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Automated decision-making and good administration: Views from inside the government machinery

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ABSTRACT

Use of semi- and fully automated, administrative decision-making in public administration is increasing. Despite this increase, few studies have explicitly analysed its relation to good administration. Good administration is regulations and norms aimed at securing the correctness of administrative decisions as well as the legitimacy of these and is often associated with underlying values such as transparency, equality of treatment and accountability. Based on a thematic analysis of qualitative interviews with 43 key public administration stakeholders in a wide array of policy areas in Denmark, insiders of government machinery are shown to perceive relations between automated decision-making and good administration as manifold. Automated, administrative decision-making is articulated as providing both opportunities for supporting good administration and undermining good administration. Six values of good administration particularly related to automated, administrative decision-making are identified: Carefulness; Respecting-individual-rights; Professionalism; Trustworthiness; Responsiveness and Empowerment. Put simply, risks to good administration can be expected to occur if administrative bodies apply automated, administrative decision-making, while opportunities must be actively nurtured through managerial attention. Despite popular conceptions of the threat of “robotic government”, the conclusions of this study indicate a need for a more pragmatic view of relations of automated, administrative decision-making and good administration balanced between outright techno-optimism and techno-pessimism.

1. Introduction

Automation of administrative decision-making by public administrative bodies is an important element of digital government reforms and has received growing attention within public administration and eGovernment studies (e.g., Bovens & Zouridis, 2002; Peeters, 2020; Wihlborg, Larsson, & Hedström, 2016). Nonetheless, limited explicit attention has been given to the critical relation between such decision-making and so-called good administration.

Good administration primarily covers regulations and norms aimed at securing the correctness of administrative decisions and their legitimacy (Ponce, 2005) and is often associated with underlying values¹ such as transparency, equality of treatment and accountability (Groves & Lee, 2007; Widlak, van Eck, & Peeters, 2021). Some authors see good

administration as an attempt to level the inherent imbalance in the power of administrative bodies vis-à-vis individual citizens or firms (Hasenfeld, Rafferty, & Zald, 1987). This imbalance is generally due to the former's superior resources in terms of unilateral interpretation of relevant legislation, professional expertise and authoritative sanctions (fines, imprisonment, etc.). Regulations, norms and values of good administration influence public servants and administrative bodies, and shape procedures of administrative decision-making including the use of automated, administrative decision-making.

Automated, administrative decision-making (hereafter AADM²) is applied in a wide array of policy areas such as support for the unemployed (Kuziemski & Misuraca, 2020), administration of child benefits (Larsson, 2021) and administration of agricultural subsidies (Jorna & Wagenaar, 2007). Wihlborg et al. (2016) cited several reasons for use of

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¹ For sake of clarity, the term “values” in this article does not relate to the value of something (in principle in measurable form) as for example employed in literature on public value (e.g., Moore, 1997) but to preferable modes means and ends of action (Kluckhohn, 1952) by administrative bodies.

² “ADM” is a common abbreviation for automated (or algorithmic) decision-making, while “APDM” is infrequently used for automated public decision-making and “ADMS” for automated decision-making systems. “AADM” is used in this article to emphasise the focus on automated, administrative decision-making as a particular type of automated decision-making.

AADM: increased efficiency, speedier administration, improved impartiality and equality of treatment. Use of AADM is widely assumed to be increasing as technology develops and matures (e.g., Juell-Skielse, Lindgren, & Åkesson, 2022). This increase will most likely also entail more complex types of administrative decisions being partially or fully automated in the future.

The relation between use of AADM and good administration is of particular societal importance since the resulting decisions represent an exercise of direct, authoritative power over individual citizens and firms by government. As administrative decision-making becomes increasingly automated, understanding possible changes in good administration's "equalising" role for the mentioned imbalance of administrative bodies vis-à-vis citizens and firms is essential. Without such an understanding, the equalising role of good administration risks being weakened. This will not only indirectly question the correctness and legitimacy of automated, administrative decisions but also the concomitant exercise of authoritative power as well as – in a broader sense – public government itself.

Reflecting the increased use of AADM, multiple authors have discussed selected relations between AADM and good administration such as data bias and equal treatment (e.g., Eubanks, 2018), opacity and reason-giving (e.g., Ahonen & Erkkilä, 2020) and effects for the exercise of discretion (e.g., Adler & Henman, 2009). However, only a few authors such as Cobbe (2019), Oswald (2018) and Widlak et al. (2021) explicitly discuss relations of use of AADM and good administration with the aim of covering the entire range of relevant relations. The latter contributions tend to lack empirical nuance, be theoretical or be based on an outside-in perspective of public administration. The relative shortage of research mirrors a more general vacuum of research on the relationship between public sector values and new technology (Bannister & Connolly, 2014). It may additionally reflect a tendency to perceive public administration management as a uniform body of rather naïve techno-optimists (Veale, van Kleek, & Binns, 2018).

This article supplements the mentioned literature by offering an empirical, inside-out perspective on a broad range of relations regarding use of AADM and good administration. By doing so, detailed empirical light is cast in a public administrative setting on the ongoing – and sometimes polarised – debate between techno-optimists (e.g., McAfee & Brynjolfsson, 2014) and techno-pessimists (e.g., Eubanks, 2018).

Following a techno-optimistic view, use of AADM is perceived as securing quality of administrative decisions, supporting equal treatment, helping guarantee individual rights of citizens, and strengthening societal trust by increasing transparency of administrative decision-making. This view stresses the ability of technology to both support individual citizens (and firms) and "open up" government bureaucracy while increasing the efficiency of administrative decision-making, thereby supporting good administration. Traces of this approach can be found in disciplines of public administration (Margetts & Dorobantu, 2019), eGovernment (e.g., Scholta, Mertens, Kowalkiewicz, & Becker, 2019) and management studies (e.g., Martinho-Truswell, 2018).

A techno-pessimistic view, on the other hand, argues that use of AADM limits the necessary administrative discretion of public servants, may incorporate unethical behavioural manipulation of citizens, relies on biased data and blurs transparency. This view emphasises apparent inherent weaknesses of advanced technology, and the unhealthy commercial interests of the tech industry vis-à-vis government and civil society capabilities, thereby undermining good administration. It is particularly dominant within critical algorithmic studies (e.g., Veale et al., 2018) and law (e.g., Harlow & Rawlings, 2020) but is also related to discussions of the possible shift from street-level bureaucrats to system-level bureaucracies (e.g., Bovens & Zouridis, 2002).

Building on a thematic analysis of articulations of 43 Danish insiders of government machinery across policy areas, this article builds on the following research question: *What are the relations of use of automated, administrative decision-making and good administration as articulated by key public administration stakeholders?*

By doing so, this article not only examines possible risks of undermining values of good administration as stressed by techno-pessimists but also explores possible opportunities of supporting values of good administration as stressed by techno-optimists. Drawing on existing work on alternative sets of administrative values (Bannister & Connolly, 2014; Hood, 1991), it furthermore casts empirical light on inherent trade-offs and duplicate synergies related to AADM and good administration.

The article is structured in the following way. In the next section, the concepts of AADM and good administration are scrutinised and connected to existing theoretical understandings. In the third section, the empirical setting and employed methods are described. The fourth and fifth sections form the main body of the article and contain a presentation and discussion of the empirical findings. The sixth, and final section, concludes by analysing opportunities and risks that occur when AADM meets good administration. This section also provides a few selected implications for practice.

2. Automated, administrative decision-making and good administration

Following the Introduction, the following sub-sections discuss the key concepts of AADM and good administration, and connect them to existing theoretical understandings.

2.1. Administrative decision-making and its automation

To some extent the focus of this article is "back to basics" in terms of public administration, i.e., administrative decision-making is the bread-and-butter activity of many public authorities and involves a high number of public servants around the world daily. Administrative decisions³ as studied in this article are legally binding decisions determining what is lawful in a specific case and in relation to a specific addressee, i.e., an individual or firm (Mashaw, 2007). Some administrative decisions are beneficial to the individual (e.g., decisions to grant unemployment benefits or childcare benefits) and some restrictive (e.g., rejection of application to build a private house or grant parole). These decisions differ considerably in complexity.

AADM is the automation of such decision-making by way of digital technology. It is illustrative to consider the different types of automation as a continuum ranging from semi- to fully automated. Specifically, i) from simple types where data is acquired and presented by the decision support system for the public servant; ii) via decision support where the automated decision system acquires, presents and suggests decisions for the public servant and iii) fully automated decisions without any interaction of the public servant (Peeters, 2020; Roehl, 2022).

Researchers across academic fields have principally studied the use of AADM by public authorities through case studies. As early as 1991, Margetts described the introduction of semi-automated administration of selected social security schemes in the UK, and in 2002, Bovens & Zouridis gave an account of fully automated administration of minor traffic offenses as well as public student grants and loans in the Netherlands. Carney (2018) has studied fully automated administration of debts due to welfare overpayment in Australia while Andersson, Hedström, and Wihlborg (2018) have studied semi- and fully automated administration of driver license permits in Sweden.

Technically, AADM is often based on combinations of multiple systems, government databases, online portals and network components (Nevo, Nevo, & Ein-dor, 2009; Stoudt-Hansen et al., 2020). Empirically,

³ Traditions of public administration vary across countries and legal traditions, but the concept of administrative decisions is generic and known under headings such as "adjudication" and "order" (US tradition), "acte administratif individuel" (Napoleonic tradition), "Verwaltungsakte" (Germanic tradition), and "förvaltningsbeslut" / "förvaltningsafgørelse" (Scandinavian tradition).

AADM often incorporates both simple and more advanced techniques in the form of robotic process automation, deterministic rule-based models, regression, big data, predictive analytics, machine learning and neural networks and is operated by public servants via smartphones, tablets, websites, office applications and case management systems (Roehl, 2022). "Automated decision systems" is here used as a common denominator for the systems and techniques described above. Some topics of good administration arise in relation to particular techniques, e.g., unsupervised machine learning. However, the majority of opportunities and risks articulated by the interviewees appear tied to the mentioned continuum of automated decision-making rather than to specific types or specific techniques.

2.2. Good administration

Regulations and norms of good administration (sometimes referred to as proper or sound administration) concern administrative activities of the executive branch of government including, in particular, administrative decision-making.⁴

The British legal scholar, Peter Cane (2011, p. 377), defines good administration as "...adherence to hard and soft law, and to policies and procedures; timeliness; accuracy in provision of information; having and giving good reasons for decisions; avoiding conflicts of interest; acting reasonably, fairly, consistently, and proportionately." Cane emphasises that the mentioned definition is not exhaustive as good administration includes, but is not limited to, the above elements. No definitive list of regulations and norms of good administration thus exists, and good administration is sometimes criticised as a rather ambiguous concept (Mendes, 2009). Similar regulations and norms do, however, exist in most democracies although the scope and wording differ between countries and legal traditions (Ponce, 2005).

In a formal recommendation, the Council of Europe (2007), for example, listed 21 principles of good administration which de facto cover both regulations and norms. The Council called for its European member states to adhere to said principles. Common examples across jurisdictions – and included in the recommendation of the Council of Europe – are the obligations of reason-giving in administrative decision-making, equality of treatment of similar cases and speediness in case-handling processes.

