Revista Ítalo-Española de Derecho Procesal
pp. 285-305
Madrid, 2026
DOI: 10.37417/rivitsproc/3354
Marcial Pons Ediciones Jurídicas y Sociales

ISSN: 2605-5244
Recibido: 05/02/2026 | Aceptado: 23/06/2026

CIVIL DISPUTE RESOLUTION IN THE AGE OF ALGORITHMS: AN EMPIRICAL STUDY OF AI IN LABOUR LAW COURTS

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ABSTRACT: This article examines whether digitalisation and artificial intelligence (AI) can improve access to justice in labour law disputes without undermining fundamental rights and the rule of law. Methodologically, it combines EU legal analysis with qualitative interviews and focus groups across six Member States. It shows that these tools can reduce burdens and information gaps only when reliable infrastructure, coherent governance, specific training, and meaningful human oversight are in place.

KEYWORDS: access to justice; digital justice; civil dispute resolution; artificial intelligence; empirical study.

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1. INTRODUCTION

Access to justice remains a central concern in contemporary civil justice systems. Although formally recognised as a fundamental right and a cornerstone of democratic governance, in practice it is often undermined by cost, delay, procedural complexity, and information asymmetries. Against this background, policymakers and scholars increasingly present digitalisation and artificial intelligence as potential responses to persistent deficits in access to justice. At the EU level, this ambition is reflected in the e-Justice Action Plans, Regulation (EU) 2023/2844 on the digitalisation of cross-border judicial cooperation, and Regulation (EU) 2024/1689 on Artificial Intelligence, which treats AI in the administration of justice as high-risk, reflecting the human-centric and rights-sensitive nature of the field.

However, the access-enhancing promise of technology remains conditional. While e-filing, remote hearings, electronic case management, AI-supported legal research, and predictive algorithms may reduce friction and improve orientation, poorly designed or governed systems may also marginalise digitally vulnerable users, increase dependence on professionals, or compromise the quality and contestability of adjudication. Empirical evidence on how these dynamics operate in labour law courts across EU Member States remains limited. This article addresses that gap through a legal-empirical study of labour law courts in six EU Member States: Belgium, Croatia, Czechia, Estonia, Italy, and Lithuania. Labour law is particularly relevant because disputes often involve structural power imbalances, high caseloads, and direct implications for employment and social rights. The central research question is: can digitalisation and AI-based tools improve access to justice in labour law disputes without undermining fundamental rights and the rule of law? To answer this question, the article pursues three objectives: first, to assess the perceived digital maturity of labour law courts in the six jurisdictions; second, to examine how justice professionals perceive administrative, research-oriented, and predictive uses of AI; and third, to identify the governance, training, and oversight conditions under which such tools may support, rather than weaken, access to justice.

The findings reveal a differentiated landscape in the digital transformation of labour law courts. Digital tools are generally valued for improving document access, case management, remote participation, and procedural transparency, although their implementation and effects remain uneven across jurisdictions. Attitudes towards AI are similarly nuanced. Participants were more receptive to administrative and research-oriented AI than to predictive AI that could influence adjudicative outcomes. Respondents also emphasised that digital and AI-based tools can support access to justice if adequate governance, role-specific training, and meaningful human oversight are in place.

The article proceeds as follows. Section 2 outlines the EU regulatory framework governing digitalisation and AI in justice, with particular attention to

guarantees of access to justice and human-centric AI governance. Section 3 explains the research design and methodology. Sections 4 and 5 present empirical findings on digital maturity and attitudes towards AI and predictive algorithms in labour law courts. Section 6 discusses these findings in light of the doctrinal framework, highlighting structural tensions between regulatory ambition and institutional reality. Finally, before concluding, we outline the study's limitations and propose directions for future research.

2. EU REGULATORY FRAMEWORK ON DIGITALISATION AND AI IN JUSTICE

2.1. Access to justice: a fundamental right in four waves

In EU law, access to justice is anchored in Articles 67(4) and 81(2)(e) TFEU, Article 47 of the CFR, and Articles 6 and 13 of the ECHR. These provisions frame access to justice not merely as formal access to a court, but as the effective ability to enforce rights, obtain an effective remedy, and participate in fair proceedings (FRA, 2016). From this perspective, digitalisation must be assessed by asking whether it makes justice more practically accessible or instead introduces new barriers linked to digital capacity, infrastructure, and institutional design.

Access to justice in civil proceedings, however, remains structurally deficient. Civil courts are widely characterised by an enduring access to justice gap, driven by the cumulative effects of high costs, lengthy delays, and procedural complexity. These barriers disproportionately affect ordinary litigants and are compounded by "legal poverty". This term refers to the inability to recognise justiciable problems, navigate procedural pathways, or engage with a system perceived as formalistic and biased towards well-resourced actors (Reiling, 2009). Empirical studies of European judicial systems confirm that complexity, lack of transparency, and limited procedural guidance continue to deter litigants from pursuing claims, particularly in cross-border disputes (Velicogna *et al.*, 2020). As a result, a substantial proportion of legal problems remain unresolved, as individuals "lump" claims because pursuing justice is perceived as intimidating, futile, or prohibitively expensive (Sorabji, 2021).

