STUDY

LABOUR AND SOCIAL JUSTICE

ALGORITHMIC MANAGEMENT

Awareness, Risks and Response of the Social Partners

Final report

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Algorithmic management tools are used in recruitment, surveillance and daily decision-making of workers' lives. One-third out of 1395 respondents are aware that such tools are used at their workplace, one-third believe that this is not the case and the remainder do not know anything about such tools.

Workers state that trade unions have raised ethical issues and discussed automatic surveillance with the employer. One-third, however, have not perceived any trade union activity and workers are calling for more action to increase the transparency of algorithmic management.

Despite the fact that collective bargaining targeting algorithmic management is rare, several examples of collective agreements and arrangements are already in place and worth examining more closely.

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Automatic surveillance tools and monitoring of performance causing inappropriate pressure and encroachments on privacy are often used not only in call centres and retail but also in offices and while working from home. Despite the fact that awareness of the use and risks stemming from algorithmic management is relatively high, workers are calling for more action to mitigate risks by detecting algorisms, understanding how they work and making sure their consent is required for their use.

While most trade unions have already addressed unethical use of algorithmic tools and initiated consultations with employers, clauses relating to rules and conditions of algorithmic management laid down in collective agreements are not very common. Trade unions at all levels are recommended to increase capacities and collaboration to improve coverage of risky algorithmic management in collective agreements.

Except for personal data protection training, workers have rarely received any request for consent or training regarding algorithmic management from employers. Workers' expectations from employers in this regard are even higher than those of trade unions. Employers are called upon to increase transparency considerably and provide detailed information on algorithms' operation and purpose.

For further information on this topic:
www.fes.de/stiftung/internationale-arbeit

FRIEDRICH EBERT STIFTUNG

LABOUR AND SOCIAL JUSTICE

ALGORITHMIC MANAGEMENT

Awareness, Risks and Response of the Social Partners

Final Report

This report was prepared for UNI Europa in cooperation with the Friedrich-Ebert-Stiftung Competence Centre on the Future of Work by Central European Labour Studies Institute.

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1 INTRODUCTION

The report presents the findings of a survey dedicated to algorithmic management (hereafter referred to as »AM«), its usage and practices, addressing the risk of AM from a workers' perspective. Algorithmic management, as a diverse set of technological tools and techniques to remotely manage workforces, relying on data collection and surveillance of workers to enable automated or semi-automated decision-making (Mateescu, Nguien, 2019), is increasingly being used not only in platform work and warehouses, but also in clerical work and home offices, challenging privacy and other workers' labour rights (De Stefano, 2020). Social partners have warned against the negative impact of AM on health and safety, stress and social risks as well as discrimination over the long term and have developed specific practices to mitigate the risks and hold companies responsible for adverse consequences (UNI Europa, 2020, UNI Global, 2021, De Stefano, Taes, 2021).

The report explores whether workers are aware of algorithmic management practices at their workplace (section 3) and whether trade unions engage in collective bargaining concerning algorithmic management at the workplaces (section 4). The survey also maps employers' practices and efforts to prevent and mitigate the negative impact of AM usage (section 5). The expectations of workers towards employers and trade unions regarding how to reduce the negative effects of AM usage will provide incentives for further social partner initiatives addressing the protection of workers' labour, privacy and fundamental rights. Finally, conclusions in section 6 provide summarised findings, serving as a basis for recommendations.

2 METHODOLOGY

An online survey with 27 closed and open questions was carried out from 10 January until the end of February 2022 using the Survey Monkey data collection system in all European counties. The questionnaire was disseminated via and among UNI Europa members in seven languages: English, French, Spanish, German, Swedish, Italian and Polish. In total, **1395 responses were included in the analysis.** Most respondents involved in the analysis work in Italy (34%), Austria (15%) and Switzerland (13%). From the 43 sectors surveyed, the respondents work mainly in the **telecommunication industry (34%),** ICT and tech sector (19%), finance and banking sector (16%) and contact (call) centres (8%). In terms of ownership of the company where the respondents are employed: **75% were private companies,** 7% public and 12% were mixed private-public companies. The remainder work in non-profit companies or companies with other types of ownership. As for employment status, 99% of the respondents were employed. Most of the respondents (89%) have a standard open-ended employment contract, 7% a fixed-term contract for more than 12 months and 1% for less than 12 months. **94% of the respondents are trade union members,** out of which 48% are regular members and the rest representatives of trade unions at EU, national, sectoral or company levels. 59% of the sample were men and 37% women, most of whom were workers in the age categories 51–60 years (47%), 41–50 (31%), 61 and over (7%) and under 30 years (3%). The annex provides further details on the sample of respondents in the analysis. All the survey findings, including open answers, explore experiences and views **from the workers' perspective.**

3

AWARENESS OF ALGORITHMIC MANAGEMENT USE AND RISKS

The survey explores respondents' awareness of AM tool usage in the area of **hiring algorithms** (CV/resume screening algorithms to filter applicants, automated job interviews without a human interviewer and automatic background checks of social media to filter the job applicants), **automated control and performance management** (software to track physical and digital worker activity, algorithms to read the content of employee emails and messages, consumer-sourced rating systems to evaluate performance and automated worker's assessment against output and performance targets). The last set of items surveyed automated **everyday workplace decision-making,** such as automatic projection to schedule shifts, algorithms to approve/deny annual leaves, log sick leave, etc., algorithmic assessment of people to assign them to teams and algorithms to assign tasks and distribute orders.

Most respondents reported being aware of usage or non-usage of AM tools by their employer, but with different levels of certainty. On average, 34% of respondents stated that such tools are used (with certainty or probably), and the same percentage of respondents reported that AM tools are not used by their employer with certainty, or probably not. One-third of respondents confirmed they do not know if AM tools are used at their workplace.

