.

Zetka, J.R. (2001) Occupational divisions of labor and their technology politics: The case of surgical scopes and gastrointestinal medicine. *Social Forces*, 79/4: 1495-520

Zook, M. (2017). Crowd-sourcing the smart city: Using big geosocial media metrics in urban governance. *Big Data & Society*, *4*(1). https://doi.org/10.1177/2053951717694384

Zook, M. A., and Graham, M. (2007a). Mapping DigiPlace: Geocoded Internet Data and the Representation of Place. *Environment and Planning B: Planning and Design*, *34*(3), 466-482. https://doi.org/10.1068/b3311

Zook, M. A., and Graham, M. (2007b). The creative reconstruction of the Internet: Google and the privatization of cyberspace and DigiPlace. *Geoforum*, *38*(6), 1322-1343. https://doi.org/10.1016/j.geoforum.2007.05.004

Zouridis, S., Van Eck, M. and Bovens, M. (2020) Automated discretion. In T. Evans and P. Hupe (Eds.), *Discretion and the quest for controlled freedom*, (pp. 313–29). Cham: Palgrave Macmillan.

Zürn, M. (2013) Politisierung als Konzept der Internationalen Beziehungen. In: Zürn M, Ecker-Ehrhardt M (eds) Die Politisierung der Weltpolitik. Umkämpfte internationale Institutionen. Berlin, Suhrkamp, pp 7–35

Summary

Across the world, digital welfare states are on the rise, with data-driven governance transforming the very social fabric of the welfare state. This dissertation examines the data-driven transformation of the Dutch welfare system, uncovering how data-driven governance reshapes the governance and delivery of welfare services. It investigates how data-driven governance reshapes the lives of benefit recipients, the work and relational dynamics of frontline bureaucrats within their frontline-screen-level network, the responsibilities of political actors, and the institutional frameworks in which they operate. Rather than viewing data-driven technologies as neutral tools, it situates them within broader political, administrative, and social dynamics, showing how they embody normative assumptions and redistribute power in often subtle but profound ways. This dissertation demonstrates that the promise of neutrality and efficiency conceals new modes of inequality, opacity, and alienation that affect how citizens experience the welfare state and how public officials enact their roles.

The dissertation begins with the personal story of Mrs. Ceylan, a benefit recipient in Rotterdam, whose experience with the welfare system exemplifies the broader issues at stake. Her account of invasive inspections, lack of transparency, and digital surveillance raises urgent questions about dignity, trust, and accountability in the digital welfare state. These concerns form the foundation of the central research question: how do data-driven technologies reconfigure welfare service provision and governance at the municipal level? To answer this, the study investigates four interrelated sites: the experiential site of benefit recipients, the professional site of frontline bureaucrats and their networks, the political site of municipal government, and the institutional frameworks of the Dutch digital welfare state. The study builds on a multi-sited qualitative research design. It combines interviews, observations, and document analysis to capture how data-driven technologies are embedded in welfare governance in the different sites and how they shape interactions within and between these sites.

Welfare recipients describe data-driven decisions as detached and impersonal, mediated by computer screens and automated checks rather than human judgment and dialogue. Eligibility assessments, risk profiling, and automated monitoring create a sense of constantly being watched while never fully understanding the criteria at play. Even when citizens comply with all requirements, outcomes often appear arbitrary, with little possibility to challenge or even interpret the underlying processes. In this way,

technologies do not merely process information but actively shape what it means to interact with the state, redefining welfare encounters as technical transactions rather than social relationships, and they relocate accountability from human judgment to system outputs. At the same time, the dissertation reveals how data-driven governance amplifies existing power imbalances and erodes trust between citizens and municipalities. The use of algorithms and dashboards creates a dynamic of mutual suspicion, where citizens feel surveilled and bureaucrats are expected to collect and verify data. Citizens respond with coping tactics, such as pleasing, fighting, withdrawing, and seeking external help, to navigate data-driven encounters. These strategies reflect a broader contestation of the values embedded in data-driven governance, where efficiency is prioritised over empathy and control over care.

Frontline bureaucrats, particularly work coaches, experience a shift in their professional identities due to the implementation of data dashboards. Two role identities emerge: the client coach, focused on personal contact and tailored support, and the caseload manager, focused on efficiency and labor market reintegration. The dashboard encourages a shift toward the caseload manager role, leading to role conflicts and feelings of alienation among those who value relational work. It also reshapes relational dynamics within frontline teams, fostering competition and altering perceptions of autonomy and power. Bureaucrats with strong data skills gain influence, while others feel disempowered. The uneven distribution of knowledge limits the ability of some frontline bureaucrats to take responsibility for data-driven decisions, undermining transparency and accountability. For example, work coaches who lack expertise in using the dashboard must still justify their decisions to benefit recipients, while colleagues with greater data literacy are able to influence how the dashboard works, and how it is interpreted and used. This creates an epistemic imbalance that shifts responsibility away from collective professional judgment towards a small group of data-savvy frontline professionals. Such an imbalance poses a democratic risk, as decisions with major consequences for citizens, such as eligibility for benefits or the imposition of sanctions, are made without clear lines of accountability, leaving both benefit recipients and frontline bureaucrats without strong data skills with little room to contest or review them.