Furthermore, sociolegal scholarship has long framed access to justice as requiring more than the formal availability of courts. To begin with, Cappelletti and Garth (1978) famously characterised access to justice as the "most basic human right" of a modern legal system. Subsequent scholarship, such as Lord Woolf's work (1996), argued that a legitimate justice system must deliver just outcomes through procedures that are fair, timely, intelligible, and proportionate (Sackville, 2004). Similarly, Galanter's (1981) notion of justice in "many rooms" underscores that access must extend beyond traditional court proceedings to encompass simplified, alternative, and increasingly digital forms of dispute resolution capable of responding to contemporary societal needs.

Notably, Cappelletti and Garth introduced the idea of conceptualising access to justice in three waves. The first wave focused on providing legal aid to the poor, seeking to overcome economic barriers by funding legal representation. The second wave addressed the representation of collective interests, such as consumer protection, by facilitating collective representation through class actions and public interest law. The third wave moved beyond mere representation towards systemic reform, prioritising the simplification of procedures and the mainstreaming of alternative dispute resolution.

Subsequent scholarship suggests that a fourth wave of access to justice is already underway, although its defining characteristics remain contested. Since the 1990s, scholars have advanced divergent conceptions of what this fourth wave comprises. Early contributions, most notably Parker (1999), linked it to reforms in legal services markets centred on competition and cost reduction, while cautioning that market-driven approaches may deepen exclusion for individuals who lack adequate financial resources. Economides linked the fourth wave to enduring justice deficits affecting remote and geographically marginalised communities, whereas Harvey (2016) emphasised the expanding role of voluntary and alternative dispute resolution mechanisms. Pablo Cortés (2010), in particular, associates the fourth wave with the emergence of online courts and digital procedural environments. Taken together, these perspectives suggest that the fourth wave is best understood as a broad transition towards technology-driven, and in some cases fully online, forms of dispute resolution that extend beyond traditional court processes (Giacalone *et al.*, 2025a).

Against this backdrop, digitalisation has emerged as a central policy response to the access to justice gap within the broader fourth wave of access to justice reforms. The premise is that technology may reduce administrative burdens, shorten procedures, lower transaction costs, and support "swift and certain justice" (Sorabji, 2021). Yet this premise should not be treated as self-executing. Whether digitalisation improves access depends on institutional design, governance, usability, training, and the availability of non-digital alternatives for users who are digitally illiterate. This article, therefore, adopts a functional understanding of the fourth wave as a transition towards technology-driven dispute resolution, while rejecting the assumption that technological change automatically produces better access to justice.

2.2. Digitalisation of justice in the EU

Since the late 2000s, the EU has pursued a progressive strategy for judicial digitalisation, initially focused on coordination, access to information, and technical interoperability in cross-border cases. The first e-Justice Action Plan (2009-2013) marked the start of this approach and coincided with the launch of two foundational components of the EU digital justice ecosystem: the European e-Justice Portal and e-CODEX.

The e-Justice Portal was conceived as a multilingual "one-stop shop" to reduce informational asymmetries in cross-border litigation by providing multilingual legal information, procedural guidance, and standardised forms. The Portal addresses a core barrier for unrepresented and cross-border litigants: the inability to identify procedural pathways, understand formal requirements, or assess available remedies. Over time, it has evolved from a primarily informational tool into a prospective interface for direct interaction with judicial authorities.

In parallel, e-CODEX (formalised in Regulation (EU) 2022/850) was developed as a decentralised interoperability framework that enables secure electronic communication between national judicial authorities (Recital 8). Instead of functioning as a centralised database, the platform comprises software components that facilitate interoperability among national systems, with data remaining at the national level and under the control of competent authorities. Management is entrusted to EU-LISA (Articles 7 and 10(4)), while the authorisation, supervision, and operation of e-CODEX access points remain the responsibility of the Member States and other authorised entities (Articles 8 and 9). At the same time, the Regulation expressly safeguards judicial independence, both by requiring all relevant entities to respect that principle (Article 14) and by embedding it in the system's governance structure (Recitals 14, 16 and 38). Accordingly, the platform's decentralised design leaves procedural implementation and data handling to the Member States and does not impose mandatory use (Recital 10). This approach aims to preserve procedural autonomy while respecting the diversity of national legal traditions in judicial cooperation (Ontanu, 2024).