The most-used AM tool, according to the respondents, is consumer-sourced rating systems to evaluate performance (52%) and software to track physical and digital worker activity (47%). A less-used automatic tool is related to the hiring process: automated job interviews without a human interviewer. However, more than 58% of respondents are persuaded that such AM is not used at their company for selecting job applicants.

The lowest awareness of AM usage is with regard to employers' hiring, particularly automatic background checks of social media to filter job applicants (43%) and CV/resume screening algorithms to filter applicants (42%). The lack of awareness of AM usage or uncertainty whether an algorithmic instrument is being used indicate a low level of transparency and an absence of regulation of AM implementation.

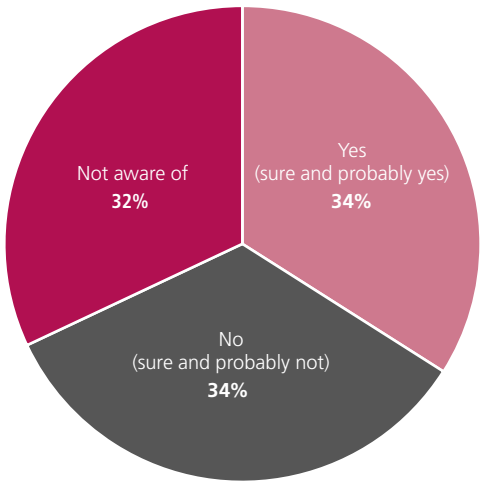
However, some respondents stated that AM is not yet being used, but will be used in the near future. More than 150 respondents listed specific AM instruments and the tools' purposes. Some indicated that there was negative impact or violation of their privacy and other rights. Here is a summary of AM tools experienced by the workers:

Many respondents complained that their activities, assignment and even paper printouts are tracked via GPS, Microsoft 365 and other tools, with the employer arguing that this is required to ensure the »security« of the company.

Permanent surveillance all day long and at any time, tracking whether the mouse or keyboard are not used for more than 10 minutes, even when workers are taking a comfort break, determining the daily lunch break, with all this possibly resulting in a bad ranking and forfeiture of overtime.

Some respondents revealed that they have to attend regular mandatory digital training courses with exams, and that the employer even surprises them with follow-up checks. Employ-

Graph 1
Average awareness of AM usage at the workplace (N=1158, as a %)

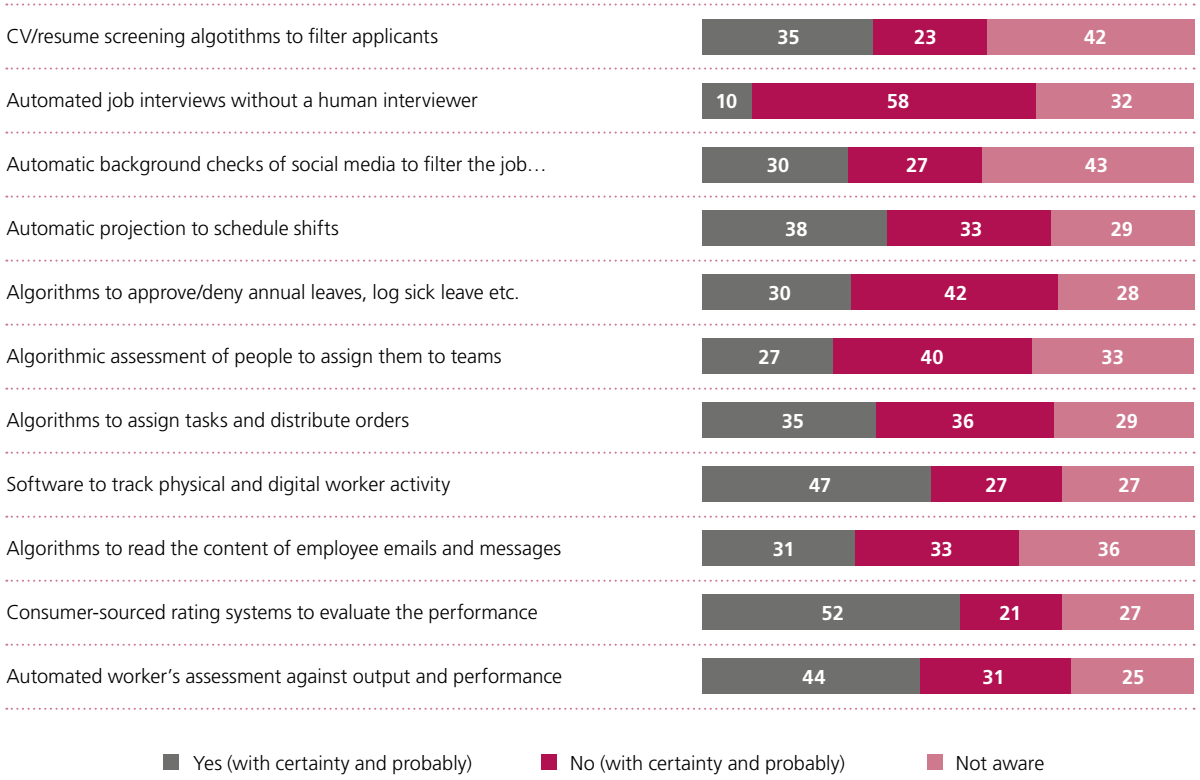


QUESTION 09: Does your employer use any algorithmic tools or software for hiring, evaluating the work or any other job-related tasks? Please rate each of the items in the rows by using the scale: Yes, with certainty; Yes, probably yes; No, probably not; No, with certainty not; I am not aware of such a tool being used.