Despite the profound implications of digitalization, political discussions within Rotterdam's municipal government are rare and reactive. When they do occur, they are fragmented through a mechanism called 'content chopping,' which separates technical, ethical, and political aspects of digitalization into different arenas, obscuring the

overall picture. Local politicians often cite a lack of time and knowledge as reasons for limited engagement with digitalization, effectively depoliticizing the issue. This shifts responsibility to a small group of technically skilled civil servants, raising concerns about democratic oversight.

On a macro-level the dissertation identifies an institutional void in the Dutch digital welfare state, where legal, ethical, and data quality frameworks are inadequate to address the challenges posed by data-driven technologies. This void is illustrated through two case studies: the childcare benefits scandal and the Top 400/600 predictive policing program. In the former, a black-box algorithm led to wrongful accusations of fraud, disproportionately affecting citizens with dual nationality. The lack of transparency and accountability resulted in institutional racism. In the latter, youth were flagged as high-risk based on vague indicators, blurring the line between care and control and disproportionately targeting ethnic minorities. These cases show how weak institutional safeguards enable discrimination and erode democratic values. Contestation arises across all sites -citizens resisting data requests, bureaucrats questioning dashboard norms, and political actors avoiding responsibility- but rarely leads to meaningful change.

The consequences of data-driven governance are visible across the sites studied. Citizens find themselves governed by opaque systems that make contestation difficult. Frontline bureaucrats must navigate conflicting demands of relational work and digital compliance, often sacrificing trust and empathy in the process. Political actors struggle to assert control over technologies that are framed as technical necessities but carry far-reaching normative implications. In each of these arenas, data-driven governance creates new forms of inequality and exclusion, often amplifying existing vulnerabilities. Those who lack digital literacy, resources, or stable life circumstances are disproportionately affected by automated checks and risk assessments, while those already marginalised experience heightened scrutiny and diminished opportunities for appeal. Rather than increasing trust in the welfare state, data-driven governance risks undermining its legitimacy by eroding transparency, accountability, and empathy.

At the same time, the dissertation emphasises that these developments are not inevitable. It documents moments of resistance, negotiation, and adaptation, where actors seek to reclaim space for human judgment and relational engagement. Welfare recipients develop strategies to cope with and sometimes challenge the systems that govern them. Frontline workers find ways to navigate between screen and recipient, looking for ways

to preserve space for discretion and relational engagement. Local officials sometimes raise critical questions about fairness, feasibility, and proportionality, even if these do not always translate into policy change. These practices reveal that the digital welfare state is not a finished project but a contested field in which different logics and values compete. The logic of digitalisation coexists and collides with alternative logics of care, trust, and social justice, and the balance between them remains open to negotiation.

The theoretical contribution of this work lies in integrating perspectives that are often studied separately. By connecting citizen experiences, frontline practices, institutional logics, and systemic design choices, it develops a holistic account of data-driven governance. It integrates literature on street-level bureaucracy, power dynamics, and citizen-state interactions to show how data-driven technologies mediate relationships, reshape roles, and influence institutional structures. In doing so, existing concepts are further developed and connected. Concepts such as the 'digital sphere' and the 'logic of digitalisation' are used to understand the normative embedding of data-driven technologies, while the concept of the 'institutional void' helps to understand how gaps in the institutional framework affect the governance of the welfare state. These frameworks are not only applied to make the effects of data-driven governance visible at various levels but are also expanded and connected throughout this dissertation. Finally, the dissertation offers a critical reflection on the political and ethical implications of digitalisation for the functioning of the welfare state.

The dissertation relates to three pressing societal debates. First, it addresses the erosion of welfare principles. Data-driven technologies often reinforce inequality and shift responsibility onto vulnerable citizens. Benefit recipients experience emotional and administrative burdens, undermining principles of solidarity and public responsibility. Second, it examines the transformation of frontline service delivery. Digital tools reshape how services are delivered and how bureaucrats relate to citizens and each other. The loss of personal contact and the rise of performance metrics challenge the relational foundation of welfare provision. Third, it explores the implications for democratic governance. Limited political engagement and technocratic decision-making threaten democratic legitimacy. The study calls for stronger political leadership, ethical reflection, and citizen involvement in shaping data-driven governance.