As with all regulations and norms, regulations and norms of good administration are associated with broader underlying values. In this case, this points to selected values of public administration. Authors such as Hood (1991), Kernaghan (2003), Beck Jørgensen and Bozeman (2007) and Rose, Persson, Heeager, and Irani (2015) have all suggested different typologies of values of public administration (or public values as some authors term it) in the last decades. Here, the point of departure is Bannister & Connolly (2014, p. 123) who reviewed several existing typologies and suggested what the authors themselves argue is "...a convenient structure for the analysis of the impact of ICT [information and communications technology] on values". A shortened version of Bannister and Connolly's (2014) suggestion focusing on values of good administration including adjacent values is reproduced in Table 1.

Partly inspired by Hood's (1991) typology of Sigma-, Theta- and Lambda-type values, Bannister and Connolly (2014) differentiate between three subsets of values of public administration: *Duty*, *Service* and *Socially oriented*. However, none of the subsets encapsulate all values relevant to good administration. Hood (1991, p. 11) defines his Theta-type values as characterised by "achievement of fairness, mutuality and the proper discharge of duties". These values thus most directly reflect the above-mentioned understanding of good administration.

⁴ The use of the prefix "good" in good administration might seem peculiar, but the label is simply a question of tradition serving to delimitate a certain group of regulations, norms and values relevant for public administrative activities.

Partly mirroring this, Bannister and Connolly's (2014) subset of *Socially oriented* values stresses that values such as justice, fairness and equality of treatment are the subset primarily relevant to good administration. Values from the other two subsets, i.e., compliance-with-the-law (often termed legality) and accountability (both from the *Duty oriented* subset) as well as transparency (from the *Service oriented* subset), also have some pertinency for good administration.

This is significant because while the values within each of the three subsets tend to be coherent, the values across the different subsets are not. Referring to Table 1, protecting-citizen-privacy and transparency are typically not mutually supportive just as parsimony and citizen service might be difficult to integrate. This line of thinking suggests that use of AADM in a similar manner will present trade-offs (choice of one desired factor decreases another desired factor) of values of good administration. Imagining synergies (a combination of factors producing a greater total effect than the sum of the individual factors) between the subsets in relation to use of AADM is, however, also possible.

2.3. Automated, administrative decision-making and values of good administration

Looking across existing contributions regarding relations between use of AADM and good administration, seven of the values mentioned in Table 1 are particularly dominant (indicated with arrows in Table 1). Understood through the prism of this article, the contributions indicate that possible changes in good administration's equalising role regarding the imbalance of administrative bodies vis-à-vis citizens (or firms) are particularly likely to occur in relation to these seven values.

One of the most commonly cited advantages of use of AADM is its support of speedy, effective and efficient administrative decision-making including the easy and cost-effective up and downscaling (e.g., Ranerup & Henriksen, 2019). While not exclusively a part of good administration, use of AADM is in this way related to the underlying value of *effectiveness* (Bannister & Connolly, 2014) and *leanness* (Hood, 1991).

Another advantage of use of AADM is its ability to treat similar cases identically, eliminate human bias and ignore irrelevant attributes of a case (Oswald, 2018). Use of AADM is thus related to the underlying values of *equality of treatment* and can be said to touch upon the value of *compliance-with-the-law* (Bannister & Connolly, 2014).

Use of AADM likely involves the processing of personal, often sensitive, information (Cobbe, 2019). Here, authors point to the risk of AADM being based on disproportionate volumes or disproportionate sensitivity of data regarding individual addressees hence implying a regime of inappropriate surveillance (Hardy, 2020) being related to the underlying value of *protecting-citizen-privacy* mentioned by Bannister and Connolly (2014).

Authors have also pointed to the risk of reaching erroneous or unfair administrative decisions as AADM might be based on data being biased (e.g., Cobbe, 2019). Among other issues, this is at odds with the obligation of equal treatment of similar cases and related to values of *equality of treatment* (Bannister & Connolly, 2014) and *fairness* (Bannister & Connolly, 2014; Hood, 1991).

Authors argue that use of AADM could result in an excessive curtailment of administrative discretion. Within street-level literature, it is widely discussed if digitalisation curtails or transforms the discretion of professionals (e.g., Busch & Henriksen, 2018). It is to some extent simpler in terms of good administration. Specifically, if relevant regulation obliges an administrative body to take individual aspects into account as part of administrative decision-making, then decision-making cannot be left to decision systems unable to deviate from policies or guidelines where appropriate. Doing so goes against the obligation of no "fettering" of statutory discretion (Oswald, 2018) and the value of *compliance with law* (Bannister & Connolly, 2014).

Some authors point to administrative bodies transferring their formal responsibility for administrative decisions to, e.g., ICT suppliers who

Table 1

Bannister and Connolly's (2014) suggestion of administrative values.

Subset	Socially oriented	Duty oriented	Service oriented
Values of good administration	Inclusiveness; justice; ►fairness; ►equality of treatment; due process; ►protecting-citizen-privacy; consulting citizens; impartiality	Responsibility to citizens and elected politicians, proper use of funds; ►compliance-with-the-law; integrity and honesty; ►accountability; parsimony; rectitude	Citizen service; respect-for-the-individual; responsiveness; ►effectiveness and efficiency; ►transparency
Broader focus of subset	Values emphasising rectitude and fairness as well as broader social goals.	Values emphasising frugality and purposefulness as well as duties of public servants to government and state.	Values emphasising the responsibility of public servants to provide a high level of service to the citizen.

Extract focusing on values of good administration including adjacent values. Arrow (►) indicates value is related to use of AADM in existing literature, cf. Section 2.3.

develop decision systems or de facto escape the responsibility by claiming “the computer says no” (e.g., Widlak et al., 2021, p. 65). Such transfer risks constitute improper delegation by administrative bodies (Oswald, 2018) and are related to the underlying value of *accountability* (Bannister & Connolly, 2014).

Finally, authors have pointed to the obligation of reason-giving and the risk use of AADM poses to the obligation. Both public servants and addressees being subject to administrative decisions should ideally be able to understand the criteria used and steps taken to reach the decision (Widlak et al., 2021). This can be particularly endangered by opaque “black box” algorithms if decision systems are based on artificial intelligence (e.g., Henman, 2020). Following these authors, what is at stake here is the underlying value of *transparency* (Bannister & Connolly, 2014).

3. Methods

This article is intended to supplement emerging and more speculative literature by providing an explorative, empirical account of the breadth of relations of use of AADM and good administration. The focus is to uncover and categorise articulations of key public administration stakeholders, thereby formulating initial explanations for later research (Lee & Baskerville, 2003). Appendix B contains details on data collection and analysis as a supplement to the following and is available as online supporting information.

3.1. The empirical setting: Automated, administrative decision-making in Danish public administration

While the application of advanced techniques such as big data and artificial intelligence (AI) in the public sector has received considerable attention recently (e.g., Maciejewski, 2017; Margetts & Dorobantu, 2019), automation of administrative decision-making has in fact been an expanding trend in Western public administration for several decades (Margetts, 1998).

There are not necessarily any “hyped” technologies behind use of AADM, and Danish public authorities have used it as far back as the 1970s for administrating, e.g., income taxes. Clear signs of the scope and depth of use of AADM increasing as technology develops and matures are currently observable (Juell-Skielse et al., 2022).

Denmark belongs within the Scandinavian administrative tradition, and is, in general, considered a high trust society characterised by a modern, extensive and decentralised welfare state as well as social cohesion, low corruption and high equality (Andersen, 2018). As a working thesis, values of good administration are thus relatively well rooted in Danish public administration. Denmark has invested heavily in the digitalisation of its public sector since the 1990s and is today considered a leader in terms of digital government (United Nations, 2022). This has led some authors to observe that Denmark is developing into “a Neo-Weberian State in the digital era” (Greve & Ejersbo, 2016, p. 127).

Semi- and fully automated AADM are used by a high number of administrative bodies in Denmark at the local, regional and national government levels. They are additionally used in relation to such diverse areas as tax administration, student grants, building permits and

livestock farming permits. Apart from broader regulations such as the General Data Protection Regulation (GDPR) of the European Union, no legislation regulating the use of AADM exists in Denmark with the traditional assumption being that administrative bodies can organise activities freely as long as they observe relevant regulation (Mørup, 2018). As a result, no special review or appeal procedures exist in relation to automated, administrative decisions. The Danish Ombudsman has, however, emphasised that regulations and norms of good administration in Denmark are to be considered “technology neutral” and also apply to use of AADM (Motzfeldt & Næsberg-Andersen, 2018). A popular debate on the need for more comprehensive reform of regulations and norms of good administration to match the continued digitalisation of the public sector does, however, seem to be slowly emerging.

Relatively few administrative bodies employ fully automated AADM, and none of these do so based on machine learning or other artificial intelligence techniques. This tendency appears to roughly mirror developments in other European countries (see Misuraca & van Noordt, 2020) and – in the sense of very limited use of fully automated AADM based on artificial intelligence techniques – in the US (see Coglianese & Dor, 2021).

3.2. Data collection and analysis

This study is based on interviews with two groups of public administration stakeholders all of whom have experience with use of AADM in the Danish public sector. Specifically, I) “policymakers” are administratively appointed (non-elected) high-level officials influencing policies and regulations in relation to the digitalisation of the Danish public sector including AADM (e.g., a departmental head in the Danish Ministry of Justice or a municipal chief executive officer), and II) “managerial practitioners” are either mid-level managers with responsibility for actual use of AADM within an administrative body or senior consultants working in close collaboration with such managers. In Denmark, administrative bodies drawing on assistance from management and technology consultants with regard to use of advanced technology are common. Despite the risk of possible bias rooted in their commercial interests, consultants are included as a subgroup of managerial practitioners as they serve as important management fashion-setters assisting administrative bodies across the public sector (Abrahamson, 2016) and – as experts – represent efficient access to accumulated insider knowledge (Bogner, Littig, & Menz, 2009). Table 2 provides an overview of the interviewees. The choice of interviewees obviously resulted in the exclusion of voices from both lower ranks

Table 2
Overview of interviewees.

	Policymakers	Managerial practitioners	
		Mid-level managers	Senior consultants
National government	4	8	N/A
Local government	7	9	N/A
Total	11	17	15

“Senior consultants” include persons working for state and municipally owned companies assisting with the use of AADM across the public sector.

within public administration and “outside” in the form of citizens and firms.

Interviewees were drawn from local and national government administrative bodies in a wide array of areas (social policy, taxation, employment, state pension, company registration and policing) covering administrative decisions that address both citizens and firms.⁵ Among the group of managerial practitioners, experience with use of AADM stems from, e.g., semi-automated administration of unemployed citizens' benefits and duties as well as of provisions within child protective services. Experience also stems from fully automated administration of agricultural subsidies and housing benefits. With the ambition to cover the full range of relations of use of AADM and good administration, focus was not on exact policy areas but on the interviewees' experience with use of AADM. By combining the two groups of interviewees, both articulations at close range (through managerial practitioners) and at medium range (through policymakers) are illuminated, thereby adding to the validity of the analysis. The interviewees were identified based on snowball sampling (chain referral) starting out with interviewees already known to the author. Specifically, the initial interviewees were used as “seeds” and asked to name other relevant persons (Bernard, Wutich, & Ryan, 2017).

