



İstanbul İktisat Dergisi Istanbul Journal of Economics

Submitted: 31.03.2026
Revision Requested: 22.05.2026
Last Revision Received: 26.05.2026
Accepted: 15.06.2026

Research Article

Open Access

Artificial Intelligence and Collective Labour Agreements: A Comparative Study within the EU-Türkiye Context



Abdullah Erol¹

¹ Istanbul University, Faculty of Economics, İstanbul, Türkiye

Abstract

Digitalisation and the Fourth Industrial Revolution have produced a new management paradigm in the workplace known as “algorithmic management”. This process, in which the functions of traditional human managers are taken over by algorithms, creates a lack of transparency and intense pressure from digital surveillance on workers. This study examines the transformative impact of AI on the collective bargaining framework from a comparative perspective, focusing on the European Union (EU) and Türkiye.

The study’s central argument is that AI shifts the scope of collective bargaining away from traditional working conditions and towards the axis of “negotiating the algorithm”. EU legislation, through the AI Act, the General Data Protection Regulation (GDPR), and the Platform Work Directive, establishes this transformation on a prescriptive and procedural public framework. In Türkiye, despite the absence of a standalone technology law, provisions in the Constitution (Art. 51, 53), Law No. 6356, and the Personal Data Protection Law (Art. 11/1-g) offer social partners a robust “micro-regulation” framework capable of limiting algorithmic authority. The study concludes that, due to the technology-neutral nature of the existing legal framework in Turkish law, algorithmic governance can be opened up to collective oversight through specific provisions added to collective agreements, thereby safeguarding industrial democracy in the digital age.

Keywords

Artificial Intelligence · Algorithmic Management · Collective Labour Agreement

Jel Codes

J52, K31, O33



Citation: Erol, A. (2026). Artificial intelligence and collective labour agreements: A comparative study within the EU-Türkiye context. *İstanbul İktisat Dergisi-Istanbul Journal of Economics*, 76(1), 288-304. <https://doi.org/10.26650/ISTJECON2026-1920000>

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2026. Erol, A.

Corresponding author: Abdullah Erol abdullah.erol@istanbul.edu.tr



Artificial Intelligence and Collective Labour Agreements: A Comparative Study within the EU-Türkiye Context

Digitalisation and the technological components offered by the Fourth Industrial Revolution are bringing about a fundamental transformation in working life (Haipeter, 2020, p. 242; Molina, et al., 2023, p. 89; Aleks, Maffies, & Saksida, 2020, p. 85). The convergence of technologies such as the Internet of Things, big data, and cloud computing has given rise to a new management paradigm in the workplace known as ‘algorithmic management’ (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 102; Voss & Bertossa, 2022, p. 2; Murat, 2023, p. 162; Jarrahi, et al., 2021, p. 1). Functions traditionally performed by human managers, such as recruitment, task allocation, performance appraisal, and dismissal, are increasingly being taken over by complex software and self-learning algorithms (Kinowska & Sienkiewicz, 2023, p. 25; Collins & Atkinson, 2023, p. 38). While this “boss ex machina” model promises efficiency and cost savings for businesses, from the workers’ perspective, it brings inequality, a lack of transparency, and intense pressure from digital surveillance (Directive 2024/2831, 2024, Recital). 4; (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 105; Ajunwa, An auditing imperative for automated hiring systems, 2021, p. 632; De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 22).

The European Union is demonstrating global leadership in embedding this technological transformation within a universal and inclusive legal framework (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 103; Hassel & Özkızıltan, 2023, p. 72). GDPR provides protection for individuals against fully automated decisions, particularly through Article 22, while Article 88 grants Member States the authority to introduce more specific rules in the context of employment via collective agreements (De Stefano, Algorithmic bosses and what to do about them: Automation, artificial intelligence and labour protection, 2020, p. 77). Further strengthening this framework, the EU Artificial Intelligence Act (AI Act) classifies AI systems used in employment as ‘high-risk’, imposing strict transparency and human oversight obligations (AI Act, 2024, Recital 72; Hassel & Özkızıltan, 2023, p. 80)). Finally, the Platform Work Directive (PWD) contains specific provisions aimed at improving the working conditions of workers under algorithmic management and increasing collective oversight of these systems (Directive 2024/2831, 2024, Art. 25).

The collective bargaining framework must, in this new era, encompass not only wages and working hours but also the “negotiation of the algorithm” (De Stefano, Algorithmic bosses and what to do about them: Automation, artificial intelligence and labour protection, 2020, p. 82). Ensuring that worker representatives are informed about the design of the systems, the categories of data used, and the evaluation criteria is vital for limiting algorithmic authority (Directive 2024/2831, 2024, Art. 9; Voss & Bertossa, 2022, p. 81). A similar transformation in Türkiye is inevitable, and in this process, the existing constitutional (Constitution of the Republic of Turkey [Turk. Const.], Art. 51, 53) and the legal framework provides important tools that enable regulation at the microlevel through collective bargaining (Oral, 2024, p. 171; TÜRK-İŞ, 2025).

This study examines the transformative impact of AI on the collective bargaining framework from a comparative perspective. The central argument of the study is as follows: AI is shifting the collective bargaining framework away from the axis of wages and traditional working conditions towards the axis of transparency,

oversight, and limitation of algorithmic governance. In the EU, this transformation is grounded in a robust public regulatory framework, including the AI Act, the GDPR, and the Platform Work Directive. In Türkiye, the same transformation is underpinned by Articles 51 and 53, Article 33 of Law No. 6356, Article 1 of Law No. 4857, and Article 11/1-g of the Personal Data Protection Law, creating a ‘micro-regulation’ framework that can be operationalised through collective agreements.

