



► AI Systems at Work

A Changing Psychosocial Work Environment

Author / Tahmina Karimova





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Abstract

The dominant framing of AI systems at work focuses on the opportunities that AI-based technologies offer to improve workplace safety and health. With few exceptions, little is done to map and understand the negative implications of these technologies. Nonetheless, there is a small but growing awareness of the need to critically review whether the preventive approach offered by existing occupational safety and health frameworks is fit for purpose when addressing risks associated with the deployment of AI-based systems in the world of work. The debate on this topic is active at the regulatory level. Various jurisdictions are developing general AI regulations that tend to classify the use of AI-based systems in employment settings as high-risk. This paper proposes to examine the health impacts of AI, focusing on its effects on mental and social well-being (known in the occupational safety and health discipline as the workplace psychosocial environment). The paper argues that to effectively address psychosocial risks arising from AI-based systems, policymakers should adopt an integrated approach that includes laws and policies on labour and employment, equality and non-discrimination, occupational safety and health, and privacy and data protection.

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▶ Introduction

The world of work and the nature of work are undergoing significant transformations as a result of digitalization, including AI-based technologies.¹ Throughout workplaces, artificial intelligence (AI) is increasingly being used as a tool for the tasks that workers perform, but also for the entire cycle of the employment relationship, including recruitment, training, onboarding, monitoring and surveillance, remuneration, rewarding and career development, transfer and dismissal. This transformation is profoundly changing the composition of the workforce, the work environment, the equipment used, as well as the way work is designed and organized, leading to important impacts on workers' health and well-being.²

As a result of these transformations, academics have begun to analyse the effects of digitalization and new AI technologies;³ policymakers and practitioners have made efforts to better understand how to govern technology at work; while regional institutions have developed campaigns and begun researching what is a digitalized world of work and what it means for workers. There is still limited research on how AI systems are integrated into core aspects of employment relationships, such as working time, wages, occupational safety and health (OSH), and other rights at work.⁴

To address this gap, we need to explore various questions, including the meaning of work, and whether policies created to ensure 'humane conditions of work for all' are fit to address challenges of this digital and AI-based world of work. At the moment, the discourse on AI-based technologies in the workplace is focused on the opportunities that these technologies offer, and with few exceptions, there is little systematized knowledge on the health impacts of AI-based technologies. The present paper will not, therefore, engage with the positive developments in the use of AI in the workplace or its benefits from an OSH perspective. Rather, it will focus on growing evidence and concerns regarding the effects of AI-based systems on health and well-being⁵ including the less understood aspects of workplace safety and health such as psychosocial risks – defined as “anything in the design or management of work that increases the risk of work-related stress”.⁶ This concern is reflected both within the broader context of active policymaking, related to general regulation of AI technologies, and in the sphere of new employment-specific standards such as the prohibition of certain artificial intelligence (AI)-based forms of workplace surveillance, and 'new' or 'enhanced-old' rights claimed in the context of AI-based algorithmic management (AM) (e.g. the right to transparency on the deployment of AI technologies, the right to human review of decisions taken by AI-based AM, etc.).

This research paper examines whether there is a need to adapt existing legal frameworks to the new health risks associated with deployment of the AI in the workplace, and what those adaptations should be. It, therefore, examines how digital working environments trigger psychosocial

¹ According to the ILO, while “digitalization encompasses all types of digital applications in the workplace from the simple use of desk-top computers to advanced robotics and virtual/augmented reality, since the mid-2010s attention has focused on artificial intelligence, particularly machine learning”. In: ILO, *Challenges and opportunities of digitalization*, GB.350/HL/1(Rev.1), §5.

² C. de Tecco, B. Persechino, S. Iavicoli, Psychosocial Risks in the Changing World of Work: Moving from the Risk Assessment Culture to the Management of Opportunities, *Med Lav*, 2023, 114(2).

³ A. Aloisi & V. De Stefano, *Your Boss Is an Algorithm: Artificial Intelligence, Platform Work and Labour* (Bloomsbury Publishing, 2022).

⁴ See e.g. EU-OSHA's Healthy Workplaces Campaign: *Safe and Healthy Work in the Digital Age*, 2023 - 2025.

⁵ M. Jarota, Artificial Intelligence in the Work Process. A Reflection on the Proposed European Union Regulations on Artificial Intelligence from an Occupational Health and Safety Perspective, *Computer Law & Security Review*, Volume 49, 2023.

⁶ ILO, *Psychosocial risks and stress at work*, 10 November 2022.

hazards and whether these hazards require additional and/or different safeguards to protect workers' health and safety.⁷ In so doing, the paper will contribute to addressing gaps in knowledge of known and emerging risk factors, to help ensure safety, health, and well-being in workplaces and help enterprises better understand the specific risks associated with AI technologies, in an effort to advance decent work.

The study proceeds first by setting the context of AI technologies in workplaces and work processes and introduces the types of AI technologies examined in this paper (section 1). Against this background, the repercussions of these technologies on safety and health at work are analysed. Section 2 then addresses the new and emerging health and safety risks associated with these AI technologies, focusing only on psychosocial risks posed by AI-based technologies. The paper then examines the role of international labour standards and regional and national labour regulatory trends (in section 3). The argument is made for the need for an integrated regulatory approach that combines preventive approaches with emerging regulatory interventions to address psychosocial risks associated with AI-based systems. This paper focuses on one specific aspect of workplace safety and health – PSRs – and will not address physical health and safety issues.

⁷ F. Chirico, The Forgotten Realm of the New and Emerging Psychosocial Risk Factors. *J Occup Health*, 59(5)(2023):433–435.

► 1 Setting the scene

AI systems and their uses at work

Before addressing the factual interplay of AI-based technologies with the health and safety of workers, it is important to define what AI is and how it is used in the workplace and work processes.

There are various ways in which the scientific literature defines the term “artificial intelligence”. In simple terms, the notion has been defined as “the ability of machines to think, learn and adapt” and importantly AI is “[n]o longer confined to routine tasks, AI now tackles complex challenges once exclusive to human intelligence”.⁸ Regulatory frameworks have likewise attempted to define AI. For example, the recently adopted EU AI Act, defines an AI system as “a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments”.⁹

AI-based technologies – a term that requires its own definition – are a subset of a broader workplace digitalization process encompassing a wide variety of technologies such as AI, advanced robotics, technology used for monitoring remote working, the internet of things (IoT), big data, wearables, and online platforms, among others.¹⁰ This paper focuses on the following types of technologies: advanced robotics, AI-based AM (see box).

A very short introduction to advanced robotics, AI-based AM and smart digital systems

Advanced robotics (included in AI-enabled systems)¹¹ or smart robots are “technologies designed to perform tasks requiring high precision, adaptability and autonomy ... [such as] industrial robots, ... robotic arms used for repetitive and hazardous tasks, as well as modern innovations such as autonomous mobile robots, drones, exoskeletons and collaborative robots (“cobots”)”.¹² These AI-based robots are increasingly being used in advanced manufacturing.

AI-based AM – also referred to as ‘algorithmic management of work’ – can be defined as the use of algorithmic procedures for the coordination of labour input in an organization,¹³ but it can also be defined as the delegation of managerial functions to algorithms.¹⁴ AI-based AM collects data from workspaces, workers and their activities. These data are then processed by AI-based systems “to make automated or semi-automated decisions, or to

⁸ ISO, [What is artificial intelligence \(AI\)?](#) See also Oxford English Dictionary that defines AI as “The capacity of computers or other machines to exhibit or simulate intelligent behaviour” in OED, [Artificial Intelligence](#).

⁹ [EU, AI Act](#), 13 March 2024, Art. 3.

¹⁰ EU-OSHA, [Digital Technologies at Work and Psychosocial Risks: Evidence and Implications for Occupational Safety and Health](#), 2024.

¹¹ J. T. Licardo, M. Domjan, T. Orehovački, Intelligent Robotics – A Systematic Review of Emerging Technologies and Trends, *Electronics* 13 (3).

¹² ILO, [Revolutionizing health and safety: The role of AI and digitalization at work](#), 2025, p. 6.

¹³ S. Baiocco, E. Fernandez-Macias, U. Rani and A. Pesole, *The Algorithmic Management of Work and its Implications in Different Contexts*, (ILO, 2022), p. 5.

¹⁴ MIT Sloan Management Review, [Algorithmic Management: The Role of AI in Managing Workforces](#), April 2023.

provide information to decision-makers, such as human resources managers, employers and sometimes workers themselves”.¹⁵

Smart digital systems can also incorporate AI-based technologies. In the workplace context, these include “systems that use a range of digital technologies – such as sensor-based devices, AI, IoT, wearables, wireless technologies, augmented reality, virtual reality and drones – to monitor, analyse, and manage workplace safety and health risks, including physical, ergonomic, chemical, biological and psychosocial, associated with various factors such as workers' activities or tasks, equipment, workplace layout and work organization”.¹⁶

While there is a great deal of overlap between these technologies, AI-based technologies lie at the core of each. For this reason, the literature classifies them according to how they transform the world of work. Discussions distinguish two main applications of AI technology in the workplace:

▶▶ *“The first is aimed at automating tasks that workers perform, especially routine and repetitive tasks that can be efficiently handled by machines. The second is to use AI-based analytics and algorithms to replace or augment management functions: hiring, monitoring, supervising and training workers, as well as scheduling hours and breaks – or what is commonly referred to as “algorithmic management”. Both have implications for job quantity (the number of jobs) and job quality, including respect for fundamental principles and rights at work”.*¹⁷

Existing literature further complements the scope of AI in the workplace by documenting other applications of AI-based technologies in the workplace, such as the use of AI technologies in assessing employee performance,¹⁸ monitoring and predicting employee health,¹⁹ and even directly improving employee health.²⁰ These examples illustrate the existence of previously unknown relationships between workers and AI.

This study uses “AI systems” and “AI technologies” interchangeably to describe the three types of technologies examined (i.e. advanced robotics, AI-based AM and smart digital systems).

Health and safety in the AI-based workplace

Researchers in the field of digitalization of workplaces find that AI-based technologies offer a range of opportunities for workers (e.g. automating routine and repetitive tasks, reduced physical risks), for employers (e.g. higher productivity and efficiency) and opportunities to improve workplace safety.²¹ These opportunities, however, also come with a broad range of risks to workers' safety, health and well-being, including physical, mental, psychosocial, economic, and ethical risks.²² With that said, as noted, this study will only address the PSRs. As AI-based technologies are becoming highly integrated across industries and span the entire range of employer/managerial responsibilities, one of their direct impacts on workplace health will be felt at the

¹⁵ EU-OSHA, [Digital Technologies at Work and Psychosocial Risks](#), p. 24.

¹⁶ EU-OSHA, [Digital Technologies at Work and Psychosocial Risks](#), p. 19.

