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From Risk Regulation to Risk Governance:

Examining the Dutch Public Policy Approach to Addressing Discrimination in Algorithmic Profiling

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Abstract

Human rights law, the GDPR, the LED, and the recently adopted AI Act, establish obligations for addressing discrimination in algorithmic profiling but leaves room regarding the operationalization of these obligations. Against this backdrop, the Dutch Ministry of Internal Affairs, Directorate of Digital Society (DDS), is developing the *Algoritmekader*, a framework to provide further guidance to public organizations regarding the responsible and non-discriminatory use of algorithmic systems. This paper examines how DDS approaches developing the *Algoritmekader* to address discrimination in algorithmic profiling and assesses the suitability of their approach for managing this systemic risk. Using empirical legal methods, the approach taken by DDS is analyzed through the lens of the systemic risk governance principle—communication and inclusion, integration, and reflection. The findings highlight the importance of integrating citizen perspectives in systemic risk governance, combining bottom-up & top-down coordination, strategically engaging stakeholders through targeted consultations, and embedding formal reflections to enhance institutional learning.

1. Introduction

In recent years, several instances in which citizens have been discriminated against by Dutch supervision and enforcement agencies using algorithmic profiling technologies have gained public attention. Such instances can be observed, for example, within the context of social security fraud detection,[1] the immigration sector with regard to processing visa applications and detecting fraudulent resident permits,[2] and in relation to predictive policing.[3] Such cases are, not unique to the Netherlands, with a multitude of similar instances being observed in countries such as Poland,[4] the United Kingdom,[5] the United States,[6] Australia,[7] and New Zealand.[8] Despite such instances, supervision and enforcement organizations in the Netherlands continue to rely on algorithmic profiling technologies to efficiently and effectively detect and prevent violations of administrative and criminal law.[9]

Currently, within the Netherlands, broad legal bases for supervision and enforcement enable the use of algorithmic profiling technologies and there is limited dedicated case law offering further norms regulating the design, implementation, and use of these technologies.[10] Human rights law, together with the more specific General Data Protection Regulation (*hereafter GDPR*), Law Enforcement Directive (*hereafter* LED), and the recently adopted Artificial Intelligence Act (*hereafter AI Act*) introduce obligations for governmental organizations using, in particular, high risk algorithmic and AI systems, to address risks for fundamental

1. Amnesty International, *Xenophobic Machines: Discrimination through Unregulated Use of Algorithms in the Dutch Childcare Benefits Scandal* (Amnesty International, 2021); *Netherlands vs NJCM c.s.* [2020] ECLI:NL:RBDHA:2020:1878., District Court The Hague, C-09-550982-HA ZA 18-388; Dutch Data Protection Authority, *DUO Gebruik van geautomatiseerde risicoclassificering op basis van een risicoprofiel bij Controleproces Uitwonende Beurs (CUB)* (Dutch Data Protection Authority, 2024); Eva Constantaras and others, 'Inside the Suspicion Machine' (6 March 2023) WIRED https://www.wired.com/story/welfare-state-algorithms/
2. Merijn Rengers, Carola Houtekamer & Nalinee Maleeyakul, ''Pas op met deze visumaanvraag', waarschuwt het algoritme dat discriminatie in de hand werkt. Het ministerie negeert kritiek' (23 April 2023) NRC https://www.nrc.nl/nieuws/2023/04/23/beslisambtenarenblijven-profileren-met-risicoscores-a4162837; Marc Hijink, 'IND maakte zich schuldig aan etnisch profileren' (6 May 2022) NRC https://www.nrc.nl/nieuws/2022/05/06/ind-verzweeg-een-dikke-error-met-kennismigranten-a4123661.
3. David Davidson, 'Dubieus algoritme van de politie 'voorspelt' wie in de toekomst geweld zal plegen' (23 August 2023) Follow The Money https://www.ftm.nl/artikelen/nederlandse-politie-gebruikt-minority-report-algoritme; Marc Schuilenburg & Abhijit Das, 'Vuile data leiden tot willekeur bij politie' (5 October 2020) Sociale Vraagstukken https://www.socialevraagstukken.nl/vuile-data-leiden-tot-willekeur-bij-politie/; Amnesty International, *We sense trouble: Automated discrimination and mass surveillance in predictive policing in the Netherlands* (Amnesty International, 2020) https://www.amnesty.org/en/documents/eur35/2971/2020/en/ .
4. Jedrzej Niklas, 'Poland: Government to scrap controversial unemployment scoring system' (16 April 2-19) AlgorithmWatch https://algorithmwatch.org/en/poland-government-to-scrap-controversial-unemployment-scoring-system/ .
5. Jon Ungoed-Thomas & Yusra Abdulahi, 'Warnings AI tools used by government on UK public are 'racist and biased' (25 August 2024) The Guardian https://www.theguardian.com/technology/article/2024/aug/25/register-aims-to-quash-fears-over-racist-and-biased-ai-tools-used-on-uk-public.
6. Julia Angwin and others, 'Machine Bias: There's software used across the country to predict future criminals. And it's biased against blacks.' (23 May 2016) ProPublica https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing.; Will Douglas Heaven, 'Predictive policing algorithms are racist. They need to be dismantled.' (17 July 2020) MIT Technology Review https://www.technologyreview.com/2020/07/17/1005396/predictive-policing-algorithms-racist-dismantled-machine-learning-bias-criminal-justice/; Rahida Richardson, Jason Schultz, & Kate Crawford, 'Dirty data, bad predictions: How civil rights violations impact police data, predictive policing systems, and justice' (2019) 94 *NYU Law Review*.
7. Toby Murray, Marc Cheong, Jeannie Paterson, 'The flawed algorithm at the heart of Robodebt' (10 July 2023) Pursuit https://pursuit.unimelb.edu.au/articles/the-flawed-algorithm-at-the-heart-of-robodebt .
8. Sahar Barmomanesh & Victor Miranda-Soberanis, 'Potential Biased Outcomes on Child Welfare and Racial Minorities in New Zealand using Predictive Models: An Initial Review on Mitigation Approaches' (2023) *arXiv*.
9. Algemene Rekenkamer, *Focus op AI bij de rijksoverheid* (Algemene Rekenkamer, 2024); CVRM, *Toetsingskader risicoprofilering – Normen tegen discriminatie op grond van ras en nationaliteit* (College voor de Rechten van de Mens, 2025).
10. Lucas Haitsma, 'The Murky Waters of Algorithmic Profiling: Examining discrimination in the digitalized enforcement of social security policy' (2023) 44(2) *Recht der Werkelijkheid*; Lucas Haitsma, 'Regulating algorithmic discrimination through adjudication: the Court of Justice of the European Union on discrimination in algorithmic profiling based on PNR data' (2023) 5 *Frontiers*.; Lucas Haitsma & Albertjan Tollenaar, 'Regie op de toepassing van algoritmes in het sociaal domein' in Solke Munneke, Hanna Tolsma, & Heinrich Winter, *Regie, regie, regie: over maatschappelijke problemen en de terugkeer van de sturende overheid* (Boom Juridisch 2024) 99-115.

rights, including discrimination.[11] These legal sources serve as a broad regulatory call to action to safeguard and address risks for fundamental rights, however leave considerable room regarding how this legal framework should be operationalized. As such, it is relevant to consider how organizations currently approach—and how they can and should approach—the governance of systemic risks of discrimination through identification, assessment, and management.[12]

Against this backdrop, the Dutch Ministry of Internal Affairs, Directorate of Digital Society (*hereafter DDS*), is creating a governance framework called the *Algoritmekader* to provide further norms and guidance to organizations operationalizing this broad legal framework.[13] DDS is committed to fostering a transition to a digital society that is inclusive, safeguards fundamental rights, and allows for societal issues to be effectively tackled.[14] The framework being developed thus aims to offer practical guidance to organizations using such technologies on how to address risks to fundamental rights, such as discrimination, throughout the lifecycle of algorithmic systems.[15]

Developing norms and guidance to address discrimination in algorithmic profiling is however both challenging and knowledge-intensive, as discrimination can be characterized as a 'systemic risk',a well-established category within the field of risk governance.[16] Systemic risks are characterized by their complexity, uncertainty, and ambiguity.[17] Discrimination in algorithmic profiling, is characterized by its sociotechnical complexity, scientific uncertainty regarding how to address these risks, and sociolegal ambiguity stemming from a broad legal framework coupled with competing views on the governance discrimination risks. In light of the systemic nature of this risk, a lack of clarity exists in regard to how to effectively govern the risk of discrimination in algorithmic profiling.

To address this gap in clarity and knowledge, van Asselt and Renn propose three key principles for governing systemic risks, which organizations should carefully consider when developing approaches to address systemic risks. The principles of communication and inclusion, integration, and reflection synthesize decades of risk governance research and are proposed to support socially robust systemic risk governance approaches.[18] These principles provide a lens for researching and analyzing systemic risk governance approaches in the public sector, thereby contributing to their theoretical and methodological grounding.