Conceptual framework

Industry 4.0 and the digitalisation process are transforming the organisation of work beyond a mere technical change, fundamentally altering the management paradigm and the balance of power between employees and employers (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 95; Oral, 2024, p. 170). Artificial intelligence systems, which lie at the heart of this transformation, are transferring the concepts of ‘dependence’ and ‘management authority’, the cornerstones of labour law, into a digital dimension (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 60; De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 23). This new order, established through algorithms, transfers the employer’s authority to supervise and issue instructions from human managers to software systems while transforming the nature of the employment relationship into a less transparent, data-driven structure (Directive 2024/2831, 2024, Art. 8). Consequently, to understand how collective labour law can establish a line of defence and a space for negotiation in the face of AI, it is essential first to clarify the operational mechanisms of algorithmic management, the legal risks posed by automated decision-making, and the nature of collective oversight over these processes (De Stefano, Algorithmic bosses and what to do about them: Automation, artificial intelligence and labour protection, 2020, p. 82).

Algorithmic management refers to the automation of management functions, such as recruitment, task allocation, performance appraisal, and discipline, traditionally carried out by human managers through software algorithms and data-driven processes (Wood, 2021, p. 1; Aleks, Maffies, & Saksida, 2020, p. 88; Lee, Kusbit, Metsky, & Dabbish, 2015, p. 1603; Jarrahi, et al., 2021, p. 1). This concept was first defined by Lee et al. (2015, p. 1601) as a structure in which algorithms take over management tasks and organisational mechanisms support these systems (Kinowska & Sienkiewicz, 2023, p. 24). Algorithmic management operates through the ‘6 R’ mechanism, summarised as restricting and making recommendations (guidance), keeping performance records and scoring (evaluation), and rewarding or replacing the worker (discipline) (Kellogg, Valentine, & Christin, 2020, p. 367). Although it first emerged on digital labour platforms such as Uber and Lyft, it is now rapidly spreading to traditional work environments, including logistics, retail, manufacturing, and office-based jobs (Wood, 2021, p. 3; Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 5; Voss & Bertossa, 2022, p. 22; OECD, 2025, p. 16; Collins & Atkinson, 2023, p. 39).

Automated decision-making involves the adoption or support of decisions that affect critical aspects of workers’ lives, such as working conditions, recruitment, earnings, contractual status, and the suspension or closure of accounts, via electronic tools (Wray, 2026, p. 9). These systems take over functions typically performed by managers, such as task allocation, scheduling, issuing instructions, and performance evaluation, using algorithmic power (Molina, et al., 2023, p. 90; De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 25). The most critical feature of automated decision-making systems is that decisions are typically generated through ‘black box’ processes that are technically complex and lack transparency (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 105; Aleks, Maffies, & Saksida, 2020, p. 101;

Jarrahi, et al., 2021, pp. 8-9). This situation leads to the “bias in, bias out” problem, where past biases in training data seep into algorithms, and consequently poses a risk of systematic discrimination (Kellogg, Valentine, & Christin, 2020, p. 373; Ajunwa, An auditing imperative for automated hiring systems, 2021, p. 623). Article 22 of the European Union’s GDPR protects individuals by granting them the right not to be subject to “fully automated” decisions that produce legal effects concerning them.

Collective oversight involves the monitoring, limitation, and governance of algorithmic management and automated decision-making systems through worker representatives (trade unions and works councils) (De Stefano, Algorithmic bosses and what to do about them: Automation, artificial intelligence and labour protection, 2020, p. 79; Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 47). This concept is based on the principle of “negotiating the algorithm” (De Stefano, Automation - artificial intelligence and labor protection, 2019, p. 7). The primary aim of collective oversight is to ensure that technology is removed from being a unilateral management tool and is instead managed through social dialogue based on transparent criteria that protect workers’ rights, privacy, and health (De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 33). In this process, the ‘human-in-command’ principle is vital: the aim is for every automated decision to be verified and supervised by a human (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 46). Article 88 of the GDPR provides a legal basis for collective oversight by granting Member States the authority to introduce more specific data protection rules in the employment context through collective agreements. The PWD also strengthens this oversight by granting workers’ representatives the right to access information and consult on the design and operation of algorithmic systems (Directive 2024/2831, 2024, Recital. 8).

When examined at a conceptual level, algorithmic management and automated decision-making processes expand the boundaries of employer authority to an unprecedented degree, while condemning workers’ rights and industrial democracy to the uncertainty of ‘black box’ processes (Molina, et al., 2023, p. 90; Adams-Prassl, Binns, & Kelly-Lyth, 2023, p. 25). The principles of “collective oversight” and “negotiating the algorithm”, which are intended to address this asymmetry, are vital tools for safeguarding human dignity and transparency in the digital workplace (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 104). However, for these principles to evolve from abstract aspirations into functional oversight mechanisms, a robust legal foundation and regulatory framework are essential (AI Act, 2024, Art. 1). At this point, the European Union has developed a multi-layered regulatory approach that brings technological authority within legal boundaries, spanning a broad spectrum from data protection to AI security (Directive 2024/2831, 2024, Art. 28). This approach is built on a comprehensive “normative architecture” that encompasses not only individual rights but also the transformative power of collective bargaining.

Normative architecture in EU law

The AI Act and high-risk employment relationships

The AI Act is based on a ‘risk-based’ approach that categorises the use of technology according to potential risk levels (AI Act, 2024, Recital. 26, 52). Within this framework, AI applications in the areas of employment, workforce management, and access to self-employment have been directly classified as “high-risk” (AI Act, 2024, Recital. 57; (Molina, et al., 2023, p. 92)). The primary rationale for this classification is that such systems have the potential to exert a “significant impact” on individuals’ future career prospects and livelihoods (De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 31).