Note: Average for all items

Source: UNI Europa survey on algorithmic management

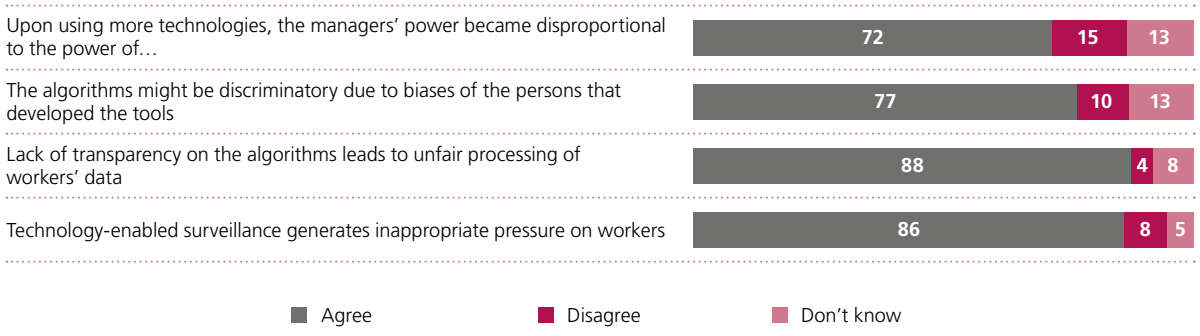
Graph 2
Awareness of AM usage by item (N=1158, %)



QUESTION 9: Does your employer use any algorithmic tools or software for hiring, evaluating work or any other job-related tasks? Please rate each of the items in the rows by using the scale: Yes: with certainty; Yes, probably yes; No, probably not; No, certainly not; I am not aware of any such tool being used.

Source: UNI Europa survey on algorithmic management

Graph 3
Awareness of algorithmic management risks (N=1156, as a %)



QUESTION 11: Do you agree or disagree with the following statements? Use the scale below and rate each statement in the rows: Strongly agree, Agree; Disagree; Strongly disagree; Don't know

Source: UNI Europa survey on algorithmic management

ers were also said to use tools to send messages in order to then analyse the reaction of the recipient.

In terms of data collection and low transparency regarding their use, workers are forced to agree to cookies and similar data protection barriers in many cases in order for systems to be able to work in the first place and workers to be able to work freely.

Contact centre operators are exposed to multiple and constant surveillance as well as recording of telephone calls, the time spent with customers' network analysis, analysis of the speed of employees in executing asks and surveillance cameras, voice recognition, etc. There is also an affinity system which is formally used to match the commercial characteristics of customers with the professional attributes of contact centre operators.

On the other hand, AM is used also to predict conflicts between in-flight air traffic; the capacity of air traffic control sectors is calculated and updated in real time according to confirmed flight plans. Managers use tools to propose promotion after evaluation of target agreements and AI may in some cases provide a lot of information inside a company, for example, how to ask for permits, when you receive your pay check, what to do if you have a problem with your PC, and other useful information. Regarding AM to assign tasks and distribute orders, at some companies, an application is used to to distribute emails sent by departments or work areas.

Workers have a high awareness of AM risks. On average, 80% of respondents agree (strongly agree or agree) that the lack of transparency regarding algorithms leads to unfair processing of workers' data or that technology-enabled surveillance generates inappropriate pressure on workers. The high level of awareness of risks stemming from AM use might be influenced by the previous activities of UNI Europa among their members and engage workers' representatives when it comes to information-sharing about the challenges of AM. On the other hand, there seems to be no difference in risk perception between trade union members and non-members. However, the share of non-members in the sample (5.5% of respondents) is too low to confirm this conclusion.

4

TRADE UNIONS RESPONSE TO MITIGATE AND PREVENT AM RISKS

The survey furthermore deep-dives trade union reactions to prevent or mitigate AM risks. Respondents were asked if they know about any initiatives or activities of trade unions targeting the risks of AM use or other aspects of automated hiring, surveillance or decision-making in connection with work. The respondents also related their expectations on how trade unions should deal with AM challenges.

4.1 TRADE UNION PRACTICES

Regarding trade union actions to address AM risks, the findings suggest that most respondents have experienced one of the activities addressing AM risks. Only 27% of respondents do not have any awareness of any such action, however. The most frequent action was taking issue with monitoring and surveillance software (49%) and software related to hiring and performance evaluations (25%). In addition, 19% of the respondents stated that unions had raised the topic of AM in the collective bargaining context. Less frequently cited were individual consultations about ethical aspects of AM or the provision of training or information sessions.

Respondents also identified further specific practices in their open responses:

- The trade union has performed a comprehensive analysis of data ethics concerning employee data and work-related data. The union is also discussing issues relating to AI more broadly;
- This concerns the implementation of flex-office and the right to disconnect;
- The work council's enquiries are answered with »nothing to monitor the employees …«. The question remains: is this credible? Input or more information on this would hence be useful;
- The works council has concluded a works agreement;
- We have discussed personnel data under the GDPR and asked for additional information that has not been officially provided. Based on personal contact with the relevant persons in the company, however, certain information has been provided on request.

Despite being a trade union member, however, not all respondents have received comprehensive information on such actions or practices. Approximately 4% of respondents revealed that they do not have any such knowledge or even do not know what the trade union organisation is doing at the company level. This was clearly stated in the open answers.