This paper thus explores the following research question: *How is the Dutch Ministry of Internal Affairs developing policy to address discrimination in algorithmic profiling, and is their approach suitable for addressing this systemic risk?* This question is answered using empirical legal methods, involving a case study

11. Karen Yeung & Sofia Ranchordás, *An Introduction to Law and Regulation Text and Materials 2nd Edition* (Cambridge University Press 2024) 41-77; Regulation (EU) 2024/1689 of the European Parliament and of the Council of 11 July 2024 laying down harmonised rules on artifical intelligence (Artificial Intelligence Act) [2024] OJ L202/1.; Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) OJL119/1; Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA (Law Enforcement Directive) OJL119/89.
12. Marjolein van Asselt & Ortwin Renn, 'Risk Governance' (2011) 14(4) *Journal of Risk Research* 431–449.; IRGC, *IRGC Guidelines for the Governance of Systemic Risks* (International Risk Governance Council, 2018).
13. Ministry of the Interior and Kingdom Relations of Netherlands, 'Algoritmekader' (December 2024) Overheid.nl https://minbzk.github.io/Algoritmekader/ .
14. Rijksoverheid, ' Over Open Overheid – Directie Digitale Samenleving' (2025) Open-overheid.nl https://www.open-overheid.nl/over-open-overheid ; Ministry of the Interior and Kingdom Relations of Netherlands, 'Hillie Beentjes directeur Digitale Samenleving tevens plaatsvervangend directeur-generaal DOO bij BZK' (27 May 2025) Algemene Bestuursdienst https://www.algemenebestuursdienst.nl/actueel/nieuws/2024/05/27/hillie-beentjes-directeur-digitale-samenleving-tevens-plaatsvervangend-directeur-generaal-doo-bij-bzk
15. Overheid.nl (n 13).
16. Marjolein van Asselt & Ortwin Renn (n 12); Ortwin Renn, Andreas Klinke, & Marjolein van Asselt, 'Coping with complexity, uncertainty and ambiguity in risk governance: a synthesis' (2011) 40(2) *Ambio* 231-246; Karen Yeung & Sofia Ranchordás (n 11) 66
17. Marjolein van Asselt & Ortwin Renn (n 12); Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16).
18. Marjolein van Asselt & Ortwin Renn (n 12)

conducted at the Ministry of Internal Affairs, Directorate of Digital Society (*hereafter DDS*) to examine how the directorate approaches creating a framework for governing discrimination in algorithmic profiling. The systemic risk governance principles serve as a framework for examining how DDS addresses discrimination in the *Algoritmekader* and later as a basis for analyzing and reflecting on their approach.

Section 2 explores the applicable legal framework, the concept of systemic risks and the principles of systemic risk governance, which form the theoretical underpinning of this study. Section 3 outlines the study's methodology, while Section 4 presents the case study findings through the lens of systemic risk governance principles. Section 5 reflects on the approach to addressing the systemic risk of discrimination in algorithmic profiling and offers some recommendations for improving systemic risk governance.

2. Theoretical background: From Risk Regulation to Risk Governance

2.1 Regulating Risks of Discrimination in Algorithmic Profiling

In the context of algorithmic profiling within Europe, discrimination is regulated by human rights legislation, the General Data Protection Regulation, the Law Enforcement Directive, and the recently adopted AI Act. Regarding human rights, the substantive prohibition of discrimination based on protected grounds is enshrined in the right to non-discrimination and focuses on unequal treatment and effects based on protected characteristics. Complementarily the right to equal treatment stipulates that any differential treatment affecting a citizen's rights should be reasonable and fair.[19] In the context of algorithmic profiling, supervision and enforcement organizations must demonstrate that differences in treatment stemming from the risk profiles used are justified.[20] The right to privacy and data protection regulate and limit the collection and processing of information that can be used in discriminatory algorithmic profiling.[21] Lastly, the right to an effective remedy seeks to ensure that individuals can challenge and seek redress for discriminatory decisions produced by organizations using algorithmic systems.[22]

The GDPR and LED safeguard against discrimination by for example, requiring that processing is fair, establishing a right to human intervention, prohibiting the processing of special categories of personal data, and obliging Data Protection Impact Assessments to be conducted where the processing of data poses risks to fundamental rights.[23] Within Data Protection Impact Assessments, organizations must identify and mitigate risks for fundamental rights stemming from the data processing, which includes discrimination.[24]

Additionally, the AI Act introduces provisions relevant to regulating discrimination in the context of 'high-risk' AI systems used for profiling.[25] Organizations must implement risk and quality management systems, ensuring compliance and addressing fundamental rights risks, including discrimination.[26] The AI Act also mandates data governance measures to detect and mitigate bias and requires public authorities to conduct fundamental rights impact assessments before deploying such systems.[27]

19. Article 14 (Article 1 of Protocol No. 12), European Convention on Human Rights (ECHR), opened for signature 4 November 1950, ETS 5 (entered into force 3 September 1953); Article 20, Article 21, Charter of Fundamental Rights of the European Union [2012] OJ C326/391; Janneke Gerards & Frederik Zuiderveen Borgesius, 'Protected grounds and the system of non-discrimination law in the context of algorithmic decision-making and artificial intelligence' (2022) 20 (1) *Colorado Technology Law Journal* 45-47.; Niklas Eder, 'Privacy, Non-Discrimination and Equal Treatment: Developing a Fundamental Rights Response to Behavioural Profiling' in *Algorithmic Governance and Governance of Algorithms: Legal and Ethical Challenges* (Springer International Publishing 2021) 32-38.
20. Niklas Eder (n 19) 40-44.
21. Article 8, European Convention on Human Rights; Article 7 & Article 8, Charter of Fundamental Rights of the European Union; Jessica L. Roberts, 'Protecting Privacy to Prevent Discrimination' (2015) 56(6) *William & Mary Law Review* 2121-2127.; See for example *Ligue des droits humains v Conseil des ministres* [2022] C-817/19 & District Court The Hague, C-09-550982-HA ZA 18-388.
22. Article 13, European Convention on Human Rights; Article 47, Charter of Fundamental Rights of the European Union; Maria O' Sullivan, 'Artificial intelligence and the right to an effective remedy' in Michal Balcerzak & Julia Kapelańska-Pręgowska *Artificial Intelligence and International Human Rights Law* (Edward Elgar Publishing 2024) 196-213.
23. Article 5, 9, 22, 35, General Data Protection Regulation; Article 4, 10, 11, 27, Law Enforcement Directive.
24. Article 35 General Data Protection Regulation; Article 27 Law Enforcement Directive.
25. Chapter III, Annex III, Artificial Intelligence Act.
26. Article 9, 17, Artificial Intelligence Act.
27. Article 10, 27, Artificial Intelligence Act.

Human rights legislation entails both ex-post safeguards and ex-ante duties, obliging organizations to address discrimination risks in the design, implementation, and deployment of algorithmic systems.[28] The GDPR, the LED, and the AI Act aim to regulate risks to fundamental rights associated with novel technologies by requiring organizations to adopt strategies and measures to identify, govern, and address these risks throughout the entire lifecycle of such technologies. However, organizations operationalizing this regulatory framework are confronted with the challenge of translating these broad provisions into organizational practices that address risks of discrimination throughout the lifecycle of profiling systems.[29]

2.2 Challenges in Addressing Risks of Discrimination in Algorithmic Profiling

Tackling discrimination in algorithmic profiling is challenging as it can be considered a 'systemic risk' within risk governance—marked by significant complexity, uncertainty, and ambiguity.[30] *Risks* are *complex* when they are multicausal, which makes it difficult to pinpoint and quantify links between specific causal agents and negative outcomes.[31] Discriminatory outcomes are multicausal and sociotechnical, as they can be traced back to choices and unmitigated social and technical risks in the life cycle of such systems, including their design, implementation, and use.[32] In practice, a multitude of cases have demonstrated how strict supervision and enforcement policy, biases in algorithms and human reviewers, opacity of systems, a lack of governance, and ineffective remedies interact to produce discriminatory consequences for citizens.[33] Identifying and tracing these outcomes back to unmitigated risks in the life cycle requires a combination of qualitative and quantitative research methods and lacks an established methodology, with reports regarding the same incidents differing in methodologies and their outcomes.[34]

Uncertainty refers to when there is limited scientific knowledge on how to assess and manage risks and potential negative outcomes.[35] In the context of algorithmic profiling, it is well-established that discrimination is a recurring problem, as demonstrated by the countless previously cited incidents that clashed with the right to non-discrimination. However, there is still limited interdisciplinary empirical research into how these discriminatory outcomes occur.[36] Likewise while research regarding methodologies and interventions aimed at preventing discrimination exists, further empirical research is still needed to assess their utility in preventing discriminatory outcomes in an algorithmic profiling context.[37]