Subsequent e-Justice Action Plans (2014-2018; 2019-2023) consolidated these infrastructures and shifted the EU's ambition from improving access to information to enabling direct electronic interaction in cross-border proceedings. This transition culminated in the EU Digitalisation Package adopted in 2023, notably Regulation (EU) 2023/2844 on the digitalisation of judicial cooperation and access to justice in cross-border civil, commercial, and criminal matters. This Regulation marks a decisive shift from policy coordination to binding procedural obligations. It requires secure electronic communication between competent authorities and, under specific conditions, allows two-way electronic interaction between individuals, legal representatives, and authorities (Article 3(1)). This is facilitated via electronic access points on the e-Justice Portal connected to the decentralised infrastructure, including e-CODEX (Article 4(1-4)). Crucially, the Regulation provides that documents transmitted through electronic communication may not be denied legal effect or deemed inadmissible in cross-border judicial procedures solely because they are in electronic form (Article 8). Therefore, the Regulation requires competent authorities to accept communications submitted via the European electronic access point in cases covered by the Regulation (Article 4(5)), provided that they meet relevant Union and national procedural rules (Velicogna *et al.*, 2020).

At the same time, the Regulation explicitly acknowledges the risk of digital exclusion. Recital 29 embeds safeguards to ensure that digitalisation facilitates access to justice rather than making it conditional on digital skills, equipment, or connectivity. This reflects a core tension in EU digital justice policy: promoting "digital by default" pathways while avoiding a shift to "digital only" procedures that could marginalise digitally vulnerable users. Scientific analyses also emphasise that digital access must be supplemented with effective non-digital alternatives where necessary to prevent formal rights from becoming inaccessible in practice (Inchausti, 2024). While these Regulations primarily address cross-border cooperation, they increasingly shape national practices indirectly by setting technical standards[1].

2.3. Enabling AI in justice: from soft law to hard law

Within the broader digitalisation agenda, the EU has progressively opened the door to the use of AI in the justice sector, while framing this development through a strong human-centric narrative. Early EU scholarship framed AI primarily as a tool to support case management, information retrieval, document processing, and procedural guidance. These applications are seen as potentially reducing backlogs and improving user navigation through complex systems (Koulu, 2020; Kramer *et al.*, 2021; Velicogna, 2007).

From 2017 onwards, AI increasingly became an explicit focus of regulatory and policy attention at the EU level. For example, the European Ethical Charter on the Use of AI in Judicial Systems (CEPEJ[2], 2018) articulated core principles, including respect for fundamental rights, non-discrimination, transparency, quality, and the requirement that AI systems remain "under user control". The EU's ethical consolidation continued with the High-Level Expert Group's Ethics Guidelines for Trustworthy AI (2019), which defined trustworthy AI as lawful, ethical, and robust, and set out operational requirements, including human oversight, transparency, fairness, and accountability. These ethical frameworks did not resolve legal questions; they provided vocabulary and expectations that would later be imperfectly translated into enforceable obligations.

Subsequently, the conversion from soft law to hard law culminated in the AI Act (Regulation (EU) 2024/1689). The AI Act establishes a horizontal, risk-based framework for AI governance and classifies many AI systems used in the administration of justice as high-risk systems (Article 6(2) in conjunction with Annex III). This classification is normatively significant because it recognises that AI in justice is not merely a tool for improving efficiency, but one

[1] Recent policy instruments reinforce this access-oriented framing: The European e-Justice Strategy 2024-2028, the Commission's DigitalJustice@2030 and the European Judicial Training Strategy (2025-2030).

[2] European Commission for the Efficiency of Justice (Council of Europe)

capable of affecting individual rights and institutional legitimacy (Enqvist, 2023; Koulu, 2020).

The AI Act operationalises this recognition through a comprehensive set of ex ante and ex post legal obligations applicable throughout the AI system's life cycle. These include mandatory risk management systems (Article 9), strict requirements for training, validation and testing data to mitigate bias and ensure representativeness (Article 10), extensive technical documentation and record-keeping obligations enabling traceability and auditability (Articles 11-12), and enhanced transparency requirements to ensure users are informed of the system's capabilities and limitations (Article 13). Most notably, the Regulation imposes a binding human oversight requirement (Article 14), obliging providers and deployers to design and organise AI systems so that natural persons can effectively interpret, contextualise, and, where necessary, override system outputs. Finally, these obligations are reinforced by accountability and enforcement mechanisms, including conformity assessments, post-market monitoring, and corrective measures (Articles 16-17 and 61), underscoring that human-centric AI in justice is conceived as a legally enforceable standard rather than a purely ethical aspiration.

From an access to justice perspective, two aspects of the AI Act are particularly important. First, transparency and traceability obligations support contestability: parties and professionals must be able to understand the role, limits, and influence of AI tools in judicial processes, and institutions must retain the capacity to audit and correct risks. Second, the human oversight requirement serves as the legal mechanism intended to prevent de facto delegation of normative judgment to automated systems.

However, human oversight is also where regulatory ambition meets institutional reality. The empirical and theoretical literature highlights the risks of automation bias and the "sheep effect", in which decision-makers over-rely on algorithmic outputs, particularly under workload pressure or when they lack the expertise or authority to challenge them (Busuioc, 2020). In judicial contexts, this raises fundamental concerns: even where responsibility formally remains with humans, AI may become practically determinative, thereby weakening judicial independence and reason-giving (Koulu, 2020; Greenstein, 2022).