Furthermore, criticism of the unions for a lack of involvement, or even consent to the use of AM, were echoed in the respondents' responses. Some respondents complained that they do not have any information on trade union activities,

Table 1
Trade union action and practices to address risks related to AM (N=986, as a %, multiple responses possible)

Trade union action	%
Trade unions have raised issues about monitoring and surveillance software.	49%
Trade unions have taken issue with a software tool for hiring, evaluating work, or other job-related tasks.	25%
Trade unions have consulted the employer about ethical use of algorithmic management.	22%
The unions have raised the issue of algorithmic management in the collective bargaining context.	19%
Trade unions have provided training and/or information sessions on algorithmic management tools used at the workplace.	10%
Trade unions have consulted individual workers on the use of algorithmic management.	10%
None of the above.	27%
There are no trade unions or employee representatives at my workplace.	1%
Other (please specify)	9%

QUESTION 15: How has your trade union or employee representative addressed the risks related to algorithmic management at your workplace? Tick anything that applies to you.

Source: UNI Europa survey on algorithmic management

including due to the pandemic, and stated that they expect more participatory decision-making on AM issues.

4.2 COLLECTIVE BARGAINING

Collective bargaining is considered to be one of the most effective tools of social partners to deter the employer from using AM to violate workers' rights and expose workers to the negative impact of AM. A collective agreement can comprehensively address algorithmic management rules and set rules governing transparency, purpose and non-discrimination of the workforce.

The survey explores the existence of a collective agreement addressing AM. We asked the respondents if a collective agreement regarding AM exists and, if so, by what specific measures, what aspects of AM need to be included in bargaining and, most importantly, provide examples of such collective agreements.

A collective agreement addressing and regulating AM use and mitigating risks is rare. The respondents do not have specific knowledge of such an agreement or specific measures. Some respondents indicated that no collective agreement was in place, or a collective agreement is in place, but does not address any issues concerning algorithmic management.

Nevertheless, here are some **remarkable examples of collective agreements targeting AM usage** that the respondents described in their open answers:

a) Specific technology agreement in Danish financial services

As part of a collective agreement, the Financial Services Union Denmark (Finansforbundet) and the Danish Employers' Association for the Financial Sector (FA) have made a specific technology agreement for savings banks. This agreement addresses the introduction, use and development of technologies and systems within the savings banks and stipulates that the parties are to collaborate on the use and development of technologies that can improve working conditions, work satisfaction and increase competitiveness.

The agreement sets out to clarify that the management of savings banks must ensure collaboration on the introduction of new technologies and systems. It additionally states that employees are entitled to co-decide how technologies and systems are implemented in the employee's work situation. This involves being involved in the decision-making processes.

In cases where the savings bank has appointed a consultation committee (samarbejdsudvalg), this committee is to discuss matters relating to technology. The employee representatives of the committees have the right to propose the establishment of a specific technology commission/group that reports to the committee.

The technology agreement furthermore states that it is the responsibility of the management of the savings bank to inform both the technology commission/group and relevant employees on the introduction, use, and change in technology.

The company must present a written statement that clarifies the purpose, the time frame, the functionality, economy, the use of resources and alignment with existing systems and processes. Additionally, it needs to involve an assessment of the potential consequences for the company, works functions, personnel, the use of personnel, competences, and the work environment.

One more issue deserving mention in the 5-page long technology agreement is that it contains a comfort section, which among other things states that the company is obliged to ensure re-education or relocation of an employee whose function is becoming obsolete because of the introduction of a technology.

b) Example of regulations related to AM: The Spanish »riders law«[1]:

In 2021, the Spanish government and social partners agreed on amendments to legislation in order to recognise workers engaged in the delivery or distribution of consumer products via digital platforms as employees, while also requiring algorithmic transparency. Key provisions of this law are:

> ARTICLE 5. **BEFORE THE USE OF ARTIFICIAL INTELLIGENCE:**
> Workers have the right not to be subject to decisions based solely and exclusively on automated variables.
>
> Companies are to inform the trade unions about using data analytics or artificial intelligence systems when human resources and labour relations decision-making processes are based exclusively on digital models without human intervention.

> ARTICLE 10. **DIGITAL DISCONNECTION**
> The parties consider digital disconnection to be a right whose regulation contributes to workers' health and well-being by reducing technological fatigue or stress and improving the work environment and quality of work.
>
> In order to guarantee compliance with this right and regulate possible exceptions, the following measures have been established:
> a) The right of workers not to attend to digital devices outside of their working hours or during break times, permits, leave, licenses or vacations, is recognised.
> b) Workers have the right not to respond to any communication on professional matters once their daily workday has ended.

1 More information on the regulation can be found here: https://socialeurope.eu/spains-platform-workers-win-algorithm-transparency

ARTICLE 11. **DIGITAL TRANSFORMATION**
In digital transformation processes, companies are to inform the legal representatives of workers about the technological changes that are going to take place in them if these are relevant and may have significant consequences for employment and/or lead to substantial changes in working conditions.

ARTICLE 12. **RIGHT TO PRIVACY AND USE OF DIGITAL DEVICES AT THE WORKPLACE**
In accordance with the regulation, companies must establish protocols with the participation of the legal representatives of workers, in which the criteria for the use of digital devices made available to workers are laid down.

The survey also enquired about AM measures already involved in collective bargaining. More collective agreements are limited only to personal data protection (GDPR), and no further rules on AM tools usage or control are included. Nevertheless, some respondents cited inspiring regulations related to data collection and other issues involving AM incorporated in their collective agreements. Respondents stated that their collective agreement contains measures related to transparency of data use, non-use of data collected for disciplinary purposes and data confidentiality, while employees are informed in detail about the employer's use of their personal data. The collection of performance data, for example relating to call centres teams, is only allowed on an aggregated basis.

Specific measures targeting remote control have been developed, such as prohibitions of real-time monitoring of workers. The collective agreements set out specific rules on ethical use and standards of algorithmic management, for example informing the trade unions before the launch of any AM tool and compulsory consultations between employers and employees, providing training on the issue of algorithmic management, and establishing a complaints mechanisms. At some companies, specific measures are incorporated in a works agreement, such as a stipulation that the outputs/results of AI must be traceable.