All interviewees were introduced to the subject – “digitalization, automated, administrative decision-making, management and good administration” – by email. Interviews started with a brief introduction describing the purpose of the study and the subject of the interview making it possible to solve possible ambiguities and secure approximate similar understandings of AADM and good administration to support basic validity. On this basis, the interviewees were simply asked to mention relevant regulations, norms and other topics that came to mind in relation to use of AADM and good administration. In case conversation stalled, or the interviewee ventured into highly irrelevant territory, the interviewer steered the conversation back to tangible topics of automated, administrative decision-making and good administration. All interviews were conducted as loosely structured, open-ended interviews in Danish and were characterised by a shared creation of meaning and knowledge between the interviewee and the interviewer (Brinkmann & Kvale, 2015; Silverman, 2014). Interviews were conducted in person by the author from July 2018–April 2019. Each interview took approx. 45–90 min.

Data was analysed through thematic coding and analysis based on Boyatzis' (1998) hybrid approach to the development of codes and was combined with the three iterative stages of Gioia, Corley, and Hamilton (2013). The hybrid approach blends a data-driven, inductive approach to identifying themes in the data with a more research-driven approach which relies on prior research and the researcher's own theories as a guide for meaningful themes. In total, 73 detailed topics regarding use of AADM and good administration were identified during the first stage. All topics were then sorted into themes. Topics relevant to each potential theme were compiled and continuously refined the specifics of each theme. In total, 29 themes were generated inductively. Based on the articulations of the interviewees, each theme was furthermore categorised predominantly as opportunities of supporting good administration, as risks of undermining good administration or as combinations hereof.

Finally, the identified themes were categorised into six aggregate dimensions based on further analysis and distillation (Gioia et al., 2013). The description of the dimensions is based on a combination of insights from the empirical data as well as from existing literature following the method of conceptual clustering of themes based on their related characteristics (Boyatzis, 1998). This led to the framing of each dimension

(cluster) as a value of good administration related to use of AADM. While the interviews thus concerned how the interviewees articulate relations between use of AADM and regulations and norms of good administration, topics and themes have subsequently – as part of the analysis – been related to underlying values of good administration.

4. Empirical findings: Related values of good administration

This section extensively draws on interviewees' responses and describes the identified relations between use of AADM and good administration.

4.1. Particularly related values

By examining the themes articulated by the interviewees, analytically aggregating six values of good administration particularly related to the use of AADM is possible. The six values represent conceptions of desirable modes, means and ends of action by public servants and administrative bodies in terms of good administration which for the interviewees were particularly relevant to use of AADM.

The values and their underlying themes are described in Table 3 and are expanded upon in the following subsections. Emphasising that each value relates to a multitude of articulations of the interviewees is important. In particular, while some articulations reflect hesitation and scepticism regarding use of AADM, others indicate a more supportive relationship between use of AADM and good administration. The related values thus do not reflect either a techno-optimistic or techno-pessimistic view. The mapped themes to each value represent varied levels of abstraction. Some are tangible while others are more abstract. Only selected themes in relation to each value are described to illustrate risks and opportunities. Appendix A (Data structure) relates all 73 topics and 29 themes articulated by the interviewees to the six value dimensions.

4.2. Carefulness

The first value dimension, Carefulness, concerns the most basic issue of administrative decision-making, i.e., the decisions made by public authorities must be correct (free from error) in terms of the application of legal rules (reflecting policy intentions) and the careful assessment of each individual case. We are here at the traditional core of values of good administration (Addink, 2019), as the interviewees' articulations touch upon related values such as equality of treatment, compliance-with-the-law and fairness (Bannister & Connolly, 2014) as well as rectitude and proper discharge of duties (Hood, 1991). The value dimension is aggregated on the basis of seven themes (the highest number of themes related to one value) and covers both themes well and is less described in existing literature.

Both access to and quality of data were important for a number of interviewees since AADM relies on systemised information about the case in question. These interviewees described a risk of AADM relying on faulty or incomplete data thus articulating a need for a systematic focus on the quality of data as the basis of automated decisions. While some interviewees articulated this as a risk that ideally must be mitigated, others seemed to accept some measures of faulty or incomplete data:

For example, it was decided – when designing the rules for the [automated] calculations of the ‘job reward’ scheme – to base them [the rules] on the data of eIndkomst [national database of citizens' personal income] even though we knew those data are not always correct.

(policymaker, interviewee # 38)

The question of biases in data have been well described in existing work, but the more mundane topic of access to (and collection of) necessary data to avoid errors is covered to a lesser degree (Peeters & Widlak, 2018, speak of “master data management systems” stressing the

⁵ As discussed later, articulations of policymakers and managerial practitioners are characterised by some noteworthy differences. No significant differences in articulations were, however, identified across policy areas or level of government.

Table 3

Values of good administration particularly related to AADM based on articulations of the interviewees.

Value of good administration	Underlying empirical themes	Articulated opportunities	Articulated risks
1. Carefulness Administrative bodies carefully assessing each case to make correct and lawful administrative decisions.	<ul style="list-style-type: none"> ► 1.1 Insufficient data quality 1.2 Ambiguity regarding exhaustiveness of data 1.3 Fewer errors 1.4 New notions of administrative decisions 1.5 Increased equality of treatment 1.6 Increased scale and speed ► 1.7 Statutory discretion 	More informed decisions due to volume of processed data; Increased correctness of decisions; Consistency in decision-making; Equality of treatment; Speed of decision-making.	Insufficient quality of data; Insufficient access to data; Undue variation in automated and paper-based decisions; Evasion of obligations of discretion.
2. Respecting-individual-rights Administrative bodies respecting and protecting individual rights of citizens and firms during administrative decision-making processes.	<ul style="list-style-type: none"> ► 2.1 Limited exposure of data 2.2 Disproportionate measures ► 2.3 Increased surveillance 	Reduced exposure of personal data to public servants.	Limited protection of data via pseudonymizing and anonymizing techniques; Disproportional volumes of processed data; Monitoring of full segments of citizens or firms.
3. Professionalism Administrative bodies managing and organizing administrative decision-making in a serious, reflective and competent manner.	<ul style="list-style-type: none"> 3.1 Changing tasks and lack of skills 3.2 Underdeveloped management focus ► 3.3 "Digital, scientific management" 3.4 Ambiguous forms of delegation and cooperation ► 3.5 Recurring quality assurance 3.6 Insufficient legal basis 	Efficient and effective decision-making; Real-time monitoring of decision-making; Systematic quality control.	Insufficient skills in assessing quality and appropriateness of data; Questionable delegation of authority to ICT suppliers; Automation bias in decision-making; Insufficient legal basis for automated decisions.
4. Trustworthiness Administrative bodies conducting and communicating administrative decisions in a trustworthy and benign manner.	<ul style="list-style-type: none"> ► 4.1 Intelligibility and reason giving 4.2 Improved predictability 4.3 Increased impartiality 4.4 Limitation of right to be heard ► 4.5 "Systemic dehumanisation" 	Increased intelligibility of reason-giving; Predictability of decision-making; Impartiality of decision-making.	Lack of explainability of decisions; De facto limits in the right to be heard; "Systemic dehumanisation" of administrative bodies.
5. Responsiveness Administrative bodies adapting administrative decision-making in accordance with needs of citizens, firms and wider constituencies.	<ul style="list-style-type: none"> 5.1 Restrictions in accessibility ► 5.2 Reduced flexibility ► 5.3 New forms of feedback 5.4 Open data ► 6.1 New channels for advice 6.2 Potential for coproduction ► 6.3 "Anticipative administration" 6.4 "Digital Divide" 	Increased focus on usability-feedback; Potential for putting data to wider use in society.	Reduced access to humans (public servants); De facto limits in right to appeal; Reduced ability to handle "outlier cases"; Reduced ability to exercise holistic perspectives in decision-making.
6. Empowerment Administrative bodies empowering citizens and firms, thereby increasing their autonomy and control of their own circumstances.		Personalized, automated advice; Potential for coproduction of administrative decisions; Ability to advise based on anticipated events.	Reduced ability to advise citizens and firms; Ethically questionable ability to forecast the future of citizens and firms; Limits in access to benefits and services ("digital divide").

Includes underlying empirical themes as well as primarily being associated opportunities and risks articulated by interviewees (arrow (►) indicate empirical theme is described in the text).

sharing of data across administrative bodies rather than the difficulty of access).

Carefulness was also linked to a number of interviewees' articulations about administrative bodies' exercise of discretion in administrative decision-making (including statutory obligations). For the interviewees, the theme is first and foremost related to the mentioned prohibition of curtailing ("fettering") to discretion, which is a well-known obligation of good administration internationally (Oswald, 2018) and strongly rooted in Danish administrative tradition (Stausholm, 2015). Some interviewees emphasised how use of AADM risks imposing such limits thereby evading lawmakers' intention of exercising conscious choice (discretion). Other interviewees stated that some statutory obligations of discretion have in fact been rooted in low quality

law making as key notions (e.g., a legal definition of a citizen's partner) of administrative decisions which have hitherto not been properly defined. In this view, use of AADM helps to address careless law making and supports rule-of-law:

Why do we believe discretion is positive in terms of rule-of-law? Can we support the same objective even though we automate?

(managerial practitioner, interviewee # 4)

4.3. Respecting-individual-rights

The second value dimension covers articulations revolving around the administrative bodies' respect for what is here termed rights of the

individual. This dimension is rooted in classic values of liberal societies going back to the thinking of John Locke, i.e., the fundamental differences between citizens and government, and – following this – how citizens are to be free from intolerable intrusions of government. While the first value, Carefulness, is primarily related to the inner workings of administrative bodies, Respecting-individual-rights is related to the relationship between administrative bodies and citizens (and firms).

Administrative bodies and other parties' access to personal, often sensitive, information about citizens is central to Respecting-individual-rights; however, the three themes aggregated into this value dimension go beyond well-known and more narrow topics of both data protection and privacy as well as beyond the underlying value of protecting-citizen-privacy (Bannister & Connolly, 2014). While these topics are traditionally discussed in relation to citizens, some interviewees articulated the related themes in relation to individual firms thus expanding the notion of privacy in a novel manner.

Overall, the value seems to be at risk of being undermined due to use of AADM supporting a more techno-pessimistic view. At a more abstract level, no interviewees mentioned or hinted at the principal differentiation between citizens and government. On a more tangible level, interviewees did not report measures to limit data storage, pseudonymise or anonymise data etc.

This picture is not one-sided. Privacy in a more traditional sense includes adherence to the GDPR of the European Union and was a topic high on the agenda of many interviewees. Some interviewees mentioned peculiar, practical aspects of use of AADM. Specifically, one interviewee noted that personal data is in practice – although not in principle – much less exposed to public servants as a result of fully automated AADM:

Most often human discretion necessitates public servants access large amounts of sensitive personal data, which automated decision-making in practice shields.