A rights-compliant approach, therefore, requires human oversight to be genuinely meaningful rather than symbolic. This depends on adequate training, organisational authority, and sufficient time and resources to assess, challenge, and override algorithmic outputs when necessary (Constantino, 2022; Fink, 2026). These safeguards and policies set the stage for our empirical investigation into how they operate in national civil labour law courts.

3. RESEARCH DESIGN AND METHODOLOGY

This article presents the results of empirical research conducted between April and June 2025 as part of the EU-funded IDEA[3] project. IDEA aims to analyse how digitalisation and emerging AI-based tools are currently embedded in labour law proceedings and how they may affect access to justice and professional practices. The analysis underpinning this article draws on Work Package 2 of the IDEA Project, which comprises three deliverables[4].

Across the six Member States, 57 respondents participated in semi-structured interviews or focus groups: Belgium (n = 11), Croatia (n = 8), Czechia (n = 10), Estonia (n = 11), Italy (n = 5), and Lithuania (n = 12). The selection of countries is consortium-based rather than statistically representative: the jurisdictions correspond to the Member States represented in the IDEA project and were chosen to reflect different levels of judicial digitalisation, procedural traditions, and institutional settings. This variation enables the article to compare perceptions of digital and AI-supported justice reforms across more digitally mature, partially digitalised, and fragmented institutional environments[5]. Participants were identified through professional networks, referrals, and publicly available contact details on the official websites of courts, tribunals, professional associations, and public authorities. Judges and court staff were approached through labour law courts; lawyers, mediators, and policymakers were identified through bar associations, mediator associations, Supreme Courts, Ministries of Justice, Judicial Administrations, and Labour Inspection Authorities. Participation was voluntary, based on informed consent, and conducted in compliance with GDPR requirements. The sample deliberately included professionals at different career stages, from early-career practitioners to senior experts, to capture a broad range of institutional and professional perspectives on technological change in labour law justice. Most participants took part in individual interviews, while focus groups were used where organisational or logistical constraints made this more appropriate.

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[3] I-tools to Design and Enhance Access to justice (IDEA) EU-funded research (JUST-2023-JACC-EJUSTICE) grant agreement no. 101160528; IDEA aims to develop a digital procedure and platform to harmonise digitalisation and predictive algorithms in access to justice. The ultimate goal of the IDEA consortium is to analyse three legal systems and identify best practices; Design a pilot project for a digitalised court in three EU Member States; Develop a chatbot that suggests the best course of action for parties: automated negotiation, online mediation or regular dispute resolution via an online court. By combining predictive algorithms with legal analysis, the project explores how technology can improve access to justice, simplify access to legal documents and reduce the costs of justice.

[4] The first deliverable 2.1 presents six national reports regarding justice digitalisation initiatives. The second deliverable 2.2, presents a comparative study of the national reports from the previous deliverable. The third and last deliverable 2.3, is published in the Zenodo repository and contains the qualitative empirical material collected through interviews and focus groups.

[5] The selection brings together countries with more advanced or reform-oriented digital justice systems, such as Estonia, Italy and Lithuania, and countries where digital transformation is more uneven, such as Belgium, Croatia and Czechia. This combination is important for the project: the more advanced systems can help identify good practices, while the others offer concrete contexts in which to assess the practical value, limits and transferability of the IDEA tools.

The interview and focus group questions were identical across all participating countries. They were initially developed in English and then translated into each country's national language to ensure conceptual consistency while remaining sensitive to national legal and institutional contexts. The questions were organised around four core thematic areas: (i) perceptions of technological development within the judiciary; (ii) the level and adequacy of training received for the use of such technologies; (iii) attitudes towards artificial intelligence and predictive justice, including any direct experience with AI-based systems; and (iv) perceived ethical, legal, and operational risks associated with AI, together with potential mitigation measures. Following data collection, each national research team translated relevant excerpts and findings into English and completed a standardised reporting template. These templates organised pseudonymised responses by respondent group and interview question, thereby facilitating systematic comparison across jurisdictions. The analysis presented in this article draws on these national reports.

The qualitative material was analysed using a thematic approach. The four thematic areas embedded in the interview and focus group guide provided an initial analytical framework, while the standardised reporting templates enabled comparisons across jurisdictions, professional groups, and research questions. The analysis combined deductive and inductive elements. Deductively, the material was examined in light of the study's research objectives and interview structure. Inductively, recurring patterns and themes emerging from the national reports were identified and refined through iterative review.

Sections 4 and 5 present empirical findings on perceived digital maturity and attitudes towards AI and predictive algorithms. Section 6 then interprets these findings against the doctrinal benchmark developed in Section 2, asking whether EU human-centric digital justice ambitions can be realised under the institutional conditions identified across the six Member States. The combination of doctrinal legal analysis and qualitative empirical material makes this a legal-empirical mixed-methods study (Ferraris *et al.*, in press). Its purpose is not to measure technological impact statistically, but to examine how justice professionals perceive, negotiate, and condition the use of digital and AI-supported tools in labour law adjudication (Giacalone *et al.*, 2025b).

