

# BIAS

Mitigating biases  
of AI in the  
labour market

**Citizen science and AI technologies** | Webinar  
9 October 2023

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## Citizens' engagement on tackling gender and intersectional biases in AI



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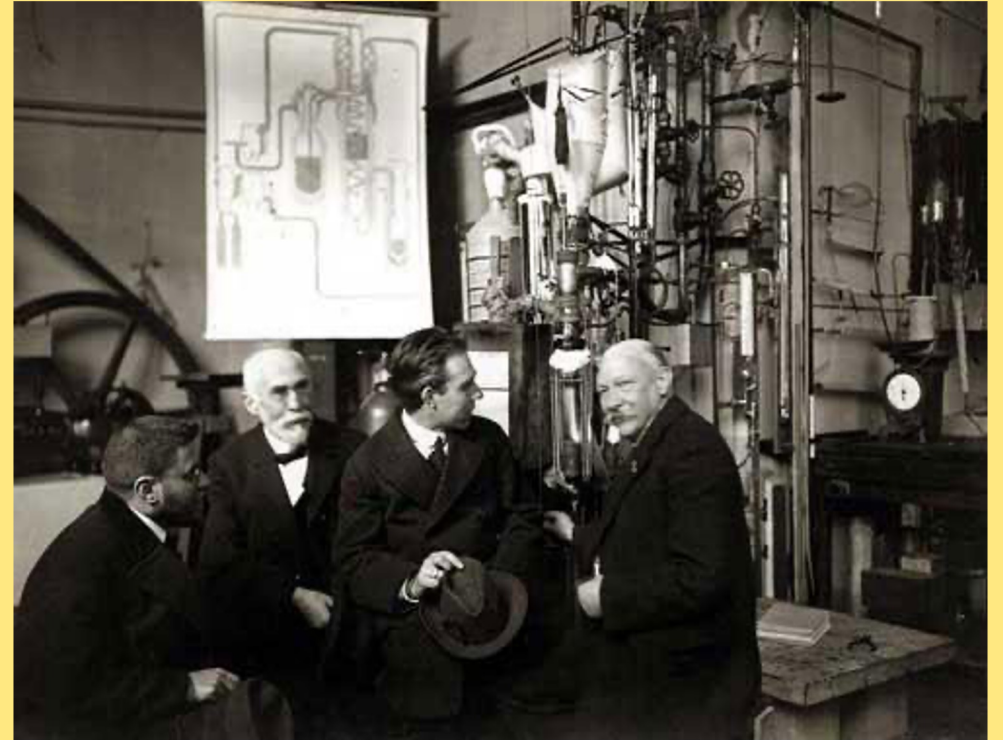


- eLaw is the Center for Law and Digital Technologies.
- Founded in 1985, with Leiden University being established in 1575.
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Leiden Law School



Ehrenfest, Lorentz, Bohr, Kamerlingh Onnes in Leiden

# Overview



Discussing citizens' attitude towards

AI applications for recruitment and selection, via:

- The mapping exercise.
- The literature review.
- The expert interviews.
- The survey.

With special regard to fairness and diversity bias.