The high-risk areas prioritised under the legislation include recruitment and selection processes, such as the placement of targeted job advertisements and the screening and filtering of candidate applications, as well as decisions on promotion and dismissal, the allocation of tasks based on individual behaviour or personal characteristics, and the monitoring and evaluation of employees' performance and behaviour (Tullini, 2023, p. 194). These processes are deemed high-risk due to concerns that algorithms may reinforce historical patterns of discrimination due to biases in training data and may infringe upon employees' privacy rights (Jarrahi, et al., 2021, p. 3; Krzywdzinski, Gerst, & Butollo, 2023, p. 58).

From a collective perspective, the AI Act imposes an obligation on employers (implementers) that constitutes a critical turning point. Pursuant to AI Act Article 26(7), employers must inform employee representatives and affected employees before deploying or using a high-risk AI system in the workplace. This duty to inform is defined as an 'ancillary' and necessary element of the objective of protecting fundamental rights (AI Act, 2024, Recital. 92).

This normative framework demonstrates that the European Union views algorithmic management in the workplace not merely as a technical compliance issue but as a fundamental rights and representation issue that directly affects labour relations (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 168). By preventing decisions from being confined to 'black box' processes, the EU aims to ground the use of AI in a democratic framework of oversight and balance power asymmetries through representative mechanisms (Collins & Atkinson, 2023, p. 39).

The GDPR and data-driven labour management

GDPR has transformed the role of data in employment relationships from a mere privacy issue into a legal governance domain that directly affects the worker's status and rights (Aloisi & Gramano, Artificial intelligence is watching you at work: Digital surveillance, employee monitoring, and regulatory issues in the EU context, 2019, p. 100). Within this new framework, data are not merely passive information stored away but both the source and target of 'automated decisions' that shape labour management (Busacca & A. Monaca, 2020, p. 54).

Article 22, at the heart of the Regulation, grants individuals the right not to be subjected to fully automated decisions that produce "legal effects" or "significantly affect them in a similar manner". In "data-driven labour management", where processes such as recruitment, task allocation, performance assessment, or dismissal are performed by algorithms, this provision acts as a fundamental safeguard against "black box" processes (Adams-Prassl, Binns, & Kelly-Lyth, 2023, p. 164). Even where automated decisions are permitted in exceptional circumstances, it is mandatory to ensure minimum safeguards, such as the right to request the data controller's intervention, the right to express an opinion, and the right to object to the decision (Directive 2024/2831, 2024, Recital 48).

However, the clear power imbalance in the employment relationship prevents the worker's consent from always being deemed to have been given "freely" and necessitates collective protection beyond individual rights (Adams-Prassl J., 2019, p. 133; Wray, 2026, p. 19). Article 88 elevates the normative framework to the collective level by granting Member States and social partners the authority to regulate data processing procedures in the employment context through collective agreements (Doellgast, Wagner, & O'Brady, 2022, p. 109). Under Article 88, collective agreements may introduce "more specific rules" to safeguard the worker's human dignity and fundamental rights at every stage, from recruitment to work planning, from monitoring systems to the termination of the employment relationship (Adams-Prassl J., 2019, p. 144).

With this regulation, collective bargaining has become a legitimate and integral part of data governance, covering matters such as the criteria for data collection, how data are processed, and how algorithmic authority is limited. Consequently, by subjecting algorithmic decisions to a democratic oversight process, the GDPR places the ‘negotiation of the algorithm’ at the heart of modern industrial relations.

PWD and collective procedural safeguards

The PWD opens a new chapter in labour law by defining algorithmic management not merely as a form of work organisation but as a systemic risk area that threatens workers’ fundamental rights (Directive 2024/2831, 2024, Recital 4). The Directive specifically and in detail regulates “automated monitoring” and “automated decision-making” systems (AMDMS) with the aim of balancing the power asymmetry in the platform economy (Wray, 2026, p. 16). This regulation aims to remove algorithmic management from being a “black box” and transform it into a process subject to legal scrutiny (Wray, 2026, p. 62).

The Directive’s normative strength lies in its establishment of transparency and human oversight obligations on a collective basis. Under Article 13, platforms have to inform and consult worker representatives before making significant changes to AMDMS systems. One of the most critical innovations introduced here is the right of worker representatives to seek assistance from a data expert of their own choosing to address the technical complexity of the systems (Sena, 2024, p. 1211). This provision ensures that the technical parameters of algorithms are no longer merely a matter of individual curiosity but become an integral part of trade union bargaining and collective oversight (Wray, 2026, p. 24).

The significance of the PWD is not limited to platforms alone; this regulation can establish a ‘model standard’ for all digital work environments (OECD, 2025, p. 52). The use of technology, which under traditional employment law was viewed as falling within the employer’s unilateral management rights, has been redefined by this directive as a subject for negotiation subject to collective procedural safeguards (Aloisi & De Stefano, *Your boss is an algorithm*, 2022, p. 59). Experts argue that the protective framework offered by the PWD could serve as a universal standard for all traditional sectors undergoing the process of ‘platformisation’ (OECD, 2025, p. 52).

The Directive is based on managing the risks created by automated systems through representative mechanisms rather than placing them on the shoulders of individuals (De Stefano & Taes, *Algorithmic management and collective bargaining*, 2023, p. 27). The inclusion of worker representatives in ‘human-in-the-loop’ processes (Directive 2024/2831, 2024, Art. 10) and periodic impact assessments serves as a vital safeguard in limiting algorithmic authority. Consequently, in the EU, algorithmic governance is framed by collective procedural safeguards rather than individual recourse mechanisms (De Stefano & Doellgast, *Introduction to the Transfer special issue. Regulating AI at work: labour relations, automation, and algorithmic management*, 2023, p. 10).