4. DIGITAL MATURITY OF LABOUR LAW COURTS IN EUROPE

The empirical material reveals pronounced cross-national differences in how participants perceive and experience the integration of digital technologies. For this article, digital maturity is not used as a quantitative index but as a qualitative assessment of perceived integration, reliability, usability, interoperability, professional support, and practical effects on access to justice. This definition matters because the mere availability of digital tools does not

necessarily mean that courts, professionals, or litigants experience them as access-enhancing.

Country	Digital maturity	Strengths	Challenges
Estonia	High	Fully digital proceedings; intuitive and reliable; efficient access to case files; procedural transparency; routine use of electronic signatures; availability of remote hearings.	Limited perceived impact on case duration despite extensive digitalisation.
Lithuania	High but uneven	Extensive electronic case handling; perceived gains in efficiency, speed and accessibility because of e-filing and remote hearings.	Outdated and complex software and uncertainty regarding future system upgrades; internal usability challenges.
Italy	Functional but complex	Clear legal framework; improved case management; reduced procedural barriers regarding paper filing, physical presence, and information retrieval.	Technical malfunctions; growing procedural complexity; increased technical expertise requirements; concerns regarding reduced oral participation.
Croatia	Uneven	Improved case management, oversight, transparency, and procedural efficiency.	Regional infrastructure disparities; inconsistent implementation; security and infrastructural concerns; uneven benefits across user groups.
Czechia	Partial and fragmented	Effective electronic filing; reduction of some procedural barriers.	Outdated case management systems; fragmentation; insufficient support for substantive legal work; limited interoperability.
Belgium	Formal rather than functional	Improved document transmission and communication.	Fragmentation; outdated platforms; usability, governance, and security concerns; duplication of work; reliance on individual initiative; limited coordination across institutions.

Table 1: Perceived digital maturity

As Table 1 also indicates, among the six jurisdictions examined, Estonian stakeholders emphasise that digital technologies are not only widely adopted but also deeply integrated into daily judicial practice. They highlight features such as fully digital proceedings, the routine use of electronic signatures, and the availability of remote hearings. Stakeholders across professional groups

describe existing digital tools as intuitive and reliable, enabling swift access to case files, efficient communication, and procedural transparency. Yet judges were cautious about equating digital maturity with faster justice, noting that "statistics show that the average duration of civil cases in country courts has increased in recent years".

Similarly, Lithuanian respondents report that the vast majority of labour law cases are handled electronically. Lawyers and policymakers associate e-filing and remote hearings with greater efficiency, fewer errors, and faster procedures. Judges and court staff, however, were more critical of the LITEKO case-management system, which they describe as "outdated" and "overly complex", requiring "numerous technical steps and workarounds". Therefore, respondents generally associated digital tools with improved accessibility, while reporting internal usability challenges and uncertainty about future system upgrades, indicating an uneven experience of digital integration.

Italian respondents view their digital system as relatively mature and stable, centred on the *Processo Civile Telematico* and underpinned by a clear legal framework. Judges and lawyers frequently associate digitalisation with easier filing, reduced reliance on paper, improved access to information, and more efficient case management. An Italian policymaker noted that digital tools have "radically transformed the day-to-day management of cases". However, respondents also identified technical malfunctions, increasing procedural complexity, and higher demands for technical expertise. The same policymaker cautioned that "digitalisation has significantly weakened the value of oral proceedings and the active participation of lawyers in court", adding that "platforms are often designed by technicians rather than jurists".

The Croatian sample describes a more uneven pattern of digitalisation. Policymakers and judges view e-Spis as an important improvement in case management, oversight, and procedural efficiency. They associate digital tools with strengthened institutional capacity and greater transparency. Lawyers, however, are more critical, describing the systems as insufficiently developed, inconsistently implemented, and vulnerable to security and infrastructure weaknesses. These concerns were particularly evident outside larger urban centres, where a Croatian policymaker notes, "although infrastructure is relatively satisfactory in large population and regional centres, it can be completely abysmal in courts situated on remote islands or in sparsely populated regions (such as Lika)".

Czech respondents describe a mixed experience of digitalisation, marked by partial integration and fragmentation. Electronic filing via data boxes is widely regarded as effective and beneficial, but core case management systems are perceived as outdated and misaligned with judicial workflows. Judges and court staff often characterise digital tools as administratively functional yet insufficiently supportive of substantive legal work. They report that the information system "serves essentially as a filing service for storing documents without actively supporting decision-making or procedural activities".

Lawyers similarly emphasise the gap between technological potential and actual use, particularly where parallel systems and limited interoperability persist.