To foster more responsible data-driven governance, the dissertation proposes several directions for future research and policy. It calls for the development of a citizen-centered

data science field, focused on the lived experiences of those affected by data-driven systems. It emphasizes the need to restore the principle of contestability by ensuring that all actors can meaningfully engage with and challenge data-driven technologies. It advocates for greater digital literacy across society, particularly among citizens, frontline bureaucrats, and politicians. It stresses the importance of professional proximity, encouraging empathetic, person-centered frontline work. Finally, it urges continuous ethical reflection to ensure that data-driven governance aligns with democratic values.

This dissertation concludes that data-driven governance is not merely a technical innovation but a profound social transformation. It reconfigures welfare provision, reshapes professional roles, and challenges democratic accountability. The question is not merely how to implement data-driven technologies, but more fundamentally whether and under which circumstances it is necessary and desirable to use them. To ensure that the digital welfare state serves all citizens fairly, it must be grounded in democratic values, informed by lived experience, and subject to meaningful contestation. This requires reimagining data-driven governance not as an end in itself, but as a means to uphold fairness, empathy, and accountability in public service.

Samenvatting

Wereldwijd zijn digitale welvaartsstaten in opkomst, waarbij data-driven governance het sociale weefsel van de verzorgingsstaat ingrijpend verandert. Dit proefschrift onderzoekt de data gedreven transformatie van het Nederlandse welvaartssysteem en laat zien hoe data-driven governance zowel de aansturing als de uitvoering van sociale voorzieningen fundamenteel transformeert. In het onderzoek wordt gekeken naar hoe data gedreven sturing op meerdere plekken in de verzorgingsstaat vorm krijgt. Het onderzoek analyseert hoe data gedreven sturing het dagelijks leven van uitkeringsgerechtigden beïnvloedt. Het laat zien hoe deze sturing het werk en de professionele relaties van frontlijnambtenaren binnen hun frontlijn-screen-level-netwerk verandert. Ook wordt duidelijk hoe de verantwoordelijkheden van lokale politieke actoren verschuiven, doordat zij digitaliseringsvraagstukken vaak pas reactief bespreken wanneer er problemen ontstaan en daarbij de samenhang tussen technische, ethische en politieke aspecten los van elkaar behandelen. Ten slotte laat het zien hoe de institutionele kaders waarin uitkeringsgerechtigden, frontlijnambtenaren en lokale politieke actoren opereren onder druk komen te staan. In plaats van data gedreven technologieën te zien als neutrale instrumenten, plaatst dit onderzoek ze binnen bredere politieke, bestuurlijke en sociale dynamieken. Zo wordt duidelijk hoe technologieën normatieve aannames belichamen en macht herverdelen op vaak subtiele maar diepgaande manieren. Het proefschrift toont aan dat de beloften van neutraliteit en efficiëntie nieuwe vormen van ongelijkheid, ondoorzichtigheid en vervreemding verhullen, die zowel de ervaring van burgers met de verzorgingsstaat als de manier waarop ambtenaren hun rol vervullen beïnvloeden.

Het proefschrift opent met het persoonlijke verhaal van mevrouw Ceylan, een uitkeringsgerechtigde in Rotterdam, wier exemplarische ervaringen met het uitkeringsstelsel de bredere problematiek illustreren. Haar relaas over indringende controles, gebrek aan transparantie en digitale surveillance roept urgente vragen op over waardigheid, vertrouwen en verantwoording in de digitale verzorgingsstaat. Deze zorgen vormen de basis voor de centrale onderzoeksvraag: hoe veranderen data gedreven technologieën de uitvoering en governance van sociale dienstverlening op gemeentelijk niveau? Om deze vraag te beantwoorden, onderzoekt dit proefschrift vier onderling verbonden sites: de ervaringssite van uitkeringsgerechtigden, de professionele site van frontlijnambtenaren en hun netwerken, de politieke site van het gemeentebestuur, en de institutionele kaders van de Nederlandse digitale verzorgingsstaat. Het onderzoek is gebaseerd op een multi-sited kwalitatief onderzoeksontwerp. Het combineert interviews,

observaties en documentanalyse om te begrijpen hoe data gedreven technologieën zijn ingebed in de sociale dienstverlening binnen verschillende sites, en hoe ze interacties binnen die sites vormgeven.