The current legal framework in Türkiye

Constitutional Basis

In Türkiye, the highest-level normative basis for bringing artificial intelligence and algorithmic management under the discipline of collective labour law is found in the Constitution. Article 51 of the Constitution guarantees that workers and employers have the right to form trade unions without prior authorisation, with the aim of protecting and developing their economic and social rights and interests in employment relationships. This provision constitutes the fundamental basis of legitimacy, enabling workers to assert

themselves as an organised force against the transformation of the employer's management rights into a unilateral, non-transparent, and unregulated power through artificial intelligence systems (Oral, 2024, p. 178).

The primary area where this right to organise is transformed into a concrete means of asserting rights and establishing regulations is the right to collective bargaining, as set out in Article 53 of the Constitution. Article 53 of the Constitution explicitly stipulates that workers and employers have the right to enter into a collective agreement (CA) "for the purpose of mutually regulating their economic and social conditions and working conditions". This wording provides a highly robust and flexible constitutional basis for including any changes to working conditions arising from artificial intelligence within the scope of collective bargaining.

Algorithmic management systems focus on elements that directly affect "working conditions" and the worker's economic and social situation, such as digital monitoring, task allocation, performance scoring, the determination of working hours, and the automation of disciplinary processes (Collins & Atkinson, 2023, pp. 39-40). Consequently, the parameters of the employer's algorithmic authority become a natural part of the CLA within the framework of the authority provided by Article 53 of the Constitution (Oral, 2024, p. 172). This constitutional framework removes artificial intelligence from being merely a technical operational decision, framing it instead as a negotiation arena where social partners have a say at the constitutional level and can impose limits through "micro-regulation" (Sena, 2024, p. 1210).

Law No. 6356 and the scope of the CLA

The primary legislation defining the scope and content of the right to collective bargaining, which is guaranteed at the constitutional level, is Law No. 6356 on Trade Unions and Collective Labour Agreements. With regard to the integration of AI and algorithmic governance into collective labour law, Law No. 6356 possesses a flexible normative capacity that goes beyond being a static text, enabling it to encompass the new risk areas created by technological transformation. Article 33 of the Act defines the scope of the collective labour agreement, granting social partners the authority to regulate and monitor algorithmic authority at the microlevel.

According to Article 33 of Law No. 6356, the collective agreement contains provisions regarding the conclusion, content, and termination of the employment contract. This three-part structure brings all stages of the worker's working life (hiring, evaluation, and dismissal) directly within the scope of algorithmic management (Parent-Rocheleau & Parker, 2022, p. 22; Kinowska & Sienkiewicz, 2023, p. 24). The stage of concluding the employment contract provides a clear avenue for making automated recruitment and candidate screening algorithms, which are currently considered high-risk, a subject of the collective labour agreement (Tullini, 2023, p. 189). Provisions regarding the content of the employment contract, meanwhile, open up the digital monitoring and task allocation processes established by algorithms through the '6 R' mechanism (Restrict, Recommend, Record, Rate, Replace, Reward) (Kellogg, Valentine, & Christin, 2020, p. 367), the determination of working hours, and performance scoring criteria to trade union negotiation (OECD, 2025, p. 26). Finally, the provision regarding the termination of the contract allows for the limitation of automated termination processes based on data generated by performance algorithms within the framework of the principles of transparency and human oversight (human-in-command) (Sena, 2024, p. 1212).

The flexibility afforded by the Act is not limited to the content of the agreement; the mutual rights and obligations of the parties, as well as the implementation and monitoring of the agreement, may also be covered by a collective agreement (Oral, 2024, p. 172). This provision legitimises the inclusion in the text of the collective agreement of the right of workers' representatives to carry out periodic inspections and technical

reviews of algorithmic systems in the workplace, in line with the data protection impact assessment and monitoring obligations under EU law (Directive 2024/2831, 2024, Art. 8). Furthermore, Article 33 states that the framework agreement may include provisions relating to vocational training, occupational health and safety (OHS), social responsibility, and employment policies (Voss & Bertossa, 2022, p. 3). In the face of the risk of technological unemployment caused by AI, workers' access to 'upskilling/reskilling' and the assessment of psychosocial risks arising from digital surveillance within the scope of OSH become a natural part of the CLA thanks to this provision (Nissim & Simon, 2021, p. 8).

The critical conclusion here is this: under Turkish law, the scope of the CLA is not so narrow as to exclude algorithmic management; on the contrary, it is flexible enough to encompass this area (Oral, 2024, p. 178). By defining the content of the CLA in general terms, the legislator has made any deviation in working conditions caused by changing technological conditions "negotiable." This demonstrates that trade unions in Türkiye possess strong legal legitimacy not only in the context of wages and social rights but also in the context of "negotiating the algorithm" (Oral, 2024, pp. 178-179). Consequently, Law No. 6356 contains all the necessary normative building blocks to remove algorithmic management from being an opaque 'black box' and transform it into a verifiable element of social dialogue and collective oversight.

The Labour Code No. 4857 and the framework of working conditions

The Labour Code No. 4857, the foundational text of individual labour law in Türkiye, provides an indispensable framework for the legal oversight of artificial intelligence applications in the workplace. Article 1 of the Code defines its primary objective as "regulating the rights and responsibilities of workers regarding working conditions and the working environment." This general framework is sufficiently broad to encompass any form of intervention implemented today through algorithmic management tools.