28. Frederik Zuiderveen Borgesius, 'Strengthening legal protection against discrimination by algorithms and artificial intelligence' (2020) 24(10) *The International Journal of Human Rights* 1578-1581.; Tilburg University, Non-Discrimination by Design (Tilburg University 2021).; Lucas Haitsma (n 10).
29. Lucas Haitsma (n 10).
30. Marjolein van Asselt & Ortwin Renn (n 12); Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16); Karen Yeung & Sofia Ranchordás (n 11) 66
31. Marjolein van Asselt & Ortwin Renn (n 12) 436-437; Andreas Klinke & Ortwin Renn, 'Adaptive and integrative governance on risk and uncertainty' (2012) 15(3) *Journal of Risk Research* 275-276.
32. Marco Marabelli, Sue Newell, & Valerie Handunge, 'The lifecycle of algorithmic decision-making systems: Organizational choices and ethical challenges' (2021) 30(3) *The Journal of Strategic Information Systems* 101683.; Lucas Haitsma (n 10).
33. Lucas Haitsma (n 10); Amnesty International (n 1); Dienst Uitvoering Onderwijs, *Intern onderzoek controle uitwonendenbeurs* (DUO, 2024); Carola Houtekamer & Merijn Rengers, 'LET OP, zegt de computer van Buitenlandse Zaken bij tienduizenden visumaanvragen. Is dat discriminatie?' (1 May 2024) NRC https://www.nrc.nl/nieuws/2024/05/01/let-op-zegt-de-computer-van-buitenlandse-zaken-bij-tienduizenden-visumaanvragen-is-dat-discriminatie-a4197697 .
34. See the difference in methodologies and results between the reports related to a case at DUO: Algorithm Audit, *Vooringenomenheid voorkomen (Addendum)* (Algorithm Audit, 2024) & PWC, *Onderzoek misbruik uitwonendenbeurs* (Price Water Cooperhouse, 2024); See the difference in methodologies and results between the reports related to a case at the Dutch Ministry of Foreign Affairs: SigmaRed, *Report on Algorithmic Bias Assessment* (SigmaRed, 2024) & Rijksorganisatie voor Ontwikkeling Digitalisering en Innovatie, *Bias-toetsing 'Kort Verblijf Visa' aanvragen* (Ministrie van Binnenlandse Zaken en Koninkrijksrelaties 2023).
35. Andreas Klinke & Ortwin Renn (n 31) 276.; Marjolein van Asselt & Ortwin Renn (n 12) 436-437.
36. Examples of such interdisciplinary empirical research include: Lucas Haitsma (n 10); Mirthe Danloff, 'Analysing and organizing human communications for AI fairness assessment' (2024) *AI & Society* 1-21.; Maddalena Favaretto, Eva De Clercq, Elger Bernice Simone, 'Big Data and discrimination: perils, promises and solutions. A systematic review' (2019) 6(1) *Journal of Big Data* 1-27; Christoph Kenn and others, 'When Small Decisions Have Big Impact: Fairness Implications of Algorithmic Profiling Schemes ' (2024) 1(4) *Journal on Responsible Computing*.
37. Examples of research regarding methodologies and interventions include: Daniel Vale, Ali El-Sharif, & Muhammed Ali, 'Explainable artificial intelligence (XAI) post-hoc explainability methods: risks and limitations in non-discrimination law' (2022) 2(1) *AI and Ethics* 815-826.; Aline S. Franzke, Iris Muis, Mirko T. Schäfer, 'Data Ethics Decision Aid (DEDA): a dialogical framework for ethical inquiry of AI and data projects in the Netherlands' (2021) 23(3) *Ethics and Information Technology* 551-567.; Marjolein Boonstra and others, 'Lessons Learned in Performing a Trustworthy AI and Fundamental Rights Assessment' (2024) *arXiv:2404.14366*; Dennis Vetter and others, 'Lessons Learned from Assessing Trustworthy AI in Practice' (2023) 2(3) *Digital Society*; Tilburg University (n 28); Anne Meuwese, Jurriaan Parie, & Ariën Voogt, 'Hoe 'algoprudentie' kan bijdragen aan een verantwoorde inzet van machine learning-algoritmes' (2024) 2024/556 *Nederlands Juristenblad*.

Risks are *ambiguous* when views differ on how to identify, appraise, manage, and justify risks and potential adverse effects.[38] The legal framework that regulates and safeguards against discrimination is broad. As a result, perceptions in society differ, for example, between civil society and governmental organizations on whether it is appropriate to use AI and algorithmic profiling technologies in certain contexts, such as for social security fraud prevention.[39] Furthermore, views may differ on how to design, implement, and use such systems in a manner that safeguards fundamental rights. For example, data scientists, ethicists, lawyers, and supervision professionals may disagree on if and when it is justified to use certain predictive indicators, how much overrepresentation of specific groups is acceptable, or how to facilitate meaningful transparency or explainability.[40]

2.3 From Risk Regulation to Systemic Risk Governance

Klinke and Renn, stipulate that the effectiveness and legitimacy of risk governance processes hinge on the ability of organizations to responsibly handle, address, and resolve complexity, uncertainty, and ambiguity.[41] Risk governance authors, van Asselt and Renn, thus propose three principles that can be used to cope with these challenges and inform strategies for identifying and managing systemic risks.[42] The three principles established by these authors are; communication and inclusion, integration, and reflection.[43] These principles consolidate decades of interdisciplinary research on systemic risk governance, and have found application in diverse domains, including climate and environmental hazards, urban planning, disaster management, public health, supply chain management, and data governance.[44] Van Asselt and Renn suggest that while these are not mandatory principles, they should be seriously considered when designing strategies for risk governance to help overcome knowledge deficits that typically plague systemic risk governance.[45]

2.3.1 Communication and inclusion

Risk governance is a multi-actor process that necessitates effective communication and inclusion of various stakeholders. Communication involves a meaningful exchange of knowledge, experience, interpretations, concerns, and perceptions governmental and policy actors, scientific experts, and affected groups and civil society.[46] This exchange fosters trust and social support, forming a solid foundation for responsibly discussing and managing systemic risks.[47] A significant challenge in communication is determining who

38. Marjolein van Asselt & Ortwin Renn (n 12) 437; Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16) 231-246.
39. Amnesty International, *Etnisch profileren is overheidsbreed probleem* (Amnesty International 2024) 53-57; Tweede Kamer den Staten Generaal, 'Rondetafelgesprek over risicoprofilering in het handhavingsbeleid' (23 May 2024 https://www.tweedekamer.nl/debat_en_vergadering/commissievergaderingen/details?id=2024A03248 .
40. See for example: Amnesty International (n 39) 16-18; Tweede Kamer den Staten Generaal (n 39); Dennis Vetter and others (n 37); Anne Meuwese, Jurriaan Parie, & Ariën Voogt (n 37); Michele Loi, Andrea Ferrario, & Eleonora Viganò, 'Transparency as design publicity: explaining and justifying inscrutable algorithms' (2021) 23(3) *Ethics and Information Technology* 253-264.
41. Andreas Klinke & Ortwin Renn (n 31) 286.; International Risk Governance Council, *'What do we mean by "Risk Governance"?'* (IRGC, 2019) https://irgc.org/risk-governance/what-is-risk-governance/ accessed 20 September 2025.
42. Marjolein van Asselt & Ortwin Renn (n 12) 431-449.
43. Marjolein van Asselt & Ortwin Renn (n 12) 439.
44. Victoria Ahlqvist, Andreas Norrman and Marianne Jahre, 'Supply chain risk governance: Towards a conceptual multi-level framework' (2020) 13 *Operations and Supply Chain Management* 382.; Benham Taebi, Jan Kwakkel and Celine Kermisch, 'Governing climate risks in the face of normative uncertainties' (2020) 11 *Wiley Interdisciplinary Reviews: Climate Change* e666.; Gabriela Marques Di Giulio, Ione Maria Mendes, Felipe Dos Reis Campos and Joao Nunes, 'Risk governance in the response to global health emergencies: understanding the governance of chaos in Brazil's handling of the Covid-19 pandemic' (2023) 38 *Health Policy and Planning* 593.; Lucy Holmes McHugh, Maria Carmen Lemos and Tiffany Hope Morrison, 'Risk? Crisis? Emergency? Implications of the new climate emergency framing for governance and policy' (2021) 12 *Wiley Interdisciplinary Reviews: Climate Change* e736.; Lucien Hanssen, Jeroen Devilee, Marijke Hermans and others, 'The use of risk governance principles in practice: Lessons from a Dutch public institute for risk research and assessment' (2019) 9 *European Journal of Risk Regulation* 632.; Marina Micheli, Marisa Ponti, Max Craglia and others, 'Emerging models of data governance in the age of datafication' (2020) 7 *Big Data & Society* 2053951720948087.; Ortwin Renn, 'Stakeholder and Public Involvement in Risk Governance' (2015) 6(8) *International Journal of Disaster Risk Science* 8.; Ortwin Renn and Andreas Klinke, 'A framework of adaptive risk governance for urban planning' (2013) 5 *Sustainability* 2036.
45. Marjolein van Asselt & Ortwin Renn (n 12) 439.
46. Marjolein van Asselt & Ortwin Renn (n 12) 439 - 441; Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16) 242-243; Ortwin Renn & Andreas Klinke, 'Risk' in Christopher Ansell & Jacob Torfing in *Handbook on Theories of Governance* (Edward Elgar Publishing 2016) 253-254.
47. Marjolein van Asselt & Ortwin Renn (n 12) 439 - 441; Ortwin Renn & Andreas Klinke (n 47) 253-254.

