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A kratt can bring a money, but not yet an employee in Estonia

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1.   Introduction and relevant country context

1.1   Introduction

The Estonian Government Office and the Ministry of Economic Affairs and Communications have launched a cross-sectoral project to analyse and prepare the implementation of artificial intelligences (AI), or so-called "kratts", as well as to develop a test environment in Estonia in November 2016.[1] A kratt is a practical application based on AI technologies (in the narrow meaning of AI) performing a specific function, the kratt must reach the right solution using various algorithms of machine learning. The kratt is able to learn. Estonia has the AI action plan (2019-2021) and the AI strategy is developed.[2] Development of legal framework for AI deployment was specified in the action plan. Since August 2018 there are positions of Chief Technology Officer (CTO) and Chief Data Officer (CDO). There is no information available about CDO reports on algorithmic discrimination.

Artificial intelligence is widely used in the Estonian public sector. The e-Estonia Council introduced the vision and the development directions of the digital state and cybersecurity development plan for 2030 to the Government. There are about 50 AI services planned to be in use by the end of 2020. Out of these 50 services only one application is related to the development of recruitment software, but is not yet ready to enter the market. The majority of the recruitment companies based in Estonia state that they do not use recruitment software, but the search from social platforms is widely used. Those who have a rich pool of CVs, use CV parsing and applicant tracking systems (ATSs). The leading Estonian job search portals are CV-Online (cv.ee) and CV Market (cvkeskus.ee). The General Data Protection Regulation (GDPR) requirements are known and considered by the companies. EURES portal declares that the most common ways to find a job in Estonia are through employment portals, social media, company career pages, with the help of friends, newspaper advertisements, recruitment companies, and the public employment service (the Estonian Unemployment Insurance Fund and labour offices). Regarding gender-based discrimination, there are no specific supervisory authorities that will test kratts for existing bias and/or regulate the market access of kratts before they are used.

1.2   Legal framework

No specific legal instrument has been adopted to combat algorithmic discrimination in Estonia. There is no information about case law regarding selection or recruitment in connection with the use of algorithms. There are difficulties to discover, prove or assess algorithmic discrimination due to lack of information, knowledge and experience.

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[1] In Estonian mythology, a kratt is a treasure-bearer, a creature brought to life from hay or household objects. The kratt belongs to the master, is notable for doing everything the master ordered, mostly used for stealing and bringing various goods for the kratt's owner; https://en.kratid.ee/visionpaper.
[2] Eesti riiklik tehisintellekti alane tegevuskava 2019-2021 (*Estonian National Action Plan on Artificial Intelligence 2019-2021*), https://www.mkm.ee/sites/default/files/eesti_kratikava_juuli2019.pdf

Several lawyers were involved in AI Taskforce project (March 2018-April 2019) and have contributed to the report presented in May 2019.[3] Research findings of the legal group suggest that a legal subject should be a natural person or legal person and responsible for AI misconduct.[4] The legal group found that:

- AI should not be a legal subject;

- There is no need for a special law on AI, but there should be amendments to the Penal Code and to the Administrative Procedure Act and in some legal acts some changes could be considered, but there is no need to amend the Gender Equality Act[5] and the Equal Treatment Act (11 more legal acts were highlighted)[6];

- state and private sector responsibilities should be specified;

- special insurance products should be developed;

- supervisory body and competence should be specified.

The AI taskforce identified several problems that hinder the successful (incl. sustainable) implementation of kratts in the public sector. These constraints could be divided into six categories and were related with low awareness and skills (awareness of the management and officials, the skills of the officials), lack or inadequate funding, complexity of the technical launch of projects, uncertainty in sustainability, and problems with data availability.

There are warnings by lawyers that there is a risk of algorithmic discrimination[7], but there was no analysis and proposals for legal development before the legal initiative taken by the Ministry of Justice. In August 2020 a Concept Paper of the intention to develop the law regarding algorithmic systems reached to the Cabinet and public consultation and comments were expected due October 2020.[8]

1.3 Recruitment companies do not use kratts yet

In Estonia, five randomly selected leading recruiting companies' managers and one IT company owner were asked about their use and experience with the recruitment

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[3] Report of Estonia's AI Taskforce, https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf.

[4] Kerikmäe, T. (2019). Autonoomsed intelligentsed tehnoloogiad ja õigusruum *(Autonomous Intelligent Technologies and Legal Framework),* https://turundustreff.ee/wp-content/uploads/tanel-kerikmae-tehisintellekt-10-10.pdf.

5 The Gender Equality Act provides that the activities of an employer shall be deemed to be discriminatory if the employer upon hiring, establishes conditions which put persons of one sex at a particular disadvantage compared with persons of the other sex. An undertaking engaged in the job mediation and discrimines if "overlooks a person or treats a person less favourably in any other way due to pregnancy, child-birth, parenting, performance of family obligations or other circumstances related to gender". Offers of employment and training which are directed at persons of one sex only are prohibited unless the reasons specified by law. There is a general anti-discrimination article, which requires that employers ensure the protection of employees against discrimination (Article 3 of the Employment Contracts Act). The Personal Data Protection Act prohibits to make a decision based on only automatic processing, including profiling, if it brings adverse legal consequences for the data subject pertaining to the data subject or has any other significant effect on the data subject.