Artificial intelligence systems take on functions such as task allocation, shift planning, generating performance scores, or monitoring behaviour via digital tools, thereby transferring traditional management authority to a digital dimension (Aleks, Maffies, & Saksida, 2020, pp. 88-89; Wood, 2021, p. 1). As these applications directly affect the worker's daily work rhythm, rest periods, and peace of mind at the workplace, they cannot be viewed merely as technical operational decisions; rather, they constitute direct "working conditions" within the meaning of Law No. 4857 (Collins & Atkinson, 2023, p. 40; OECD, 2025, pp. 40-42). Consequently, the employer's delegation of management authority to an algorithm does not exempt them from the mandatory provisions and oversight of the Law (Ajunwa, Automated governance, 2023, p. 379; Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 64).

One of the most important features of the Labour Code is its "technology-neutral" structure. Rather than referring to a specific technology, the Code is built on the universal concepts designed to balance the inherent power asymmetry in the employment relationship. Consequently, new-generation management practices driven by AI can be assessed against existing standards, such as the principle of equal treatment (Art. 5), proportionality, substantial changes to working conditions (Art. 22), and valid grounds for termination (Art. 18). For example, an algorithm assigning low performance scores solely to a specific demographic group could be deemed a direct breach of the prohibition on discrimination; similarly, an algorithm increasing the workload to the extent that it compromises a worker's health constitutes a breach of occupational health and safety obligations (OECD, 2025, p. 40).

However, individual labour law mechanisms have a fundamental weakness when faced with algorithmic management: this scrutiny often operates 'after the event' (ex-post) (Ajunwa, An auditing imperative

for automated hiring systems, 2021, p. 630; De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 28). For a worker to become aware of the existence of an algorithm operating against their interests, to prove that these 'black box' processes are discriminatory or unlawful, and to seek redress through the courts, is generally only possible after the employment relationship has ended or significant harm has occurred (Adams-Prassl J., 2019, p. 142).

This is precisely where the importance of collective labour agreements (CLAs) comes into play (De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 28). CLAs can transform the reactive protection offered by the Labour Code into a proactive safeguard (Sena, 2024, p. 1210). Unlike individual lawsuits, the collective bargaining process allows for the 'negotiation of the algorithm' before algorithms are even implemented (Doellgast, Wagner, & O'Brady, 2022, p. 105). Through CLAs, social partners can transform the general framework of the Labour Code into a concrete 'micro-regulation' area by pre-determining which data algorithms will use, the transparency criteria, and the 'human-in-command' mechanisms (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 162).

The Personal Data Protection Act and Objections to Automated Systems

In Türkiye, the most concrete line of defence against algorithmic governance at the individual level is provided by the KVKK. Article 1 of the Act defines its primary purpose as protecting individuals' fundamental rights and freedoms, particularly the privacy of private life, in the processing of personal data. As every action taken by an employee in an employment relationship (such as location data, keystroke speed, tone of voice, or email content) is converted into data, the processing of this data by algorithms falls directly within the scope of protection under the KVKK.

The most critical provision of the KVKK regarding algorithmic decision-making is Article 11(1)(g). Under this provision, every data subject (employee) has the right to "object to a decision made solely by automated processing which produces legal effects concerning them or similarly significantly affects them." This right corresponds to the "right not to be subject to fully automated decisions" under Article 22 of the GDPR in Turkish law. For employees, this provision establishes a vital line of individual protection against non-transparent algorithmic scoring, automated recruitment screening, or disciplinary sanctions resulting from data-driven performance evaluations.

However, this individual right faces significant obstacles in practice due to the 'black box' nature of algorithmic management. It is, in itself, quite difficult for an employee to prove that a result adverse to them stems 'solely' from an automated system and to challenge the system's technical logic (Jarrahi, et al., 2021, p. 7). Furthermore, while the duty to provide information under Article 10 of the KVKK requires the employer to disclose the purpose of data processing, it does not always explain the technical complexity of the algorithm and the decision-making criteria at a level that the employee can fully comprehend (Busacca & A. Monaca, 2020, pp. 60-61).

At this point, the intervention of collective labour law is essential to make the individual right of objection operational (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 163). Collective labour agreements (CLAs) can transform this abstract individual right under Article 11(1)(g) of the KVKK into a collective review procedure (De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 29). For example, a CLA provision could stipulate that objections to the results produced by automated systems are examined by a committee including a trade union representative, that the algorithm's parameters are audited by a

data specialist, or that ‘human-in-command’ mechanisms are established (Doellgast, Wagner, & O’Brady, 2022, p. 111).

Consequently, while data protection under Turkish law does not directly resolve the issue of algorithmic governance, it does provide the opportunity for individual objection and the establishment of legal boundaries (Ses & Korkusuz, 2024, pp. 1009-1010). The collective agreement, however, strengthens the worker’s position vis-à-vis algorithmic authority by transforming this individual right into a collective procedure (Oral, 2024, p. 178).

Comparative Analysis

The normative frameworks of EU and Turkish law, examined in detail in the preceding sections, offer different yet strategically complementary legal instruments aimed at limiting the authority of AI in the workplace (Molina, et al., 2023, p. 101). While the European Union seeks to bring algorithmic governance under a universal standard through a wide range of vertical and binding public law regulations, spanning from data protection to platform work (Molina, et al., 2023, p. 92), Türkiye, thanks to the flexibility of its existing constitutional and legal structure, conceives of this area as an autonomous ‘micro-regulation’ zone to be shaped through collective bargaining.