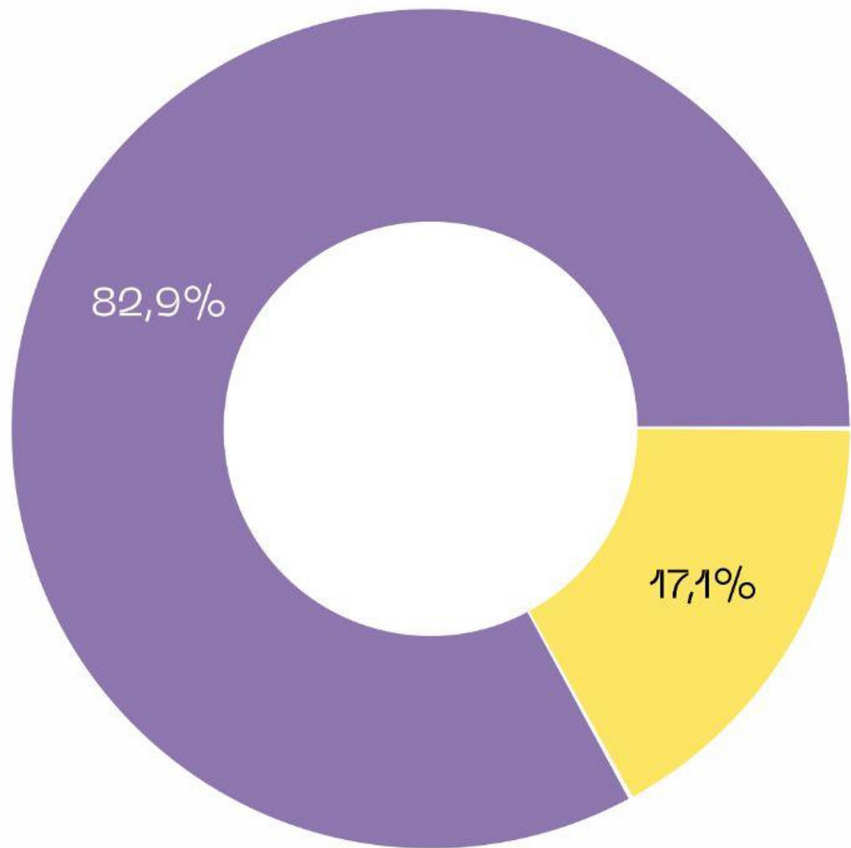


# The mapping exercise



# The mapping exercise

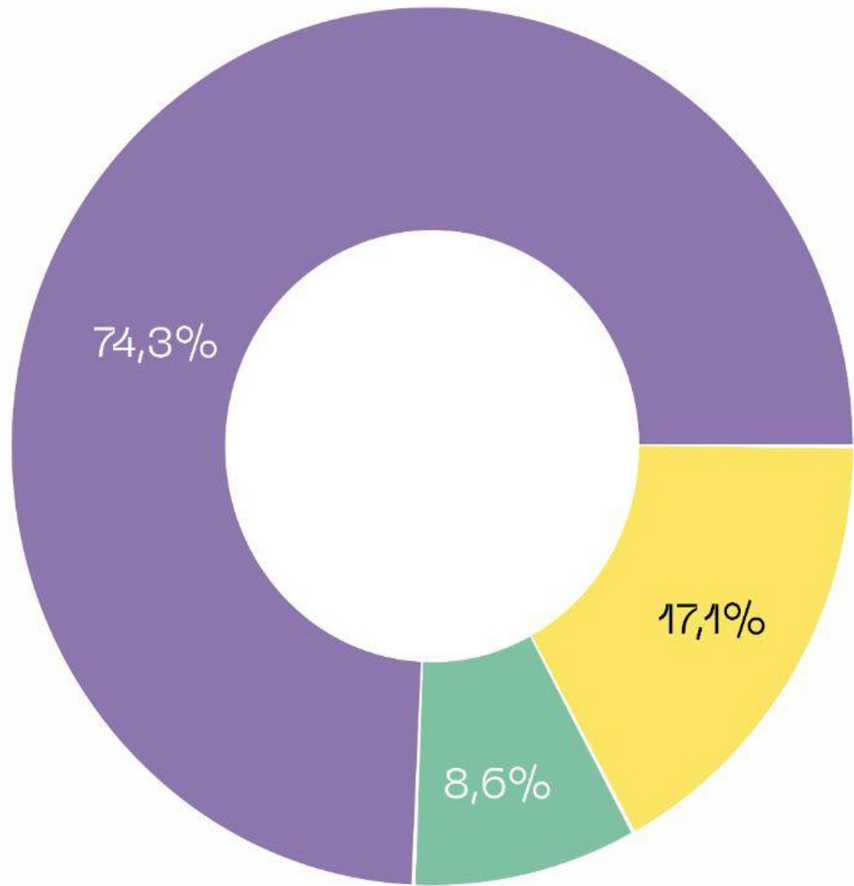
- To map current AI applications for HR purposes, by simply seeking information via the Internet.
- With a three-tier structure:
  - To identify the current AI applications.
  - To contextualize its use and specificities (e.g., where, why, and how the AI application was designed and/or deployed).
  - To explore diversity issues, with special regard to data processing operations, mitigation measures, and fairness perceptions.