Uitkeringsgerechtigden ervaren data gedreven beslissingen als afstandelijk en onpersoonlijk, bemiddeld via computerschermen en geautomatiseerde controles in plaats van menselijke beoordeling en dialoog. Beoordelingen van recht op ondersteuning, risicoprofielen en automatische monitoring creëren een gevoel van constante observatie, zonder ooit de gehanteerde criteria volledig te begrijpen. Zelfs wanneer burgers aan alle voorwaarden voldoen, lijken uitkomsten vaak willekeurig, met weinig mogelijkheden om deze aan te vechten of te doorgronden. Zo verwerken technologieën niet alleen informatie, maar vormen ze actief de betekenis van interactie met de staat, waarbij interacties technische transacties worden in plaats van sociale ontmoetingen en verantwoordelijkheid verschuift van menselijke beoordeling naar systeemuitkomsten. Tegelijkertijd laat het proefschrift zien hoe data-driven governance bestaande machtsongelijkheden versterkt en het vertrouwen tussen burgers en gemeenten ondermijnt. Het gebruik van algoritmen en dashboards creëert een dynamiek van wederzijds wantrouwen, waarbij burgers zich gecontroleerd voelen en ambtenaren onder druk staan om data te verzamelen en te verifiëren. Burgers ontwikkelen coping-tactieken, zoals meewerken, verzetten, terugtrekken of externe hulp zoeken, om zich door het systeem te navigeren. Deze tactieken laten zien dat burgers zich verzetten tegen de waarden die besloten liggen in data-driven governance, met name de voorrang van efficiëntie boven empathie en controle boven zorg.

Frontlijnambtenaren, met name werkcoaches, ervaren een verschuiving in hun professionele identiteit door de implementatie van data dashboards. Twee rolidentiteiten komen naar voren: die van klantcoach, gericht op persoonlijk contact en maatwerk, en die van caseloadmanager, gericht op efficiëntie en arbeidsmarktintegratie. Het dashboard stimuleert een verschuiving naar de caseloadmanager rol, wat leidt tot rolconflicten en gevoelens van vervreemding bij degenen die waarde hechten aan relationeel werk. Ook verandert de relationele dynamiek binnen teams: competitie neemt toe en percepties van autonomie en macht verschuiven. Ambtenaren met sterke datavaardigheden krijgen meer invloed, terwijl anderen zich machteloos voelen. Omdat kennis ongelijk verdeeld is, kunnen sommige frontlijnambtenaren minder goed verantwoordelijkheid nemen voor beslissingen die met behulp van data gedreven technologieën worden gemaakt. Dat ondermijnt de transparantie en verantwoording. Zo moeten werkcoaches die niet precies

weten hoe het dashboard werkt toch de beslissingen die ze maken kunnen verantwoorden en uitleggen aan uitkeringsgerechtigden. Ondertussen hebben collega's met meer datavaardigheden meer invloed op hoe het dashboard wordt gebruikt en geïnterpreteerd. Dit zorgt voor een scheve kennisverdeling. De gezamenlijke professionele afweging wordt vervangen door de invloed van een kleine groep datavaardige frontlijnambtenaren. Dat is een risico voor de democratie, omdat beslissingen met grote gevolgen voor burgers, zoals het recht op een uitkering of het opleggen van sancties, worden genomen zonder duidelijke verantwoordelijkheden. Daardoor hebben zowel uitkeringsgerechtigden als frontlijnambtenaren zonder veel datakennis weinig mogelijkheden om die beslissingen aan te vechten of te herzien.

Ondanks de ingrijpende gevolgen van digitalisering zijn politieke discussies binnen het gemeentebestuur van Rotterdam zeldzaam en vooral reactief. Wanneer ze wel plaatsvinden, zijn ze gefragmenteerd door een mechanisme dat we 'content chopping' noemen, waarbij technische, ethische en politieke aspecten van digitalisering in afzonderlijke arena's worden behandeld, waardoor het totaaloverzicht uit beeld raakt. Lokale politici geven vaak aan dat ze onvoldoende tijd en kennis hebben om zich inhoudelijk te verdiepen in digitalisering, waarmee het onderwerp feitelijk wordt gedepolitiseerd. Hierdoor verschuift de verantwoordelijkheid naar een kleine groep technisch onderlegde ambtenaren, wat zorgen oproept over democratische controle.

Op macroniveau is er sprake van een institutionele leegte in de Nederlandse digitale verzorgingsstaat, waarin juridische, ethische en datakwaliteitskaders onvoldoende zijn toegerust om de uitdagingen van data gedreven technologieën het hoofd te bieden. Deze leegte wordt geïllustreerd aan de hand van twee casestudies: de toeslagenaffaire en het Top 400/600 programma voor voorspellende handhaving. In de toeslagenaffaire leidde het gebruik van een black box algoritme tot onterechte beschuldigingen van fraude, waarbij burgers met een dubbele nationaliteit onevenredig werden getroffen. Het gebrek aan transparantie en verantwoording resulteerde in institutioneel racisme. In het Top 400/600 programma werden jongeren als risicovol aangemerkt op basis van vage indicatoren, waardoor de grens tussen zorg en controle vervaagde en etnische minderheden disproportioneel werden geprofileerd. Deze casussen tonen aan hoe zwakke institutionele waarborgen discriminatie mogelijk maken en democratische waarden ondermijnen. Verzet vindt plaats op alle onderzochte sites -burgers verzetten zich tegen dataverzoeken, ambtenaren stellen kritische vragen over dashboards, en politieke actoren mijden verantwoordelijkheid- maar zelden leidt dit tot betekenisvolle of structurele verandering.