¹⁷ ILO, [Challenges and opportunities of digitalization](#), §7.

¹⁸ A. Varma, V. Pereira & P. Patel, Artificial Intelligence and Performance Management, *Organizational Dynamics* Volume 53:1 (2024).

¹⁹ El-Helaly M. Artificial Intelligence and Occupational Health and Safety, Benefits and Drawbacks, *Med Lav.* 115(2)(2024).

²⁰ ILO, [Revolutionizing health and safety: The role of AI and digitalization at work](#), 2025, p. 9.

²¹ For a broad overview see ILO, [Revolutionizing health and safety: The role of AI and digitalization at work](#).

²² J. Howard & P. Schulte, [Managing Workplace AI Risks and the Future of Work](#), *Am J Ind Med.*, 67(11)(2024), p.4.

level of psychosocial factors. Second, PSRs have been less studied and, thus, are relatively less well understood.

Cobots, for example, working alongside workers or sharing a task with the worker, may create a risk of traumatic injury or cognitive overload and work intensification for the worker working in close proximity.²³ Work intensification, for example, can result from “mismatch between a human worker’s physical or cognitive capabilities and a cobot’s AI-enabled pacing”.²⁴ Above all, a general fear of job loss and job insecurity has been a frequent concern for workers “collaborating” with the advanced digital technologies.²⁵

The use of AI-based analytics and algorithms often results in a continuous interaction between a worker and an AI-enabled system affecting all aspects of work and above all in overseeing and managing everyday tasks.²⁶ These systems are no longer experimental but are being integrated across traditional industries.²⁷ A survey of mid-level managers in six high-income countries indicates that out of the 6,047 managers surveyed about their firms’ use of AM tools, 74 per cent indicated that their firms use at least one tool to instruct, monitor or evaluate employees.²⁸ AI-based AM assumes managerial authority²⁹ substantially changing the traditional employer and employee relationship but also carrying with it potential detrimental effects to safety and health work.

Emerging evidence suggests that surveillance capabilities of AI-based AM have been associated with a variety of adverse psychosocial and health effects on workers. They can have “disempowering and inequitable impacts on worker health, job quality, and the employer–employee relationship”.³⁰ The aforementioned survey of managers in six high income countries also found that 27 per cent of mid-level managers were concerned that employees’ physical and mental health are often not adequately protected.³¹

Evidence is emerging that AM tools negatively impact workers in the areas of job satisfaction, trust, workloads, motivation, and stress levels. Thus, another survey, conducted in the United States, using data from 1,273 respondents (workers), found that 46 per cent of workers who said that their productivity was monitored “all the time” (i.e. using AM and surveillance technologies) agreed that they worked too fast, compared to just 15 % of workers who said that their productivity was never monitored electronically.³² According to the same survey, 53 per cent of workers who said that their productivity was monitored “all the time” agreed that they felt anxious at work all or some of the time. This anxiety could be related to the fact that data collected and fed into AI does not consider contextual information or co-relate the data points that would allow sound conclusions on workers’ productivity and habits. As noted in a submission to Australian Parliament’s Standing Committee on Employment, Education and Training, excessive

²³ K. Jung & J.-S. Yang, [Mitigating Safety Challenges in Human-Robot Collaboration: the Role of Human Competence](#), *Technological Forecasting and Social Change*, Volume 213 (2025).

²⁴ J. Howard & P. Schulte, [Managing Workplace AI Risks and the Future of Work](#), p.4.

²⁵ L. Tomidei et al., [Beyond Pure Technology – The Cognitive and Organisational Impacts of Cobots](#), 12 December 2022; EU-OSHA, [Digital Technologies at Work and Psychosocial Risks](#), p. 15.

²⁶ J. Howard & P. Schulte, [Managing Workplace AI Risks and the Future of Work](#), p.4.

²⁷ U. Rani, A. Pesole, and I. Gonzalez Vazquez, [Algorithmic Management practices in regular workplaces: case studies in logistics and healthcare](#), (ILO, 2024). T. Cox and G. R. Oosterwijk, [Algorithmic Management in the Workplace: Case Studies on the Impact of Algorithmic Technologies in Seven Sectors in the Nordics](#), Policy Study, October 2024.

²⁸ OECD, [Algorithmic Management in the Workplace: New Evidence from an OECD Employer Survey](#), *Artificial Intelligence Papers*, 31 (2025). At the country level: in “United States, 90% of managers indicate that their firms provide at least one algorithmic management tool, while prevalence rates in European countries (France, Germany, Italy, and Spain) range between 76% (Italy) and 81% (France)”, p. 19.

²⁹ GuruLink, [Algorithmic Management: The Rise of AI Middle Management](#).

³⁰ J. Howard & P. Schulte, [Managing Workplace AI Risks and the Future of Work](#), p.5.

³¹ OECD, [Algorithmic Management in the Workplace: New Evidence from an OECD Employer Survey](#).

³² A. Hertel-Fernandez, [Estimating the Prevalence of Automated Management and Surveillance Technologies at Work and their Impact on Workers’ Well-Being](#), 2024.

monitoring, like key-stroke monitoring, serving “as a ‘proxy’ for worker productivity does not tell ‘a complete story’”.³³

The evidence presented above shows that AI is responsible for challenges at the level of job satisfaction, trust, workloads, and motivation. Digitalization of the employment relationship takes place in a context where workplace PSRs are often overlooked by workplace safety and health regulations, with a considerable amount of legislation across the globe focusing on the physical aspects of workplace safety rather than mental and social health.

³³ Australia, House Standing Committee on Employment, Education and Training of the Parliament, [The Future of Work](#), 2025, p. 46.

▶ 2 Psychosocial risks and AI systems: interplay and data availability

Psychosocial factors at work

A report of the Joint ILO/WHO Committee on Occupational Health defines psychosocial factors at work as “interactions between and among work environment, job content, organizational conditions and workers’ capacities, needs, culture, personal extra-job considerations that may, through perceptions and experience, influence health, work performance and job satisfaction”.³⁴

This definition serves as a reference point to encapsulate the dynamic interrelationship between the work environment/conditions in general and subjective elements such as individual mental and health capacities. Any aspect in the design or management of work that increases the risk of work-related stress can be understood as a psychosocial hazard.³⁵ In other words, the workplace factors that may cause stress are defined as psychosocial hazards.³⁶ The terms PSRs and hazards are often used interchangeably.

Psychosocial factors, also known as those workplace factors that can cause stress, and therefore, become psychosocial hazards at work include³⁷:

- job content/task design (lack of variety in the work; under-use of skills or lack of appropriate skills for work);
- workload and work pace (long or unsocial work hours; shift work; inflexible hours);
- job control (lack of control over job design or workload; limited participation in deciding one’s own work);
- environment and equipment (unsafe equipment and resources; poor physical working conditions, such as poor lighting, excessive or irritating noise, poor ergonomics);
- organizational culture (unclear organizational objectives; poor communication; culture that enables discrimination or abuse);
- interpersonal relationships at work (social or physical isolation; limited support from supervisors or colleagues; authoritarian supervision and poor line management; violence, harassment or bullying; discrimination and exclusion);
- role in organization (unclear job role within the organization or team);
- career development (under- or over-promotion; job insecurity; poor investment in development; punitive procedures for sickness absence and performance management); and
- home–work interface (conflicting home–work demands; being away from home for work).

³⁴ ILO, *Psychosocial Factors at Work: Recognition and Control* – a report of the Joint ILO/WHO Committee on Occupational Health, 1986.

³⁵ ILO, *Preventing and Addressing Violence and Harassment in the World of Work through Occupational Safety and Health Measures*, 2024., p. 12.

³⁶ V. Forestieri, Prevention of Psychosocial Risks and Work-Related Stress, *International Journal of Labour Research*, 8(1–2), 1–131, p. 13.

³⁷ ILO, *Psychosocial Risks and Stress at Work*, 2022.

Psychosocial risks affect workers' well-being and productivity and can result in physical and mental health outcomes such as depression, anxiety, cardio-vascular diseases and musculoskeletal disorders. Furthermore, studies demonstrate a dynamic relationship between occupational injuries and PSRs.³⁸

References to PSRs are found in the provisions related to mental health in several international labour standards. First, the ILO Occupational Safety and Health Convention, 1981 (No. 155, hereinafter C155), defines the term health, in relation to work, as indicating not only the absence of disease or infirmity but also including the physical and mental elements affecting health which are directly related to safety and hygiene at work.³⁹ Further, Article 5 of C155 makes reference to adaptation of machinery, equipment, working time, organization of work and work processes to the physical and mental capacities of the workers (emphasis added), underlining the notion of a positive correlation between "good mental health, good working conditions, adequate salaries, work productivity, well-being and quality of life".⁴⁰

Occupational Safety and Health Recommendation, 1981 (No. 164), also contains references to the need to prevent harmful physical or mental stress due to conditions of work in the context of Article 4 of C155. While such measures pertain to policy, at the level of the firm, it is incumbent upon employers not only as a general matter, "to provide and maintain workplaces, machinery and equipment, and use work methods, which are as *safe and without risk to health* as is reasonably practicable" but also "to take all reasonably practicable measures with a view to eliminating excessive physical and mental fatigue".⁴¹

ILO Convention No. 190 on Violence and Harassment in the World of Work (hereinafter C190) and its accompanying Recommendation deal explicitly with PSRs, the latter being addressed through the notion of violence and harassment. While Article 1 includes psychological harm in the definition of workplace violence and harassment, Article 9 of C190 envisages prevention of PSRs. Given that Article 3 specifies that the Convention applies to violence and harassment occurring in the course of, linked with or arising out of work through work-related communication, including those enabled by information and communication technologies, it can be argued that C190 applies also to risks arising from the use of AI-based technologies in the workplace.

Psychosocial risks arising from AI-based technologies: current state of research

Combining the foregoing description of interplay of AI-based technologies and workplace safety and health with the current classification of psychosocial factors (also referred to as job aspects impacting psychosocial environment at work) may help better understand how AI can affect these factors. (Table 1).

³⁸ J. Mireia, C. Catalina-Romero, E. Calvo-Bonacho & G. Benavides, Exposure to Psychosocial Risk Factors at Work and the Incidence of Occupational Injuries: A Cohort Study in Spain. *J Occup Environ Med.*, 58(3)(2016), 282–286. Also see S. Leka, A. Jain, S. Iavicoli & C. Di Tecco, An Evaluation of the Policy Context on Psychosocial Risks and Mental Health in the Workplace in the European Union: Achievements, Challenges, and the Future, *Biomed Res Int* (2015).

³⁹ Occupational Safety and Health Convention, 1981 (No. 155), Art. 3; Occupational Safety and Health Recommendation, 1981 (No. 164), para. 2.

⁴⁰ European Parliament resolution of 5 July 2022 on mental health in the digital world of work (2021/2098(INI)), para. 11.