**Is the applicant or employee aware of the involvement of the AI in the application process?**

-  I don't know
-  Yes





Is there a strategy or a set of procedures to avoid creating or reinforcing unfair bias?

-  I don't know
-  Yes
-  No



# The literature review



# The literature review

## BOTS, BIAS AND BIG DATA:

### ARTIFICIAL INTELLIGENCE, ALGORITHMIC BIAS AND DISPARATE IMPACT LIABILITY IN HIRING PRACTICES\*

#### I. INTRODUCTION

“With artificial intelligence, we are summoning the demon. You know all those stories where there’s the guy with the pentagram and the holy water and he’s like, yeah, he’s sure he can control the demon? Doesn’t work out.”<sup>1</sup> While this is perhaps dramatic, many Americans share Elon Musk’s underlying anxieties about artificial intelligence’s increasing proliferation into everyday life.<sup>2</sup> However, few realize the depth of artificial intelligence’s involvement in mundane daily activities.<sup>3</sup> Fewer than half of Americans are aware of the existence of “computer programs that can review job

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Full length article

#### Marketing AI recruitment: The next phase in job application and selection

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#### ARTICLE INFO

**Keywords:**  
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#### ABSTRACT

Organizations are beginning to adopt and capitalize on the functionality of AI in their recruitment processes. However, little is known about how potential candidates regard the use of AI as part of the recruitment process and whether or not it influences their likelihood to apply for a job. Our research finds that attitudes towards organizations that use AI in the recruitment process, significantly influences the likelihood that potential candidates will complete the application process. The novelty factor of using AI in the recruitment process, mediates and further positively influences job application likelihood. These positive relationships between attitudes towards the use of AI in the recruitment process and the likelihood of applying for a job have several important practical implications. First, it means that while anxiety is naturally present when AI is part of the recruitment

Commentary

### The “black box” at work

Ifeoma Ajunwa

#### Abstract

An oversized reliance on big data-driven algorithmic decision-making systems, coupled with a lack of critical inquiry regarding such systems, combine to create the paradoxical “black box” at work. The “black box” simultaneously demands a higher level of transparency from the worker in regard to data collection, while shrouding the decision-making in secrecy, making employer decisions even more opaque to the worker. To access employment, the worker is commanded to divulge highly personal information, and when hired, must submit further still to algorithmic processes of evaluations which will make authoritative claims as to the workers’ productivity. Furthermore, in and out of the workplace, the worker is governed by an invisible data-created leash deploying wearable technology to collect worker data. At all stages, the worker is confronted with a lack of transparency, accountability, or explanation of inner workings or even the logic of the “black box” at work. This data revolution of the workplace is alarming for reasons: (1) the “black box at work” not only serves to conceal disparities in hiring, but could also allow for a level of “data-laundering” that beggars any notion of equal opportunity in employment and (2) there exists, the danger of a “mission creep” attitude to data collection that allows for pervasive surveillance, contributing to the erosion of both the personhood and autonomy of workers. Thus, the “black box at work” not only enables worker domination in the



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## LINKEDIN OR LINKEDOUT? HOW SOCIAL NETWORKING SITES ARE RESHAPING THE LABOR MARKET

Ofer Sharone

#### ABSTRACT

*The rapid growth of online social networking sites (“SNS”) such as LinkedIn and Facebook has created new forms of online labor market intermediation that are reconfiguring the hiring process in profound ways; yet, little is understood about the implications of these new technologies for job seekers navigating the labor market, or more broadly, for the careers and lives of workers. The existing literature has focused on digital inequality – workers’ unequal access to or skilled use of digital technologies – but has left unanswered critical questions about the emerging and broad effects of SNS as a labor market intermediary. Drawing on in-depth interviews with unemployed workers this paper describes job seekers’ experiences using SNS to look for work. The findings suggest that SNS intermediation of the labor market has two kinds of effects. First, as an intermediary for hiring, SNS produces labor market winners and losers involving filtering processes that often have little to do with evaluations of merit. Second, SNS filtering processes exert new pressures on all workers, whether winners or losers as perceived through this new filter, to manage their careers, and to some extent their private lives, in particular ways that fit the logic of the SNS-mediated labor market.*