to include in governance deliberations, at what point to involve them, and how to facilitate social learning among them in a meaningful and productive manner.[48]

Of further relevance to this challenge is inclusion. Inclusion in the risk governance process refers to who is included, how they are included, and what the scope and mandate for the inclusion in the risk governance process is.[49] Mechanisms such as roundtables, open forums, expert panels, and citizen advisory committees aim to pool relevant knowledge and incorporate diverse perspectives for identifying risk problems and developing mitigation strategies.[50] These mechanisms are crucial for enabling experts to identify risk topics, but also for identifying public values and social concerns which are key to prioritizing risk topics.[51] Inclusion enhances legitimacy, trust, and socially robust outcomes by establishing checks and balances and enabling collective decision-making among relevant actors and parties affected by the risk.[52] However, it is up to organizations to carefully consider, question, and later evaluate their timing, degree, and overall approach to communication and inclusion.[53]

2.3.2 Integration

Van Asselt and Renn further highlight the importance of the integration principle. While communication and inclusion focus on who to involve and how to facilitate their interactions, integration considers how the resulting knowledge is used to identify and mitigate risks.[54] Integration involves combining and including interdisciplinary knowledge and experiences from various domains in risk identification and governance. This goes beyond scientific expertise, incorporating diverse risk perceptions and values related to tolerability, acceptability, persistence, controllability, and potential consequences.[55] Integrating these perspectives helps to understand systemic risks more thoroughly and develop more socially robust, legitimate, and effective mitigation strategies.[56]

2.3.3 Reflection

Finally, Van Asselt and Renn stress the importance of consistently reflecting on the content and approach to governing complex, uncertain, and ambiguous risks.[57] This is crucial, as mistreating them as simple risks and routinizing governance accordingly can be tempting and detrimental. The principles of communication, inclusion, and integration stipulate that a diversity of actors should be involved in reconsidering risks, reflecting on their management, and adjusting the approach where necessary.[58]

3. Methodology

In light of the broad and evolving regulatory call to address risks of discrimination in algorithmic profiling, this research uses the risk governance principles to examine how the systemic risk of discrimination in algorithmic profiling is responded to at the policy level in the Netherlands. To this end, a case study, lasting from February until September 2024, was conducted within DDS. This organization was selected as it is a central organ in the Dutch government tasked with creating policy to help organizations using profiling technologies identify and prevent risks of discrimination and operationalize applicable legal norms.[59] These norms and guidance are developed and provided through the creation of a national algorithm framework

48. Marjolein van Asselt & Ortwin Renn (n 12) 439 - 441; Ortwin Renn & Andreas Klinke (n 47) 253-254.
49. Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16) 246.
50. Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16) 246.; Ortwin Renn (n 46).
51. Ortwin Renn & Andreas Klinke (n 47) 254.
52. Marjolein van Asselt & Ortwin Renn (n 12) 439-441; Ortwin Renn, Andreas Klinke, & Marjolein van Asselt (n 16) 243; Ortwin Renn & Andreas Klinke (n 47) 255.
53. Marjolein van Asselt & Ortwin Renn (n 12) 439-441.
54. Marjolein van Asselt & Ortwin Renn (n 12) 441-442.
55. Marjolein van Asselt & Ortwin Renn (n 12) 441-442.
56. Marjolein van Asselt & Ortwin Renn (n 12) 441-442.
57. Marjolein van Asselt & Ortwin Renn (n 12) 442-443.
58. Marjolein van Asselt & Ortwin Renn (n 12) 442-443.
59. Marjolein van Asselt & Ortwin Renn (n 12) 431-449.; Marco Marabelli, Sue Newell, & Valerie Handunge (n 32).

(*'Algoritmekader'* in Dutch).[60] Inherent in their task, the Directorate engages in risk governance by identifying risks and prescribing mitigating measures within their policy.

Due to their application in a wide variety of systemic risk governance contexts, the principles of systemic risk governance were used as a lens and theoretical framework to investigate and analyze the approach taken by DDS to addressing discrimination. To this end, the principles informed the data collection, the structure of the results stemming from the case study, and the analysis of the data. Within the case study, data was collected regarding the various actors and mechanisms that contributed to the content and form of the *Algoritmekader*. This included political and administrative actors including DDS, the House of Representatives, and the 'Inter-administrative Working Group'. Furthermore, this included operational mechanisms including the 'Working Group on Bias and Non-Discrimination' that creates content for the *Algoritmekader*, and the AI Validation team that builds technical tooling to make the framework implementable. Finally, this included public sessions and GitHub which were used as mechanisms for public engagement and transparency.

Mixed methods were used to gather data in the context of this case study. The primary methods of data collection included external and internal document analysis and interviews with relevant organizational actors. Additionally, it involved participation, observation, and informal conversations. Data was firstly collected from publicly available sources, including information published online by DDS regarding the *Algoritmekader* and the involvement of various actors.[61]

Regarding the bias and non-discrimination working group, it was possible to join the working group as a contributing member, which was done to understand the functioning of the working group and inform questions asked later in the interviews.[62] Within the AI Validation team, the author was granted the status of 'Researcher in Residence', the conditions of which were recorded in a publicly available decision record.[63] In particular, this entailed that the author could attend relevant meetings, take notes, and use these as data once reviewed by the team.[64]

Finally, semi-structured interviews were conducted to gain information regarding the risk governance approach taken by the Directorate. The interviews were conducted with relevant actors chosen via a purposive sampling method within the directorate. Due to the focus on the central government's approach, perspectives from civil society, NGOs, or directly affected citizens fall outside of the scope of this study, warranting further empirical research into their perspective on their (potential) role and contribution. Given that the names of the interview participants are irrelevant to this research, and the relatively small size of the Directorate, the participants were pseudonymised. Participants are thus listed with an assigned number for referencing, their function, and the organization for which they work. An overview of the interview participants can be found in Appendix A.

The interviews were firstly transcribed and subsequently analyzed with Atlas.ti. Deductive codes based on the systemic risk governance principles were used to code the interviews. These codes were used to extract and organize qualitative information about the *Algoritmekader* and the actors involved in its creation. The codes can be viewed in the table below. Based on these methods, findings were generated about the risk governance approach taken by the Directorate.

60. Overheid.nl (n 13).
61. Ministry of Interior and Kingdom Relations of Netherlands, 'Algoritmekader' (2025) aienalgoritmes.pleio https://aienalgoritmes.pleio.nl/groups/view/bf169271-70df-47b3-ae59-b46f6b1b32dc/algoritmekader ; Ministry of Interior and Kingdom Relations of Netherlands, 'MinBZK/Algoritmekader Repository' (2025) Github https://github.com/MinBZK/Algoritmekader .
62. Ministry of Interior and Kingdom Relations of Netherlands, 'Werkgroep Fundamentele Rechten' (2025) aienalgoritmes.pleio https://aienalgoritmes.pleio.nl/groups/view/314509b2-70e7-4ca1-b4e3-cb2d1c26d4ac/werkgroep-fundamentele-rechten.
63. Ministry of Interior and Kingdom Relations of Netherlands, 'AI Validation Team' (2024) AI Validation Team https://minbzk.github.io/ai-validation/; Ministry of Interior and Kingdom Relations of Netherlands, 'ADR-0011 Researcher in Residence' (2024) AI Validatie Team https://minbzk.github.io/ai-validation/adrs/0011-researcher-in-residence/ .
64. AI Validation Team (n 64).

Code Group	Codes	Purpose
Communication and Inclusion	- Who was included and why - Who was excluded and why - Mechanism for inclusion	To analyze which actors were engaged and the means of their inclusion.
Integration	- How was input used	To assess how stakeholder input was incorporated into the *Algorithmekader*.
Reflection	- Reflection on content - Reflection on approach - Use of reflection	To evaluate self-assessment practices and learning processes.
General	- Description of initiative - Origin/rationale of initiative - Relation between initiatives	To provide descriptive context and understand the initiatives' origins and interconnections and how they relate to the *Algoritmekader*.

The findings in this paper cannot claim to show how all organizations address algorithmic discrimination when creating policy. Rather, this paper discusses an example by which the central government in the Netherlands is responding to algorithmic discrimination at the policy level. Given the lack of empirical evidence on this topic, the insights from this case study are useful to contribute to a theoretical foundation to discuss algorithmic discrimination and its prevention in academic literature and in practice.