⁴¹ Occupational Safety and Health Recommendation, 1981 (No. 164), paras. 3& 10. Psychosocial factors are also addressed in the framework of the Occupational Health Services Convention, 1985 (No. 161), which defines, in its Article 1(a)(ii), occupational health services as services that advise employers, the workers and their representatives at the workplace on "the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work" and "the adaptation of work to the capabilities of workers in the light of their state of physical and mental health".

► **Table 1: Taxonomy of psychosocial risks and digital technologies specific risks (AI related PSR factors in *Italic*)**

Psychosocial factors or job aspects impacting psychosocial environment at work	Description	Risks arising from AI-based systems
Job content/task design	Lack of variety in the work; under-use of skills or lack of appropriate skills for work.	Deskilling or the need for upskilling/re-skilling.
Workload and work pace	Long or unsocial work hours; shift work; inflexible hours.	Cognitive overload, the need to constant adaptation to new technologies; time/pace pressure. Work intensification; automated management leading to increasing number of tasks in shorter working hours; unachievable or unreasonable key performance indicators.
Job control <i>Subcategory: loss of autonomy, meaningfulness of work</i>	Lack of control over job design or workload; limited participation in deciding one's own work.	Reduced worker autonomy; AM lacking in transparency. <i>Loss of ability to make decisions, loss of meaningful work, loss of sense of value, feelings of reduced self-efficacy, greater work alienation.</i>
Environment and equipment <i>Subcategory: AI malfunctions; injuries</i>	Unsafe equipment and resources; poor physical working conditions, such as poor lighting, excessive or irritating noise, poor ergonomics.	Sense of unfairness among employees due to collection of real-time data from the workplace, workers & their activities. <i>Workers are possibly endangered by inaccurate information from AI systems, "algorithmic choices subject to severe problems due to partial or incomplete data, inadequate modelling, and problematic objective".</i>
Organizational culture <i>Subcategory: intrusive or excessive monitoring</i>	Unclear organizational objectives; poor communication; culture that enables discrimination or abuse.	<i>Lack of trust due to digital surveillance; excessive monitoring; excessive collection of data on worker; breach of privacy, unauthorized gathering & use of personal data; validity of collected data; risk of incorrect inferences about workers, their performance and their personal idiosyncrasies outside the scope of their functions;</i> <i>Algorithmic and biomonitoring of sentiment, intention, activity, attention, selective exploitation of workers' behaviour.</i>

Psychosocial factors or job aspects impacting psychosocial environment at work	Description	Risks arising from AI-based systems
Interpersonal relationships at work	Social or physical isolation; limited support from supervisors or colleagues; authoritarian supervision and poor line management; violence, harassment or bullying; discrimination and exclusion.	Poor interpersonal relationships; reduction of face-to-face interactions; erosion of workplace cohesion; increased social isolation.
Role in organization	Unclear job role within the organization or team.	Role ambiguity: worker's identity, i.e. how a person views themselves in their professional role.
Career development	Under- or over-promotion; job insecurity; poor investment in development; punitive procedures for sickness absence and performance management.	Effects on workers' economic mobility; downward pressure on wages; required to change occupations; job loss.
Home-work interface	Conflicting home-work demands; being away from home for work.	Limited ability to disconnect; role ambiguity.

Source: ILO 1984, 1995, EU-OSHA 2024, J. Howard, P. Schulte 2024 and author's analysis.

Table 1 draws on psychosocial factors as classified by the ILO/WHO report and endeavours to demonstrate that the psychosocial factors –, although technology-neutral, in principle –, can pose PSRs, depending on the design and use of the technology. Some PSRs arising from the use of AI-based technologies – such as excessive surveillance and extensive datafication – can be categorised as risks falling under existing factors such as organizational culture or environment or equipment. However, and at the same time, these risks can be singled out as falling under distinct, “new” technology-enabled psychosocial risks (for example, excessive monitoring or surveillance).

Similarly, lack of control over jobs, in an organizational culture where decisions (for example, hiring, promotion, dismissal, disciplinary actions) are taken by an algorithm, raises issues of workplace autonomy and potential workplace discrimination. The notion of “job control” acquires a whole new meaning in the context of digitalization. The current framing of psychosocial aspects of work may not sufficiently consider the PSRs associated with AI-based technologies and AM. There may be a need for formulating new psychosocial factors/aspects that will capture the technology-related risks such as employee control over the use of personal data. Some of these “new” psychosocial aspects of work arising from AI-technology will be discussed more in detail in the next section.

Focusing on new or “augmented” risks

There are risk factors derived from the deployment of AI systems that do not situate precisely within one of the above-mentioned categories of psychosocial factors, although they seem to relate to (and at times overlap) with some of these factors. These notable new PSRs are excessive monitoring and surveillance, job autonomy in digitalized workplaces and excessive data collection and lack of transparency. The sections that follow aim to details these “new” risks and better understand their occupational safety and health implications.

Intensive/intrusive surveillance

Monitoring of performance is standard practice in the workplace. Technological developments of the past decade, as well as “management culture” and “new organizational forms” have extended and intensified the opportunities for workplace “surveillance”.⁴² The psychosocial risk factors in this context can “relate to the design and use of monitoring, as well as with the managerial processes and policies which surround it”.⁴³ Semantically, the term surveillance in the contemporary technological context refers to the collection of information (“an act of surveillance always involves the purposeful gathering of information about something or someone”),⁴⁴ but recent policies employ the term excessive/intrusive monitoring/surveillance.⁴⁵

Not all data collection, or surveillance/monitoring, is considered unwarranted. In fact, workplace surveillance is often authorized under certain circumstances. As noted, the key issues are intensity, intrusiveness and the constant technology-enabled surveillance that raises OSH questions as well as other legal concerns. With digital technologies, the sheer amount of data collected on workers and their work is vast and constantly increasing. For example, widely used workplace applications (such as Microsoft Teams) can generate data on user’s activity’s such as when the person is active on their computer, in shared channels, the messages a user posts in a team chat or a private chat; the calls they participate in; the number of meetings the user organized; number of meetings the user participated in; meetings audio, video and screen sharing time; last activity date of a user; shared channel interactions of a user, etc.⁴⁶

From the OSH perspective, “[d]epending on how it is configured, monitoring can also cause negative privacy, trust, procedural and distributive justice perceptions as well as negative impacts on autonomy and creativity”.⁴⁷ In one account, “dignity at work is undermined when technology cannot be overruled and those subjected to surveillance are denied the right to comment/correct/present their side”.⁴⁸ Furthermore “[e]xcessive monitoring and surveillance to track workers’ attainment of KPIs [key performance indicators] can create unsafe workplaces”, as surveillance material generated by AI systems may result in incorrect inferences about workers’ performance.⁴⁹

At the European Union level, a European Parliament resolution of 5 July 2022 on mental health in the digital world of work notes “significant risks for workers’ health and safety, notably their mental health and right to privacy and human dignity” entailed by the use of digital tools such as “apps, software and artificial intelligence (AI) to manage their workers” and “AM presents new challenges for the future of work such as technology-enabled control and surveillance through prediction and flagging tools, remote real-time monitoring of progress and performance and time-tracking”. The resolution notes that “about 40 % of human resources departments in international companies now use AI applications and 70 % consider this a high priority for their organization”.⁵⁰

There are very limited examples of national policies recognizing the psychosocial risks related to technology in the workplace. A case in point is Australian Comcare (the national authority for

⁴² K. Ball, *Electronic Monitoring and Surveillance in the Workplace*, (EU, 2021), doi:10.2760/5137, JRC125716, p. 7.

⁴³ Ball, p. 7.

⁴⁴ Ball, p. 10.

⁴⁵ Australian Comcare: *Intrusive Surveillance*.

⁴⁶ See <https://learn.microsoft.com/en-us/microsoftteams/teams-analytics-and-reports/teams-reporting-reference>

⁴⁷ Ball, p. 7.

⁴⁸ Australia, *The Future of Work*, p. 53.

⁴⁹ Australia, *The Future of Work*, p. 52.

⁵⁰ European Parliament, *Resolution of 5 July 2022 on Mental health in the Digital World of Work*, (2021/2098(INI)), para. F.

work health and safety), which has developed a list of workplace practices qualifying as intrusive surveillance:

- unreasonable level of supervision/oversight;
- tracking when and how much workers are subject to methods, such as keyboard activity trackers;
- monitoring emails, files and internet use;
- covert surveillance by webcams on work computers;
- tracking calls and movements made by workers using CCTV and trackable devices;
- technology that allows the PCBU to access remotely (without workers' knowledge/permission) and take screenshots of a worker's computer;
- GPS monitoring of workers' movement in company vehicles for the purpose of work performance monitoring, as opposed to other reasons such as safety considerations.⁵¹

Importantly, intrusive surveillance is identified as a workplace hazard in the Australian Work Health and Safety (Managing Psychosocial Hazards at Work) Code of Practice 2024. According to this Code of Practice, intrusive surveillance methods/tools "can be analogue (e.g. supervisor engaging in micromanagement) or technological (e.g. trackable devices)".⁵² According to the Code, intrusive surveillance may include unreasonable levels of supervision; excessive monitoring of work tasks or breaks; tracking of workers' calls and movements (using CCTV or trackable devices) for the purpose of performance monitoring (as opposed to improving safety or other purposes); GPS monitoring of workers' geographical location or movement in company vehicles for the purpose of performance monitoring (as opposed to improving safety or other purposes). These broad categories include a wide range of AI-based monitoring and surveillance.

Despite the limited number of examples, the regulatory landscape may be slowly changing, and legal proposals are being formulated in various jurisdictions as will be discussed in section 3.

Job autonomy (and dignity)

Job control is the level of autonomy and influence workers have over their work, and appears as one of the most important, if not fundamental, aspects of good working conditions and well-being in the workplace. Little or no control over job design or workload and/or limited participation in deciding one's own work are known workplace psychosocial hazards. According to Hackman and Oldham (1976), autonomy is one of the five core job characteristics/dimensions which prompt psychological states such as experiencing meaningfulness of work, taking responsibility for the outcomes of the work and having knowledge of the results of the work activities. Autonomy has been defined as "[t]he degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out".⁵³

⁵¹ Australian Comcare: *Intrusive Surveillance*.

⁵² Australia, *Work Health and Safety (Managing Psychosocial Hazards at Work) Code of Practice*, 2024, p. 62.

⁵³ J. R. Hackman & G. R. Oldham, *Motivation through the Design of Work: Test of a Theory*, *Organizational Behavior and Human Performance*, Volume 16 (2)(1976), 250–279, p. 258.