[6] Proposals for legal changes presented in Estonian available at: http://innar.com/taltech/.

[7] https://humanrights.ee/2019/11/tehisintellekt-ja-diskrimineerimine-varbamisel/; https://turundustreff.ee/wp-content/uploads/tanel-kerikmae-tehisintellekt-10-10.pdf.

[8]Justiitsministeerium (2020). Algoritmiliste süsteemide mõjude reguleerimise väljatöötamise kavatsus („krati VTK") *(Intention to develop regulation of the effects of algorithmic systems ("kratt VTK").* Available in Estonian at: https://eelnoud.valitsus.ee/main/mount/docList/93ebe63d-de8c-4662-9908-3232aa7f987c.

software.[9] All five managers have told that they do not use recruitment software. Some of them agreed that machine-learning algorithms can be used by some companies, but they do not use. They agree that machine-learning algorithms can apply different techniques in data analysis, can find correlations and patterns. Some of them have told that they do not believe that there is currently such software they can trust available in the market. Google search was said to be widely used, as well as the social media platforms, which are used for recruiting. Beside CV portals there are companies who have a social media recruiting strategy that makes sense for their company and they are flexible and open to test new possibilities. The external website of one university declares that they do not process or collect personal data. The website uses Facebook Pixel and Google Analytics.

One of the leading recruitment companies has tested and also used AI to run the CV referral engine. This company recently came up with a completely new technical platform, which is maybe ready to use in 2021. The code testing is time consuming, it is at least three times more expensive than the code writing. And integration tests need huge resources.

The manager of the workforce solutions and services company does not know that the recruiting software is in active use or that such software is publicly available on Estonian market at all. This idea was supported by some other respondents and one respondent stated that "Estonia is too small to use kratts for finding an employee for Estonian market". Recruiters believe that kratts are not yet used in Estonia ("Not to our knowledge and certainly not in Estonia.". Recruiting companies are aware that there are more threats and risks than a chance to win, they refer in particular to EU General Data Protection Regulation (GDPR) and other privacy issues. They know that algorithms can play an important role in the targeted distribution of ads to users of online platforms such as LinkedIn, Facebook, Twitter, Instagram and Google Ads. Some people from recruiting companies are aware that the algorithm bias is possible, they have heard that Google and Instagram do not offer some job vacancies for women and other minorities. But this is a global problem and should be on the table of international agencies like EC and UN. From the other side, recruiters were confident that they have no intention to discriminate and they were sure that their employee search methods and recruitment techniques are bias-free.

The Estonian Personnel Management Association PARE (NGO Eesti Personalijuhtimise Ühing PARE) does not have information about use of software by member organisations. PARE has not commissioned a study on this subject and does not know that anyone else has studied this topic. PARE has introduced various programs that use AI in the recruitment process to their members.

2. Policy and legal debate

2.1 Limited policy debate

In Estonia, a wider public debate on AI from equality and discrimination perspectives is missing. However, the Strategy Unit of the Government Office on e-government and AI has invited to debate AI issues already in September 2017. There was a call to introduce better regulations and co-creating together through public consultation the necessary framework so that the final result is understandable for everyone.

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[9] An e-mail with a short interview schedule was sent to the leading recruitment agencies and HRM association. After that a phone call was made between 22 and 30 October 2020.

The Government is working on AI involving the government agencies, IT professionals, lawyers, academics and representatives from the private sector. The representatives of the civil society and equality bodies (EB) are not yet involved. Involvement in public debate is limited due to low knowledge and awareness, poor technological capacity.

There is no information about public discussion on the need for regulations and legal instruments to combat algorithmic discrimination in Estonia. There is also little information about the software engineering and testing focused to the wider public. Algorithms may have inbuilt biases, but job applicants and platform work contractors do not know it. There is no legal obligation for additional explanation by employers and service providers except an obligation not to discriminate.

2.2   Legal debate on the rise

Linnar Viik has pointed out that a balanced debate on AI should involve the public and "meaningful debate requires that dreamy utopias be balanced with open discussions about AI's controversial attributes and threats. Only this can create user-friendly legislation that's equipped to reduce legal nightmares in the long-term."[10].

A Concept Paper on regulation of AI systems from August 2020 highlights that "Estonia faces the challenge of finding a solution to the question of which regulations contribute to the creation of a credible responsible kratt respecting fundamental rights, while avoiding over-regulation and not hindering excessively innovative solutions."[11]

The aim of the draft law (the Kratt Act) is to ensure that transparency and the fundamental rights of individuals are followed and protected in the implementation of algorithmic systems and to introduce increased requirements for high-risk algorithmic systems that pose a significant threat to fundamental rights. The paper admits that it is necessary to establish state supervision to resolve complaints. The Concept Paper relies beside research findings on ideas from the White Paper on AI and the Council of Europe Recommendation from April 2020.[12] The Concept Paper defines algorithmic systems as both self-learning algorithms (kratts) and algorithms that do not have such skills.