Finally, despite the availability of multiple digital tools, Belgian stakeholders hold more critical views of their jurisdiction's digital maturity. Across all professional groups, respondents acknowledged improvements in document transmission and communication, but described fragmented platforms, outdated tools, usability problems, governance concerns, and security risks. Digital systems often required parallel manual processes, duplicating work and undermining efficiency and legal certainty. A policymaker linked this fragmentation to reliance on "individual initiative", suggesting that many digital improvements depend on the voluntary efforts of a small number of motivated individuals rather than on a coherent and well-resourced national digitalisation strategy. The policymaker further observed that courts have traditionally operated as isolated "islands", with limited coordination, information-sharing, and technological integration across institutions. In Belgium, digital maturity is therefore perceived as more formal than functional.

5. AI AND PREDICTIVE ALGORITHMS TO SUPPORT ACCESS TO JUSTICE

The empirical materi+al suggests a stable distinction between three forms of AI use in justice: *administrative or ancillary AI*, such as pseudonymisation, document handling, translation, and workflow support; *cognitive-professional support tools*, such as legal research, summarisation, drafting, and information retrieval; and *predictive or outcome-oriented systems* that identify patterns in legal data to support case assessment or decision-making. The first two categories are generally accepted, provided their outputs remain subject to professional verification. Predictive tools generate substantially stronger resistance, especially where they may influence adjudicative reasoning or undermine judicial independence. Attitudes are shaped by national digital maturity, prior experience with digital tools, institutional trust, and the availability of role-specific training. Judges are the most sceptical group regarding predictive algorithms. They tend to accept AI in narrow supportive functions (such as case-law retrieval, file summarisation, and pseudonymisation) but resist any framing of AI as outcome guidance. Their concerns focus on automation bias, loss of discretion, accountability, and the fact-sensitive nature of labour disputes. As an Italian respondent stressed, "judicial decision-making cannot be reduced to numbers and legal provisions, because each dispute requires a contextual assessment that 'can only be made by people'". This resistance reflects concern that predictive tools may oversimplify sensitive labour disputes, disadvantage weaker parties, standardise outcomes, and stifle legal creativity. A Czech respondent similarly warned that "AI-based decision-making could trap the judiciary in rigid patterns of 'runaway logic' detached from social change".

Court staff are generally receptive to administrative AI, including document handling, pseudonymisation of case law, and workflow support. However, they report limited direct use and emphasise the need for clear governance frameworks, training, and transparency, particularly to avoid liability for unverified AI-supported outputs. Resistance arises when systems are unreliable, poorly integrated, or increase manual work rather than reducing it. Belgian court staff, for example, report that the existing AI-based pseudonymisation tool, JustMask, still requires significant human correction and manual input. Lawyers are generally the most experimental group. They use AI for drafting, translation, and legal research, while also warning of hallucinations, breaches of professional secrecy, confidentiality risks, and client-side misuse, such as clients generating documents and expecting lawyers merely to "validate" them. While AI-supported research can improve access to legal information, uneven uptake risks widening informational asymmetries between well-resourced parties and those without professional representation.

Mediators view AI as a logistical or communicative aid, for example, in translation, editing, scheduling, or exploring communication styles. They rejected predictive justice more firmly, emphasising that mediation depends on interpersonal dynamics, trust, and contextual sensitivity that algorithmic models cannot capture. As a Belgian mediator put it, "AI must not fill users' knowledge gaps" and "AI may support professional work, but should not displace competence, judgment, or responsibility".

Policymakers adopt a cautious yet forward-looking stance. They recognise AI's potential systemic benefits, particularly in efficiency and consistency, but emphasise the need for clear legal frameworks, controlled pilot projects, and robust safeguards before deployment. This stance reflects heightened concern for institutional risk, public trust, and compliance with fundamental rights.

Country differences broadly mirrored earlier digital-maturity findings. In Estonia, stakeholders report limited experimentation with AI and predictive algorithms, coupled with strict expectations for human review due to hallucination risks. Although Estonia is described as having mature everyday digital literacy and user-friendly digital infrastructure, respondents emphasise the lack of structured AI-specific training. They instead rely largely on self-directed learning, which risks reinforcing internal inequalities and may particularly disadvantage older professionals. Lithuanian respondents are similarly cautious, with experimentation largely confined to data management and processing tasks. Training is described as fragmented and reactive, often reaching only a small group of professionals who then cascade knowledge informally, producing uneven competence across professionals and institutions. Participants also highlight the growing need for cybersecurity and digital forensics skills to assess AI-generated or manipulated outputs.

Italian respondents generally acknowledge that AI and predictive tools may improve access to legal information by helping practitioners identify recurring patterns in case law, assess litigation risks, guide parties towards

more informed decisions, and produce outcomes broadly consistent with established case law. They nevertheless stress that labour disputes require personal, social, and contextual assessment that algorithmic models cannot fully capture. This position reflects a broader concern among Italian respondents that excessive reliance on predictive models could undermine judicial autonomy, standardise legal reasoning, and weaken the qualitative and equitable dimension of labour adjudication.