Indeed, a fundamental aspect of humane working conditions is “the ability to exert influence over different aspects of one’s own work”.⁵⁴ The occupational medicine and psychology discipline has shown the direct correlation between higher occurrence of job autonomy (understood, i.e. in its three dimensions: scope of action, the scope of variability/creativity and decision latitude⁵⁵) and a positive impact on workers’ health. In a study of psychosocial working conditions, job control, defined as a high level of decision autonomy and task variety, has also been identified a determinant of good working conditions.⁵⁶

According to the WHO Guidelines on Mental Health at Work, “[f]actors associated with job control (i.e. low authority in decision-making in own’s work) are associated with symptoms of mental health conditions; whereas higher decision latitude is protective for depressive symptoms and higher job control is associated with reduced emotional exhaustion burnout- Low job control has been associated with increased odds of suicide and with increased odds of absence related to mental health diagnosis”.⁵⁷

The question then arises of how automation affects human control and autonomy. One study found that workers’ performance was best under low-intermediate levels of automation while higher levels was negatively associated with performance and workload.⁵⁸ High-levels of automation increased mental workload and had a detrimental effect on situational awareness, the feeling of control and task variability. Other studies distinguish between the sophistication of the tasks being executed emphasizing that control over execution is more critical “for tasks of great expertise, while simple and redundant tasks can be performed by completely autonomous systems without negatively affecting the worker’s autonomy”.⁵⁹

More recently, a German Survey, “Digitalization and Change in Employment” (DiWaBe), of 8,000 employees, found that a minimum level of autonomy is “a relevant factor for the mental health of employees and represents a long-term risk for mental illness”.⁶⁰ Overall, the results of this study indicate a worsening of working conditions rather than improvement, when more decisions are made by technology. Research thus suggests that in the machine-human interaction, little to no human control over technology is a threat to a job autonomy. Preserving workers’ autonomy and job control is therefore one clear policy implication of these studies.

Unlike with the case of excessive surveillance, there is very little discussion of the psychosocial risks of automation/AI-based systems that decrease job control. Admittedly, job control as factor could cover the influence of technology, but the field of occupational psychology and medicine does not include specific considerations related to the use of AI-based systems and hence, may not be able “to fully explain specific changes regarding the digitalization of tasks”.⁶¹ Since

⁵⁴ S. Niehaus, M. Hartwig, P. H. Rosen & S. Wischniewski, *An Occupational Safety and Health Perspective on Human in Control and AI*, *Front. Artif. Intell.* Vol 5 (2022).

⁵⁵ Niehaus et al. detail the theoretical framework of Eberhard Ulrich on job autonomy which according to Ulrich consists of three components: 1) scope of action as “degrees of freedom in the execution of and temporal organization of work actions”; 2) scope of variability/creativity described as “the extent to which the worker has the opportunity to design their work and procedures” and 3) decision latitude which is understood as “the extent of an employee’s decision-making authority and autonomy to independently determine and delimit working tasks”, in Niehaus et al., *An Occupational Safety and Health Perspective on Human in Control and AI*, p. 3.

⁵⁶ T. Theorell, Job Demand/Control/Strain. In: M.D. Gellman & J.R. Turner (eds), *Encyclopedia of Behavioral Medicine*, (New York: Springer,2013).

⁵⁷ WHO, *Guidelines on Mental Health at Work*, 2022.

⁵⁸ D. Kaber & M. Endsley, The Effects of Level of Automation and Adaptive Automation on Human Performance, Situation Awareness and Workload in a Dynamic Control Task, *Theoretical Issues in Ergonomics Science* 5(2004), 113–153.

⁵⁹ Niehaus et al., *An Occupational Safety and Health Perspective on Human in Control and AI*, p. 6, also referencing to the similar conclusion arrived by L. Fréour, S. Pohl & A. Battistelli, How Digital Technologies Modify the Work Characteristics: A Preliminary Study, *Spanish Journal of Psychology*, Vol. 24 (2021).

⁶⁰ Niehaus et al., *An Occupational Safety and Health Perspective on Human in Control and AI*, p. 11.

⁶¹ Niehaus et al., *An Occupational Safety and Health Perspective on Human in Control and AI*, p. 11.

it seems clear that the risk of low job control is “heightened” by AI-based systems necessitating further enquiry and policy analysis.

Excessive data collection and lack of transparency

As the 1997 ILO Code of practice on the protection of workers' personal data states, “employers collect personal data on job applicants and workers for a number of purposes: to comply with law; to assist in selection for employment, training and promotion; to ensure personal safety, personal security, quality control, customer service and the protection of property”. Such information is required as part of business operations, and enterprises legitimately handle sensitive and personal information about their employees.

Yet, with the advent of advanced digital technologies, such as IoT devices (devices that use sensors to capture information, for example, wearables), machine learning applications and data analytics, big data, generated through constant and comprehensive monitoring of employees and work processes, is used to build, test and use AI. As one report states “data can be used to ‘create a feedback loop where adoption of AI systems necessitates greater collection of employee data’”.⁶² This collection of large amounts of data, its level of detail and processing is unprecedented and goes well beyond what information the employers should legitimately have access to.

Furthermore, advanced digital technologies lack transparency in their data collection and processing, amplifying privacy risks and impeding data subjects’ awareness of these risks.⁶³ As noted, “overcollection [of data] is overexposure” of employees⁶⁴ and this could lead to the perceived lack of fairness and trust.

⁶² Australia, *The Future of Work*, p. 45.

⁶³ EUROFOUND, *Employee Monitoring: a Moving Target for Regulation*, 2024.

⁶⁴ M. Rasmussen, *Less is More: The Risks of Excessive Data Collection from Mobile Devices*, 2024.

▶ 3 Regulatory frameworks addressing AI associated PSRs

The digital transformation of the world of work cuts across various international labour standards and diverse regulatory frameworks at the national level. Psychosocial risks posed by AI-based technologies fall within the scope of occupational safety and health frameworks, regulations governing data protection and privacy as well as workplace relations frameworks. Key ILO instruments discussed include Occupational Safety and Health Convention, 1981 (No. 155), and its accompanying Recommendation No. 164 and Violence and Harassment Convention, 2019 (No. 190), and its accompanying Recommendation No. 206.

While these instruments can provide a legal basis for assessing the risks posed by AI-based technologies, an important question to ask is whether the deployment of AI-based systems in the workplace unsettle technology-neutral premises upon which labour regulation is built.⁶⁵ Any attempt to answer this question should begin with the premise that the legal framework governing the world of work was designed to create working conditions within a traditional, human-to-human employment relationship. This is attested by the ILO Constitution which promotes and speaks of “humane conditions of labour” as well as the pursuit of material well-being (i.e. employment) in “conditions of freedom and dignity”⁶⁶ – a pledge that has been reiterated in the human-centred approach to the future of work by the ILO Centenary Declaration.

In response to this, one could also argue that occupational safety and health legislation constitutes a results-based legal framework, in which the employer’s obligation is to provide, as far as practicable, a safe workplace and working environment without risks to health. These results-oriented OSH rules are also accompanied by the process-based requirements such as consultation and information obligations related to introduction and implementation of these technologies in the workplace. Thus, OSH legislation provides a framework for addressing the physical, as well as psychosocial, harm posed by the AI-based systems, provided they are anchored in the ILO fundamental OSH Conventions that incorporate both physical and mental dimensions of health in relation to work.⁶⁷ Furthermore, the preventive approach offered by OSH frameworks helps to better understand and address risks associated with AI systems deployment, including through improved mapping and understanding of the psychosocial factors created or implicated by these technologies and integrating them into the risk assessment.

This apparent fitness of existing OSH architecture is being increasingly questioned, prompting calls, not least within the European context, to adopt “a fresh and broader definition of health and safety at the workplace, which can no longer be separated from mental health”.⁶⁸ This call for reconceptualization is further reinforced by the fact that countries “do not have the same legally binding common standards and principles for PSRs, which leads to de facto unequal legal protections for workers”.⁶⁹ It further illustrates that PSRs are not consistently addressed by OSH regulations and remain among the least understood workplace risks across the globe.

⁶⁵ See G. Le Moli, *AI vs Human Dignity: When Human Underperformance is Legally Required*, 2022.

⁶⁶ *ILO Constitution*, Preamble and Declaration of Philadelphia, II. See also *ILO Centenary Declaration for the Future of Work*, wherein the preamble raises the notion of “humane conditions of work”.

⁶⁷ *ILO Centenary Declaration for the Future of Work*, P. II (let. D).

⁶⁸ European Parliament, *Resolution of 5 July 2022 on Mental health in the Digital World of Work*, (2021/2098(INI)), para. F.

⁶⁹ European Parliament, *Resolution of 5 July 2022 on Mental health in the Digital World of Work*.

Indeed, in many jurisdictions, workplace health and safety is still identified more in terms of physical safety rather than health. Even if national laws address OSH broadly as encompassing mental health and social dimensions, PSRs are not always addressed expressly. References to mental health determinants of work are not operationalized or integrated into implementing measures.⁷⁰ However, even in national contexts, where psychosocial hazards are explicitly integrated into legislation and operationalized through practical measures, focused studies on the impact of AI systems on workplaces have repeatedly stressed that current labour legislation is “technology-neutral to accommodate ongoing digital transformation” revealing gaps and limits of OSH regulations.⁷¹

Another concern raised regarding the adequacy of OSH frameworks relates to the fact that AI technologies create “OSH risks that may only become apparent in the context of use ... [as they] emerge dynamically”.⁷² This poses a problem as the “prevailing paradigm for existing OSH regulation (SbD) [safety by design] ... focuses on the design phase”.⁷³ Reviewing more recent instruments in the European context, such as OSH Framework Directive (FD), as well as ISO 45-003 (on “Guidelines for Managing Psychosocial Risks”), a group of researchers point out that “none of the instruments account for the dynamic emergence of previously unknown OSH risks from the ongoing deployment of AI: they all follow in the SbD tradition, which effectively assumes that all OSH risks can be addressed and mitigated in the design phase”.⁷⁴ The unpredictability factor seems to be confirmed by the developers of the AI systems.⁷⁵

Scholarly debates and regulatory initiatives attempting to circumscribe AI impacts on health have begun to examine if OSH legal frameworks address these fundamentally different circumstances and whether new regulations may ultimately be needed.⁷⁶ For example, as discussed in previous section, one of the main PSRs in digitalized workplaces is excessive or intrusive monitoring and surveillance. While it may be captured – at least in part – by existing psychosocial risk management frameworks (typically within the “organizational culture” dimension), it simultaneously brings into sharp relief issues such as privacy, data protection among others, that, with few country level exceptions, are not comprehensively addressed by an overarching legal framework.