**Keywords:** Labor market; social networking; human resources; Internet; digital technologies



# Fairness | The literature review

In data protection law, Article 5(1)(a) GDPR:

**fairness + lawfulness + transparency**

The GDPR positions fairness within the substantial circumstances at stake to prevent unbalanced relationships between the data subject and other stakeholders.



# Fairness | The literature review

In anti-discrimination law, **fairness** relates to all those situations where:

- *A person is treated less favorably than another is, has been, or would be treated in a comparable situation due to their personal characteristics (i.e., direct discrimination).*
- *An apparently neutral provision, criterion or practice unjustifiably puts a person or some people at a particular disadvantage, in comparison with other people (i.e., indirect discrimination).*
- *There could be also positive discrimination and discrimination by association.*



# Fairness | The literature review

In its amendments to **the AI Act**, the European Parliament proposed the introduction of Article 4(a), which defines ‘diversity, non-discrimination and fairness’ as the development and use of AI applications:

“in a way that includes diverse actors and promotes equal access, gender equality and cultural diversity, while avoiding discriminatory impacts and unfair biases that are prohibited by Union or national law”.

Besides, the European Parliaments suggested the rephrasing of Recital 9, by including fairness amongst the values on which the Union is funded and should therefore drive the technological design.



# Fairness | The literature review

In the common attempt to provide a bridge between the different research communities, the High-Level Expert Group on Artificial Intelligence (AI HLEG) regards fairness as an ethical principle that is later transposed into a key requirement, be it a technical or non-technical method.



# Fairness | The literature review

## What about job applicants?

- *Substantive fairness, arising from the desire for equitable treatment and outcome, by comparing their knowledge, skills, and efforts with the hiring decision of the HR practitioner(s).*
- *Procedural fairness, where selection and recruitment procedures are considered a means to achieve fair hiring outcomes and should comply with several requirements (e.g., transparency, job relatedness, consistency).*





# Fairness | The literature review

## What about HR practitioners?

- Fairness often corresponds to the greatest benefit to the employer and the immediate stakeholders of the organization, irrespective of procedural fairness or any positive consequence on society.
- Matching is of the utmost importance.
- Diversity in the workforce is relevant but challenging.



# The expert interviews

# The expert interviews

- To gain the knowledge of HR practitioners and AI developers.
- Through semi-structured, anonymized interviews.
- Within the BIAS geographical scope.
- Gender balanced ensured.
- Number: 71 in total from 7 countries

# Fairness | The expert interviews

Fairness is mostly seen through **procedural lenses**, with regard to:

- *Safety.*
- *Transparency.*
- *Explicability.*
- *Human oversight.*



# The survey



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**BIAS**

# The survey



- **Why:** To map the personal attitude of job applicants and workers.
- **How:** Through a collaborative drafting and translating process.
- **When and where:** Now, on Qualtrics!