(managerial practitioner, interviewee # 11)

Another theme is coined “Increased surveillance” as a few interviewees reflected on the large volume of data available to administrative bodies due to increased technological possibilities. For example, one interviewee reported how satellite technology enables the administrative body to monitor the behaviour of certain types of firms thus making physical inspections of a random *sample* of the population obsolete. Traditional considerations of proportional ratios between the purpose of administrative decision-making and the depth and breadth of data also seemed to become irrelevant for the interviewees.

4.4. Professionalism

The third value dimension, Professionalism, covers the most diverse themes and most internally oriented themes regarding the workings of administrative bodies. Compared to the value of Carefulness and following Beck Jørgensen and Bozeman (2007), themes related to Professionalism concern broader organisational and managerial prerequisites for good administration in relation to use of AADM rather than themes specifically related to AADM itself. While not exclusively a part of good administration, Professionalism is linked to the earlier mentioned and narrower value of effectiveness and what Hood (1991) terms the proper discharge of duties.

Reflecting the optimism of classic ideas of “scientific management”, one theme can be termed “Digital, scientific management” as it is wholeheartedly articulated as an opportunity for good administration by the interviewers. This theme covers a broad range of topics with the common denominator being how use of AADM leads to more efficient use of resources as well as higher levels of supervision and control of the decision-making process due to the inherent systematisation and codification when compared to paper-based administrative decision-making. Some interviewees argue that this makes it possible to plan and execute the decision-making process better while monitoring the quality and speed of the process closely, thereby securing adherence to norms of

correctness and timeliness. To some extent, the latter articulations reflect observations in street-level literature of technology deployed as a tool for increased managerial control of street-level bureaucrats although the actual effects are debated (Busch & Henriksen, 2018).

Another theme, which has not previously been linked to good administration, is the question of recurring quality assurance. Interviewees thus pointed to the importance of recurring quality assurance as an effect of use of AADM:

We plan to continuously improve the regression model [which is the basis of the automated decision-making] at least every second year.

(managerial practitioner, interviewee # 41)

The need for quality assurance is described in different ways but is basically a way to ensure that automated decision systems – whether semi-automated or fully automated – continue to operate within the intended legal framework—without bias or systematic error – and are continuously improved in terms of precision and functionality.

A distinctive part of this theme is the managerial attention to so-called automation bias. A few interviewees hint at the tendency of human beings to disregard contradictory information when presented with suggestions from “objective” automated decision systems (Cummings, 2006). While some interviewees mention those topics as future focus points, it appears the actual use of recurring quality assurance tools and associated management procedures are underdeveloped, indicating the theme representing both opportunities and risks for good administration.

4.5. Trustworthiness

Public trust in government is often emphasised as a prime value of public administration (e.g., Hood, 1991). Trustworthiness can be taken as the display of properties indicating an entity's, e.g., an administrative body's, commitment to act competently and in the broad interest of the trustor (Levi & Stoker, 2000). While the related value of transparency is well-known in relation to use of AADM, cf. Section 2.3, the value dimension has been coined Trustworthiness because the essential component is the ability of administrative bodies to cultivate understandings of automated, administrative decisions as trustworthy by citizens and firms.

The five themes aggregated into the dimension were hinted at by a high number of interviewees. Taken together, they show that trust and trustworthiness come in several different guises in relation to use of AADM and cannot be reduced to either solely transparent or impartial. Additionally, the themes and underlying topics are articulated not only as risks to good administration but also as opportunities.

A dominant theme touched upon by interviewees was the question of intelligibility and reason-giving in relation to decisions. The obligation of reason-giving in relation to administrative decisions is a prominent part of administrative law in many countries (Mashaw, 2007) and entails the obligation to explain the reasons for an administrative decision to the addressee.

Interviewees made a number of claims which varied in both terms of level of abstraction and terms of risks and opportunities. Mirroring current literature (e.g., de Bruijn, Warnier, & Janssen, 2021), some interviewees pointed to aspects of explainability and transparency which they perceived as an important part of reason-giving. The interviewees described how this theme becomes more important when advanced techniques such as machine-learning algorithms are used in relation to decision support. Several interviewees also mentioned the need for reason-giving as the primary reason for not employing machine-learning and other AI techniques in fully automated AADM as these techniques work by correlations of data rather than by cause-effect relations and therefore, by principle, do not comply with the said obligation.

The most dominant technique we [the administrative body of the interviewee] use in relation to data is decision trees rather than neural

networks and such. Decision trees make it possible to document and communicate the most significant elements of the decision models.

(managerial practitioner, interviewee # 28)

On the other hand, interviewees also reported how potential use of adaptive methods based on the exact situation of the individual citizen or firm can increase intelligibility of decisions via more concise writing, graphic illustrations, links to further detailed information etc. For interviewees this was a major step forward, as they – despite adhering to formal legal rules of reason-giving – regarded the intelligibility of decisions from more paper-based decision-making as often unsatisfactory.

At a more abstract level, a rather large number of interviewees brought up the theme of “the human factor” in different forms. In particular, a few interviewees pointed to the “coldness” and disrespect inherent in standardised web-forms, apps, portals, etc., which should not be confused with classic Weberian forms of officialdom. A high number of interviewees spoke of a slow evolving “systemic dehumanisation” of administrative bodies experienced by citizens and firms which led to questions regarding whether automatically generated decisions will ever be trusted in the same way as humanly generated decisions:

We have more confidence in humans than in machines, and we trust people more than we trust systems. What does it take – in terms of good administration – to reach the same level of confidence in the machine?

(policymaker, interviewee # 6)

I believe we see an alienation and distancing of citizens and firm because the casework and the decision-making are hidden for them due to automatization.

(policymaker, interviewee # 20)

4.6. Responsiveness

The idea of responsive behaviour as a value of public administration is both more contemporary and more contested (du Gay, 2008) than the previous four values. The value is nevertheless reported by Bannister and Connolly (2014) and is also partly reflected by the value of adaptivity (Hood, 1991). Responsive public administration entails an openness and willingness to respond to outside inputs in a just and uncorrupted manner (Stivers, 1994).

For interviewees, this entailed being responsive to individual citizens and firms at the individual level as well as to the environment of the administrative body rather than solely to political or administrative superiors (Beck Jørgensen & Bozeman, 2007). The value dimension thus covers four themes related to the ability to continuously develop and adapt use of AADM in accordance with the needs of citizens, firms and the wider constituency of the administrative body. Notably, the themes and underlying topics are primarily articulated as risks, indicating that Responsiveness is the value most put at risk by use of AADM according to interviewees.

Articulations of a number of interviewees are related to the theme of flexibility in decision-making. First and foremost, there is a normative understanding among some interviewees regarding the need to handle “outlier cases” correctly and effectively, i.e., citizens and firms with special needs or characteristics which cannot be handled by AADM. This mirrors du Gay's (2008) observation that administrative bodies cannot ignore the “nuisance client” or “marginal customer” due to equality of treatment concerns. Bovens and Zouridis (2002) foresaw the need for hardship clauses giving citizens the opportunity to draw attention to specific circumstances that do not fit predefined categories of standardised web-forms, apps, portals, etc.:

Administrative bodies must always have a procedure for the citizens and firms in ‘the residual group’, who have special characteristics, [and] do not want to or cannot use the digital options.

(policymaker, interviewee # 46)

A second theme related to this value dimension is feedback. Some

interviewees reported a growing focus on feedback mechanisms as a consequence of the standardised communication with citizens and firms inherent in most AADM. As use of AADM means less access to the constituency's informal evaluation of the administrative body through daily, human contact, it becomes a matter of responsive behaviour by administrative bodies to develop and increase other channels for feedback. This is observed in both a very tangible way – i.e., administrative bodies continuously testing the usability etc., of user interfaces and guidance among citizens and firms – and in more abstract ways, i.e., through the establishment of customer panels etc.

4.7. Empowerment

Finally, the sixth value dimension also stands out compared to the first four. Good administration and citizen (and firm) empowerment are less often associated, and empowerment is itself a disputed concept (Rushing, 2016). It is here understood as actions by administrative bodies to promote citizens' and firms' capacity to mobilise resources to achieve their goals (Avelino, Dumitru, Cipolla, Kunze, & Wittmayer, 2020). Notably, it mirrors one of Dunleavy et al.'s (2006, p. 489) original ambitions with “digital-era governance”: “Digital-era changes inside the government machine would be closely meshed with and run strictly in parallel with increases in citizens' autonomous capabilities for solving social problems.” [author's italics].

The value of Empowerment is based on the idea that citizens can learn and develop through contact with government including administrative bodies and relate to other values such as inclusiveness (Bannister & Connolly, 2014), dialogue and citizen involvement (Beck Jørgensen & Bozeman, 2007). These values stem from the tradition of participatory democracy. Countries and societies with stronger traditions of participatory democracy are therefore probably more likely to experience the effects of use of AADM in relation to this value.

The value dimension is aggregated from four themes. One theme is related to the internationally widespread obligation to advise citizens and firms within the jurisdiction of the administrative body. A large number of interviewees pointed to the fact that the obligation is at risk due to use of AADM, i.e., the use of standardised web-forms, apps, portals, etc., “squeeze out” the traditional channel of advice to citizens and firms, thereby reducing their capacity to act.

Probably automation sometimes affects the confidence and safety of the citizen when dealing with authorities because automation affects the understanding and ability to be advised.

(policymaker, interviewee # 24)

At a more abstract level, a few interviewees stressed the increased importance of administrative bodies' ability to proactively assist disadvantaged groups articulate their needs for public benefits and services. This understanding arose due to the “squeezing out” of more flexible, human-based patterns of interaction with citizens and firms due to use of AADM.

On the other hand, interviewees with experience with more advanced technologies such as machine learning reported new personalized ways of automated advice based on data mining of the processing of previous, similar cases. Although this does not seem to replace more traditional forms of advice entirely, it does offer new ways for citizens' and firms' autonomous understanding of rights and duties:

The user interface [used by firms dealing with the administrative body] is basically ‘a gigantic schema’ with many mandatory data fields, about 300 validations and a high number of detailed advisory texts.

[author's upright] (managerial practitioner, interviewee # 45)

The theme of predictive administration was touched upon by some interviewees and is well covered within critical algorithmic studies. Eubanks (2018) and Ferguson (2017) have, among others, shown the potentially disturbing and stigmatising effects of predictive systems. For interviewees, “anticipative” seemed more fitting than “predictive”, and

Table 4

Empirical articulations of values of good administration in relation to use of AADM compared to understandings of adjacent values in existing literature.