In this section, the fundamental differences and similarities between the two models will be analysed from a comparative perspective, focusing on regulatory techniques, the scope of collective oversight, and the concrete manifestations of the principle of ‘negotiating the algorithm’. This analysis aims to clarify how the procedural safeguards created by the EU’s “Brussels Effect” (Manav-Özdemir and Aydın 2025, p. 1762) might engage in dialogue with the flexible regulatory capacity offered by Turkish law through collective agreements and to elucidate the transformative impact of both systems within the framework of collective bargaining (Sena, 2024, p. 1210).

Differences in regulatory techniques

Regarding the legal oversight of AI and algorithmic governance, the European Union and Türkiye have adopted fundamentally different regulatory techniques. The EU model constructs a specific normative architecture that frames algorithmic governance through preventive (ex-ante) and procedural public law rules (Hassel & Özkızıltan, 2023, p. 81). This architecture, with its global standard-setting power known as the ‘Brussels Effect’, addresses the use of technology through individual rights and systemic risk management (Manav-Özdemir & Aydın, 2025, p. 1762).

The EU’s regulatory approach features a multilayered and highly specialised structure (Manav-Özdemir & Aydın, 2025, pp. 1755-1756). The AI Act adopts a preventive approach by classifying employment processes as ‘high-risk’, thereby imposing strict documentation, technical compliance, and transparency criteria before such systems are even implemented. The PWD, on the other hand, addresses the power asymmetry created by algorithmic management by directly regulating AMDMS and granting workers’ representatives mandatory rights to information and consultation, thereby establishing a procedural framework (Wray, 2026, p. 22). This approach frames algorithmic management within a ‘workplace due process’ model (Kellogg, Valentine, & Christin, 2020, p. 387).

In contrast, in Türkiye, the same field is addressed primarily through constitutional trade union rights, general labour law, and data protection provisions, that is, within a more fragmented regulatory framework. There is no standalone ‘labour regulation’ specific to AI in Türkiye. Instead, the process is governed by

the rights to organise and collective bargaining guaranteed under Articles 51 and 53 of the Constitution, alongside the technology-neutral principles (equal treatment, proportionality, etc.) of the Labour Code No. 4857. Although the KVKK incorporates the provision on objecting to automated decisions under Article 22 of the GDPR (Article 11(1)(g)), it has not yet opened the sector-specific procedural avenues offered by recent EU directives (such as the presumption of employment for platform workers).

Consequently, while the EU model limits algorithmic authority through centralised and vertical public law oversight, Turkish law constructs this area as a ‘micro-regulation’ sphere that can be concretised through collective agreements, utilising existing constitutional and legal building blocks. Whereas in the EU, the rule-maker is directly the state/Union (AI Act, 2024, Recital 1), in Türkiye, against the backdrop of the current fragmented legislative framework (Ses & Korkusuz, 2024, p. 1040), the task of rule-making has been largely left to the social partners (trade unions and employers) thanks to the flexibility of collective agreements.

The intensity of collective rights

One of the most striking differences between the European Union and Turkish law regarding the governance of AI in the workplace is the textual density of the procedural safeguards granted to worker representatives (Ses & Korkusuz, 2024, p. 1040). The EU model is based on an approach that directly surrounds technological authority with the participation and oversight of worker representatives (Wray, 2026, p. 22).

In EU texts, the processes for informing and consulting worker representatives are made extremely clear and detailed (Directive, 2024/2831, Art. 13; AI Act, 2024, Art. 26). Under the AI Act, systems used in the employment sector that could affect individuals’ future career prospects are classified as “high-risk” (AI Act, 2024, Recital 57). Within this framework, employers must inform worker representatives before deploying a high-risk AI system (AI Act, 2024, Art. 26/7). Going even further, the PWD mandates consultation with worker representatives regarding significant changes to AMDMS. One of the most notable aspects of the Directive is that it explicitly provides for representatives’ right to seek assistance from a ‘data expert’, the costs of which are to be borne by the employer, to understand the technical complexity of the systems (Directive, 2024/2831, Art. 13/3). These provisions demonstrate the extent to which the principle of “negotiating the algorithm” has been firmly enshrined in positive law within the EU (De Stefano, Automation - artificial intelligence and labor protection, 2019, p. 7).

In Turkish law, however, such AI-specific procedural safeguards are not codified with the same clarity. Within the current legal framework, vertical and prescriptive “information-gathering” mechanisms designed to limit the employer’s management rights over technology use lack the directness found in EU directives. Conversely, Article 33 of Law No. 6356 provides a structure that is highly conducive to filling this gap through collective agreements. Pursuant to Article 33, a CA may cover not only the conclusion, content, and termination of the employment contract but also its implementation and monitoring. The flexibility afforded by this provision provides legitimacy for social partners to incorporate mechanisms such as ‘mandatory information’, ‘expert assistance’, and ‘periodic algorithmic impact assessments’, as found in EU texts, directly into the text of the CLA. Consequently, while collective oversight in the EU derives directly from legislation, in Türkiye, thanks to the flexibility of Law No. 6356, this oversight constitutes a power that can be established directly through collective bargaining.

The balance between individual recourse and collective regulation

The governance of AI systems in the workplace necessitates the establishment of a delicate balance between individual rights and collective safeguards. A comparative analysis reveals that EU and Turkish law adopt different centres of gravity when establishing this balance.