Respondents shared their views on the importance of aspects relating to AM to be addressed by collecting bargaining with regard to risks mitigation. **All the aspects have been rated as having a high level of significance.** The most important topics are to make the employer obliged to inform, explain, and agree with workers on AM use before its application (76%) and to insist on compliance with personal data-processing legislation (73%).

Further suggestions on measures that should be the subject of bargaining:

- Create the possibility of rejecting AM use without any negative impact on workers
- Crystal clear transparency is the only protection – and of course, standing up for each other;
- The risks of algorithmic management and regulation can only be dealt with at the level of the legal provisions of a country.
- We are maintaining employment instead of squeezing employees like lemons and telling them that they should leave if the stress is too much. In addition, the company should take measures to preserve call centre employees' physical and mental health.
- More control of AM tools.

Other opinions stated related to setting rules on AM usage:

- It should not make the job any more complicated. Instead, my employer implements changes by »accept or go«. Despite all the greed out there, people must become aware that AI only applies stored behaviour patterns without empathy and only to the end of the file.
- The company should monitor the workforce without digital intelligence;
- A GDPR charter has been signed not to protect employees, but the confidentiality of data of the clients we process.
- The collective agreement has not been reviewed for many, many years;

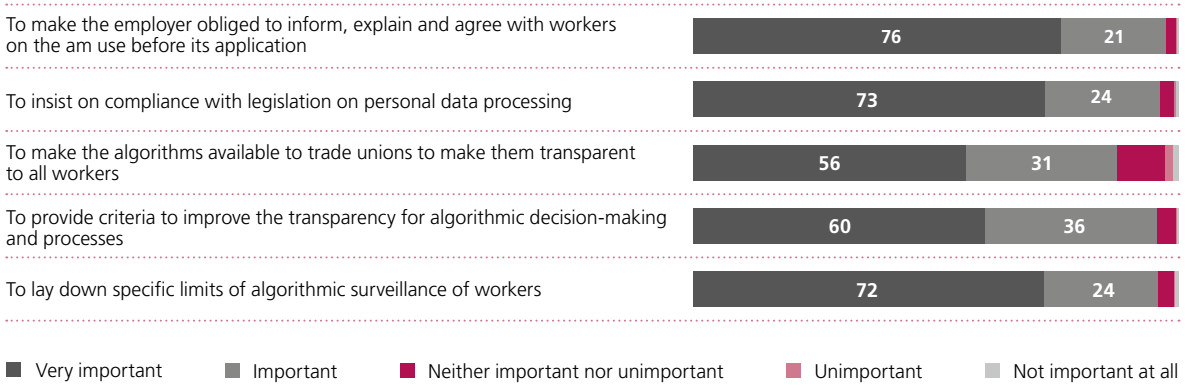
4.3 WORKERS' EXPECTATIONS REGARDING TRADE UNION ACTION

In response to the question of which role trade unions or employee representative could play in addressing the risks related to algorithmic management, the following three main priorities were identified: To **increase workers' awareness** of when artificial intelligence is operating and ensure consent is obtained wherever appropriate (63%), to **secure ethical and socially responsible development of algorithmic management** for the benefit of all, not only employers and commercial interests (47%), and to ensure strong **collective bargaining** on technology at work as well as data protection (44%)

Further workers' suggestions (open answers):

- Possibility to have personal data protection without restriction and disadvantages at the workplace
- Prohibition of algorithmic management
- To diminish the workload by using automation, thus reducing stress
- The value of being human is at the forefront and artificial intelligence is at the service of human beings and not vice versa.
- The employee has access to the data of his or her superiors.

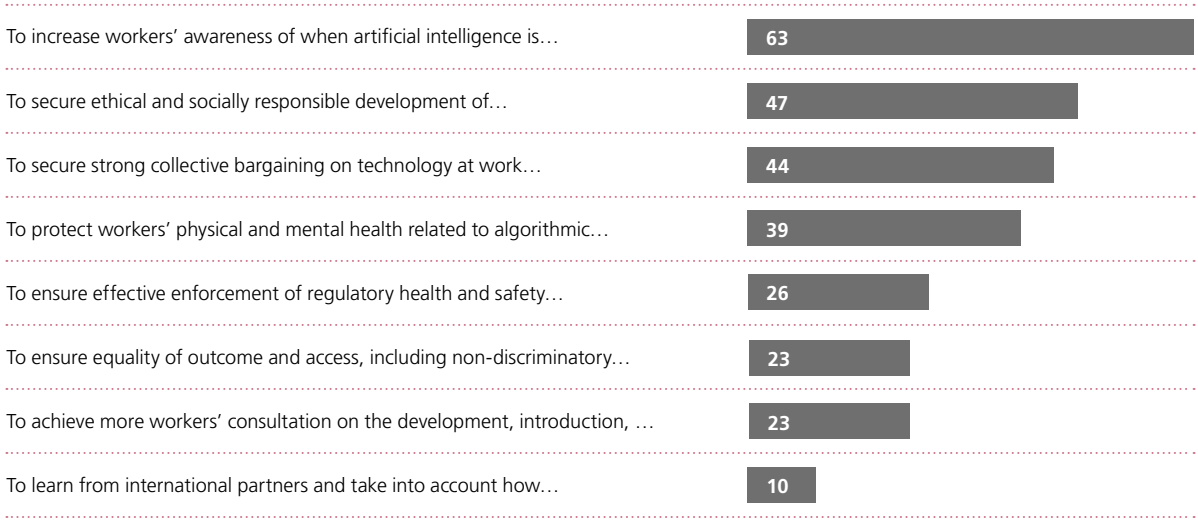
Graph 4
The magnitude of importance of issues to be included in bargaining (N=969, as a %)



QUESTIONS 18: Collective bargaining helps regulate and mitigate the risks of algorithmic management. What do you consider important in bargaining to mitigate risks? Rate on a scale where 1 means very important and 5 is not important at all.