Empirical articulation of values	Adjacent values in existing literature	Key empirical supplement
1. Carefulness Administrative bodies carefully assessing each case to make correct and lawful administrative decisions.	<i>Socially oriented:</i> Fairness, equality of treatment <i>Duty oriented:</i> Compliance-with-the-law	Empirical articulations expand existing understandings by linking them to basic questions of non-erroneous/erroneous administrative decision-making and pointing to consequences of insufficient quality of, and insufficient access to, data.
2. Respecting-individual-rights Administrative bodies respecting and protecting individual rights of citizens and firms during administrative decision-making processes.	<i>Socially oriented:</i> Protecting-citizen-privacy	Empirical articulations expand existing understandings by linking them to broader themes of disproportionate data use and increased surveillance beyond data protection and individual privacy.
3. Professionalism Administrative bodies managing and organizing administrative decision-making in a serious, reflective and competent manner.	<i>Duty oriented:</i> Accountability. <i>Service oriented:</i> Effectiveness and efficiency.	Empirical articulations expand existing – but underdeveloped – understandings by linking them to broader organisational and managerial themes beyond individual practices and formal delegation of authority.
4. Trustworthiness Administrative bodies conducting and communicating administrative decisions in a trustworthy and benign manner.	<i>Service oriented:</i> Transparency	Empirical articulations expand existing understandings by linking them to broader themes of organisational trustworthiness of administrative bodies including a possible “systemic dehumanisation”.
5. Responsiveness Administrative bodies adapting administrative decision-making in accordance with needs of citizens, firms and wider constituencies.	<i>Service oriented:</i> Responsiveness	Empirical articulations expand existing – but underdeveloped – understandings by linking them to themes such as restrictions in addressees’ access to administrative bodies and reduced flexibility in administrative decision-making.
6. Empowerment Administrative bodies empowering citizens and firms, thereby increasing their autonomy and control of own circumstances.	<i>Socially oriented:</i> Inclusiveness	Empirical articulations expand existing – but underdeveloped – understandings by linking them to themes of automated, personalized advice and “anticipative administration” (predictive administration).

several of the interviewees focused on the ethical pros and cons of such use. Specifically, some articulated the seemingly unethical idea of administrative bodies being de facto able to predict future events (e.g., divorce or bankruptcy) of citizens and firms based on big data analysis without sharing this knowledge. Other interviewees focused on the difference between case-handling based on *past and present* information in contrast with case-handling based on *future* expectations as a moral threshold which must not be crossed.

While the former type of articulations – stressing the unethical nature of not sharing knowledge of future, anticipated events – somehow lead to understanding “predictive administration” as an opportunity in terms of good administration, the latter type of articulations – stressing the difference between past and present information, and future expectations – perceive it as a clear risk.

5. Discussion: room for a pragmatic view?

Taken together, the articulations of the interviewed policymakers and managerial practitioners cover a wide array of themes related to good administration. In the simplest sense, the interviewees confirmed that use of AADM relates to good administration.

Across all articulations, interviewees do not strongly differentiate between use of semi- and fully automated, administrative decision-making in relation to good administration. Rather than a question of semi- or fully automated decision-making, the articulations indicated that themes and underlying values are not only relevant in one end of the continuum from semi- to fully automated but often across the continuum.

Even when structured into the six aggregated value dimensions described in the previous section, the articulations did not form a fully coherent whole. Rather, the articulations seem to emphasise that themes of use of AADM and good administration are acted and organised upon in different manners by individual public servants and administrative bodies, thereby representing several alternative patterns of opportunities and risks.

The following subsections seek to highlight those patterns by firstly discussing how the findings supplement existing knowledge; secondly, by acknowledging the differences between the two main groups of interviewees; thirdly, by presenting the most strongly articulated opportunities and risks to good administration and finally discussing how those opportunities and risks are paired in terms of synergies and trade-offs.

5.1. An empirical supplement to existing knowledge

The six identified values of this study represent an empirical supplement to existing knowledge of relations between use of AADM and values of good administration.

Analysed solely in terms of good administration, the six identified values are all well-known from the literature but cut across the subsets suggested by Bannister and Connolly (2014) and Hood (1991). Reflecting on the theoretical expectations in Section 2.2, the articulations of the interviewees relate primarily to what Bannister & Connolly label “Socially oriented” and what Hood labels “Theta” values.

As one digs into the empirical findings, it becomes clear that other subsets of values are related to use of AADM. What Bannister & Connolly term “Service oriented” and Hood calls “Sigma” values was also articulated as related to use of AADM by the interviewees. This was particularly seen in relation to the values of Professionalism and Responsiveness.

Zooming in on relations between use of AADM and good administration, seven values of good administration were initially identified as particularly dominant in existing literature in relation to use of AADM in Section 2.3. All of those values were somewhat recognisable in the articulations of the interviewees, but the interviewees expanded and added nuance to the meaning of the hitherto known values in a number of ways. This is summarised in Table 4.

The first identified value, Carefulness, incorporates known themes of data bias, equal treatment of similar cases and curtailment of discretion as well as lesser-known themes, thereby expanding Carefulness from a more singular meaning of fairness, equality of treatment and compliance with law. The second identified value, Respecting-individual-rights likewise goes further than existing knowledge and covers not only the theme of data protection but also disproportionate use of data and increased surveillance of addressees. Similarly, the third value, Professionalism, incorporates not only known themes of increased effectiveness in decision-making and questionable delegation, but a number of other themes as it demonstrates broader organisational and managerial prerequisites for good administration as use of AADM becomes more commonplace. Finally, the fourth value, Trustworthiness, expands on the question of transparency in relation to use of AADM, casting light on supplementary themes such as improved predictability for addressees potentially supporting trustworthiness and limitation of addressees’ right to be heard as well as a slow “systemic dehumanisation” of administrative bodies that potentially undermine trustworthiness.

The last two identified values, Responsiveness and Empowerment, have previously been related to use of AADM to a much lesser extent. Responsiveness stands out as one of two values that seems particularly undermined by use of AADM according to the articulations of the interviewees. This is particularly due to the restrictions on the addressees' access to administrative bodies that seem to accompany use of AADM as well as reduced flexibility in the actual decision process (meaning that administrative bodies are less capable of responding to unusual circumstances). The sixth value, Empowerment, includes topics related to two rather well-known elements from the literature, namely anticipative (or, as often termed, predictive) administration and limits in digital access to benefits and services. However, seen in concert with the two other empirical themes associated with the value, it is possible to understand Empowerment as a more coherent value that relates to use of AADM. While Empowerment in itself indicates inclusion and promotion of addressees' own capacity, the other side of the coin is stigmatisation of addressees due to use of AADM.

5.2. Policymakers vs. managerial practitioners

The two groups of policymakers and managerial practitioners were included in the analysis to illuminate articulations at close and medium range thus adding to the validity of the findings. First and foremost, the two groups shared articulations. There were, however, also variation. Managerial practitioners more often stressed the importance of procedures and organisational practices being at close range to actual use of AADM. Interestingly, no significant differences were traced in the articulations of the two sub-groups of the managerial practitioners' category, i.e., mid-level managers and senior consultants. Policymakers, on the other hand, tended to stress more abstract and, to some extent, more normative elements.

Illustrative of this, it was almost solely managerial practitioners who articulated the theme of insufficient data quality and pointed to activities to increase feedback from constituencies of administrative bodies as a way to overcome lack of human feedback through daily, human contact. Illustrating the more abstract, policymakers were, for example, more preoccupied with the theme of reduced flexibility and articulated a need to handle "outlier cases" correctly and effectively. Policymakers were also the ones who most clearly described the apparent slow evolving "systemic dehumanisation" of administrative bodies experienced by citizens and firms.

5.3. Opportunities and risks – optimism and pessimism

The six identified values can only be understood in detail in relation to the particular policy areas of administrative decision-making, the particular technological and organisational context and the particular type of constituency of the administrative body.

Not only did interviewees articulate both risks and opportunities in relation to each value but also in relation to the more detailed themes (often covering a regulation or norm of good administration). This can be seen, for example, with regard to the obligation to advise citizens and firms where interviewees point to both supportive and undermining effects of use of AADM. The interviews thus indicated a need to balance the outright views of techno-optimism and techno-pessimism.

Decisively linking the six particularly related values to either opportunities or risks is difficult. There are, however, indications that the value of Carefulness can be particularly *supported* by use of AADM, while the values of Respecting-individual-rights and Responsiveness are potentially *undermined* by use of AADM.

It is interesting to note that one of the most frequent descriptions of the context of use of AADM is scepticism towards the world of paper-based decision-making. Instead of techno-pessimists, many interviewees positioned themselves as "paper-pessimists" arguing traditional paper-based decision-making is prone to errors due to, e.g., less systemised use of data. Many of the interviewees therefore, by default,

attached some opportunities of supporting good administration to use of AADM, as they perceived the usage of this technology entailing fewer errors, equal treatment in cases and increased speed of operation.

Multiple interviewees returned to the inherent categorisation of information and knowledge through web-forms, apps, portals, etc. as an element of use of AADM. Referred to as procedural standardisation and functional simplification by authors such as Kallinikos (2006), this gave rise to both opportunities and risks of good administration for the interviewees. On the one hand, the interviewees related this to a means of ensuring correctness of administrative decisions, while risking "systemic dehumanisation", inflexibility and the "squeezing" out of channels of advice for citizens and firms.

Barring the most basic themes, such as the obligation of reasoning and impartiality of AADM, it appears that most of the articulated risks to good administration will occur if administrative bodies applying AADM do not actively mitigate or prevent them. Conversely, and still broadly speaking, the articulated opportunities for good administration are not seized by themselves but necessitate continued focus including deliberate choice and design of technology, procedures, professional roles and management practices in administrative bodies. An example is the theme of limited exposure related to the value of Respecting-individual-rights. Here, interviewees articulated that use of fully automated AADM in practice shields personal data from public servants, which can be seen as supporting good administration. This supportive relation can, however, be strengthened considerably by administrative bodies implementing and maintaining internal procedures of limited access to data.

Additionally, there seemed to be a normative undercurrent among several of the interviewees which stressed the need for remodelling regulations and norms of good administration including their implementation in daily use of AADM if the societal aim of levelling the imbalance between addressees and government is to hold. The undercurrent is most visible in relation to Responsiveness but is also noticeable in other values. Although this might sound logical to outside observers, it should be remembered that most interviewees – be it policymakers or managerial practitioners – are insiders of the government machinery and thus owe their loyalty to the very system they are here somehow questioning.

5.4. Synergies and trade-offs

As introduced in Section 2, public administration entailing a recurring balance of conflicting values leading to dilemmas and contradictions in daily practice is well-established (Pollitt & Bouckaert, 2017). The empirical data confirms this is also the case when one zooms in on use of AADM. Three trade-offs and synergies are particularly evident, thereby emphasising the need for a more pragmatic view of the relations between use of AADM and good administration.

Firstly, and building on the full set of articulations of the interviewees, it is clear that a trade-off between the value of efficiency (beyond core values of good administration) and good administration in general exist when it comes to use of AADM. This is hardly surprising, but the interviewees gave examples of instances where adhering to regulations and norms of good administration by administrative bodies reduced the potential use of AADM.