De gevolgen van data-driven governance zijn zichtbaar in alle onderzochte sites. Burgers worden bestuurd door ondoorzichtige systemen die het moeilijk maken om bezwaar te maken. Frontlijnambtenaren moeten balanceren tussen relationeel werk en digitale naleving, waarbij vertrouwen en empathie vaak onder druk komen te staan. Politieke actoren worstelen met het uitoefenen van controle over data gedreven technologieën die worden gepresenteerd als technische noodzaak, maar diepgaande normatieve implicaties hebben. In elk van deze sites creëert data-driven governance nieuwe vormen van ongelijkheid en uitsluiting, waarbij bestaande kwetsbaarheden worden versterkt. Mensen met beperkte digitale vaardigheden, weinig middelen of instabiele levensomstandigheden worden onevenredig getroffen door geautomatiseerde controles en risicobeoordelingen, terwijl reeds gemarginaliseerde groepen extra onder toezicht komen te staan en minder mogelijkheden hebben om bezwaar te maken. In plaats van het vertrouwen in de verzorgingsstaat te vergroten, dreigt data-driven governance de legitimiteit ervan te ondermijnen door transparantie, verantwoording en empathie af te breken.

Tegelijkertijd benadrukt het proefschrift dat deze ontwikkelingen niet onvermijdelijk zijn. Het documenteert momenten van verzet, onderhandeling en aanpassing, waarin actoren proberen ruimte terug te winnen voor menselijke beoordeling en relationele betrokkenheid. Uitkeringsgerechtigden ontwikkelen tactieken om met het systeem om te gaan en het soms uit te dagen. Frontlijnambtenaren zoeken manieren om te navigeren tussen hun computerscherm en de burger, op zoek naar ruimte voor discretie en menselijk contact. Lokale bestuurders stellen soms kritische vragen over rechtvaardigheid, haalbaarheid en proportionaliteit, ook al leiden deze niet altijd tot beleidsverandering. Deze praktijken laten zien dat de digitale verzorgingsstaat geen afgerond project is, maar een betwist veld waarin verschillende logica's en waarden met elkaar concurreren. De logica van digitalisering bestaat naast en botst met alternatieve logica's van zorg, vertrouwen en sociale rechtvaardigheid, en de balans daartussen is nog steeds onderhandelbaar.

De theoretische bijdrage van dit proefschrift ligt in het samenbrengen van perspectieven die doorgaans afzonderlijk van elkaar worden bestudeerd. Door ervaringen van burgers, frontlijnpraktijken, institutionele logica's en systemische ontwerpkeuzes met elkaar te verbinden, ontstaat een samenhangend holistisch beeld van hoe data-driven governance werkt. Het proefschrift integreert literatuur over street-level bureaucracy, machtsdynamieken, en burger-staatinteracties om te laten zien hoe data gedreven technologieën relaties veranderen, rollen herdefiniëren en institutionele structuren beïnvloeden. Daarbij worden bestaande concepten verder ontwikkeld. Concepten

zoals ‘digital sphere’ en de ‘logic of digitalization’ worden gebruikt om de normatieve inbedding van data gedreven technologieën te begrijpen, terwijl het idee van de ‘institutional void’ helpt om zichtbaar te maken hoe gaten in het institutionele kader het bestuur van de verzorgingsstaat beïnvloeden. Zo worden de kaders niet alleen toegepast om de effecten van data gedreven sturing op verschillende niveaus zichtbaar te maken, maar ook uitgebreid en met elkaar verbonden. Tot slot biedt het proefschrift een kritische reflectie op de politieke en ethische gevolgen van digitalisering voor het functioneren van de verzorgingsstaat.

Het proefschrift levert tevens een bijdrage aan drie urgente maatschappelijke debatten. Ten eerste gaat het in op de uitholling van verzorgingsstaatsprincipes. Data gedreven technologieën versterken vaak ongelijkheid en verschuiven verantwoordelijkheid naar kwetsbare burgers. Uitkeringsgerechtigden ervaren emotionele en administratieve lasten, wat principes van solidariteit en publieke verantwoordelijkheid ondermijnt. Ten tweede onderzoekt het de transformatie van frontlijn dienstverlening. Digitale tools veranderen hoe diensten worden geleverd en hoe ambtenaren zich tot burgers en elkaar verhouden. Het verlies van persoonlijk contact en het gebruik van prestatie-indicatoren ondermijnen de relationele basis van sociale dienstverlening. Ten derde verkent het de implicaties voor democratisch bestuur. Beperkte politieke betrokkenheid en technocratische besluitvorming bedreigen de democratische legitimiteit. Daarom wordt gepleit voor sterker politiek leiderschap, ethische reflectie en betrokkenheid van burgers bij het vormgeven van data-driven governance.