The deployment of AI in the workplace and the resulting excessive data collection is another area of concern. Even if data protection is a familiar topic in the world of work, its regulation has been partial at best. In the digitalised world of work, “[n]ot only do management and supervision of work (and workers) come in new digital ways, it may also be in the hands of different actors and even with a complex of automated systems beyond individual or even the employer’s full control”.⁷⁷

Thus, it is possible to conclude preliminarily that, at present, AI systems are being deployed in workplaces in the absence of a comprehensive regulatory framework. Preventing the risk of harm by AI use and operation in this context may not be straightforward. If an allegation of

⁷⁰ ILO, [Preventing and Addressing Violence and Harassment in the World of Work through Occupational Safety and Health Measures](#), 2024.

⁷¹ Australia, [The Future of Work](#), 2025.

⁷² A. Cefaliello et al., [Making Algorithmic Management Safe and Healthy for Workers: Addressing Psychosocial Risks in New Legal Provisions](#), p. 194.

⁷³ Cefaliello et al., p. 194.

⁷⁴ Cefaliello et al., p. 201.

⁷⁵ See for example, Dario Amodei, CEO and co-founder of AI company Anthropic conceding that “...generative AI systems are *grown* more than they are *built* – their internal mechanisms are “emergent” rather than directly designed. It’s a bit like growing a plant or a bacterial colony: we set the high-level conditions that direct and shape growth, but the exact structure which emerges is unpredictable and difficult to understand or explain... Many of the risks and worries associated with generative AI are ultimately consequences of this opacity, and would be much easier to address if the models were interpretable.” In> D. Amodei, [The Urgency of Interpretability](#), 2025.

⁷⁶ Australia, [The Future of Work](#), p. 18.

⁷⁷ F. Hendrickx, [Protection of Workers Personal Data: General Principles](#), ILO WP Series (2022), p 10.

discrimination is based on an AI operation, would the person who has been affected have a right to appeal? Would the person affected even know that AI was being used? And if they do, who's to blame? Is it the developers? Or the deployer? And how would the employer determine if the decision was made because of algorithmic bias or based on larger data sets?

It is clear that the application of the OSH preventive approach to AI-based systems may be challenging given the fundamentally different circumstances posed by digital technologies and their unpredictability, potentially raising questions regarding current risk assessment models as well as the governance, oversight and supervision of these systems in the employment setting. For the time being, the discourse is focused on the opportunities AI-based technologies offer to improve workplace safety and health, and with few exceptions, little has been done to map and understand the negative implications of these technologies. This is not to say that preventive approaches are not helpful, but this factual landscape suggests the need for additional legal articulation to make the normative framework fit the contemporary changing world of work.⁷⁸

It is proposed here that to effectively address PSRs arising from AI, action should be taken in an integrated manner through several areas including laws and policies on labour and employment, equality and non-discrimination, occupational health and safety, and privacy and data protection. This regulatory approach has been taken in the more recent standard-setting activities of the ILO.⁷⁹ Tackling mental health impacts of AI through the PSRs framework would be effective if it is supported by necessary regulatory solutions that resolve fundamental issues related to worker's data protection, privacy and addresses the role and place of "new" OSH rights such as the right to appeal against the decisions made by AI, right to disconnect, and so on. To help to lay the groundwork for what would comprise an integrated approach, the following section will take stock of recent regulatory trends across the globe that endeavour to address AI-based impacts in the work settings. These examples of national and regional practices can help us determine the direction that the regulation of AI is taking and the extent to which OSH concerns are addressed.

General AI regulations and the scope of OSH in them

While there is a profusion of guidelines, concepts, ethics frameworks, policies and strategic visions on AI, there are not yet many binding regulations.⁸⁰ States and regional institutions are starting to design and introduce new AI legislation. By and large, countries have chosen to address AI through non-binding concepts and visions that will not be the subject of review here.⁸¹ For the purposes of the present analysis, both legislation in force and draft legislation on AI will be examined with a view to analyse OSH-specific content.

Only a few countries have AI-specific legally binding instruments (e.g. Italy, Japan, Republic of Korea and Viet Nam). At the European level, the EU has adopted AI regulation binding across all EU Member States. Many countries are in the process of developing legislation governing AI (e.g. Brazil, Chile, Kazakhstan).⁸² Regulatory approaches to AI as well as their content in terms

⁷⁸ More specifically, "Mitigation strategies to address these risk factors include ensuring data privacy, worker involvement in decision-making, enhanced human accountability in data interpretation, and adapting legal and policy frameworks." In: EU-OSHA, [Digital Technologies at Work and Psychosocial Risks](#), 2024.

⁷⁹ ILO Convention on Violence and Harassment, 2019 (No. 190) for example promotes an integrated approach. In the same vein see ILC, *Outcome of the Committee on Decent Work in the Platform Economy: Proposed resolution and Conclusions submitted to the Conference for adoption*, ILC.113/Record No. 6A (2025).

⁸⁰ See OECD AI GPAI, [Policy Observatory: National AI Policies and Strategies](#).

⁸¹ For African Union (AU), [Continental Artificial Intelligence Strategy, Harnessing AI for Africa's Development and Prosperity](#), 2024.

⁸² The sample of countries is based on 1) availability of legislation and/or 2) availability of draft legislation that is accessible in open sources.

of OSH vary considerably around the world. Overall, while concepts such as human-centric AI, anthropocentric AI regulation, ethical and/or responsible AI, as well as rights, transparency, privacy and non-discrimination figure in the context of AI regulation, there is no discernible common approach as regards the content of these concepts nor specifically on the workplace safety and health.⁸³

Two points should be made, nonetheless. First, most regulations on AI do not explicitly refer to workers or employers, rather they identify rights and obligations of different actors within AI supply chain. Thus, in the EU, actors are termed as deployers, providers, authorized representatives, importers, distributors, operators, downstream providers and product manufacturers. Kazakhstan's draft law delineates the roles of owners, holders, and users, with Viet Nam's law, in addition, labelling users as the implementing party. South Korean legislation also introduces the notion of "affected person" referring to a person whose life, physical safety, and fundamental rights are significantly affected by an AI product or AI service.⁸⁴ These terms are not identical to the world of work actors and may ultimately pose challenges to the exercise of freedom of association as a foundational right for the protection of all other rights at work, including OSH.

Second, the few existing regulations tend to adopt a risk-based approach to regulating AI and comprehensive cross-cutting regulatory interventions focus on "product safety-oriented" regulation of AI. This risk-based and safety approach to regulating AI is not based on the employer-employee relationship (i.e. workplace setting, rather the employer's (and their obligations) are regulated as agents or deployers). Regardless of the terminology, AI regulations do apply to workplaces. At the European level, the EU AI Act contains references to workplace and the document accompanying the EU AI Act confirms the applicability of the AI Act to workplaces stating that:

▶▶ *"AI systems used in employment, workers management and access to self-employment, in particular for the recruitment and selection of persons, for making decisions affecting terms of the work-related relationship, promotion and termination of work-related contractual relationships, for allocating tasks on the basis of individual behaviour, personal traits or characteristics and for monitoring or evaluation of persons in work-related contractual relationships, should also be classified as high-risk, since those systems may have an appreciable impact on future career prospects, livelihoods of those persons and workers' rights. Relevant work-related contractual relationships should, in a meaningful manner, involve employees and persons providing services through platforms as referred to in the Commission Work Programme 2021. Throughout the recruitment process and in the evaluation, promotion, or retention of persons in work-related contractual relationships, such systems may perpetuate historical patterns of discrimination, for example against women, certain age groups, persons with disabilities, or persons of certain racial or ethnic origins or sexual orientation. AI systems used to monitor the performance and behaviour of such persons may also undermine their fundamental rights to data protection and privacy".⁸⁵*

Thus, AI systems are classified according to the level of risk they pose to safety and health or, as in Viet Nam, based on criteria such as the level of impact on human rights or security, among others.⁸⁶

⁸³ For anthropocentric approaches to AI see Italy, [Law No. 132/2025 of 23 September 2025](#) and Viet Nam, [Law No. 134/2025/QH15 on AI, 10 December 2025](#).

⁸⁴ Republic of Korea, [Basic Act on Artificial Intelligence](#), Law No. 20676 of 21 January 2025, Art. 2.

⁸⁵ EU, AI Act, [Recital 57](#) as related to Article 6 and Annex III.

⁸⁶ Viet Nam, [Law No. 134/2025/QH15 on AI, 10 December 2025](#), Article 4.

Some uses of AI in the workplace appear expressly, depending on the jurisdiction, either in the high-risk or unacceptable risk category. In the EU, the AI Act bans the use of AI systems to infer emotions of a natural person in “the areas of workplace and education institutions” with an exception “where the use of the AI system is intended to be put in place or into the market for medical or safety reasons”. The Chilean draft legislation qualifies such functional capability of AI systems (i.e. that infers the emotions of a natural person in the workplace) as an unacceptable AI risk.

Subliminal manipulation systems, those that exploit people's vulnerabilities to generate harmful behaviour; biometric categorization systems for individuals based on sensitive personal data; generic social classification systems are prohibited in legislations of various jurisdictions albeit the precise wording differs (EU AI Act, Brazil and Kazakhstan draft legislations).⁸⁷ The Kazakh draft legislation prohibits fully autonomous AI as well as AI that possesses the above functional capabilities.⁸⁸

In the same vein, EU AI Act classifies subliminal techniques deployed by AI beyond a person's consciousness or purposefully manipulative or deceptive techniques as prohibited practices. Added to these prohibited practices are those that exploit any of the vulnerabilities of a natural person or a specific group of persons due to their age, disability or a specific social or economic situation. This concern, common across many regulations, is due to the direct impact on the employment and more broadly working environment. Emotion recognition technologies are deployed to recognize and interpret the mental and emotional state of employees through biometrics analysis (e.g. facial micro-expressions, speech patterns and tones, head and body posture, gait, and brain activity).⁸⁹ While recruitment is an oft-quoted instance of the application of emotion recognition technologies, these technologies can be applied to the entire cycle of employment relationship. Restricting or banning AI capabilities, such as inferring emotions, subliminal manipulation systems, biometric categorization systems for individuals based on sensitive personal data, generic social classification systems, etc. would therefore aim to protect the privacy and autonomy of individuals in the working environment and, to a certain extent, prevent discrimination and unfair practices.⁹⁰

However, these select legal restrictions provide little information on whether they cover broader psychosocial factors discussed above, such as job autonomy, a working environment free from intrusive surveillance or excessive data collection and if so to what extent. For example, biometric categorization systems that categorize individuals according to certain prohibited characteristics – including race, political opinions, trade union membership, religion and sexual orientation – are banned in the EU AI Act.⁹¹ Yet, biometric technologies can be used in many work contexts – not only in recruitment through “data-based candidate evaluations, for example through automated interviews or psychometric assessments” but also in monitoring, such as keeping track of “productivity, for example through keyboard logging or movement sensors, or measure performance using affective computing, concentration tracking” and dismissal.⁹²

Brazil's draft law expressly identifies the use of AI systems as high-risk when they are used for recruitment, screening, filtering, evaluation of candidates, decision-making on promotions or

⁸⁷ See e.g. Viet Nam's [Law No. 134/2025/QH15 on AI, 10 December 2025](#), Article 7.