Secondly, there is an articulated trade-off between the three values of Carefulness, Respecting-individual-rights and Trustworthiness as interviewees described how it is possible to achieve a high level of precision in automated decision-making by use of machine learning algorithms and a large volume of data. Even so, this is left aside as the administrative bodies in question prioritise the theme of intelligibility and reason-giving thus using simpler, rule-based, decision-tree algorithms due to the need for explainability of the decision.

Thirdly, some interviews articulated a synergy between investing in the opportunities represented by use of AADM in terms of both improved predictability of the decision-making process for addressees and

improved intelligibility of administrative decisions, thereby reducing the number of (expensive) complaints of decisions from citizens and firms. This is a tangible illustration of how themes related to good administration in some instances agree with the broader value of effectiveness rather than in opposition to it.

6. Conclusions

The automation of administrative decision-making has been a continuing trend in public administration for several decades, and there are clear signs that its use and scope will increase in the coming years.

The ambition of this article has been to supplement emerging literature and cast empirical light on the range of relations between use of semi- and fully automated, administrative decision-making (AADM) and good administration. This has been done through interviews with insiders of the government machinery, i.e., managerial practitioners and non-elected, administrative policymakers who have experience with use of AADM across policy areas in Danish public administration. Topics and themes articulated by interviewees have subsequently been related to underlying values of good administration.

Six values of good administration have been identified as being particularly related to use of AADM: i) Carefulness; ii) Respecting-individual-rights; iii) Professionalism; iv) Trustworthiness; v) Responsiveness and vi) Empowerment. Analytically, each value aggregates empirical themes which offer both opportunities and risks to good administration according to the interviewees, and thereby support techno-optimistic and techno-pessimistic views of use of AADM simultaneously. The data indicate, however, that the value of i) Carefulness can be particularly supported by use of AADM, while the values of ii) Respecting-individual-rights and v) Responsiveness can be particularly undermined by use of AADM.

While all identified values are well-known administrative values (cf. Bannister & Connolly, 2014; Hood, 1991), this article is the first to empirically assess which values of good administration are *particularly* related to use of AADM as seen from inside government machinery. Of the six identified values, Responsiveness and Empowerment have previously only been related to use of AADM to a very limited extent. Interestingly, the articulations indicate that the identified values are relevant across a continuum from semi- to fully automated AADM rather than being tied solely to use of semi- or fully automated AADM.

The 29 empirical themes underlying the six values and listed in Appendix A show considerable variance beyond well-known issues of data bias, discretion and opacity. The breadth of themes cut across and expand emerging knowledge of use of AADM within academic disciplines of public administration, eGovernment, critical algorithmic studies and law. The high number of qualitative interviews led to an adequate level of saturation indicating the study is characterised by a satisfactory level of reliability.

Taken together, the article casts empirical light on a number of perceived opportunities and risks in relation to use of AADM and good administration. Despite popular conceptions of “robotic government”, the conclusions indicate a need for a more pragmatic view of the relations between use of AADM and good administration. Across the group of interviewees, it thus appears that insiders of government machinery are not naïve techno-optimists (nor the opposite) but view use of AADM as constituting risks of undermining good administration as well as opportunities of supporting good administration.

6.1. Future research

Denmark belongs within the Scandinavian administrative tradition and is generally considered a high-trust society with values of good administration relatively well rooted in her public administration. A line of future research is thus to assess relations of use of AADM and good administration as articulated by key public administration stakeholders under other administrative traditions and in other national settings. It

seems likely that roughly the same identified values are or will be relevant in other countries as use of AADM increases.

It has been repeatedly stressed that this article covers articulations of key public administration stakeholders rather than observable facts. Future research should therefore ideally cover outside-in perspectives (e.g., perceptions of use of AADM by citizens and firms) as a contrast to the inside-out perspective of administrative bodies of this article. It seems likely that this will lead to the identification of other relevant values of good administration for the use of AADM.

Reflecting the fact that this article builds on data across a wide array of policy areas, it seems relevant to develop the existing inside-out perspective to use of AADM and good administration by focusing on specific policy areas. Ideally, this should be done in a comparative manner and encompass policy areas with administrative decision-making of differing complexity (volume of relevant data, ambiguity of regulation, extent of administrative discretion) and criticality (impact of administrative decisions on addressees). Although this article indicates that the identified values of good administration are relevant across a continuum from semi- to fully automated AADM, empirical research that explores to what extent alternative instances of use of AADM – e.g., semi-automated vs. fully automated – are tied to specific values of good administration should be particularly welcomed.

It is a key conclusion that the interviewed Danish government insiders perceive use of AADM as constituting both risks and opportunities for good administration. A fourth and final focus for future research is thus to systematically zoom in on circumstances of use of AADM that foster opportunities for supporting good administration across administrative bodies, while simultaneously attempting to understand circumstances that give rise to the risks.

6.2. Implications for practice

The relatively pragmatic view prevalent among the interviewees does not mean use of AADM should not attract further interest among practitioners. Put simply, the articulated risks can be expected to occur if administrative bodies apply AADM, while articulated opportunities must be actively nurtured through managerial attention. Increased managerial attention to the use of AADM is therefore paramount in order to avoid the nightmares of techno-pessimists on a wider scale and bring daylight to the dreams of techno-optimists.

A number of the risks described by the interviewees relate to limited knowledge and attention to tangible organisational and managerial practices in relation to themes such as data quality, recurring quality assurance and the obligation to advise. Work has to be done regarding methods to prevent those risks, while simultaneously tackling more abstract questions of unintended pressure on statutory discretion, excessive data-gathering of entire population segments (rather than samples) of citizens or firms for purposes of audit and control, and a “systemic dehumanisation” of administrative bodies seen from the position of citizens and firms.

On the other hand, the interviewees articulate significant opportunities for supporting good administration following the techno-optimistic view: first and foremost, some interviewees point out that use of AADM has simply improved the correctness of decisions. Other opportunities include higher levels of supervision and control of the decision-making, increased intelligibility of decisions, higher predictability of the decision-making process for citizens and firms, as well as new ways of automated, personalized advice based on statistical processing and data mining.

Administrative bodies already using AADM, as well as organisations planning to do so, need to carefully consider how to both avoid risks and harness the opportunities on a case-by-case evaluation of policy area, decision-making technology, users and organisational context. Decision-makers should not only look to the strict application of “hard” regulations of good administration (general administrative law acts, etc.) but also at how to strengthen focus on procedural and managerial support of

“soft” norms of good administration.



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Declaration of Competing Interest

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Appendix A. Data structure

Figs. A.1–A.6 relates all 73 topics and 29 themes articulated by the interviewees to the six value dimensions described in Section 4 (Empirical findings). For each theme, it is furthermore indicated whether it is primarily articulated as opportunities, risks, or combinations hereof to good administration by the interviewees.

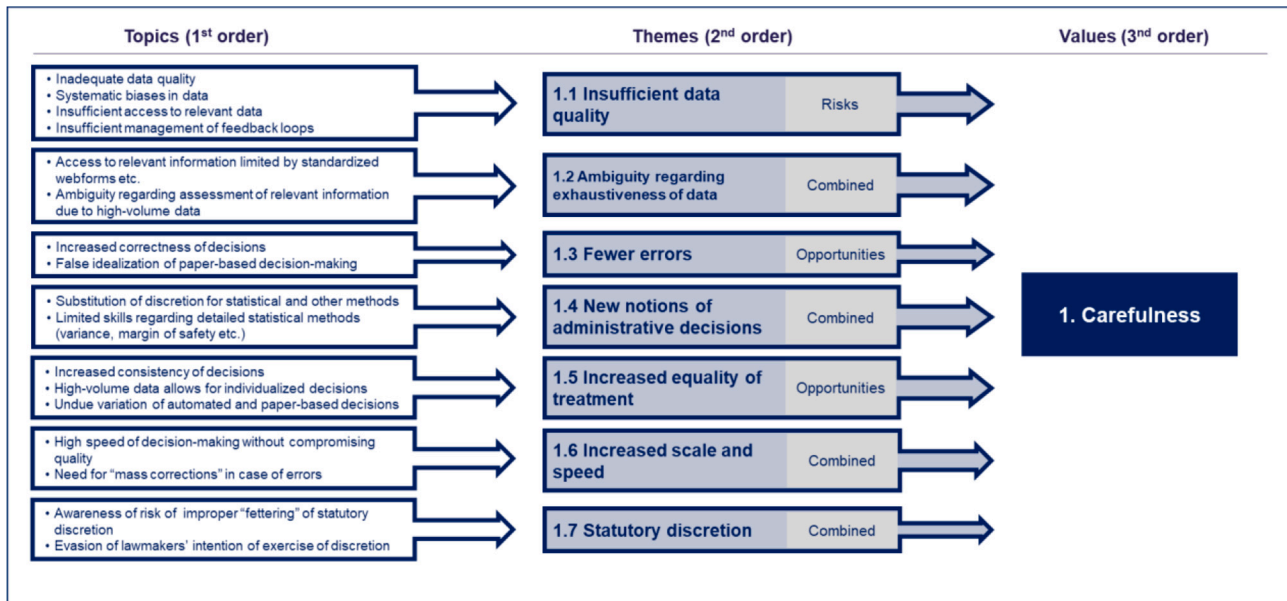


Fig. A.1. Topics and themes (data structure) related to Carefulness. Shaded notion under themes indicates whether themes are articulated as opportunities, risks or combinations hereof to good administration.

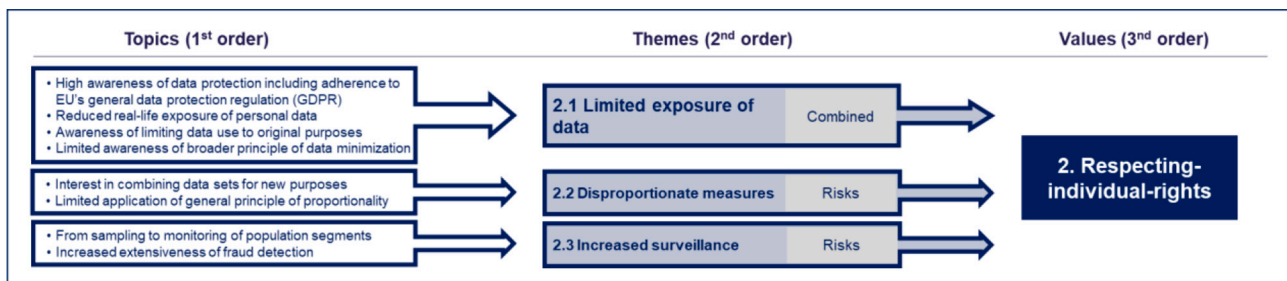


Fig. A.2. Topics and themes (data structure) related to Respecting-individual-rights. Shaded notion under themes indicates whether themes are articulated as opportunities, risks or combinations hereof to good administration.