4. Results

In light of recurring instances of discrimination in the context of algorithmic profiling by the supervision and enforcement agencies, the Dutch House of Representatives has grown concerned about the issue of the responsible development and use of algorithmic systems.[65] Such instances included the Child Care Benefits Scandal and the SyRI scandal, and later similar instances of discrimination that drew national attention.[66] This led to members of the House of Representatives consistently asking parliamentary questions to the Ministry of Internal Affairs regarding algorithms, including "what is the ministry of internal affairs going to do to prevent this from happening again in the Netherlands?".[67] The Secretary of State felt responsible for addressing and responding to such instances and made commitments to come up with a framework to guide organizations regarding the responsible development and use of algorithmic systems.[68] The Directorate of Digital Society was tasked with creating and coordinating the *Algoritmekader* as a means to address the questions asked by the House of Representatives and deliver on the commitments made by the Secretary of State.[69]

The overarching purpose of the *Algoritmekader* is to guide governmental organizations regarding the responsible development and use of algorithmic systems.[70] Under the umbrella of this overarching purpose, several sub-goals of the *Algoritmekader* can be identified. Firstly, this includes compiling minimum applicable requirements from fundamental rights such as the right to equal treatment and non-discrimination, the GDPR, the LED, and requirements in the AI Act for high-risk systems.[71] Secondly, the *Algoritmekader* should facilitate the exchange and integrate relevant knowledge, experience, and existing instruments in its content.[72] Finally, the *Algoritmekader* should be practical in its guidance to professionals within organizations regarding how to address risk for fundamental rights, such as discrimination.[73]

65. Interview with Policy Officer (2024) Participant 1.; Interview with Strategic Consultant (2024) Participant 3.
66. Interview Participant 1; Participant 3.
67. Interview Participant 3.
68. Interview Participant 1; Participant 3; Interview with Policy Advisor (2024) Participant 4.
69. Interview Participant 3.
70. Ministry of Internal Affairs and Kingdom Relations Netherlands, *Implementatiekader 'Verantwoorde inzet van algoritmen'* (Ministry of Internal Affairs and Kingdom Relations Netherlands, 2023); Overheid.nl (n 13); Interview with Policy Officer (2024) Participant 2; Interview with Policy Advisor (2024) Participant 5.; Interview Participant 3.
71. Interview Participant 1; Participant 2; Participant 3; Participant 5.
72. Interview Participant 5.
73. Interview Participant 3.

4.1 Communication and Inclusion:

Concerning the development of the *Algoritmekader* a number of key mechanisms can be identified through which actors collectively address the issue of discrimination in algorithmic systems. Most notably, at the political and intergovernmental level, this includes the House of Representatives, the Directorate of Digital Society and the Inter-Administrative Working Group. At the more operational level of creating the content of the *Algoritmekader* this includes the Working Group Bias & Non-Discrimination, the AI Validation Team. Furthermore, GitHub and public sessions are used to facilitate transparency and public engagement.

Political and Administrative Mechanisms:

The House of Representatives, the Directorate of Digital Society, and the Inter-administrative Working Group

The House of Representatives submits motions, which are then evaluated by the Secretary of State, and can result in commitments to the House of Representatives.[74] DDS can be tasked with executing the motion and commitments by developing and coordinating a response, which can be in the form of a product, such as the *Algoritmekader*.[75] DDS also chairs the Inter-administrative Working Group, which includes other ministries such as the Ministry of Economic Affairs, the Ministry of Justice and Security, and the Association of Municipalities to share, discuss and coordinate responses to the House of Representatives.[76]

Operational Mechanisms:

The Working Group Bias and Non-Discrimination

The *Algoritmekader* has several 'building blocks', the function of which is to put focus on certain topics, that are still somewhat underexplored.[77] For some building blocks, working groups were created, which are a mechanism through which actors collectively generate content for the *Algoritmekader* regarding a certain theme.[78] Working groups help to ensure "that the *Algoritmekader* does not only come from the Ministry of Internal Affairs, but also involves the surrounding community, and in particular, other governmental organizations".[79] This also helps to ensure that the *Algoritmekader* is applicable in practice.[80]

Regarding who participates in the working group, a policy officer explains that the target participants for the working groups are primarily implementation-level organizations.[81] Additionally, external experts such as academics are also included in the working groups.[82] Some groups are however not included, in particular, there is no "representation of citizens" in the working groups. A policy officer explained that "they don't stand out so much as a stakeholder...before you know it you have all the people in your network, and you overlook representatives of citizens". Similarly, a strategic consultant explains that "I see the citizen as a stakeholder as they have an interest in the government using technology responsibly...but they are not a user of the *Algoritmekader*" and thus they are not actively approached to participate in the working groups.[83]

Of particular relevance to this paper is the building blocks concerning bias and non-discrimination.[84] For this building block, a working group was created with the goal of creating content regarding the *Algoritmekader*.[85] The chairs of the working group explained that political attention, personal interest, uncertainty about the issue and how to address it, and the fact that it is a challenging topic were reasons for creating a

74. Interview Participant 1.
75. Interview Participant 1.
76. Interview Participant 1.
77. Interview Participant 3.
78. Interview Participant 2; Participant 5.
79. Interview Participant 5.
80. Interview Participant 1; Participant 2; Participant 3; Participant 5.
81. Interview Participant 1.
82. Interview Participant 1; Participant 2; Participant 5.
83. Interview Participant 3.
84. Building blocks have been renamed to 'topics'.; Ministry of Interior and Kingdom Relations of Netherlands, 'Discriminerende effecten en ander ongewenst onderscheid bij het gebruik van algoritmes' (2025) Algoritmekader https://minbzk.github.io/Algoritmekader/onderwerpen/bias-en-non-discriminatie/ .
85. Interview Participant 2; Participant 5.

working group on bias and non-discrimination.[86] Furthermore, to address this issue "you need a variety of disciplines".[87] As such, a key aim of the working group is to "involve different perspectives...and include those perspectives in the development of policy...so that it does not only come from the Ministry of Internal Affairs".[88] Participants with various roles and a combination of technical, legal, and ethical perspectives were approached from within the government and outside the government to join the working group with.[89] This also included academic experts to include scientific insights.[90]

The chairs of the working group highlighted that some actors were more difficult to involve.[91] In particular, supervisory authorities are difficult to include due to their role as a supervisor it was concluded that "their role is more to supervise and review delivered content than actively contributing to it".[92] Some actors were also not approached to participate in the working group. One of the chairs explained that "what we did not do is invite non-profits".[93] This was an explicit choice, as the "working group should be a safe and confidential space where people can dare to share experiences and bring difficult points to the table...which doesn't happen if people are there who may share this information elsewhere".[94]

The AI Validation Team

Furthermore, the work of the AI Validation Team is of further relevance to the *Algoritmekader* and the building block of bias and non-discrimination.[95] The team consists of an engineering manager, product owner, product researcher, engineers, and user experience designer.[96] In light of the team's task, they work closely with a range of internal and external stakeholders. This includes, policy and legal actors within DDS, and other ministries, like the Ministry of Justice and Security, organizations, and supervisory authorities interested in using the tooling.[97]

The idea for the AI Validation Team is to contribute to DDS's policy goals from an engineering perspective.[98] The engineering manager states that DDS it was clear that the *Algoritmekader* was "a topic that has a lot of technical components". This raised the question of how to create an "an environment where policy and the (technical) implementation of policy can go hand in hand".[99] Momentum also came from the Dutch Secretary of State visiting Singapore and meeting with a team working on tools for the validation and verification of algorithms, sparking a desire to develop a similar tool in the Netherlands.[100] Despite the tooling of the AI validation team contributing to the *Algoritmekader*, they are however, formally not part of the same policy assignment.[101]

The AI Validation team creates tooling, which most relevantly includes the *Algorithm Management Toolkit*. This toolkit is used to make the *Algoritmekader* actionable and implementable, and facilitate uniform reporting on governance within the *National Algorithm Register*.[102] Thus, the AI Act creates broad legal obligations, the *Algoritmekader* aims to provide additional norms, and the *Algorithm Management Toolkit*

86. Interview Participant 2; Participant 5.
87. Interview Participant 5.
88. Interview Participant 5.
89. Interview Participant 2.
90. Interview Participant 2.
91. Interview Participant 2; Participant 5.
92. Interview Participant 2.
93. Interview Participant 2.
94. Interview Participant 2.
95. AI Validatie Team (n 64).
96. Ministry of Interior and Kingdom Relations of Netherlands, 'About - Team' (2025) AI Validatie Team https://minbzk.github.io/ai-validation/about/team/ .
97. Interview Engineering Manager (2024) Participant 6; Interview Product Owner (2024) Participant 7.
98. Interview Participant 6.
99. Interview Participant 6.
100. Tweede Kamer der Staten-Generaal, *Informatie- en communicatietechnologie (ICT) Brief van de Staatssecretaris van Binnenlandse Zaken en Koninkrijkerelaties* (7 July 2023) 26 643, nr. 1056.; Observations AI Validation Team 08-02-2024 (8 February 2024).
101. Interview Participant 3.
102. Interview Participant 6; Participant 7. AI Validatie Team (n 64).

facilitates compliance by making these norms actionable within organizations.[103] This architecture enables the oversight of internal governance of organizations developing algorithms and allows for the structured and uniform recording and documentation of information surrounding algorithmic projects.[104]

High profile examples of algorithmic discrimination in the Netherlands[105] highlighted the need for tooling that enables governmental organizations to ensure and maintain control, governance, and transparency over algorithmic systems. Furthermore, the importance of such tooling is underscored by the AI Act which creates obligations to address risks on fundamental rights, such as discrimination, and publish algorithms in national and European registers.[106]

Public Engagement and Transparency Mechanisms

Online Public Sessions and GitHub

Content from the working group on bias and non-discrimination is processed and published on GitHub, an open-source platform on which the *Algoritmekader* is developed.[107] Furthermore, updates on the *Algoritmekader* are shared in online public sessions.[108] Via these mechanisms, DDS "gets feedback, which contributes to the acceptance and support of the output as actors can follow and think along" about the *Algoritmekader*.[109] Furthermore, this open approach is based on the idea that "the more people contribute, the better the result will be".[110] One of the chairs of the working group on bias and non-discrimination states, that while non-profits and civil society are not included in the working group, feedback from them is desired via GitHub.[111]

The AI Validation team also uses GitHub.[112] This is firstly rooted in public accountability, as the team is funded by taxpayer money, they believe that they should "make an effort to be transparent about what they are doing, and how financial resources are being used".[113] Furthermore, it makes advocating and creating tools for transparency in other organizations easier, when the team is also transparent.[114] Secondly, GitHub enables easier collaboration with external organizations that may integrate their tooling, collaborate and give input "without having to be in the same team".[115] Likewise, the use of GitHub enables easier collaboration with other teams that are working on the *Algoritmekader*.[116]

4.2 Integration

The various mechanisms and actors delineated above together deliver input relevant to the *Algoritmekader*. The manner in which their input is integrated is discussed below.