Om verantwoordelijker data-driven governance te bevorderen, stelt het proefschrift verschillende richtingen voor toekomstig onderzoek en beleid voor. Het pleit voor de ontwikkeling van een ‘burgergerichte datawetenschap,’ gericht op de eigen ervaringen van mensen die worden beïnvloed door data gedreven systemen. Het benadrukt de noodzaak om het principe van contestatie centraal te stellen door ervoor te zorgen dat alle actoren betekenisvol kunnen deelnemen aan en bezwaar kunnen maken tegen data gedreven technologieën. Het bepleit bredere digitale geletterdheid in de samenleving, met name onder burgers, frontlijnambtenaren en politici. Verder onderstreept het proefschrift het belang van professionele nabijheid, waarbij empathisch en persoonsgericht frontlijnwerk wordt gestimuleerd. Tot slot roept het op tot voortdurende ethische reflectie om ervoor te zorgen dat data-driven governance in overeenstemming is met democratische waarden.

Deze dissertatie concludeert dat data-driven governance niet slechts een technische innovatie is, maar een diepgaande maatschappelijke transformatie. Ze verandert sociale dienstverlening, verandert professionele rollen en stelt democratische verantwoording op de proef. De vraag is niet langer zozeer hoe we data gedreven technologieën moeten implementeren, maar of en wanneer het gebruik van data gedreven technologieën noodzakelijk en wenselijk is en onder welke omstandigheden. Om ervoor te zorgen dat de digitale verzorgingsstaat alle burgers eerlijk dient, moet deze worden verankerd in democratische waarden, gevoed door geleefde ervaringen, en onderworpen aan betekenisvolle contestatie. Dit vereist herbezinning op data-driven governance, niet als doel op zich, maar als middel om rechtvaardigheid, empathie en verantwoording in publieke dienstverlening te waarborgen.

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To my supervision team: you truly were a team, each contributing in your own unique way while respecting and inspiring each other and me. You were the guardrails that allowed me to safely press the gas pedal with confidence. It was a true luxury and pleasure to have you guide my work.

Lieke, thank you for your warmth, inexhaustible optimism, critical eye, academic rigor, and meticulous editing of my work. I'm excited to continue as your academic colleague, even though I am working at a different university, and I am looking forward to collaborating on new projects in the future.

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앞으로 너, 아나레나, 그리고 내가 함께 나눌 수많은 밤늦은 대화들이 정말 기대돼.

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PhD portfolio

Name	Margot Kersing
Department	Department of Public Administration and Sociology
	Erasmus School of Health Policy & Management
PhD period	April 2021 – April 2025
Promotors	Prof. dr. Liesbet van Zoonen
	Prof. dr. Kim Putters
Co-promotor	Dr. Lieke Oldenhof

Courses

Erasmus Graduate School of Social Sciences and the Humanities (EGSH)

2021 Professionalism and integrity
2021 Searching and managing your literature
2021 Qualitative data analysis with grounded theory
2022 How to finish your PhD in time
2022 Responsible research data management
2022 Qualitative coding and analysis of textual data with ATLAS.ti
2022 Qualitative interview techniques
2022 Communicating your research: lessons from Bitescience
2023 Digital research methods for textual data
2024 English academic writing for PhD students

Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC)

2021 Summer school - Epistemic corruption
2021 Fall workshop - The view from somewhere: Geographies of knowledge and STS
2022 Summer school - Opening up diversity
2023 Spring workshop - STS at work: Perspectives on labour
2023 Fall workshop - Archiving

Other courses

2022 TOP - Regie nemen over mijn resultaten en ontwikkeling

2022 ESSB Academy - Executive education design workshop

2023 NIG – Writing week

- Academic writing workshop
- Editors workshop
- Journalists workshop

2023 Basic Examiner Qualification (BEQ)

- How to design an assessment plan for your course
- How to construct (group) assignments & alternative modes of assessment
- How to construct exams & questions
- How to analyze and evaluate your assessment

2024 NIG – Writing Week

- How to visualize your research (infographic design)
- Scientific storytelling

Peer-reviewed publications

Kersing, M., Van Zoonen, L., Putters K., Oldenhof, L. (2022) The changing roles of frontline bureaucrats in the digital welfare state: The case of a data dashboard in Rotterdam's Work and Income department. *Data & Policy, 4*, E24. Doi: 10.1017dap.2022.16.