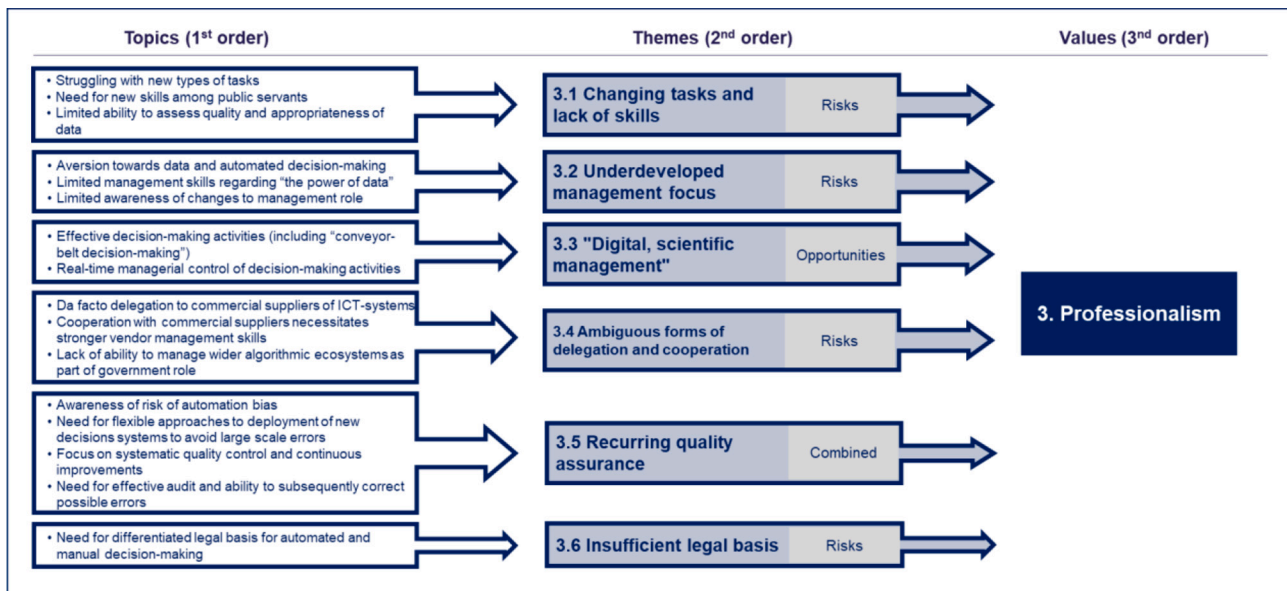


Fig. A.3. Topics and themes (data structure) related to Professionalism. Shaded notion under themes indicates whether themes are articulated as opportunities, risks or combinations hereof to good administration.

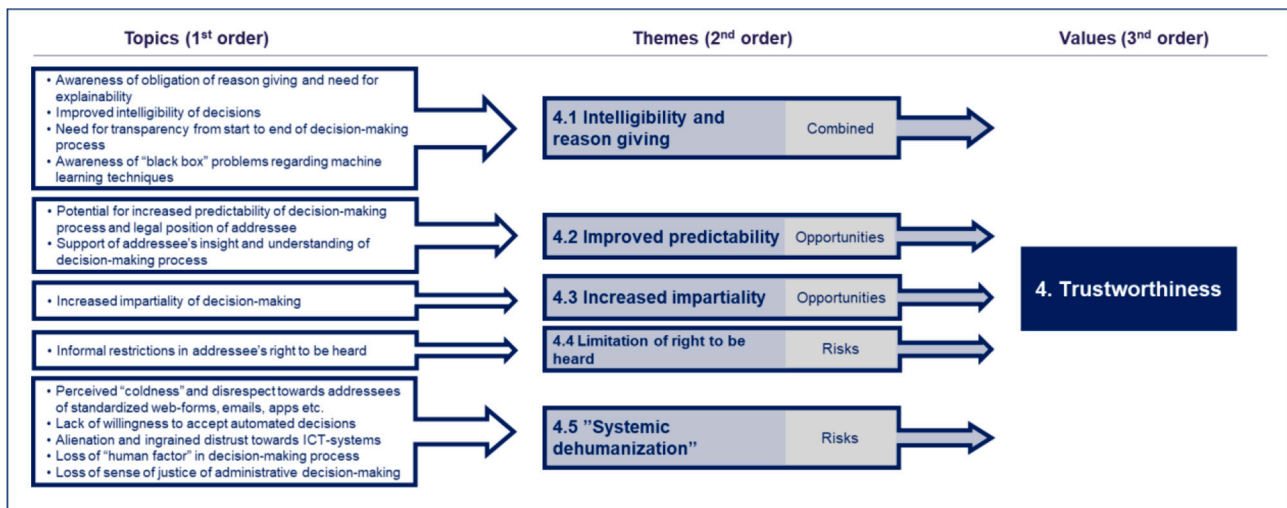


Fig. A.4. Topics and themes (data structure) related to Trustworthiness. Shaded notion under themes indicates whether themes are articulated as opportunities, risks or combinations hereof to good administration.

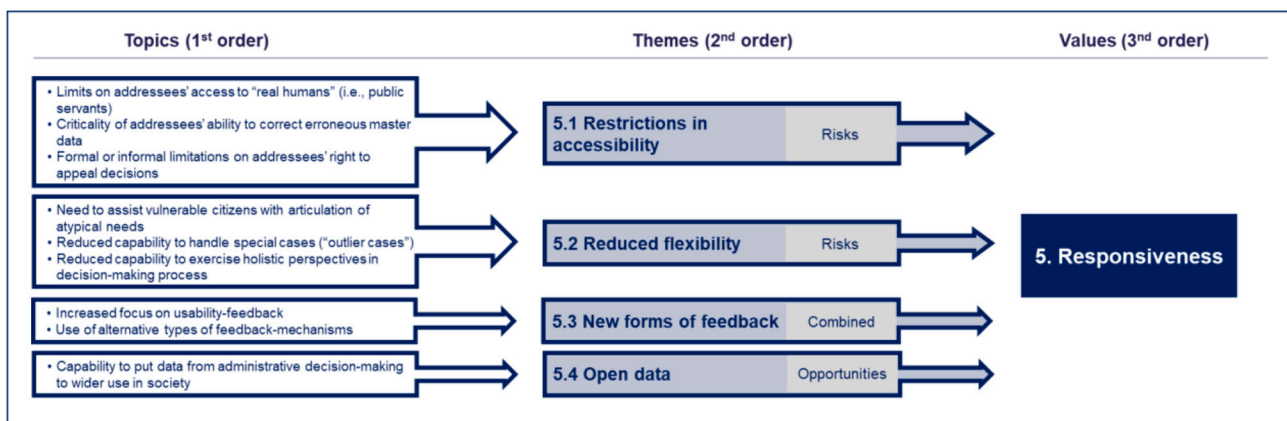


Fig. A.5. Topics and themes (data structure) related to Responsiveness. Shaded notion under themes indicates whether themes are articulated as opportunities, risks or combinations hereof to good administration.

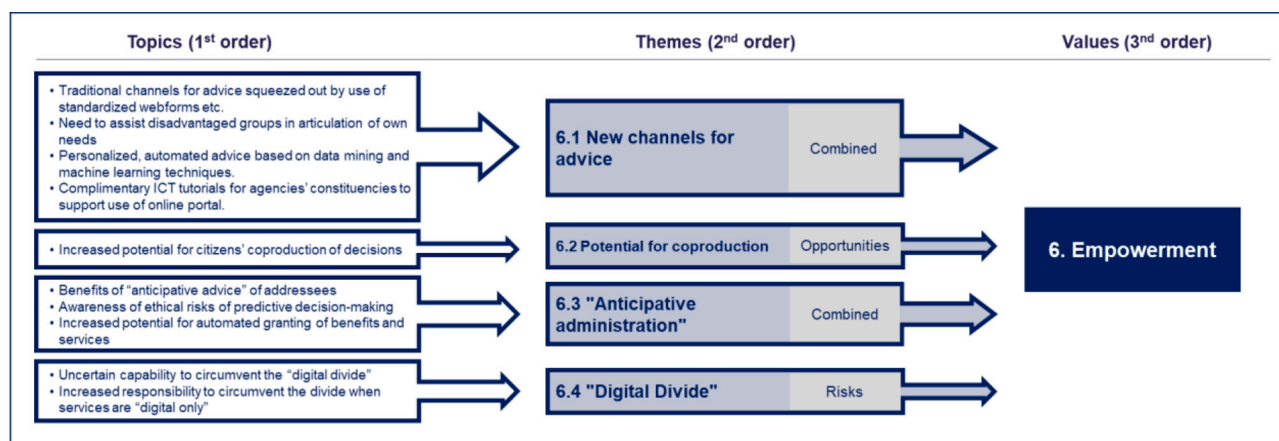


Fig. A.6. Topics and themes (data structure) related to Empowerment. Shaded notion under themes indicates whether themes are articulated as opportunities, risks or combinations hereof to good administration.

Appendix B. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.giq.2023.101864>.