Political and Administrative Mechanisms:

House of Representatives, DDS, and Inter-administrative Working Group

The House of Representatives expressed concerns regarding repeated instances of discrimination and a desire to prevent such instances.[117] The Secretary of State felt that having laws and regulations alone

103. Interview Participant 6; Participant 7; Observations AI Validation Team 13-06-2024 (13 June 2024).
104. Interview Participant 6; Participant 7.
105. This included examples of direct and indirect discrimination at the Tax Authority, the Education Executive Agency, and the Ministry of Foreign Affairs.
106. Interview Participant 6.
107. GitHub (n 62)
108. Interview Participant 2; Participant 5.
109. Interview Participant 2.
110. Interview Participant 5.
111. Interview Participant 2.
112. AI Validatie Team (n 64)
113. Interview Participant 6.
114. Interview Participant 6.
115. Interview Participant 6.
116. Interview Participant 6.
117. Interview Participant 1.

was insufficient, and thus wanted further guidelines to help organizations mitigate these risks.[118] The *Algoritmekader* was developed by DDS to offer organizations practical guidelines in response to concerns raised by the House of Representatives and the commitments made by the Secretary of State surrounding the *Algoritmekader*.[119] Likewise these concerns spurred the further development of an E-Learning on non-discrimination, the creation of a non-discrimination protocol, and subsidizing bias testing.[120]

DDS ensures the coordination and execution of motions by aligning initiatives on bias and non-discrimination with relevant legislation, the interests of other ministries, and embedding these within the *Algoritmekader*.[121] In practice, within DDS this happens primarily via bottom up coordination whereby individuals working in different teams try to find each other.[122] This is described as not ideal, as DDS currently relies on teams and individuals interpreting their assignments correctly, maintaining oversight over various initiatives related to bias and non-discrimination, seeing connections and finding each other at the right moments.[123]

Within the inter-administrative working group, several sub-goals for the *Algoritmekader* are also established collaboratively, including, for example, that the *Algoritmekader* should be practical.[124] Drafts of the *Algoritmekader* are also shared, discussed, coordinated, and collectively reviewed by other ministries and the association for municipalities, enabling them to give feedback on it, in light of their relevant interests.[125] Furthermore, DDS can give feedback to the other parties, for example, that there is not enough input from organizations falling under those ministries.[126]

Operational Mechanisms:

Working group bias & non-discrimination

Regarding the role of participants within the working group, actors participate voluntarily and thus roles are not prescribed. However, the goal of the working group on bias and non-discrimination is to generate content related to this theme for the *Algoritmekader*.[127] Within the working group, input from participants with differing perspectives are used to come "to the best possible content, that is practical, and people can use".[128] Concretely, this firstly involved looking at relevant legislation, considering what risks of bias and discrimination are, and what measures can be taken to mitigate these risks.[129] This is done in part by looking at existing literature and using existing instruments, but also relying on the practical experience and expertise of the participants in the working group.[130]

Within the working group, participants do a mix of thinking along, bouncing ideas off of each other, and writing content on bias and non-discrimination for the *Algoritmekader*. Furthermore, the drafted content is sent to working group members in order for members to review and give feedback.[131] The benefit of having a working group focused on bias and discrimination, is that it leads to "really valuable input and knowledge, and a critical eye from people with diverse perspectives".[132] It also enables "us to easily test our ideas", and see how broader concepts and measures in the *Algoritmekader* resonate with participants.[133]

The 'identify and protect vulnerable groups' measure illustrates how input from the working group on bias and non-discrimination is used to generate content for the *Algoritmekader*. This measure prescribes

118. Interview Participant 1.
119. Interview Participant 1; Participant 3; Participant 6: Participant 7.
120. Interview Participant 1.
121. Interview Participant 1.
122. Interview Participant 1.
123. Interview Participant 2; Participant 4; Participant 5; Participant 6; Participant 7.
124. Interview Participant 3.
125. Interview Participant 1.
126. Interview Participant 3.
127. Interview Participant 2; Participant 5; Ministry of Interior and Kingdom Relations of Netherlands (n 63 & 85).
128. Interview Participant 5.
129. Interview Participant 2; Participant 5. Ministry of Interior and Kingdom Relations of Netherlands (n 63 & 85).
130. Interview Participant 2; Participant 5.
131. Interview Participant 5.
132. Interview Participant 2.
133. Interview Participant 5.

mitigating impacts on specific groups in algorithmic decision-making through measures like bias analyses, fundamental rights impact assessments, expert consultation, and additional support for affected individuals.[134] A chair of the working group provided that this was an issue "we wanted to give more attention to" and was "discussed at length within the working group". This was especially due to the "lack of literature on the topic, and it only being briefly mentioned within other existing instruments".[135] The drafted content of the measure was sent to working group members in order for members to read along and give feedback.[136]

However, the working group format also comes with some challenges. Firstly, it was noted that participation and attendance in the working groups, such as the bias and non-discrimination working group, was low.[137] Participants cited that this was especially linked to the voluntary nature of participation in the working groups, and participants needing to squeeze it between their other daily work.[138] Secondly, a chair stated that "the biggest challenge is getting people into working mode" and generating output. When people do show up to the working group, "the time they can spend on the working group goes toward attending it as opposed to writing content for the *Algoritmekader*".[139] This leads to "super interesting discussions, but sometimes some repetition, and things that do not always translate to content".[140] What can and sometimes happens, is that "you keep talking instead of doing" which means that a lot of the content writing work ends up with the chairs of the working group, as opposed to be collectively written and reviewed.[141] Although content is then sent to participants in the working group with the request to review it, feedback is not always received.[142]

AI Validation Team

Within the team, the engineering manager oversees team composition and technical aspects, while engineers build the tooling.[143] The user experience designer makes the tooling user-friendly.[144] Furthermore, the product owner considers the relevant stakeholders and the realization of the product.[145] The product owner plays a crucial role in ensuring alignment with the *Algoritmekader*, the *National Algorithm Register*, the needs of potential end users, and creating awareness of the tooling.[146]

With regard to bias and non-discrimination, the *Algoritmekader* prescribes measures such as conducting algorithm impact assessments, conducting bias tests, and documenting and publishing algorithms.[147] These are tasks that with technical components.[148] For impact assessments, currently this is often done in word documents, making it 'messy' and difficult to maintain oversight and ensure uniformity.[149] The *Algorithm Management Toolkit* would aim to offer a workflow management system and "streamline communication" between the actors involved, making it "faster and more manageable".[150] Likewise, the integration of bias testing in the Toolkit would enable organizations to carry out such testing "without having to have technical skills and knowledge".[151] The *Algorithm Management Toolkit* would also facilitate standardized reporting on

134. Ministry of Internal Affairs and Kingdom Relations, 'Maak een lijst van de meest kwetsbare groepen en bescherm hen extra' (2024) Algoritmekadder https://minbzk.github.io/Algoritmekader/voldoen-aan-wetten-en-regels/maatregelen/2-owp-08-kwetsbare-groepen/?h=kwetsbare+gr
135. Interview Participant 5.
136. Interview Participant 5.
137. Interview Participant 2; Participant 3; Participant 5.
138. Interview Participant 2; Participant 3; Participant 5.
139. Interview Participant 5.
140. Interview Participant 2.
141. Interview Participant 5.
142. Interview Participant 5.
143. Interview Participant 6.
144. Interview Participant 6; Participant 7.
145. Interview Participant 6.
146. Interview Participant 7.
147. Interview Participant 6; Participant 7.
148. Interview Participant 6.
149. Interview Participant 6.
150. Interview Participant 6.
151. Interview Participant 6.

governance, facilitating communication between teams and organizations, and enabling uniform publication in national and European algorithm registers.[152]

The AI Validation does however often feel isolated within the directorate due to several challenges.[153] In light of not formally being part of the same policy assignment, the AI Validation continuously tries to fit their technical perspectives within the law and policy context, which is time-consuming.[154] The unification of these technical and policy perspectives has proven difficult, in part due to limited top-down coordination between the different perspectives.[155] Furthermore, policymakers often see creating policy as the end goal, making the added technical layer difficult to understand from a policy perspective.[156] This causes tension as policymakers sometimes wonder "why are you interfering with this? Why are you making this choice? You are not competent to make that decision."[157]