Reactions to the Concept Paper came from several ministries with remarks (mostly agreed with further legal development), from one law firm (FORT) and one digital technology company (Proud Engineers). Unfortunately, there was no reaction from the Gender Equality and Equal Treatment Commissioner and from the Ministry of Social Affairs. The consultation process is in its very early stage and it is too early to draw the conclusions. The opinion by the Ministry of Education and Research points

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10 Viik, L. (2018). AI and the Kratt momentum, https://e-estonia.com/ai-and-the-kratt-momentum/.

[11] Justiitsministeerium (2020). Algoritmiliste süsteemide mõjude reguleerimise väljatöötamise kavatsus („krati VTK") (*Intention to develop regulation of the effects of algorithmic systems ("kratt VTK")*). Available in Estonian at: https://eelnoud.valitsus.ee/main#RuNAw5MD .

12 European Commission (2020). White Paper on Artificial Intelligence - A European approach to excellence and trust. COM(2020) 65 final, https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf.

Recommendation CM/Rec(2020)1 of the Committee of Ministers to member States on the human rights impacts of algorithmic systems (Adopted by the Committee of Ministers on 8 April 2020 at the 1373rd meeting of the Ministers' Deputies), https://search.coe.int/cm/pages/result_details.aspx?objectid=09000016809e1154. The guidelines calling on governments to ensure that they do not breach human rights through their own use, development or procurement of algorithmic systems. In addition, as regulators, they should establish effective and predictable legislative, regulatory and supervisory frameworks that prevent, detect, prohibit and remedy human rights violations, whether stemming from public or private actors.

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out the need for advice, support and assistance to the public sector if implementing the algorithmic system in order to capture the positive effects created by kratts and avoid complaints. The Ministry of Foreign Affairs has a position that the preparatory work should be continued and discussed and a consensus reached on a number of issues of core values and principles before a draft law is elaborated.

The feedback by firms highlight several questions, controversies and weaknesses regarding basic terms, the scope (non-learning systems also addressed), and application (incl. private sector). Lawyers state that the Concept Paper does not indicate that there are significant problems with the use of algorithmic systems in both public and private spheres in Estonia, which should be solved by the new Kratt Act. It is unclear, how this legal act should be applied by international actors. The possibility of such regulation should be assessed in the light of EU internal market rules.

National laws are even less dissuasive and easier to escape than EU ones for international operators. The Concept Paper does not provide explanation of the need for additional regulation regarding private law relationships. The feedback argues that the root cause of a problem was not diagnosed before regulatory actions were proposed. High-risk is targeted but the meaning remains unclear, whether it refers to harm and consequences or high-risk fields of application.

There is a challenge for legislatures. Measures adopted must be appropriate to achieve the objective they pursue and not go beyond what is needed. There is different logic of legal norms and algorithms. Legal norms cannot be described as unambiguous variables inherent in the algorithm.

3.   Recommendations for action

3.1   Addressing gender bias by algorithms in recruitment processes

There is little knowledge about the potential risk of gender discrimination of algorithms in recruitment processes. On national level, technological capacity building of equality bodies is needed, but to tackle the algorithm bias in Google and other multinationals, a cooperation is needed and the network should be built up.

Therefore, there is a need:

- To study the impact of algorithms regarding gender equality and non-discrimination law in Estonia.

- To conduct research on algorithmic optimisation of ads distribution - how gender indirectly plays a role in determining which end users will be exposed to which online ads.

- To raise awareness of the owners, management and employees of the software engineering companies. Attention to the risk-management processes should be paid to prevent the detrimental use of algorithmic systems and their negative impacts.

- To develop, continuously adapt and regularly update a legislative framework due to the fast development of digital economy and AI, and in the same time this process should not result in excessive burden placed on the product/service developer and hamper innovation.

- To establish a legal AI taskforce on gender.

- To encourage international bodies with a mandate to face a radical change enabling technology aware response.

3.2   Awareness raising on gender **bias in algorithms**

Awareness of the issue of gender bias (and other biases) in algorithms should be integrated into higher education curricula and lifelong learning programs:

- Increase awareness of AI at all levels of education in order to prepare citizens for informed decisions that will be increasingly affected by AI.

- Awareness on the solutions of AI, promotion of ICT and digital skills should be raised both in the private and public sector.

There is a problem that existing gender disparity in the workforce and biased datasets amplify gender inequality and project the potential injustice into the future. Job seekers should be aware about these possibilities to fall into group of outsiders. Algorithms can exploit the information in large datasets containing information about individuals, including personal information that might not be job- or work-related. Some people behave poorly on social media and these people are filtered out by recruiters. It cannot be stated that a recruiter intentionally or unintentionally creates the biased datasets. People themselves are the data and make their digital footprints. People throughout lifespan should be taught about messaging and presenting themselves in social media sites and behind other doors of portals.

There is a need to reduce the digital divide. Capacity building of civil society organisations and volunteers who encourage girls and women to proceed with STEM career, they can spread their knowledge to wider public not connected with educational institutions. In Estonia a lot of initiatives started by the Tech Girls (Digigirls) and HK Unicorn Squad.