Oldenhof, L., Kersing, M., and van Zoonen, L. (2024). Sphere transgressions in the Dutch digital welfare state: causing harm to citizens when legal rules, ethical norms and quality procedures are lacking. Information, Communication & Society, 1–17. https://doi.org/10.1080/1369118X.2024.2358163

Kersing, M., Oldenhof, L., Putters, K., and van Zoonen, L. (2025). Dashboard-driven change: Reshaping relational dynamics in professional frontline–screen-level networks. *Journal of Professions and Organization, 12*(3), Article joaf005. https://doi.org/10.1093/jpo/joaf005

Kersing, M., Oldenhof, L., Putters, K., Van Zoonen, L. (2025) Thief or Toddler: Experiences of unemployed benefit recipients in the Dutch digital welfare state. In: Galis, V., and Vlassis, V-S. (Eds) *Digitalization, Data and Welfare: Sociotechnical Approaches to Service Delivery.* Edward Elgar Publishing Ltd. ISBN - 978 1 0353 3814 6

Kersing, M., Oldenhof, L., Putters, K., and van Zoonen, L. (2025). Catching the bad apples to keep up the good work: Dutch municipal government perspectives on data-driven technologies in unemployment. Data & Policy, 7, e75. doi:10.1017/dap.2025.10026

Print publications

2023 Illustration booklet 'Ervaringen van mensen met een uitkering met het data-gedreven werken van hun gemeente', 'The experiences of unemployed benefit recipients with data-driven working of municipalities' Centre for BOLD Cities.

2023 'Ga het gesprek aan – doe een datadialoog!' Centre for BOLD Cities

2023 Schuring, M., Burdorf, L., Stam, M., Knoef, M., Kersing, M., and van Zoonen, L. (2023). Re-integratie in BOLD Cities II: Wat zijn de kansen, risico's en (on) mogelijkheden in het gebruik van Big Data om de effectiviteit en kwaliteit van gemeentelijke reintegratie te verbeteren? Eindrapportage. Erasmus Medical Center.

Audio publications

2023 Guest in the podcast series 'Big Brother in de Bijstand' by Open Rotterdam and Vers Beton

- Part 1: 'Het Heronderzoek'
- Part 2: 'Over Dieven & Kleuters'
- Part 3: 'Zullen ze het ooit leren?'

Video publications

2022 Video for respondents of the municipality of Rotterdam about the research findings of the article Kersing, M., Van Zoonen, L., Putters K., Oldenhof, L. (2022) The changing roles of frontline bureaucrats in the digital welfare state: The case of a data dashboard in Rotterdam's Work and Income department. *Data & Policy, 4*, E24. Doi: 10.1017dap.2022.16.

2024 Presentation video Data for Policy conference 2024. Paper title: Catching the bad apples to keep up the good work: Dutch city government perspectives on data-driven governance.

2025 Video about research findings of the book chapter Kersing, M., Oldenhof, L., Putters, K., Van Zoonen, L. (2025) Thief or Toddler: Experiences of unemployed benefit recipients in the Dutch digital welfare state. In: Galis, V., and Vlassis, V-S. (Eds) *Digitalization, Data and Welfare: Sociotechnical Approaches to Service Delivery.* Edward Elgar Publishing Ltd. ISBN - 978 1 0353 3814 6

Interviews

2022 Interview Centre for BOLD Cities 'In the spotlight'

2023 Interview Erasmus Magazine 'Margot ziet pinkwashing, 'veel gelul' en weinig moeite voor meer inclusie'

Book reviews

2021 Book review presentation 'Automating inequlity. How high-tech tools profile, police, and punish the poor' by Virginia Eubanks. Health Care Governance

2023 Book review 'Met dank, door mijnoverheid, bij de voedselbank' by Gerard Sangers

2023 Book review 'Armoede krijg je gratis' by Stella de Swart

Guest speaker

2021 'The changing roles of frontline bureaucrats in the digital welfare state: developing norms to deal with data tools'

BOLD Talk, BOLD Cities

2022 'Governing through data: Data-driven governance based on ideas of social justice' Guest speaker at the 'Entering Smart Cities' event organized by the Erasmus Centre for Entrepreneurship

2022 'Re-integratie in BOLD Cities: Het gebruik van Big Data in het domein van Werk en Inkomen'
Workshop at the ZonMw conference 'Werk, inkomen en gezondheid'

2022 'Data-gedreven werken in het sociaal domein. Lessen uit de praktijk'
Workshop at Divosa Benchmark Festival

2023 ‘Ervaringen van mensen met een uitkering met het data-gedreven werken van hun gemeente’
Webinar for the municipality of The Hague about findings Re-integratie BOLD Cities Fase II project

2024 ‘Catching the bad apples to keep up the good work: city government perspectives on data-driven governance’
Digitalization, ethics, and public policy seminar at the Institute of Public Administration, Leiden University.

2024 ‘Impact van data-gedreven werken op de organisatie en de doelgroep.’
Workshop at the seminar ‘Omgaan met complexiteit in het domein Werk en Inkomen’ for the municipality of Rotterdam.