Public Engagement and Transparency Mechanisms

GitHub & Public Sessions

Public sessions, including demo's, sprint reviews, and input via GitHub enable consistent feedback from predominantly governmental organizations, but also academics, regarding output.[158] Specific to the building block of bias and discrimination within the *Algoritmekader*, in the beginning, process oriented updates were given in the public sessions about the general approach of the working group.[159] With regard to the Working Group on Bias and Non-Discrimination, the chairs noted receiving some input via GitHub, primarily from governmental actors as well as academics.[160] In particular, this is in the form of propositions for textual changes and formulation changes, or questions being asked.[161]

However, within the interviews, it was noted that generally, feedback on content via GitHub was limited. DDS has a "few fixed followers" and they receive "feedback from a handful of people with each release".[162] This feedback is primarily from members within DDS and other governmental organizations.[163] This lack of a consistent critical external perspective means that DDS is not always challenged on the content produced and included in the *Algoritmekader*.[164] The hope is that as the *Algoritmekader* takes shape this input will increase, so that it can be a product where a few hundred experts delivered input and feedback on.[165]

4.3 Reflection

Political and Administrative Mechanisms:

House of Representatives, DDS, and Inter-administrative Working Group

Within the interviews, participants were asked about whether there were central reflections on the policy process and policy outcomes at the Directorate level. A policy officer, explained that "what we do is carry out motions [from the House of Representatives]...so if a motion says make a non-discrimination protocol,

152. Interview Participant 6; Interview 7.
153. Observations AI Validation Team 13-06-2024 (n 104).
154. Interview Participant 1; Participant 7.
155. Interview Participant 6; Participant 7.
156. Observations AI Validation Team 13-06-2024 (n 104).
157. Interview Participant 6.
158. Interview Participant 2; Participant 3; Participant 4; Participant 5; Ministry of Internal Affairs and Kingdom Relations Netherlands, 'Verdiepingssessie bias, fairness en non-discriminatie - 18 sept. 2024' (4 October 2024) aienalgoritmes.pleio https://aienalgoritmes.pleio.nl/wiki/view/3034f239-12a9-4dd8-907b-587e2a223533/verdiepingssessie-bias-fairness-en-non-discriminatie-18-sept-2024
159. Interview Participant 5.
160. Interview Participant 2; Participant 5.
161. Interview Participant 2; Participant 5.
162. Interview Participant 3.
163. Interview Participant 3; Participant 4.
164. Interview Participant 3.
165. Interview Participant 3.

then we do that...but what we don't do is evaluate if such a protocol is used".[166] The directorate "does not look at the realization side" such as whether "discrimination decreased or not", and "we do not evaluate our policies ourselves, but ... I think that could be done better".[167] As a result, reflections only arise "if a question is asked [by the House of Representatives], so in that respect we are reactive and not proactive in doing evaluations or critical reflections, and wondering if we are doing the right things".[168]

Products previously developed by DDS, such as the National Algorithm Register, were likewise not evaluated regarding "if we are happy with it, did we reach our goals, should it be different". This is problematic as "there is a lot of external criticism on the algorithm register", but nothing is done with it unless it leads to a question from the House of Representatives.[169] Likewise, in the context of creating the *Algoritmekader* as "there are also things that you could be critical of", but there is a lack of formal evaluation and critical reflection mechanisms.[170]

At the political and intergovernmental level, some reflection mechanisms exist. The intergovernmental working group enables critical reflection and feedback on products prior to being sent to the House of Representatives in response to a motion.[171] Additionally, there is an approval layer on projects like the *Algoritmekader* in order for it to be a product for the Kingdom of the Netherlands.[172] Subsequently, the House of Representatives then can act as a further reflection mechanism by asking questions about the *Algoritmekader*, which necessitates reflection and a response within DDS.[173] This can include questions about the status that the *Algoritmekader* should get, whether it is user-friendly enough, and how to ensure its further implementation.[174]

Operational Mechanisms:

Working Group Bias and Non-discrimination

Within the working group on bias and non-discrimination, there are moments of reflection on the content generated by the group. For example, the working group participants and chairs reflected on the content generated to see if important risks or mitigation measures were missed.[175] However, there was a lack of formal reflection moments on its approach, functioning, and potential for improvement.[176] A chair of the working group stated that "within the working group we did not really do that, but perhaps it would be good to do".[177]

AI Validation Team

Within the AI Validation team, several reflection mechanisms can be identified. The team systematically conducts forward looking planning sessions and "Retrospectives". These are structured sessions aimed at critically reflecting on their progress and approach, alignment with the *Algoritmekader*, and future direction and tasks.[178] Participants noted that there were not any formal reflection mechanisms where policymakers and the AI Validation team could come together to reflect on alignment, progress, and approach, and long term vision.[179] However, there were plans to implement "quarter plannings" as a moment where these

166. Interview Participant 1.
167. Interview Participant 1.
168. Interview Participant 1.
169. Interview Participant 1.
170. Interview Participant 1.
171. Interview Participant 1.
172. Interview Participant 3.
173. Interview Participant 1.
174. Interview Participant 1; Interview Participant 3.
175. Interview Participant 2; Participant 5.
176. Interview Participant 5.
177. Interview Participant 5.
178. Interview Participant 6.
179. Interview Participant 6; Participant 7.

actors in DDS come together to look back but mostly look forward regarding the *Algoritmekader*, as well as alignment with the *Algorithm Management Toolkit*.[180]

Public Engagement and Transparency Mechanisms

GitHub & Public Sessions

In particular, public sessions were noted as a means for enabling reflections on the content and approach.[181] For example, early in the development of the *Algoritmekader*, the chairs of the working group on bias and non-discrimination received feedback that their approach was logical within an online public session.[182] Furthermore, a public 'In Depth Session on Bias, Fairness, & Non-Discrimination' was organized to reflect on the content within the *Algoirtmekader*.[183] Within this session, the measures within the *Algoritmekader* stemming from the working group on bias and non-discrimination were presented and participants from various governmental organizations reflected on if measures were missing, and if they were sufficiently practical.[184]

5. Discussion

The findings point to repetitive discrimination scandals and emerging legal obligations regarding the identification and mitigation of risks of discrimination in algorithmic profiling as factors driving the creation of the *Algoritmekader*. The creation of the *Algoritmekader* highlights that the Dutch government considers these broad legal obligations insufficient on their own to safeguard against discrimination. In particular, organizations are still faced with the challenge of creating governance structures that address the sociotechnical complexity, scientific uncertainty, and sociolegal ambiguity associated with discrimination in algorithmic profiling. The *Algoritmekader* thus aims to bridge risk regulation and risk governance by creating and providing organizations using profiling technologies with a framework for addressing discrimination risks. The application of systemic risk governance principles provided a lens for understanding and analyzing how the Dutch Ministry of Internal Affairs approached creating such a framework.

5.1 Communication and inclusion

Firstly, regarding the mechanisms for *communication and inclusion*, an infrastructure for involving a socially robust group of actors can be identified. This includes the use of working groups, combining policy with technical solutions, means for public participation, political and intergovernmental coordination and feedback. Through these mechanisms, a variety of actors from governmental organizations and academics with technical, legal, policy, and ethical perspectives participate to create the *Algoritmekader*. This enables the interdisciplinary and open creation of policy aimed at tackling the systemic risk of discrimination in algorithmic profiling.

However, the absence of citizens, civil society, and interest groups from this policy process poses a vulnerability in the approach to tackling this risk problem. Citizens, civil society, and interest groups possess invaluable first-hand knowledge of discrimination risks and impacts, as well as insights into challenges and potential solutions for mitigating these issues. While they may not be direct users of the *Algoritmekader*, they are its ultimate beneficiaries, as this policy product aims to safeguard their fundamental rights. The absence of these groups thus poses a crucial vulnerability in the *Algoritmekader* as the first-hand experience of the groups most affected by this risk problem were not considered in discussing a solution at the national level.

180. Interview Participant 6.
181. Interview Participant 2; Participant 3; Participant 4; Participant 5.
182. Participant 5.
183. Ministry of Internal Affairs and Kingdom Relations Netherlands (n 159); Ministry of Internal Affairs and Kingdom Relations Netherlands, 'Terugblik verdiepingssessie bias, fairness en non-discriminatie' (September, 2024) https://algoritmeregister.email-provider.eu/web/1pjwwoyxrs/difhirmnit
184. Ministry of Internal Affairs and Kingdom Relations Netherlands (n 184)

5.2 Integration

Regarding the *integration* of input, different mechanisms deliver input relevant to the creation of the *Algoritmekader*. At the political and administrative level, the House of Representatives and the Secretary of State play a role of voicing public concerns and making commitments to tackle those concerns. DDS responds to the concerns and commitments by creating delivering the *Algoritmekader* and aligning it with the interests of other ministries and associate through the inter-administrative working group. At the operational level, the working group collectively identifies risks of discrimination and mitigation measures in light of applicable legislation in order to create content for the *Algoritmekader*. The AI Validation team develops complimentary tooling, notably, *the Algorithm Management Toolkit*, to make the content within the *Algoritmekader* actionable and implementable within organizations. Finally, via GitHub and public sessions external actors, which namely includes other governmental actors and academics, review and give input on content.