In the EU model, individual data protection and collective representation mechanisms are designed as elements that strategically C one another (Molina, et al., 2023, p. 101). The GDPR empowers the individual through rights such as access (Art. 15), rectification (Art. 16), and objection (Art. 21), while providing the right not to be subject to fully automated decisions under Art. 22 (Busacca & A. Monaca, 2020, p. 60). However, due to the power imbalance in the employment relationship, it is difficult for workers to tackle ‘black box’ processes on their own (Adams-Prassl J., 2019, p. 142). For this reason, Article 88 of the GDPR explicitly permits the rules governing data processing in the employment context to be determined by collective agreements, thereby embedding the individual right to data protection within trade union protection (Sena, 2024, p. 1211). Similarly, the PWD reinforces this complementary framework by granting the right to obtain information about automated systems to both individual workers and their representatives (Wray, 2026, p. 22). Consequently, in the EU, the individual right to object to algorithmic decisions is evolving into a systemic governance model supported by trade union collective oversight (De Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 27).

In Türkiye, however, while the right to object under the KVKK provides a strong foundation at the individual level, the strengthening of the collective level is largely dependent on collective bargaining techniques. Article 11/1-g of the KVKK establishes a robust line of protection at the individual level by granting workers the right to object to adverse outcomes resulting from the analysis of data exclusively by automated systems. This provision corresponds to the guarantee under Article 22 of the GDPR in Turkish law. However, procedural safeguards in Türkiye, such as the obligation to inform trade unions about algorithmic systems, have not yet been regulated by a standalone law.

Despite this legal vacuum, the establishment of a collective framework has been left to the ‘micro-regulation’ capacity that trade unions will demonstrate at the collective bargaining table. Matters such as how the abstract right to object under Article 11(1)(g) of the KVKK is to be exercised, the role of the trade union representative in objection procedures, and the oversight of algorithmic parameters can only be concretised through collective agreement provisions. The authority under Article 53 of the Constitution to “regulate economic and social conditions” affords trade unions the opportunity to transform these individual rights into collective procedural safeguards. Consequently, this balance derived from the law in the EU must take shape in Türkiye through trade unions’ collective bargaining techniques and their level of technological awareness.

European Union regulations are establishing a mandatory ‘minimum workplace constitution’ for algorithmic management processes through the AI Act, the GDPR, and the PWD (Manav-Özdemir & Aydın, 2025, p. 1741; Molina, et al., 2023, p. 92). This regulatory framework imposes transparency, “human oversight” (human-in-command), and mandatory consultation mechanisms with worker representatives as public safeguards in the use of high-risk artificial intelligence systems (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 19).

While Türkiye does not yet have an independent and vertical technology law of this calibre, the authority granted to the parties under Article 53 of the Constitution to “regulate working conditions through collective

agreements” enables a significant portion of this workplace constitution to be established autonomously through collective bargaining. Under Turkish law, social partners possess the capacity to regulate algorithmic authority at the micro-level by transforming abstract individual rights, such as the right to “object to automated decisions” under Article 11/1-g of the Personal Data Protection Law, into concrete rules of oversight and negotiation through collective agreements. Consequently, while in the EU model, the boundaries of digitalisation are defined by centralised public law oversight, in Türkiye, the architecture of this ‘algorithmic constitution’ is largely left to the will and technological awareness of trade unions at the collective bargaining table.

Algorithmic management provisions to be included in collective agreements in Türkiye

The collective labour agreement framework in Türkiye possesses a strong legal capacity to regulate the effects of technological transformation on working life through “microregulation”. Article 33 of the Trade Unions and Collective Labour Agreements Act No. 6356 defines the scope of collective labour agreements quite broadly, encompassing areas such as the conclusion, content, termination, and supervision of the implementation of employment contracts. Furthermore, Article 1 of the Labour Act No. 4857 defines the purpose of the Act as regulating workers’ working conditions and environment; this legitimises the negotiation of task allocation or performance measurement carried out using algorithmic tools as “working conditions.” Article 11(1)(g) of the KVKK grants the right to object to decisions made against an individual by fully automated systems, thereby providing an individual basis for protection in these negotiations. Within this legal framework, drawing inspiration from regulations such as the EU’s AI Act, GDPR, and Platform Workers Directive, the following key provisions are proposed for inclusion in collective agreement texts in Türkiye:

Algorithm inventory and notification obligation

The employer must provide the trade union with a transparent ‘algorithm inventory’ covering all AI and automated decision-making systems that affect employees’ performance, task allocation, or recruitment processes at the workplace (Stefano & Taes, Algorithmic management and collective bargaining, 2023, p. 28; Molina, et al., 2023, p. 97.; Directive, 2024/2831, Art. 9). This inventory must include the system’s developer, purpose, categories of data used, and the main parameters of the decision-making mechanism (Tullini, 2023, p. 189). The transparency and record-keeping criteria set out in the EU AI Act for high-risk systems in employment serve as a fundamental guide in this regard.

Notification and Consultation with the Trade Union before Implementation

A consultation process with the trade union must be mandatory prior to the implementation of a new algorithmic system (AI Act, 2024, Recital 92; Directive, 2024/2831, Art. 13/2). As provided for in the PWD, the right of trade union representatives to seek assistance from a ‘data expert’, whose costs are borne by the employer, to analyse the technical complexity and ‘black box’ nature of the systems (Wray, 2026, pp. 22-25) must be guaranteed by the collective agreement (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 47).

Prohibition or Limitation of Fully Automated Disciplinary Action/Dismissal

Relying on the regulatory authority under Article 33 of Law No. 6356 regarding the “termination of the contract,” vital decisions, such as the suspension of an employee’s account or dismissal, must be taken exclusively by automated systems (Ses & Korkusuz, 2024, p. 1021; Krzywdzinski, Gerst, & Butollo, 2023, p. 67). In accordance with Article 10(5) of the PWD and Article 22 of the GDPR, the principle of “human oversight”

(human-in-command), which requires any critical management decision to be verified by a human, must be enshrined as a provision in the collective agreement (Wood, 2021, p. 24).