Source: UNI Europa survey on algorithmic management

Graph 5
Workers' expectations towards trade unions regarding the AM risk being addressed (N=987, as a %)



QUESTIONS 17: What role can trade unions or employee representative play in addressing the risks related to algorithmic management? Please choose at most three priorities that the union at your workplace should address in their future actions.

Source: UNI Europa survey on algorithmic management

5

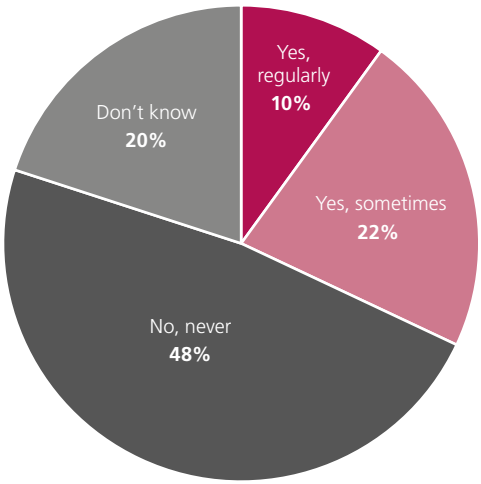
EMPLOYERS' PRACTICES ADDRESSING AND MITIGATING THE RISKS CAUSED BY AM

5.1 EMPLOYERS' PRACTICES

Approximately half of the respondents (48%) have not experienced any employer activity intended to increase the transparency of the AM usage. Another 20% do not have any information regarding such practices. Regular and sporadic employers' actions have been experienced. On average, 32% of workers have experienced regular or sporadic efforts by employers to increase transparency before an AM has been implemented at the workplace.

Focusing more closely at employer activities relating to AM transparency, workers stated the following: First, 43% of workers regularly or sometimes experienced their employer communicating about AM tools and 32% experienced that the employer consulted and agreed with them on some form of AM monitoring. Only 22% of workers experienced the employer asking for consent before applying an algorithmic technology at work. At the same time, **53% of workers have never been asked for consent to the use of AM, and 51% have never provided any training on AM use.**

Graph 6
Average workers' experience with employer practices relating to AM transparency (N=1077, as a %)



QUESTION 12: Have you experienced any of the following practices by the employer before introduction of a new algorithmic tool in the last three years? (Scale: Yes, regularly; Yes, sometimes; No, never; Don't know)

Source: UNI Europa survey on algorithmic management

Workers also shared further employers' practices or experiences. At some companies, the employer generally consults the union for the performance assessment, but that does not mean they reach an agreement. Some workers have been informed, but not asked for permission for AM use. Some employers consulted or informed employee representatives about all new forms of monitoring before applying them, and a worker can refuse to use AM tools. Some respondents stated that such tools have not been developed or used yet, but it the same time, they have doubts as to whether they have complete and updated information from their employer.

Workers revealed that employers rarely undertake any preventive actions to mitigate AM risks before launching the new technology. A data protection impact assessment was only carried out in the case of 35% of respondents, while 27% of respondents were consulted by the health and safety representative, and only 12% of respondents stated that an impact assessment on equality by the new AM has taken place. **More than 51% of the workers responding to this question had not experienced any AM risk mitigation on the part of their employer.**

Respondents identified specific employers' practices to address and mitigate negative AM impact. Despite employers applying some risks mitigation, the tests had purposes other than the well-being of workers. The evaluations or test periods were related to the system's stability or security. Some

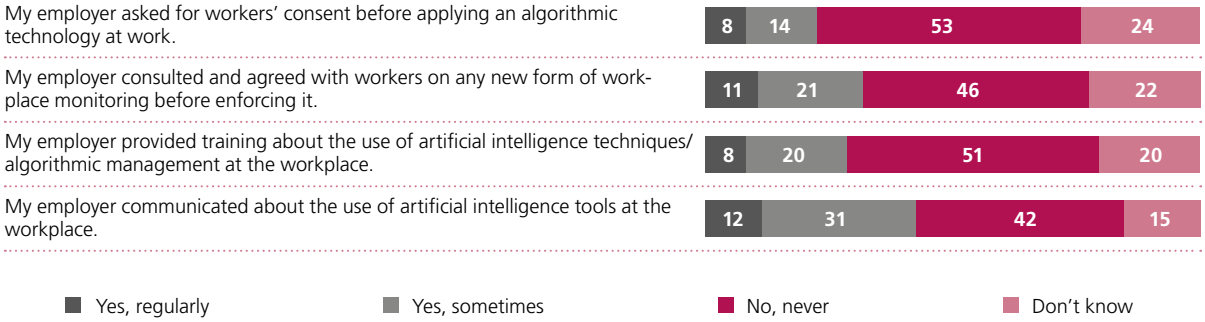
Table 2
Workers' experience with employers' practices with regard to AM risks (N=1031, %)

Data protection assessment impact.	35%
Health and safety representative consulted.	27%
Equalities impact assessment.	12%
None of the above.	51%
Other (please specify)	4%

QUESTIONS 13: Have you experienced any of the following consultations or types of assessment before the new technological tools were introduced in the last three years? Select all that apply to you.