# The survey

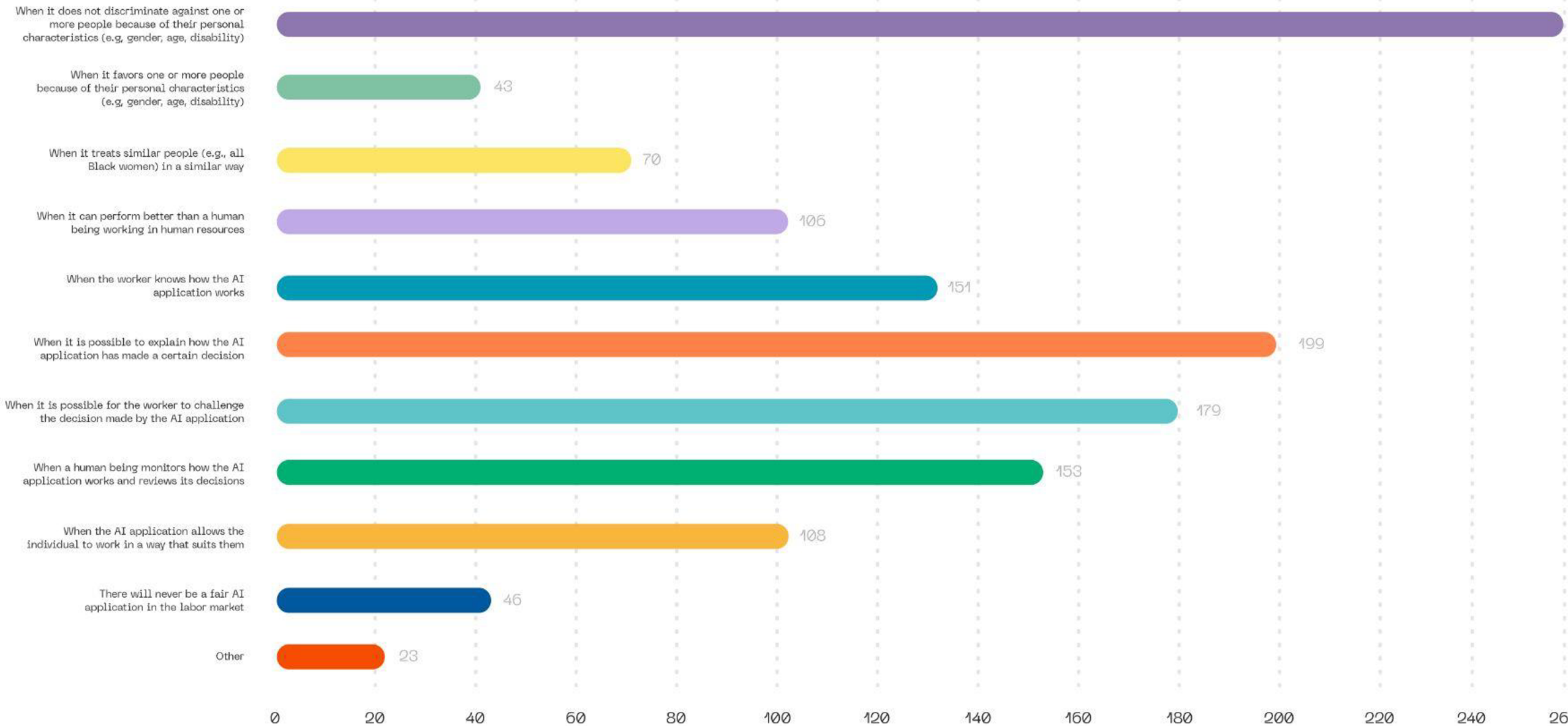
## A four-tier structure:

- **Interaction**, to understand whether the respondent has ever interacted with an AI application in the labor market and, if so, how it has worked.
- **Experience**, to share how the interaction with the AI application has made them feel.
- **Perception**, to map the more general attitude towards the deployment of AI applications in the labor market.
- **Demography**, to collect some personal information and ensure that the pool of respondents is diverse and inclusive.



## Q23 – In your opinion, when could AI applications be defined fair in the labor market?

Multiple answers are possible.





# Summary

- **Diversity biases** are often reflections of AI developers and HR practitioners, impacting characteristics like gender, race, age, and education.
- **Fairness in AI-driven HR practices** is challenging to define precisely but often revolves around procedural fairness, transparency, and non-discrimination.
- **Transparency** and information about AI applications in the labor market are lacking, leaving job applicants and workers unaware of how these systems function and whether human oversight is involved.
- **Contribute!** The BIAS project seeks to address these issues through legal reforms, technical solutions like the Debiaser, and organizational measures such as diversity quotas and inclusion offices.

# Thank you!

Wanna know more? Stay in touch at [www.biasproject.eu](http://www.biasproject.eu), register to the **national labs**, or drop us an email at [c.rigotti | e.fosch.villaronga@law.leidenuniv.nl](mailto:c.rigotti@law.leidenuniv.nl)



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