Human Review and Appeal Mechanism

The abstract right to object under Article 11(1)(g) of the KVKK must be transformed into a concrete “collective objection procedure” through the CLA (Manav-Özdemir & Aydın, 2025, p. 1762). The worker must be provided with a clear explanation setting out the reasons for the algorithm’s outcome (right to explanation) (Ajunwa, Automated governance, 2023, p. 372), and a special committee, including a trade union representative, must be established to assess objections (Oral, 2024, p. 179).

Limits on performance metrics and target pressure

As the work pace and performance criteria determined by algorithms constitute direct “working conditions,” they must be negotiated at the collective bargaining table (Aleks, Maffies, & Saksida, 2020, p. 90; Wood, 2021, p. 11). The excessive workload created by algorithmic management, “algorithm bullying” replacing “time pressure” (Kinowska & Sienkiewicz, 2023, p. 25; OECD, 2025, p. 40), and performance metrics that strain human capacity must be limited by a collective agreement (Parent-Rochelleau & Parker, 2022, p. 15).

Data minimisation, Retention Periods, and Purpose Limitation

Within the scope of the authority provided by Article 88 of the GDPR, ‘specific rules’ must be introduced for data processing procedures in the context of employment under the collective agreement (Hassel & Özkızıltan, 2023, p. 83). The collection of data relating to the employee’s private life or data that are not strictly necessary for the performance of the work (data minimisation) must be prohibited, and the retention periods and purposes of use of the data must be clarified (Aleks, Maffies, & Saksida, 2020, p. 106).

Independent Audit/Log Records/Auditability

To verify that artificial intelligence systems do not discriminate, it must be stipulated that the systems are subject to periodic independent external audits (Ajunwa, An auditing imperative for automated hiring systems, 2021, p. 647). Furthermore, to establish an ‘accountability’ mechanism, it must be ensured that the automatic log records required under Article 12 of the AI Act are accessible to trade union audits (Ajunwa, Automated governance, 2023, p. 384; Manav-Özdemir & Aydın, 2025, p. 1761).

Psychosocial Risks and Occupational Health and Safety Aspects

Psychosocial risks such as stress and anxiety caused by digital surveillance and constant monitoring must be explicitly included in the collective agreement’s occupational health and safety provisions (Aloisi & De Stefano, Your boss is an algorithm, 2022, p. 19). The adverse effects of algorithmic management on workers’ mental health and well-being must be subject to trade union oversight within the scope of the protective purpose of Article 1 of Law No. 4857 (Ses & Korkusuz, 2024, p. 1017). More broadly, the relevance of such safeguards is also supported by research showing that perceptions of fairness and equity are closely connected to subjective well-being and social cohesion, particularly in transitional institutional settings (Bolcan, 2025, p. 162–165, 179).

Digital Skills Transformation and the Right to Retraining

By utilising the regulatory authority regarding “vocational training” set out in Article 33 of Law No. 6356, workers at risk of losing their jobs due to automation must be granted the right to “reskilling/upskilling” (Voss & Bertossa, 2022, pp. 12-14). This should be structured as a “just transition” guarantee to protect

workers against the structural changes brought about by technological transformation (Hassel & Özkızıltan, 2023, p. 82).

Conclusion

Artificial intelligence and algorithmic management can transform the traditional element of “dependence” in employment relationships into a form of digital domination. However, this technological transformation also creates a new arena of legitimacy and struggle for collective labour law. As demonstrated in this study, the most significant legal consequence of AI on the collective bargaining framework is not merely that it subjects the subject matter of collective bargaining to a mere expansion of content; the real breaking point lies in the fact that algorithmic authority, which the employer regards as an absolute and unilateral management right, is now subject to collective legal oversight.

The European Union has transformed this process into a ‘public imperative’ through the normative framework it has established. Through the AI Act, it has classified employment systems as high-risk categories to enforce transparency; through the GDPR, it has granted data management a legal status; and through the Platform Workers Directive, it has granted worker representatives the authority to oversee the technical parameters of algorithms. The EU has, through this multilayered legislation, dismantled the ‘black box’ of algorithmic management and accelerated the transformation on a procedural basis.

In Türkiye, while there is as yet no similar vertical technology law, the existing legal framework possesses the flexibility and capacity to accommodate this transformation. While Articles 51 and 53 of the Constitution grant social partners the highest level of authority in determining “working conditions”, Article 33 of Law No. 6356 transforms this authority into a “micro-regulation” domain covering the operation, oversight, and dispute resolution mechanisms of algorithms. The technology-neutral structure of the Labour Code No. 4857 and the rights of objection provided by the KVKK constitute solid legal grounds for trade unions.

Consequently, AI is transforming collective agreements from merely a text for wage negotiations into a “workplace constitution” that defines the boundaries of algorithmic management. While this transformation is accelerating as a legal necessity within the EU, in Türkiye, it will be institutionalised through a dynamic interpretation of the existing constitutional and legal framework, particularly through the provisions of collective agreements. Negotiating the algorithm is no longer a matter of choice in modern industrial democracy but an unavoidable necessity to protect workers’ dignity and rights.



Peer Review	Externally peer-reviewed.
Conflict of Interest	The author have no conflict of interest to declare.
Grant Support	The author declared that this study has received no financial support.

Author Details **Abdullah Erol (Assistant Professor)**

¹ Istanbul University, Faculty of Economics, İstanbul, Türkiye

 0000-0003-1018-1602  abdullah.erol@istanbul.edu.tr

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