⁸⁸ [Kazakhstan, Draft Legislation on “Artificial Intelligence”](#), January 2025, Article 18.

⁸⁹ See EU, [AI Act](#), Recital 18.

⁹⁰ TechDispatch, [Facial Emotion Recognition](#), 2021 (1), p. 2.

⁹¹ European Commission, *Commission Guidelines on Prohibited Artificial Intelligence Practices Established by Regulation (EU) 2024/1689 (AI Act)*, 2025.

⁹² M. Hoffmann & M. Mariniello, ‘Biometric Technologies at Work: A Proposed Use-Based Taxonomy’ (Bruegel Policy Contribution 2021) Research Report 23/2021.

termination of employment contracts, division of tasks and control and evaluation of the performance and behaviour of people affected by such AI applications in the areas of employment, worker management and access to self-employment.⁹³

The EU AI Act in its Annex III lists high-risk systems expressly referring to workplace impacts:

- ▶▶ *(a) AI systems intended to be used for the recruitment or selection of natural persons, in particular to place targeted job advertisements, to analyse and filter job applications, and to evaluate candidates;*
- ▶▶ *(b) AI systems intended to be used to make decisions affecting terms of work-related relationships, the promotion or termination of work-related contractual relationships, to allocate tasks based on individual behaviour or personal traits or characteristics or to monitor and evaluate the performance and behaviour of persons in such relationships.⁹⁴*

The EU AI Act also contains derogations to the classification of AI as high-risk, thus Article 6 (3) of the Act, provides for derogations from the high-risk classification rule. An AI system (as referred to in Annex III) shall not be considered to be high-risk where it does not pose a significant risk of harm to the health, safety or fundamental rights of natural persons, including by not materially influencing the outcome of decision-making. Furthermore, it must be noted that as part of its Digital Omnibus package, the European Commission announced a delay in implementation of its AI Act, postponing obligations for high-risk AI systems to December 2027 instead of planned August 2026 to make “innovation friendly AI rules”.⁹⁵

The Italian AI Law, which complements the EU legislation on AI, also addresses the use of AI in the workplace explicitly and frames its provision in standard labour law concepts. Its Article 11 states, among others, that the use of AI in the workplace must be safe, reliable, and transparent and must not violate human dignity or the confidentiality of personal data. The employer is required to inform the employee of the use of AI. Furthermore, the article states in the organization and management of the employment relationship, AI ensures compliance with the inviolable rights of workers without discrimination. The Italian legislation further includes several general principles including the principle that AI systems must be developed and applied in compliance with human autonomy and decision-making power, harm prevention, knowability, transparency, explainability, etc., so as to ensure human oversight and intervention.⁹⁶ One area of further enquiry would be the practical application of the notions of human autonomy and decision-making power and their relationship with psychosocial determinants of good working environment (e.g. job control).

In line with a risk-based approach, high-risk AI systems are permitted provided they comply with a series of mandatory rules, including a system of “continuous” and “iterative” risk assessment carried out throughout the life cycle of a high-risk AI system. This requires periodic reviews by the deployer to ensure its effectiveness and minimize failure or malfunction, depending on the intended purpose of the AI. In fact, the Chilean draft legislation echoes Article 9 of EU AI Act which requires establishment of a risk management system, and which is understood as a continuous

⁹³ Brazil Projeto de Lei n° 2338, 2023, Article 17.

⁹⁴ EU AI Act, 13 June 2024, Article 6 and Annex III.

⁹⁵ European Commission, [Simpler EU digital rules and new digital wallets to save billions for businesses and boost innovation](#), Press Release, Brussels, 19 November 2025.

⁹⁶ Italy, [Law No. 132/2025 of 23 September 2025](#), Article 3.

iterative process planned and run through the entire lifecycle of a high-risk system, requiring regular systematic review and updating.⁹⁷

This process includes the following steps: (a) the identification and analysis of the known and the reasonably foreseeable risks that the high-risk AI system can pose to health, safety or fundamental rights when the high-risk AI system is used in accordance with its intended purpose; (b) the estimation and evaluation of the risks that may emerge when the high-risk AI system is used in accordance with its intended purpose, and under conditions of reasonably foreseeable misuse; (c) the evaluation of other risks possibly arising, based on the analysis of data gathered from the post-market monitoring system referred to in Article 72 of the Act; and (d) the adoption of appropriate and targeted risk management measures designed to address the risks identified pursuant to point (a).⁹⁸

Brazil's draft legislation has taken a somewhat different regulatory approach. It does not focus on product safety and, although similarly to the EU uses the risk-based approach, it stands out from all other regulatory initiatives with its emphasis on the respect for rights. The Brazilian draft law emphasizes that the use of AI systems in Brazil must be based on, among others, social rights, especially “the appreciation of human work”⁹⁹ and the development of AI systems shall observe the principle of well-being, including the protection of labour and workers.¹⁰⁰

Brazil's draft legislation also includes a number of rights related to AI use and its impact in the workplace. Thus, in Article 5 of the draft legislation, a person or group affected by an AI system (independent of the level of risk) has: 1) the right to information regarding their interactions with AI systems, in an accessible, free and easy-to-understand manner, including regarding the automated nature of the interaction (with exceptions in very limited cases); 2) right to privacy and protection of personal data; 3) the right to be free of unlawful or abusive discrimination as a result of AI deployment and to the correction of unlawful or abusive discriminatory biases, whether direct or indirect,¹⁰¹ 4) the right to explanation and 5) the right to a human review of decisions.

The latter means that a person or group affected by an AI system has the right to an explanation about the decision, recommendation or prediction made by the system; the right to challenge and request review of AI system decisions, recommendations or predictions; and the right to human review of decisions, taking into account the context, risk and state of the art of technological development.¹⁰² This right to explanation is to be provided through simple, accessible and appropriate language that facilitates the person's understanding of the result of the decision or prediction in question, within a reasonable period of time, depending on the complexity of the AI system and the number of agents involved.¹⁰³

While Chinese regulatory framework¹⁰⁴ is categorized as sectoral (as opposed to crosscutting which is the subject of this cursory review), two pieces of regulation are worth mentioning in the context of rights at work. The first is China's Regulation on the Management of Internet Information Service Algorithm Recommendation (2022), which in its Article 20, stipulates that “where algorithm recommendation service providers provide work scheduling services to workers, they shall

⁹⁷ Chile, Draft Legislation on Regulation of Artificial Intelligence, May 2024. EU, [AI Act](#), Article 9.

⁹⁸ EU, [AI Act](#), Article 9.

⁹⁹ Brazil, [Projeto de Lei n° 2338, 2023](#), Article 2.

¹⁰⁰ Brazil, [Projeto de Lei n° 2338, 2023](#), Article 3.

¹⁰¹ Brazil, [Projeto de Lei n° 2338, de 2023](#), Article 5.

¹⁰² Brazil, [Projeto de Lei n° 2338, de 2023](#), Article 6.

¹⁰³ Brazil, [Projeto de Lei n° 2338, de 2023](#), Article 7.

¹⁰⁴ China, [New Generation Artificial Intelligence Development Plan](#) (2017), China, [Recommendation Algorithm Regulations](#) (2022), China, [Interim Measures for the Management of Generative Artificial Intelligence Services](#) (2023).

protect the workers' legal rights and interests such as obtaining labour remuneration, rest and vacation, and establish and improve relevant algorithms for platform order allocation, remuneration structure and payment, working hours, rewards and punishments, etc"¹⁰⁵. In another regulation titled, *Interim Measures for the Management of Generative Artificial Intelligence Services* (2023), "where users discover that generative AI services do not comply with laws, administrative regulations, or these Measures, they have the right to make a complaint or report to the relevant departments in charge"¹⁰⁶.

Chile and Kazakhstan, in part, follow the Brazilian approach in their respective draft legislation on AI. Both countries have included principles governing the AI systems. These include privacy and data governance, transparency and explainability, diversity and non-discrimination, social and environmental well-being.¹⁰⁷ In terms of risk assessment, Chilean draft legislation identifies high-risk AI as those systems that present a significant risk of causing harm to health, safety, fundamental rights, or the environment, as well as to consumer rights. In the European context, the labour rights dimension is found in Article 26, paragraph 7 of the EU AI Act, mainly focusing on transparency with regard to the use of AI in the workplace.

Before putting into service or using a high-risk AI system at the workplace, deployers who are employers shall inform workers' representatives and the affected workers that they will be subject to the use of the high-risk AI system. This information shall be provided, where applicable, in accordance with the rules and procedures laid down in [European] Union and national law and practice on information of workers and their representatives.

In sum, based on this cursory comparative review, one can conclude that current frameworks regulating AI, with some exceptions namely Brazilian draft legislation, are not designed with the traditional labour relationship in mind. These AI regulations do not address employers, employees directly, nor do they expressly tailor application of AI systems in the workplace. Rather employers are identified, as seen above, as deployers and providers within a supply chain, with little agency or participatory rights granted to employees in this process. Whenever AI regulations address workers' health and safety and include risks assessments, they do not fully address the various PSRs, such as excessive monitoring, loss of job autonomy, constant and excessive data collection, and so on, associated with AI systems use in the workplace. This gap may partially be filled in by labour legislation as will be seen in the next section.

OSH-related national regulatory responses to AI-based risks

In addition to AI legislation, national legislation has also addressed some of the impacts and risks of AI on health and safety in labour and OSH-based laws. These regulatory developments have particularly focused on regulation of workplace monitoring, specifically those technologies that are enabled by technology – an area heretofore unregulated by international standards. Compared to the general OSH frameworks, the following examples of regulations are not technology-neutral and in fact seem to have been developed to deal with the technologization of employment relationships and attempt to provide safeguards for physical and mental health at work.

¹⁰⁵ China, *Provisions on the Management of Algorithmic Recommendations for Internet Information Services*, Article 20, unofficial translation.

¹⁰⁶ China, *Interim Measures for the Management of Generative Artificial Intelligence Services*, Article 18.

¹⁰⁷ Chile, Draft *Legislation on Regulation of Artificial Intelligence* and Articles 4 to 11 of Kazakhstan, *Draft Legislation on "Artificial Intelligence"*, January 2025.

For example, *Switzerland* enacted legislation – Article 26 of Ordinance 3 to the Employment Act (EmpO 3)¹⁰⁸ – that prohibits the use of monitoring or control systems to monitor the *behaviour* (*le comportement* in French) of employees in the workplace. The regulation also states that where monitoring or control systems is necessary for other reasons, it must be designed and installed in such a way as not to affect employees' health and ability to move around normally without being under constant surveillance.