2024 ‘Impact van data-gedreven werken op de organisatie en de doelgroep.’
Presentation for advisors Work & Income, Municipality of Nissewaard.

Conference presentations

2021 NIGovernance conference 2021, Utrecht, The Netherlands

2022 EASST conference 2022 Madrid, Spain

2022 NIGovernance conference 2022, Tilburg, The Netherlands

2022 Conference ‘Welfare after Digitalization. Digitalizing welfare, outsourcing responsibility’ IT University of Copenhagen, Denmark

2023 EGOS conference 2023 Sardinia, Italy

2024 SPA conference 2024, Glasgow, Scotland.

2024 Data for Policy conference 2024, London.

2025 NIGovernance conference 2025, Ghent, Belgium

Teaching activities

2021	Kwalitatief leeronderzoek workgroups	Pre-master ESHPM
2022	Thesis supervision master Public Administration	Master ESSB
2022	Kwalitatief leeronderzoek workgroups	Pre-master ESHPM
2022-2024	Governing Healthy Cities Coordinator, lecturer, workgroups	Master ESHPM, Master LDE
2023-2025	Healthcare Ethics workgroups	Master ESHPM
2023-2024	Thesis supervision bachelor Sociology	Bachelor ESSB

Guest lectures

2024 Guest lecture 'The digital welfare state: Data-driven governance in the domain of work and income' for the course 'Politics of work and digitalization', Master 'Digitalization in Work and Society', DPAS, ESSB, Erasmus University.

2025 Masterclass 'Impact van data-gedreven werken op de organisatie en de doelgroep' Master Sociaal Juridisch Expert. Hogeschool Inholland

Research projects

2021-2024 'Big Data in the social domain' commissioned by the Centre for BOLD Cities and Erasmus School of Health Policy & Management (ESHPM)

2021-2023 'Re-integratie in BOLD Cities II' funded by ZonMw

Grants

2019 'Research Incubator Ideas' Grant for proposal 'Responsibility practices of frontline bureaucrats working in a human-technology hybrid.'

Awards and nominations

2023 Nominated for ‘Best societal impact by a PhD candidate’ EGHS awards for PhD excellence 2024

2024 Lokale Media Award, category audio, for podcast ‘Big brother in de bijstand’ by Open Rotterdam and Vers Beton

2024 Nominated for ‘Best societal impact by a PhD candidate’ EGHS awards for PhD excellence 2025

Academic service

2022-present Coordinating chair of NIG colloquium ‘Street-level bureaucracy of the 21st century’

2022-2024 Co-chair of NIG colloquium ‘Administrative Ethics’

2022 DPAS PhD day organization

Peer reviewing

2021 Reviewer article for the Journal Data & Policy

2022 Reviewer article for the Journal Urban Governance

2022 Reviewer article for the Journal Policy Design and Practice

2024 Reviewer chapter for edited volume, Edward Elgar Publishing

2024 Reviewer article for the journal Social Policy and Administration

2024 Reviewer article for the journal Professions and Professionalism

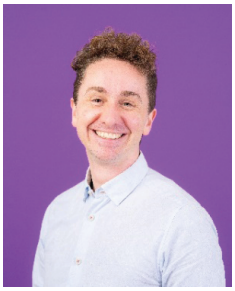
Additional activities

2023 PhD tweedaagse, SER, Den Haag.

2024 PhD tweedaagse, Tilburg University, Tilburg.

2025 Research visit Seoul National University, South-Korea.

About the author



Margot Kersing (1988) studied Public Administration at Leiden University and obtained their bachelor's degree in public administration in 2011 and their master's degree in public administration (track: politics and bureaucracy) in 2012. Their studies in Public Administration sparked their interest in ethics and political philosophy. In 2014 they obtained their master's degree in political philosophy from Leiden University.

After their studies, they worked as a teacher at the Institute of Public Administration at Leiden University, as a teacher at PPLE College (Politics, Psychology, Law, and Economics) at the University of Amsterdam, and as a teacher at Public Administration, and International Public Management of the Hague University of Applied Sciences.

In 2019 they received a grant, 'Research Incubator Ideas', financed by Professor Caelesta Braun's Aspasia Grant to work on their research proposal called 'Responsibility practices of frontline bureaucrats working in a human-technology hybrid.' From April 2021 until March 2025, they worked on their PhD thesis called 'The Digital Welfare State. A multi-sited investigation into the implications of data-driven governance for benefit recipients, frontline bureaucrats, and the municipal government' under the supervision of Professor Kim Putters, Professor Liesbet van Zoonen, and Dr. Lieke Oldenhof commissioned by the Centre for BOLD Cities and Erasmus School of Health Policy & Management (ESHPM).

Currently, Margot is working as an Assistant Professor at the Department of Political Science and Public Administration at the Vrije Universiteit Amsterdam.