Belgian respondents express some of the most sceptical views towards AI and predictive algorithms. This scepticism is closely linked to broader experiences of fragmented digital infrastructure and weak AI governance. Training is insufficiently aligned with the evolving demands of practitioners' roles. Judges call for advanced training in AI and predictive algorithms, rather than training limited to office software or basic system use. Court staff report a lack of deep technical knowledge and on-site support, while lawyers and mediators describe digital upskilling as largely self-driven or provided by professional associations, with limited structured institutional support. Czech respondents express similar caution, largely because they do not feel sufficiently familiar with AI or predictive algorithms. AI experimentation remains informal and unsystematic, with learning often occurring through trial and error. Respondents therefore call for practice-oriented training aligned with everyday professional tasks, moving beyond general principles towards the safe, context-aware use of AI tools. Finally, Croatian respondents also report low familiarity with AI and predictive algorithms, with scepticism shaped by prior implementation failures, including voice-to-text difficulties with dialects and connectivity deficits in remote areas. Respondents often discuss predictive algorithms in abstract terms, and their acceptance is conditional on limiting AI use to low-risk or low-value procedures. Resistance is framed as a precaution against undermining adjudicative authority. Training is described as uneven and dependent on personal initiative.

Taken together, these findings show that attitudes towards AI in labour law courts are shaped not only by the type of tool under consideration but also by the institutional conditions in which it would be used. The following discussion, therefore, examines how these empirical findings relate to the EU's human-centric digital justice framework and what they reveal about the conditions under which digitalisation and AI can support access to justice.

6. DISCUSSION

The doctrinal and empirical analysis suggests a conditional answer to the article's central research question: whether digitalisation and AI can improve access to justice in labour law disputes without undermining fundamental rights and the rule of law. These tools can support access to justice when they reduce administrative burdens, improve access to legal information, and remain embedded in professional judgement. They can also weaken access to justice when deployed through fragmented infrastructure, opaque

governance, insufficient training, or predictive tools that exert pressure on adjudicative reasoning. From a doctrinal perspective, EU digital justice policy is explicitly anchored in fundamental rights guarantees. Article 47 CFR, read together with Articles 67(4) and 81(2)(e) TFEU, frames access to justice as both an individual right and a systemic obligation. The EU digitalisation agenda—through the e-Justice Action Plans and, most recently, Regulation (EU) 2023/2844—reflects a conscious attempt to operationalise this obligation by reducing informational asymmetries, procedural friction, and cross-border barriers. Importantly, EU law consistently resists a "digital-only"model, embedding safeguards against digital exclusion and recognising that effective access cannot be conditioned on digital capacity. At the same time, EU digital justice policy presupposes the existence of mature digital infrastructures, coherent governance structures, and professionals with the competence, authority, and resources to operate and oversee digital systems. In practice, these conditions are unevenly met across Member States.

In *more digitally mature systems*—such as Estonia and, to a lesser extent, Lithuania and Italy—digital tools appear to reduce logistical and procedural barriers: remote hearings, e-filing, and electronic access to case files are linked to greater transparency, predictability, and user convenience. However, even in these systems, infrastructural sophistication does not automatically translate into faster proceedings or greater systemic efficiency.

In *less digitally mature systems*, such as Belgium, Czechia and Croatia, the access-enhancing promise of digitalisation is far more fragile. Fragmentation, outdated systems, and the persistence of parallel paper and digital workflows lead to duplication of work and exacerbate infrastructural inequalities, often neutralising or even reversing expected gains. Here, digital tools may introduce new barriers—such as technical complexity, unreliability, or uneven access—particularly affecting unrepresented parties and practitioners. These insights underscore that digitalisation alone does not constitute a fourth-wave solution to access to justice; rather, it may reproduce or exacerbate existing inequalities when integration and governance lag behind adoption.

6.1. AI, predictive algorithms and their limits

Doctrinally, the AI Act marks a decisive shift: by classifying many justice-related AI systems as high risk, EU law acknowledges that algorithmic tools can affect rights, institutional legitimacy, and public trust. Empirical findings confirm and qualify this regulatory logic. Across jurisdictions and professional groups, respondents accept AI when it remains supportive but resist predictive algorithms that might influence adjudicative outcomes. This boundary is particularly important in labour law, where disputes are fact-sensitive, context-dependent, and often marked by power asymmetries between the parties. In practice, the acceptable limit of AI assistance is therefore set before algorithmic outputs begin to exert normative pressure on judicial rea-

soning. Yet drawing this boundary does not guarantee that it can be maintained in practice. Whether algorithmic outputs are kept from exerting normative pressure on judicial reasoning ultimately depends on professionals' capacity to interpret, contest, and override them, which shifts the question from permissible AI use to human oversight.

6.2. Reframing human oversight as a structural capacity issue

The AI Act assumes that legal professionals can critically assess, contextualise, and override algorithmic outputs. However, the empirical material shows that this assumption is only partially met. This article, therefore, reframes human oversight not as an individual responsibility but as a structural capacity issue.