The key term in this regulation is *behaviour*, and what is meant by this term. This is because, as the Swiss Federal Data Protection and Information Commissioner clarifies, it is difficult to distinguish behaviour from performance – the two being often interlinked.¹⁰⁹ It is widely accepted that the latter, performance, needs to be evaluated and monitored. The Commissioner notes that “it is often difficult to differentiate between authorized surveillance for reasons of security, performance or efficiency and unauthorized monitoring of general behaviour”. Thus, while monitoring systems for the verification of the performance or output can be permitted, “[s]urveillance to monitor the behaviour of workers through detailed analyses of their activities on a continuous, periodic or sampling basis is prohibited”. Certain systems “may, depending on their use, violate the ban on monitoring employee behaviour” and could include “the use of artificial intelligence tools for automated evaluation of employee-based data (vision, movement, speech or communication patterns, psychological results) or systems that monitor the computer or mobile phone activities of employees in the company or while teleworking (spyware, activity trackers, application and website logs, content scanners of emails, mouse and keyboard logs)”.¹¹⁰ In reality, if a monitoring system meets the legal requirements, it will be examined on a case-by-case basis by the courts.

In Australia (NSW), the [Workplace Surveillance Act 2005](#) regulates surveillance of employees at work. The distinction is made here between covert and non-covert surveillance, the former being prohibited unless authorized by a covert surveillance authority. The regulatory framework then details the conditions of surveillance. For example, it stipulates that surveillance of an employee must not commence without prior notice (of at least 14 days) in writing to the employee.¹¹¹ Such a notice must indicate, the kind of surveillance that will be carried out (camera, computer or tracking), how the surveillance will be carried out, when the surveillance will start, whether the surveillance will be continuous or intermittent, and whether the surveillance will be for a specified limited period or ongoing.¹¹² The legislation also imposes restrictions on use and disclosure of surveillance records.¹¹³

France is example of another country that introduced restrictions on extensive and intrusive surveillance. In France, after 2008, the introduction of monitoring (data collection tools) cannot take place without prior notice to employees.¹¹⁴ Thus, workers must be informed of the existence of the monitoring systems. This provision must be read together with the Article L1121-1 of the French Labour Code, which requires that surveillance must be justified by the nature of the task and proportionate to the desired goal.

In Germany, in 2021, amendments related to AI were included in the German Works Constitution Act (Section 80(3), Section 90(1) No.3 and Section 95(2a) Works Constitution Act). Section 80 (3)

¹⁰⁸ Switzerland, Ordonnance 3 relating to Labour Law (OLT 3), [Section 5 Surveillance des travailleurs, Article 26](#).

¹⁰⁹ Swiss Federal Data Protection and Information Commissioner, [Note on Monitoring Systems in the Workplace](#).

¹¹⁰ Swiss Federal Data Protection and Information Commissioner, [Note on Monitoring Systems in the Workplace](#).

¹¹¹ Australia (NSW), Workplace Surveillance Act 2005 No 47, Section 10.

¹¹² Australia (NSW), Workplace Surveillance Act 2005 No 47, Section 10.

¹¹³ Australia (NSW), Workplace Surveillance Act 2005 No 47, Section 18.

¹¹⁴ France, Labour Code, Article L1222-4.

and Section 90(1) governs the duty to inform work councils on “working procedures and operations including the use of artificial intelligence and provides a legal foundation for work councils to call on the advice of an expert related to the introduction or use of AI”.¹¹⁵

The emergence of hybrid forms of work (i.e. teleworking, smart working¹¹⁶, etc.) has instigated legislative adaptations in several other countries prompting regulatory interventions on monitoring and surveillance. In Greece, Law 4808/2021 was passed in 2021, that introduced major reforms in labour law incorporating provisions to ensure compliance with the ILO Violence and Harassment Convention, 2019 (No. 190), and rules on teleworking with important provisions governing personal data of employees among others. According to this legislation, the employer shall monitor the employee's performance in a manner that respects his or her privacy and is in accordance with the protection of personal data and the use of a webcam to monitor the employee's performance is prohibited.¹¹⁷

In Portugal, Law No. 83/2021 was adopted in December 2021, modifying the teleworking regime. In Article 169 on the organization, management and control of work, it is stipulated that the powers of direction and control of the provision of work in teleworking are exercised ...according to procedures previously known to him/her and compatible with respect for his/her privacy and “[t]he employer's control over the provision of work must respect the principles of proportionality and transparency, and it is prohibited to impose a permanent connection, during the working day, by means of images or sound”.¹¹⁸ Furthermore, Article 170 provides that the teleworking regime implies, for the employer, the following special duties including informing the employee, when necessary, about the characteristics and method of use of all devices, programs and systems adopted to remotely monitor his/her activity and consult the worker, in writing, before introducing changes to the equipment and systems used in the provision of work, the functions assigned or any characteristic of the contracted activity.

In Spain, an amendment to the consolidated text of the Workers' Charter was passed in 2021, also known as *Rider Law*, to impose obligations of algorithmic transparency on employers.¹¹⁹ Thus, according to the amended text, the works council, will have the right to be informed by the employer/business of “the parameters, rules and instructions”(i.e. “as referring to the logic and operating characteristics of the algorithm, and its consequences”) on which the algorithms or AI systems are based and that affect decision-making that may impact working conditions, access to and maintenance of employment, including profiling.¹²⁰

Cyprus Regulation of the Framework for the Organization of Teleworking, adopted in 2023, in its section 8(2) provides that before implementing systems, technologies, applications, measures or tools for the supervision, time control or evaluation of the employee's performance, efficiency and effectiveness, the employer shall carry out the data protection impact assessment and shall proceed to the procedure of prior consultation with the Data Protection Commissioner. The

¹¹⁵ Germany, [Works Constitution Act \(Betriebsverfassungsgesetz – BetrVG\)](#).

¹¹⁶ Smart working associated with teleworking, means using Information and Communication Technologies to allow employees to perform tasks away from the employer's premises.

¹¹⁷ Greece, [Law No. 4808](#) of 19 June 2021, Article 67 (8).

¹¹⁸ Portugal, [Law No. 83/2021](#) of 6 December 2021, Article 169, Paragraphs 4 & 5.

¹¹⁹ Spain, Royal Decree Law 12/2021, 28 September 2021, modifying the consolidated text of the Workers' Statute Law, approved by Royal Legislative Decree 2/2015, of October 23, to guarantee the labour rights of people dedicated to delivery in the field of digital platforms. Ministry of Labour and Social Economy's Guide clarifies that the provision on the algorithmic transparency obligations applies to all employers where automated decisions without human intervention affecting the workers is used. See MoLSE (Spain), *Algorithmic Information in the Workplace: Guide to Corporate Obligations on the Use of Algorithmic Information in the Workplace and Instrument for Practical Application*, May 2022.

¹²⁰ Spain, Royal Legislative Decree 2/2015 of 23 October 2015, Article 64.

regulation also bans the use of a camera or other similar intrusive application for the control of the employee's performance.¹²¹

In 2024, the Bulgarian Labour Code amendments included rules for the organization of teleworking. A few aspects are worth mentioning. First, the code requires that the employer must provide information on legal requirements and rules, including the duties of the enterprise for data protection, applicable to remote work.¹²² Second, if a monitoring system needs to be installed at the workplace, a prior written consent of the worker or employee has to be obtained. In these cases, their right to personal space shall be respected.¹²³ Third, when the assignment and reporting of remote work is done through an information system, the employer shall provide the employee with written information on the type and volume of work-related data that are collected, processed and stored in the system.¹²⁴

Fourth, the new amendments in the Bulgarian Labour Code regulate the application of AI in the organization of telework. These are the following:

- *When an information system for algorithmic management of remote work is used, the employer shall provide the worker or employee with written information about the manner of decision-making.*
- *At the written request of the worker or employee, the employer or an official designated by it is obliged to check the decision of the algorithmic management system and notify the worker or employee of the final decision.*¹²⁵

The notion of “information system for algorithmic management” is understood by the Bulgarian legislation as “a system for automated decision-making when assigning, reporting and controlling the work of employees”.¹²⁶

These telework-prompted regulations imposing limits on intrusive forms of surveillance, that would cover AI-based systems, while at the forefront of regulation of digitalization of workplaces, fundamentally differ from the examples in France, Switzerland and Australia in that they are circumscribed to remote work. The former examples have broader application and provide protection, however limited, to workplaces regardless how work is organized. Notwithstanding, several principles emerge from a review of these pieces of legislation:

- monitoring or control systems when deployed must be justified by the nature of the task and proportionate to the desired goal;
- monitoring or control systems must be designed and installed in such a way as not to affect employees' health;
- when monitoring or control systems are deployed, they must be subjected to a few conditions such as prior notice and consent;
- the scope of surveillance must be made known to employees (duration, extent, etc.);

¹²¹ Cyprus, [Regulation of the Framework for the Organization of Teleworking Law of 2023 \(Law 120\(I\)/2023\)](#), Section 8(2), unofficial translation.

¹²² Bulgaria, [Labour Code](#), Art. 107i (3)(7), unofficial translation and also the English version of the amended [Code](#).

¹²³ Bulgaria, [Labour Code](#), Art. 107i (3)(8).

¹²⁴ Bulgaria, [Labour Code](#), Art. 107h (10).

¹²⁵ Bulgaria, [Labour Code](#), Art. 107h (11 & 12).

¹²⁶ Bulgaria, [Labour Code](#), Art. 107h (11 & 12).

- monitoring/surveillance tools must respect privacy and be used in accordance with the protection of personal data;
- written information on the type and volume of work-related data that are collected, processed and stored in the system shall be communicated to the employees.

Such principles and measures will ensure that AI-based systems deployed in the context of workplace surveillance, are subject to procedural requirements aimed at limiting the PSRs associated with the intrusive monitoring and surveillance.

The emergence of “new” OSH rights

Regulation of AI-based systems in the workplace has prompted the emergence of discourse around “rights” at work such as the right to information regarding AI systems, in an accessible, free and easy-to-understand manner, including regarding the automated nature of the interaction; the right to privacy and protection of personal data; the right not to be discriminated against by automated decisions and the right to the correction of unlawful or abusive discriminatory biases, whether direct or indirect;¹²⁷ the right to explanation (when a decision is taken by an AI-based system); and lastly the right to a human review of decisions.

These rights are akin to the rights inherent in the OSH management systems, namely the right to know about health and safety matters (including the right to be informed by the employer on the hazards and risks, to be provided with information, instruction, training and education), the right to participate in decisions that may have an impact on health and safety and the right to refuse work that could affect workers’ health and safety and that of others.