Source: UNI Europa survey on algorithmic management

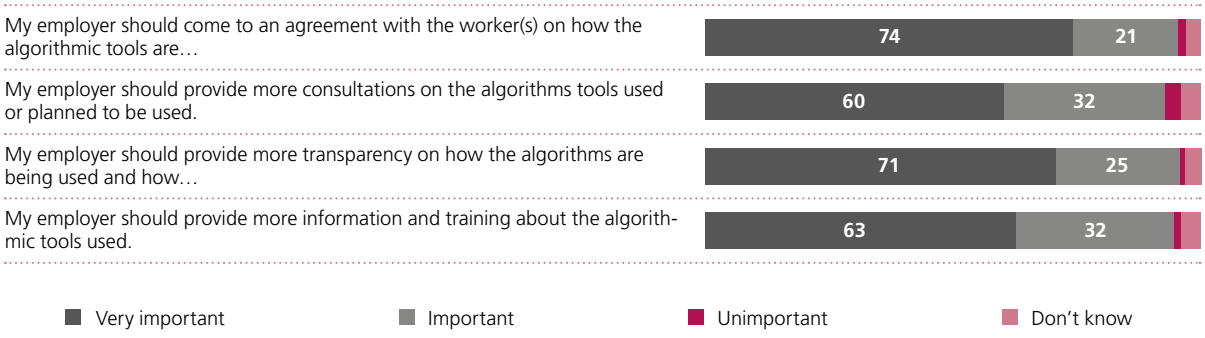
Graph 7
Workers' experiences with employers' practices relating to AM transparency by type of practices (N=1077, %)



QUESTION 12: Have you experienced any of the following practices provided by the employer before introducing the new algorithmic tool in the last three years? (Scale: Yes, regularly; Yes, sometimes; No, never; Don't know)

Source: UNI Europa survey on algorithmic management

Graph 8
Worker's expectations regarding employers' AM actions (N=1034, %)



QUESTION 14: What do you expect from the employer in terms of algorithmic management? Please rate the importance of the following practices to be provided by your employer (scale: Very important; Important; Unimportant; Not important at all; Don't know).

Source: UNI Europa survey on algorithmic management

risk mitigation activities targeted the effects on customers/the partner level, but not the internal effect on employees. A data protection impact assessment was carried out in accordance with the GDPR, albeit based on somewhat cryptic assessment standards.

Employers also evaluated the possible impact of remote control on workers, or provided regular online courses on data protection and protection of privacy compliance that are mandatory for all employees.

5.2 WORKERS'EXPECTATIONS REGARDING EMPLOYERS' ACTIONS

Workers' expectations regarding employers' AM risk mitigation actions are high. More than 90% of respondents consider either more information and training, greater transparency, more consultation or even close an agreement with workers on the use of AM to be highly important. For example, 74% consider it to be very important that the employer agrees with the worker(s) on how the algorithmic tools are to be applied to them and 71% that the employer provides more transparency on how the algorithms are used and how they work. Around 3% to 4% of respondents did not know which of the employers' actions would be important to them.

Respondents presented their expectations in more detail:

- If possible no employee monitoring and automated/ algorithmic assessment should be used;
- A qualified ethics committee should be appointed to scrutinise algorithmic tools before they are used;
- This is only necessary when significant surveillance is in place. Only the quality of work should be checked; this will then be taken into account.
- Assessment before implementation in general;
- Better not to use AM.

6

CONCLUSIONS AND RECOMMENDATIONS

The report presents findings based on data collected through an online questionnaire in January–February 2022 on a sample of 1,395 workers from all EU countries, mainly from Italy, Austria and Switzerland. Almost all respondents have been trade union representatives or regular members of trade unions, one-third from the telecommunication sector and two-thirds from private companies.

The objective of the survey was to explore the level of workers' awareness of AM usage, its risks and trade union and employer efforts to prevent and minimise the negative impact of AM use.

1. The results show that **most workers have some idea of whether or not AM tools are being used, albeit with varying degrees of certainty.** One-third confirmed that they are unaware of any AM being used at their workplace. The greatest awareness is about consumer-sourced rating systems and remote control of workers' activity. Lack of awareness of AM usage or uncertainty if the algorithmic instrument is being used indicate low transparency and absence of regulation on AM implementation. Data indicates a **high awareness among workers regarding various risks stemming from AM application,** from unfair processing of workers' data due to the lack of transparency to inappropriate pressure caused by technology-enabled surveillance.

   RECOMMENDATION 1
   High worker awareness of the use and risks of AM confirms the importance of advocacy activities by trade unions in this area. It is **recommended that the various AM tools be made more transparent and to monitor their effects on employees' daily work in order to reveal new, less visible practices, for example** in the hiring process or decision-making by the employer.

2. Although **employees identified several trade unions' activities** to address AM risks, most of them only addressed AM challenges, such as work evaluation and control of employees. Providing accurate information or training on AM use, or incorporating the issue into collective bargaining, have been rare. Around **30% of the respondents did not notice any trade union activity along these lines.** Moreover, **critical voices regarding unions' passivity** and lack of any support from unions were relatively loud.

   RECOMMENDATION 2a
   It is recommended that **the knowledge of trade union representatives** about AM use and its impact be supported and deepened in order to provide them with accurate information on employers' practices and how to effectively enforce AM regulation at the national, sectoral or corporate levels.

   RECOMMENDATION 2b
   Wherever employee representation is weak, **increase their organisation and the capacity of local trade unions in their advocacy activities**. For example, AM control, non-transparent surveillance, and other measures incompatible with decent working conditions can be an impulse to mobilise trade union activity.

3. Collective bargaining is considered an effective tool with which to address and mitigate the risks of AM. Despite the **current low level of coverage of the AM issue in collective bargaining,** the survey has identified several **notable practices** that can guide others, for example the technology agreement in Danish financial services or algorithmic transparency at work from Spain advocating the right to privacy and disconnection to regulate AM use. Bargaining, however, might be influenced by low coverage overall by CB and CBA in the country, such as Poland and other eastern European countries.