References

- Abrahamson, E. (2016). Management fashion. *Academy of Management Review*, 21(1), 254–285.
- Addink, H. (2019). *Good governance: Concept and context*. Oxford University Press.
- Adler, M., & Henman, P. (2009). Justice beyond the courts: The implications of computerisation for procedural justice in social security. In A. C. Martínez, & P. F. Abat (Eds.), *E-Justice* (pp. 65–86). IGI Global.
- Ahonen, P., & Erkkilä, T. (2020). Transparency in algorithmic decision-making: Ideational tensions and conceptual shifts in Finland. *Information Policy*, 25(4), 419–432.
- Andersen, R. F. (2018). Trust in Scandinavia: Findings from moving borders between Denmark and Germany. *Scandinavian Political Studies*, 41(1), 22–48. <https://doi.org/10.1111/1467-9477.12107>
- Andersson, A., Hedström, K., & Wihlborg, E. (2018). Automated decision-making and legitimacy in public administration. In *Scandinavian Workshop on Electronic Government (SWEG 2018)*. <http://urn.kb.se/resolve?urn=urn:nbn:se:oru:diva-73989>.
- Avelino, F., Dumitru, A., Cipolla, C., Kunze, I., & Wittmayer, J. (2020). Translocal empowerment in transformative social innovation networks. *European Planning Studies*, 28(5), 955–977. <https://doi.org/10.1080/09654313.2019.1578339>
- Bannister, F., & Connolly, R. (2014). ICT, public values and transformative government: A framework and programme for research. *Government Information Quarterly*, 31(1), 119–128. <https://doi.org/10.1016/j.giq.2013.06.002>
- Beck Jørgensen, T., & Bozeman, B. (2007). Public values: An inventory. *Administration and Society*, 39(3), 354–381. <https://doi.org/10.1177/0095399707300703>
- Bernard, H. R., Wutich, A., & Ryan, G. W. (2017). *Analyzing qualitative data: Systematic approaches* (2nd ed.). Sage Publications.
- Bogner, A., Littig, B., & Menz, W. (2009). Introduction: Expert interviews – An introduction to a new methodological debate. In A. Bogner, B. Littig, & W. Menz (Eds.), *Interviewing experts* (pp. 1–13). Palgrave Macmillan.
- Bovens, M., & 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>
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage Publications.
- Brinkmann, S., & Kvale, S. (2015). *InterViews: Learning the craft of qualitative research interviewing* (3. ed.). Sage Publications.
- de Bruijn, H., Warnier, M., & Janssen, M. (2021). The perils and pitfalls of explainable AI: Strategies for explaining algorithmic decision-making. *Government Information Quarterly*, (March) <https://doi.org/10.1016/j.giq.2021.101666>, 101666.
- Busch, P. A., & Henriksen, H. Z. (2018). Digital discretion: A systematic literature review of ICT and street-level discretion. *Information Policy*, 23(1), 3–28. <https://doi.org/10.3233/IP-170050>
- Cane, P. (2011). *Administrative law* (5th ed.). Oxford University Press.
- Carney, T. (2018). The new digital future for welfare: Debts without legal proofs or moral authority. *The Forum, University of New South Wales Law Journal*, March, 1–16. <https://www.unswlawjournal.unsw.edu.au/forum/article/new-digital-future-welfare-debts-without-proofs-authority/>.
- Cobbe, J. (2019). Administrative law and the machines of government: Judicial review of automated public-sector decision-making. *Legal Studies*, 39(4), 636–655. <https://doi.org/10.1017/ls.2019.9>
- Coglianesi, C., & Dor, L. M. b. (2021). AI in Adjudication and Administration (No. 2118; Penn Law: Legal Scholarship Repository) https://scholarship.law.upenn.edu/faculty_scholarship/2118.
- Council of Europe. (2007). Recommendation CM/Rec(2007)7 of the Committee of Ministers to Member States on Good Administration. https://search.coe.int/cm/Pages/result_details.aspx?ObjectID=09000016805d5bb1.
- Cummings, M. L. (2006). Automation and accountability in decision support system Interface design. *The Journal of Technology Studies*, 32(1), 23–31.
- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). New public management is dead – Long live digital-era governance. *Journal of Public Administration Research and Theory*, 16(3), 467–494. <https://doi.org/10.1093/jopart/mui057>
- Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.
- Ferguson, A. G. (2017). Policing predictive policing. *Washington University Law Review*, 94(5), 1109–1190. <https://doi.org/10.1126/science.13.320.258>
- du Gay, P. (2008). 'Without affection or enthusiasm': Problems of involvement and attachment in 'responsive' public management. *Organization*, 15(3), 335–353. <https://doi.org/10.1177/1350508408088533>
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15–31. <https://doi.org/10.1177/1094428112452151>
- Greve, C., & Ejersbo, N. (2016). Denmark: Towards the neo-Weberian state in the digital era. In G. Hammerschmid, S. van de Walle, R. Andrews, & P. Bezes (Eds.), *Public administration reforms in Europe: The view from the top* (pp. 119–128). Edward Elgar Publishing.
- Groves, M., & Lee, H. P. (2007). Australian administrative law: The constitutional and legal matrix. In H. P. Lee, & M. Groves (Eds.), *Australian administrative law: Fundamentals, principles and doctrines* (pp. 1–14). Cambridge University Press.
- Hardy, M. (2020). Discretion in the surveillance state. In T. Evans, & P. Hupe (Eds.), *Discretion and the quest for controlled freedom* (pp. 41–61). Palgrave Macmillan.
- Harlow, C., & Rawlings, R. (2020). Proceduralism and automation: Challenges to the values of administrative law. In E. Fisher, J. King, & A. Young (Eds.), *The foundations and future of public law: Essays in honour of Paul Craig* (pp. 275–298). Oxford University Press.
- Hasenfeld, Y., Rafferty, J. A., & 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>
- Henman, P. (2020). Improving public services using artificial intelligence: possibilities, pitfalls, governance. *Asia Pacific Journal of Public Administration*, 42(4), 209–221. <https://doi.org/10.1080/23276665.2020.1816188>.
- Hood, C. (1991). A public management for all seasons? *Public Administration*, 69(1), 3–19. <https://doi.org/10.1111/j.1467-9299.1991.tb00779.x>
- Jorna, F., & Wagenaar, P. (2007). The 'iron cage' strengthened? Discretion and digital discipline. *Public Administration*, 85(1), 189–215. <https://doi.org/10.4324/9781315132761>
- Juell-Skielse, G., Lindgren, I., & Åkesson, M. (2022). Towards service automation in public organizations. In G. Juell-Skielse, I. Lindgren, & M. Åkesson (Eds.), *Service automation in the public sector* (pp. 3–10). Springer.
- Kallinikos, J. (2006). *The consequences of information: Institutional implications of technological change*. Edward Elgar.
- Kernaghan, K. (2003). Integrating values into public service: The values statement as centerpiece. *Public Administration Review*, 63(6), 711–719. <https://doi.org/10.1111/1540-6210.00334>

- Kluckhohn, C. (1952). Values and Value-Orientations in the Theory of Action. In T. Parsons, & E. A. Shils (Eds.), *Toward a General Theory of Action* (pp. 388–433). Harvard University Press.
- Kuziemski, M., & Misuraca, G. (2020). AI governance in the public sector: Three tales from the frontiers of automated decision-making in democratic settings. *Telecommunications Policy*, 44(6), Article 101976. <https://doi.org/10.1016/j.telpol.2020.101976>
- Larsson, K. K. (2021). Digitization or equality: When government automation covers some, but not all citizens. *Government Information Quarterly*, 38(1), Article 101547. <https://doi.org/10.1016/j.giq.2020.101547>
- Lee, A. S., & Baskerville, R. L. (2003). Generalizing generalizability in information systems research. *Information Systems Research*, 14(3). <https://doi.org/10.1287/isre.14.3.221.16560>
- Levi, M., & Stoker, L. (2000). Political trust and trustworthiness. *Annual Review of Political Science*, 3(1992), 475–508. <https://doi.org/10.1146/annurev.polisci.3.1.475>
- Maciejewski, M. (2017). To do more, better, faster and more cheaply: Using big data in public administration. *International Review of Administrative Sciences*, 83(1), 120–135. <https://doi.org/10.1177/0020852316640058>
- Margetts, H. (1991). The computerization of social security: The way forward or a step backwards? *Public Administration*, 69(3), 325–343.
- Margetts, H. (1998). *Information Technology in Government: Britain and America*. Taylor & Francis Group.
- Margetts, H., & Dorobantu, C. (2019). Rethink government with AI. *Nature*, 568, 163–165.
- Martinho-Truswell, E. (2018). How AI could help the public sector. *Harvard Business Review*, 96, 2–4. <https://hbr.org/2018/01/how-ai-could-help-the-public-sector>
- Mashaw, J. L. (2007). Reasoned administration: The European Union, the United States, and the project of democratic governance. *George Washington Law Review*, 76(1), 101–125.
- McAfee, A., & Brynjolfsson, E. (2014). *The second machine age*. W. W. Norton & Company.
- Mendes, J. (2009). Good administration in EU law and the European code of good administrative behaviour. In *EUI working paper law (2009/09)*.
- Misuraca, G., & van Noordt, C. (2020). Overview of the use and impact of AI in public services in the EU (EUR 30255 EN). doi: 10.2760/039619.
- Moore, M. (1997). *Creating public value: Strategic management in government*. Harvard University Press.
- Mørup, S. H. (2018). Legalitetsprincippet og grundsætningen om saglig forvaltning. In N. Fenger (Ed.), *Forvaltningsret* (pp. 299–353). Jurist-og Økonomforbundets Forlag.
- Motzfeldt, H. M., & Næsborg-Andersen, A. (2018). Developing administrative law into handling the challenges of digital government in Denmark. *The Electronic Journal of E-Government*, 16(2), 136–146.
- Nevo, S., Nevo, D., & Ein-dor, P. (2009). Thirty years of IS research: Core artifacts and academic identity. *Communications of the Association for Information Systems*, 25(1), 221–243. <https://doi.org/10.17705/1CAIS.02524>
- Oswald, M. (2018). Algorithm-assisted decision-making in the public sector: Framing the issues using administrative law rules governing discretionary power. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376(2128), 20170359. <https://doi.org/10.1098/rsta.2017.0359>
- Peeters, R. (2020). The agency of algorithms: Understanding human-algorithm interaction in administrative decision-making. *Information Policy*, 25(4), 507–522. <https://doi.org/10.3233/IP-200253>
- Peeters, R., & 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>
- Pollitt, C., & Bouckaert, G. (2017). *Public management reform: A comparative analysis* (4. ed.). Oxford University Press.
- Ponce, J. (2005). Good administration and administrative procedures. *Indiana Journal of Global Legal Studies*, 12(2), 551–588. <https://doi.org/10.2979/gls.2005.12.2.551>
- Ranerup, A., & Henriksen, H. Z. (2019). Value positions viewed through the lens of automated decision-making: The case of social services. *Government Information Quarterly*, 36(4), Article 101377. <https://doi.org/10.1016/j.giq.2019.05.004>
- Roehl, U. B. U. (2022). Understanding automated decision-making in the public sector. In G. Juell-Skielse, I. Lindgren, & M. Åkesson (Eds.), *Service automation in the public sector* (pp. 35–63). Springer.
- Rose, J., Persson, J. S., Heeager, L. T., & Irani, Z. (2015). Managing e-government: Value positions and relationships. *Information Systems Journal*, 25(5), 531–571. <https://doi.org/10.1111/isj.12052>
- Rushing, S. (2016). What's left of "empowerment" after neoliberalism? *Theory & Event*, 19(1), 1–17.
- Scholta, H., Mertens, W., Kowalkiewicz, M., & Becker, J. (2019). From one-stop shop to no-stop shop: An e-government stage model. *Government Information Quarterly*, 36(1), 11–26. <https://doi.org/10.1016/j.giq.2018.11.010>
- Silverman, D. (2014). *Interpreting qualitative data* (5th ed.). SAGE Publications.
- Stausholm, N. S. (2015). *Skon under regel*. Karnov Group.
- Stivers, C. (1994). The listening bureaucrat: Responsiveness in public administration. *Public Administration Review*, 54(4), 364. <https://doi.org/10.2307/977384>
- Stoudt-Hansen, S., Karamouzis, F., Alexander, M., Shotton, L., Sturgill, N., & Kandaswamy, R. (2020). *Predicts 2021: Accelerate results beyond RPA to hyperautomation*. Gartner Research Paper.
- United Nations. (2022). *E-government survey 2022*. Department of Economic and Social Affairs.
- Veale, M., van Kleek, M., & Binns, R. (2018). Fairness and accountability design needs for algorithmic support in high-stakes public sector decision-making. In *Proceedings of conference on human factors in computing systems (CHI '18)* (pp. 1–14). <https://doi.org/10.1145/3173574.3174014>
- Widlak, A., van Eck, M., & Peeters, R. (2021). Towards principles of good digital administration: Fairness, accountability and proportionality in automated decision-making. In M. Schuilenburg, & R. Peeters (Eds.), *The algorithmic society: Technology, power, and knowledge* (pp. 67–83). Routledge.
- Wihlborg, E., Larsson, H., & Hedström, K. (2016). "The computer says no!" – A case study on automated decision-making in public authorities. *Proceedings of the Annual Hawaii International Conference on System Sciences*, 49(March), 2903–2912. <https://doi.org/10.1109/HICSS.2016.364>