These rights (access to adequate information, instruction and training as well as removal from work situation presenting an imminent and serious danger to life or health) are reflected in the international labour standards, among others in ILO Convention on Occupational Safety and Health, 1981 (No. 155). Article 10 of the ILO on Safety and Health in Construction Convention, 1988 (No. 167), prescribes detailed standards on the right to participation. It provides that national laws or regulations “shall provide that workers shall have the right and the duty at any workplace to participate in ensuring safe working conditions to the extent of their control over the equipment and methods of work and to express views on the working procedures adopted as they may affect safety and health”. The draft standard on decent work in the platform economy also includes a number of “algorithmic transparency” provisions as well as standards on ensuring health and safety in digital labour platforms.¹²⁸

These standards can serve as a basis for developing safety and health standards as related to the PSRs. Notwithstanding these new declinations of the traditional OSH rights adapted to the specificities of the algorithmic realities of workplaces, they have not made yet significant strides into national legislation.

Among binding regulations on AI, the EU AI Act so far has incorporated the right to explanation of individual decision-making in its Article 86. Additionally, in the European context, the General Data Protection Regulation is relevant and provides in Article 22, that “[t]he data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects

¹²⁷ Brazil, *Projeto de Lei n° 2338, de 2023*, Article 5.

¹²⁸ Realizing decent work in the platform economy Draft Convention and Recommendation, ILC.114/Report V(4).

him or her".¹²⁹ Yet, there is no consensus on the contours of the right to explanation nor how it should be applied.

In parallel, there is another OSH right, termed the "right to disconnect" or R2D.¹³⁰ There has been a noticeable interest in introducing this right into labour regulations in recent years. Importantly, certain policy documents point to the right to disconnect as one of the methods in the legal toolkit of regulating health and safety impacts of AI systems.¹³¹ Different countries have adopted different legal strategies for its integration and implementation as well as monitoring its enforcement. Some jurisdictions have amended their existing legal frameworks governing working time and mandatory rest periods, while others have developed this right in their soft law tools taking the general right to safety and health at work as a basis.¹³² The right to disconnect is devised in legislative instruments to partly protect workers from intrusion into their private lives. It seeks to establish a balance between private life and work. The question remains how the 'right to disconnect', allowing workers to opt-out from work communications and monitoring outside of working hours, will in itself be a direct legal tool to protect from or mitigate against the harmful AI systems.¹³³ One approach sees it as allowing disconnection from constant AI-based workplace surveillance, an issue of concern from the perspective of psychosocial health at work; this approach would lead to a better protection of both the health of employees and their privacy.

Although this right may indeed help to mitigate the invasion of privacy, limit intrusive monitoring or excessive collection of data, its effect on health and safety in the workplace, pending more research and evidence, seems only complementary to other legal strategies such as the right to information regarding the deployment of AI systems; the right to participate and be consulted in the deployment of the AI; the right to privacy and protection of personal data; the right not to be discriminated on the basis of an automated decisions, the right to explanation and lastly the right to a human review of decisions. It is yet to be seen how the future regulation of AI in the working environment will integrate these parameters, and more critically, how it will address the new division of labour between the machine and the human.

¹²⁹ As Article 4 of EU GDPR states, "personal data" means any information relating to an identified or identifiable natural person ('data subject').

¹³⁰ See ELI, [Guiding Principles on Implementing Workers' Right to Disconnect](#), 2023.

¹³¹ Australia, [The Future of Work](#), 2025

¹³² For example: Australia, [Fair Work Act 2006](#), Division 6; Bulgaria, [Labour Code](#), Article 154b; Belgium, [Various Labour Provisions Act](#), Article 16; France, [Labour Code](#), Article L2242-17; Greece, [Law No 4808](#), Article 67(10).

¹³³ European Parliament, [Addressing AI risks in the Workplace Workers and Algorithms](#), 2024.

▶ Conclusion

It is important to understand the impact of digital technologies on workplace health and safety to tailor policies for safe use of AI in workplaces. This working paper examined the existing (but also emerging) evidence on the impact of technological changes on the psychosocial factors/landscape in the workplace. It finds that the main technological changes associated with the use of AI in the workplace (e.g. advanced robotics, smart digital systems and AI-based AM) are associated with increased risks for health. More specifically, the paper laid out the oft-quoted psychosocial factors associated with the use and the deployment of AI systems in the workplace and identified a range of emerging psychosocial factors. These include intrusive surveillance, loss of job autonomy and workplace dignity, excessive data collection and lack of workplace transparency.

Turning to legal protection, the paper provides suggestions for future policy developments, including new OSH rights. The paper argues that an integrated approach is needed to effectively address PSRs arising from AI. In other words, legal and policy action should be taken in several areas, including laws and policies on labour and employment, equality and non-discrimination, OSH, and privacy and data protection. There have been some advances towards this goal, as highlighted in the study. For example, some supra-national and national labour regulations governing the organization of work impose limits on intrusive forms of surveillance, whereas other jurisdictions have begun to specifically design policies on workplace surveillance regardless of how work is organized (be it remote or on employers' premises). These developments show that intrusive surveillance and data collection systems involving AI must be designed and installed in such a way as not to affect employees' health. When surveillance systems are deployed, they must be subjected to a number of conditions, such as prior notice and consent of workers and the scope of surveillance must be made known to employees (duration, extent, etc.) with limits imposed to respect privacy and be used in accordance with the protection of personal data.

While excessive risks emerging from excessive data collection may require, in the interim, regulatory improvements for workers' privacy, what is lacking is the regulation of even more complex psychosocial factors, namely loss of job autonomy, dignity at work, and workplace transparency. These issues raise fundamental questions about what the future human-centred world of work should look like.

References

Aloisi, Antonio, and Valerio De Stefano. 2022. *Your Boss Is an Algorithm: Artificial Intelligence, Platform Work and Labour*. Bloomsbury Publishing.

Chirico, Francesco. 2017. "The Forgotten Realm of the New and Emerging Psychosocial Risk Factors." *Journal of Occupational Health* 59 (5): 433–435.

Cox, Tom, and G. R. Oosterwijk. 2024. *Algorithmic Management in the Workplace: Case Studies on the Impact of Algorithmic Technologies in Seven Sectors in the Nordics*. Policy Study, October.

De Tecco, C., B. Persechino, and S. Iavicoli. 2023. "Psychosocial Risks in the Changing World of Work: Moving from the Risk Assessment Culture to the Management of Opportunities." *Med Lav* 114 (2).

El-Helaly, M. 2024. "Artificial Intelligence and Occupational Health and Safety, Benefits and Drawbacks." *Med Lav* 115 (2).

ELI. 2023. *Guiding Principles on Implementing Workers' Right to Disconnect*. European Law Institute.

EU-OSHA. 2019. *Digitalisation and Occupational Safety and Health*.

_____. 2023–2025. *Healthy Workplaces Campaign: Safe and Healthy Work in the Digital Age*.

_____. 2024. *Digital Technologies at Work and Psychosocial Risks: Evidence and Implications for Occupational Safety and Health*.

European Parliament Research Service (EPRS). 2022. De Stefano, Valerio, and Mathias Wouters. *AI and Digital Tools in Workplace Management and Evaluation: An Assessment of the EU's Legal Framework*.

European Parliament. 2022. *Resolution on Mental Health in the Digital World of Work (2021/2098(INI))*.

Fréour, Léa, and Battistelli, Adalgisa. 2021. "How Digital Technologies Modify the Work Characteristics: A Preliminary Study." *The Spanish Journal of Psychology* 24.

Hackman, J. Richard, and Oldham, Greg R. 1976. "Motivation Through the Design of Work: Test of a Theory." *Organizational Behavior and Human Performance* 16(2): 250–279.

Hendrickx, F. *Protection of Workers' Personal Data: General Principles*, ILO WP, 2022.

Howard, J., and Schulte, P. 2024. "Managing Workplace AI Risks and the Future of Work." *American Journal of Industrial Medicine*, 1–14.

International Labour Organization (ILO). 1981. *Occupational Safety and Health Recommendation (No. 164)*. Geneva: ILO.

_____. 1984. *Psychosocial Factors at Work: Recognition and Control*. Report of the Joint ILO/WHO Committee on Occupational Health, 9th Session, Geneva, 18–24 September 1984. Occupational Safety and Health Series No. 56.

_____. 2025. *Challenges and Opportunities of Digitalization*. GB.350/HL/1(Rev.1).

_____. 2025. *Revolutionizing Health and Safety: The Role of AI and Digitalization at Work*, p. 6.

Jarota, Maciej. 2023. "Artificial Intelligence in the Work Process: A Reflection on the Proposed European Union Regulations on Artificial Intelligence from an Occupational Health and Safety Perspective." *Computer Law & Security Review* 49.

Jung, Kyungran, and Jae-Suk Yang. 2025. "Mitigating Safety Challenges in Human-Robot Collaboration: The Role of Human Competence." *Technological Forecasting and Social Change* 213.

Le Moli, Ginevra. 2022. "AI vs Human Dignity: When Human Underperformance Is Legally Required." August.

Leka, Stavroula, Jain, Aditya, Iavicoli, Sergio, and Di Tecco, Cristina. 2015. "An Evaluation of the Policy Context on Psychosocial Risks and Mental Health in the Workplace in the European Union: Achievements, Challenges, and the Future." *BioMed Research International*.

Lià, M., Catalina-Romero, C., Calvo-Bonacho, E., and Benavides, F. G. 2016. "Exposure to Psychosocial Risk Factors at Work and the Incidence of Occupational Injuries: A Cohort Study in Spain." *Journal of Occupational and Environmental Medicine* 58 (3): 282–286.

MIT Sloan Management Review. 2023. "Algorithmic Management: The Role of AI in Managing Workforces." April.

Niehaus, S., Hartwig, M., Rosen, P. H., and Wischniewski, S. 2022. "AI in Business." *Frontiers in Artificial Intelligence* 5 (July): Sections 3, 6, 7, 11.

OECD. 2025. *Artificial Intelligence Papers: Algorithmic Management in the Workplace—New Evidence from an OECD Employer Survey*. February.

Parliament of Australia, House Standing Committee on Employment, Education and Training. 2025. *The Future of Work*. January.

Rani, Uma, Andrea Pesole, and Iñigo Gonzalez Vazquez. 2024. *Algorithmic Management Practices in Regular Workplaces: Case Studies in Logistics and Healthcare*. February 19.

Theorell, T. 2013. "Job Demand/Control/Strain." In *Encyclopedia of Behavioral Medicine*, edited by M.D. Gellman and J.R. Turner. Springer, New York.

Varma, Arup, Vijay Pereira, and Parth Patel. 2024. "Artificial Intelligence and Performance Management." *Organizational Dynamics* 53 (1).

Varma, V. Pereira & P. Patel, *Artificial intelligence and performance management*, *Organizational Dynamics*, Volume 53, Issue 1, 2024.

WHO. 2022. *Guidelines on Mental Health at Work*.

► Advancing social justice, promoting decent work

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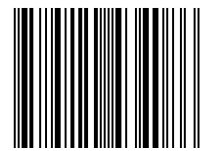
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