RECOMMENDATION 3

For UNI Europa and other EU-level and national-level social partners, it is recommended to **join capacities and identify more good practices** on regulations, collective bargaining agreements, including the whole process from initiation (argumentative support), enforcement and implementation of regulations all the way to monitoring their compliance. **In addition, build a reservoir of good practices** that will serve as a repository of ideas for other trade unions and stakeholders.

4. Respondents rate **all surveyed aspects of measures to address the AM risk at a high level of significance.** Measures on employers' obligation to inform, explain, and agree with workers on the AM used to insist on compliance with personal data-processing legislation should be incorporated into collective bargaining. Workers also share specific measures related to the ethical use of AM, traceable output or possibility to complain, consent to AM application and even limit harmful AM practices.

RECOMMENDATION 4

Expand and collect knowledge and ideas about possible specific measures that could be included in collective agreements addressing AM risks by **regular and simple enquiry among trade union members**. Prepare a template for a comprehensive collection agreement addressing specific aspects of the AM and make it available for general use.

5. Workers revealed in the survey a priority that trade unions should focus their protection on AM challenges. Workers expect trade unions to **increase workers' awareness of when artificial intelligence is operating and ensure consent is obtained wherever appropriate,** to **secure ethical and socially responsible development of algorithmic management** for the benefit of all, not only employers and commercial interests and **to ensure strong collective bargaining** on technology at work and data protection.

RECOMMENDATION 5

It is recommended that trade unions organisations at the various levels **adjust working plans and actions in this area of AM to align with members' expectation:** to plan **specific initiatives** targeting the detection of the AM mode of operation, insisting that the employer has to obtain consent from the employees and enforcement of clear ethical rules on AM. Trade unions also need **to increase their efforts to draft and enforce collective agreements** on AM, including their proper implementation.

6. From the employers' side, half of the workers did not experience any activity to address or prevent AM risks, have never been asked for consent or been provided any training on AM use. Even where some rules have been set, the workers have doubts about compliance with these. **Considering the low employers' rate of action to address AM risks, workers expect a change here.** Most respondents want employers to agree with them which AM will be used before implementation, an increase in the transparency of algorithms' use and purposes, and even training for employees on the AM tools.

RECOMMENDATION 6

Workers' expectations towards employers in terms of AM transparency and purposes can serve as a guideline for the trade unions in advocating for and representing workers effectively. **A recommendation for employers is to listen to workers and their requirements** on the AM issues as well as in their various activities to enhance transparency and establish more rules to govern AM. Attempting to meet workers' expectations will **pay off for all.**

ANNEX

SAMPLE STRUCTURE

CATEGORY	NUMBER	PERCENTAGE
Total responses	**1402**	
Responses included in the analysis	**1395**	**100%**
COUNTRIES		
Italy	479	34.2%
Austria	204	14.6%
Switzerland	176	12.6%
Poland	87	6.2%
France	84	6.0%
Belgium	66	4.7%
Spain	53	3.8%
Sweden	41	2.9%
Ireland	40	2.9%
Germany	34	2.4%
Finland	24	1.7%
Iceland	19	1.4%
Norway	15	1.1%
Others (less than 1%)	74	5.3%
SECTORS		
Telecommunication industry	471	33.8%
ICTS sector (Information, Communications, Technology and Services)	207	14.8%
Contact centres and business services	108	7.7%
Banking sector	97	7.0%
Insurance sector	67	4.8%
Media sector (print, TV, radio, internet broadcasting, etc.)	63	4.5%
Tech sector	50	3.6%
Commerce	41	2.9%
Finances industry	40	2.9%
Social/medical/education sector	22	1.6%
Postal services	21	1.5%
Social insurance sector	16	1.1%
Care sector (nursing and home care sector)	14	1.0%
Other (less than 1%)	163	11.7%
EMPLOYMENT STATUS		
Employed/working		98.0%
Independent contractor (self-employed)		0.5%
Other		1.5%
UNIONISATION		
Member of a trade union	661	47.1%
Representative of a trade union at the establishment/workplace level	405	28.9%
Representative of a trade union at the national level	111	7.9%
Representative of a trade union at the sectoral level	97	6.9%
Non-member	77	5.5%
Representative of a trade union at the European level	20	1.4%
Other kind of membership	13	0.9%
SEX OF RESPONDENTS		
Men	574	59.0%
Women	360	37.0%
Others/prefer not to reply	36	4.0%
AGE OF RESPONDENTS		
Under 20	1	0.1%
21–30	30	3.1%
31–40	113	11.6%
41–50	302	31.0%
51–60	459	47.1%
61 and over	69	71.0%

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ABBREVIATIONS

AI	Artificial intelligence
AM	Algorithmic management
CB	Collective bargaining
CBA	Collective bargaining agreement
EM	Employer
TU	Trade unions
N	Number of responses to the question

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ABOUT CELSI

The Central European Labour Studies Institute (CELSI) is a non-profit research institute based in Bratislava, Slovakia. It fosters multidisciplinary research on the functioning of labour markets and institutions, work and organisations, business and society, ethnicity and migration in the economic, social, and political life of modern societies. CELSI strives to make a contribution to cutting-edge international scholarly discourse. In its applied research and policy analysis, CELSI promotes a focus on Central and Eastern European countries. CELSI fosters intensive cooperation with internationally recognised research institutions, seeking to build a bridge between recognised international expertise and the in-depth knowledge of local experts. In addition to academic competence, CELSI provides expert data services – data collection, processing and analysis.

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