Based on the results, two main challenges can be identified surrounding integration. Firstly, the limited top-down coordination within DDS hinders cooperation between the AI Validation team and policy actors, and places the burden on individuals in DDS to both develop content for the *Algoritmekader* and facilitate bottom-up coordination. This hinders the process as significant effort is lost on the bottom up reconciliation and coordination of input from different teams and perspectives. The second challenge is that participant turn out and feedback in working groups, on GitHub, and in online public sessions is low. The quality of the *Algoritmekader* is affected, as content is developed and challenged by a less socially robust groups of actors, including, citizens, civil society, and interest groups.

5.3 Reflection

The results reveal varied approaches to *reflection* mechanisms across different mechanisms involved in the creation of the *Algoritmekader*. The directorate's reactive stance towards evaluation and reflection of the use and impact of the products it creates, driven primarily by external queries such as motions from the House of Representatives, indicates a gap in proactive and structural reflection. Regarding operational and public engagement mechanisms, academics and governmental actors in the Working Group on Bias and Non-Discrimination and the public session on this theme reflected on potential risks and gaps in the *Algoritmekader's* mitigation measures. However, there was a lack of formal evaluation within the working group regarding the group's approach, functioning, and potential adjustments. In the AI Validation team, retrospectives are used to reflect on their progress and approach, alignment with the *Algoritmekader* and the *National Algorithm Register*, and future direction and tasks. However, only plans existed to implement more structural reflection moments in the form of quarterly planning where the AI Validation Team and policymakers would come together to align these perspectives.

The lack of critical reflection, especially among policy actors involved in creating the *Algoritmekader*, is problematic. Within the working group, internal and collective reflection on the approach could have enabled valuable feedback regarding, for example, the actors involved and how to enhance participation. At the directorate level, this lack of reflection limits the directorates' opportunities for institutional learning and ability to improve policies and products related to governing risks for fundamental rights stemming from algorithmic technologies. Likewise, in the absence of reflection mechanisms to consider the use and impact of the *Algoritmekader*, for example through pilots, it remains unclear what the effect of the framework, if any, is on the non-discriminatory use of profiling. As a result, the focus remains on delivering products to satisfy motions from the House of Representatives, rather than delivering socially robust and high quality products where the protection of citizens is the primary focus.

5.4 Governance and responsible profiling

Instruments such as the *Algoritmekader* and similar emerging initiatives like the development of a Dutch Technical Agreement on responsible risk profiling[185] aim, through collaboration, to provide guidance to organizations regarding the responsible and legally compliant use of algorithmic profiling technologies. However, further research and institutional reflection are needed to assess and determine whether socially robust systemic risk governance instruments, like the *Algoritmekader* and Dutch Technical Agreement, are actually used in practice and whether they indeed contribute to reducing discriminatory outcomes. The recent case of the 'Smart Check' algorithm, where the municipality of Amsterdam invested significant effort into designing a 'responsible' profiling algorithm, highlighted that even with socially robust governance measures in place, concerns about possible discrimination and limited effectiveness persisted, leading to the project's termination.[186] This raises a more fundamental question, namely, whether profiling can ever be conducted in a non-discriminatory manner and, if not, whether it is normatively acceptable to use these technologies at all.

6. Conclusion

This study examined how the Dutch Ministry of Internal Affairs, Directorate of Digital Society is addressing the systemic risk of discrimination through the creation of the *Algoritmekader*. Repetitive scandals highlight the urgent need to address discrimination in algorithmic profiling. The law provides a call to action for organizations to mitigate risks of discrimination, yet does not provide a structure on for organizations using these technologies regarding how to take action. The *Algoritmekader* aims to provide organizations using profiling technologies with a structure to address this systemic risk.

The principles of systemic risk governance have proved a highly useful lens for studying and analyzing systemic risk governance at the national policy level. Using these principles within a clearly defined project, such as the Algoritmekader, which guides efforts to mitigate systemic risks, enabled a structured analysis of approaches to addressing discrimination in algorithmic profiling. The analysis of the *Algoritmekader* through the lens of systemic risk governance principles reveals both strengths and weaknesses in the approach taken to address discrimination risks in algorithmic profiling by the Directorate of Digital Society. From a risk governance perspective, DDS's open and interdisciplinary approach is novel and appears, at first glance, well-suited to tackling the sociotechnical complexity, scientific uncertainty, and sociolegal ambiguity of this issue.

However, the systemic risk governance principles and literature enabled insight into several shortcomings regarding the process related to the creation of the *Algoritmekader*. This included shortcomings in inclusivity, participation, coordination, and reflection mechanisms. One of the most notable shortcomings was the exclusion of citizens and vulnerable groups from the policymaking process. This exclusion undermined the potential to incorporate critical first-hand knowledge of discrimination risks and mitigation strategies, which could have significantly enhanced the framework's robustness and societal relevance. The governance process also suffered from insufficient coordination within DDS between the various actors and a low rate of external participation. Finally, a lack of formal reflection mechanisms at both working group and directorate levels limits institutional learning and seemingly prioritizes the fulfilling of motions. From a risk governance perspective, these gaps not only hinder the quality of the *Algoritmekader* but also lead to a

185. Nederlands Normalisatie-instituut (NEN), "Start ontwikkeling NTA 'Beheersmaatregelen ten behoeve van de verantwoorde inzet van risicoprofileringsalgoritmen'" (NEN, 14 February 2025) https://www.nen.nl/nieuws/actueel/start-ontwikkeling-nta--beheersmaatregelen-ten-behoeve-van-de-verantwoorde-inzet-van-risicoprofileringsalgoritmen-/ accessed September 20, 2025.; Nederlands Normalisatie-instituut (NEN), "Normcommissie Artificial Intelligence en Big Data" (NEN) https://www.nen.nl/normcommissie-artificial-intelligence-en-big-data accessed September 20, 2025.

186. Eileen Guo, Gabriel Geiger and Justin-Casimir Braun, 'Inside Amsterdam's high-stakes experiment to create fair welfare AI' MIT Technology Review (Online, 11 June 2025) https://www.technologyreview.com/2025/06/11/1118233/amsterdam-fair-welfare-ai-discriminatory-algorithms-failure/ accessed September 20, 2025.; Jeroen van Raalte, 'Amsterdam wilde met AI de bijstand eerlijker en efficiënter maken. Het liep anders' Trouw (Online, 6 June 2025) https://www.trouw.nl/verdieping/amsterdam-wilde-met-ai-de-bijstand-eerlijker-en-efficienter-maken-het-liep-anders~b2890374/ accessed 20 September 2025.

number of 'blind spots' as knowledge critical to addressing the complexity, uncertainty, and ambiguity risk not being considered.

To strengthen the *Algoritmekader* and similar initiatives both within the Netherlands and abroad, some recommendations can be proposed based on the findings and discussion. Firstly, in line with the risk governance literature, future efforts to address discrimination in algorithmic profiling should directly incorporate the first hand experiences and perspectives of citizens and civil society in developing solutions. Secondly, the findings in this study suggest that complementing bottom-up coordination with top-down coordination can help ensure and maintain proactive oversight of links and activities of different actors related to the same project. Thirdly, while participation levels are difficult to anticipate, future efforts could focus on more strategic, as opposed to constant, stakeholder engagement. This can be achieved by proactively inviting actors to specific sessions focused on discussing risks and mitigation measures or to contribute to specific online consultations. Finally, the findings suggest that embedding formal reflections at the directorate level, of processes pertaining to, for example, the creation of the *National Algorithm Register*,the *Algoritmekader*, and their use and impact, would foster more robust, legitimate, and effective outputs, while enabling institutional learning. These recommendations could help to alleviate some of the challenges identified in this study and bring approaches to address systemic risks in line with the principles of systemic risk governance.

In conclusion, systemic risk governance offers a means to collectively discuss and address systemic risk problems through the inclusion and integration of diverse knowledge and perspectives into risk governance frameworks. In this sense, resulting frameworks like the *Algoritmekader* can offer a basis for addressing risks based on collective knowledge and input. However, it remains to be seen whether the *Algoritmekader* and similar emerging risk governance frameworks will actually contribute to more responsible and less discriminatory profiling, or merely legitimize algorithmic profiling by creating the appearance of responsibility.

7. Appendix A. Interview participants

Assigned number	Function	Department
1	Policy Officer	Directorate of Digital Society, Ministry of Internal Affairs
2	Policy Officer	Directorate of Digital Society, Ministry of Internal Affairs
3	Strategic Consultant	Directorate of Digital Society, Ministry of Internal Affairs
4	Policy Advisor	Directorate of Digital Society, Ministry of Internal Affairs
5	Policy Advisor	Directorate of Digital Society, Ministry of Internal Affairs
6	Engineering Manager	AI Validation Team, Ministry of Internal Affairs
7	Product Owner	AI Validation Team, Ministry of Internal Affairs