Across jurisdictions, the recurring problem is not the complete absence of training but a systematic mismatch between what is offered and what professionals perceive as necessary. Training is often basic, voluntary, or demonstrative, whereas meaningful oversight requires advanced, role-specific competence. Professionals emphasised that effective oversight requires legal expertise, data transparency, and bias detection. Without such competence, formal oversight rights cannot be exercised effectively.

As a result, responsibility for human-centric AI is delegated to individual initiative rather than institutional support. Digitally confident professionals become de facto "oversight-capable actors", while others remain excluded, making equality before the law increasingly dependent on individual capacity. Professionals may be formally responsible for decisions without being practically empowered to supervise the tools that increasingly shape legal reasoning. Under such conditions, human oversight risks becoming symbolic compliance rather than a substantive safeguard.

Time constraints, unclear organisational authority, and limited transparency about system design further constrain critical engagement. When AI outputs begin to influence legal reasoning and decision-making under these conditions, access to justice is strained rather than improved.

6.3. AI as an access-enabling tool with clear limits

The empirical material does not support a blanket rejection of AI. These tools may contribute positively to access to justice when they remain ancillary or cognitive-supportive and are embedded within professional judgement and institutional safeguards. They can reduce information asymmetries by supporting legal research, identifying relevant case law, and structuring large volumes of legal material; they can also accelerate administrative tasks such as document handling, summarisation, and anonymisation. However, these benefits are not automatic. They depend on reliable infrastructure, transparent data sources, professional verification, and the ability to chal-

lenge or disregard AI-generated outputs. By contrast, respondents expressed strong reservations about predictive AI, citing concerns about standardisation, the reinforcement of dominant lines of case law, and more subtle normative effects on legal reasoning. The concern is not that AI will formally replace decision-makers, but that it may gradually shape their behaviour, particularly under conditions of heavy workload or limited capacity to scrutinise algorithmic outputs critically. In labour law, where disputes are highly context-dependent and often involve significant power imbalances, such influence risks undermining procedural fairness, judicial independence, and sensitivity to the circumstances of individual cases.

6.4. Governance implications at multiple levels

At the *EU level*, existing regulatory frameworks would benefit from greater attention to implementation conditions, particularly training, organisational capacity, and evaluation mechanisms. Human oversight obligations cannot be effective if treated as abstract requirements detached from institutional realities. Without sustained investment in these conditions, the AI Act's human-centric ambition risks remaining aspirational. At the *national level*, judicial systems face the challenge of investing in technology without parallel investment in training and organisational design. As a result, digitalisation risks remaining superficial and delivering only limited improvements in access to justice. Rights-compliant use of AI, therefore, requires not only integrated digital systems but also clear governance frameworks and role-specific training for legal professionals. At *professional and court levels*, training cannot rely solely on individual initiative. Effective oversight requires structured training programmes, opportunities for peer learning, and clear lines of accountability. Without these safeguards, disparities in competence may undermine the quality and legitimacy of AI-enhanced justice.

7. LIMITATIONS AND FUTURE RESEARCH SUGGESTIONS

This study offers qualitative insights into how labour law professionals perceive and experience digitalisation and AI. However, it does not provide statistically generalisable findings or macro-level evidence of technological impact. Given the purposive, consortium-based sample, the findings should be understood as an exploratory comparative account of professional perspectives and institutional conditions rather than a representative assessment of EU labour courts. Another limitation is that discussions of AI and predictive algorithms remain inherently exploratory. In most of the jurisdictions examined, these instruments are lacking, limited to pilot projects, or known mainly through indirect experience. As a result, stakeholder perceptions are often anticipatory or speculative, shaped by expectations, concerns, and limited experimentation rather than by sustained practical use. Finally,

practitioner perceptions do not provide direct evidence of technological impact on judicial outcomes. Yet they remain valuable sociolegal data because they reveal how legal actors interpret, negotiate, resist, and legitimise technological change. These perceptions are especially important in justice systems, where professional trust, organisational readiness, and perceived legitimacy shape whether digital and AI-supported tools are adopted responsibly.

Future research should move beyond perception-based analysis and examine the operational effects of digital and AI-supported tools on labour law adjudication. Longitudinal and mixed-methods studies could assess how specific technologies affect case duration, settlement rates, reasoning quality, procedural participation, and litigant experience. Future work should also include litigants' perspectives, since access to justice cannot be fully assessed from professional viewpoints alone.

8. CONCLUSION

This article has argued that digitalisation and artificial intelligence can enhance access to justice in labour law disputes, but only under specific institutional conditions. Reliable, integrated, user-oriented systems, supported by training and organisational support, may reduce administrative burdens and information asymmetries. By contrast, fragmented, opaque, or poorly governed systems may reproduce or amplify existing barriers.

The empirical findings support a human-centric approach while revealing its practical fragility. Across jurisdictions and professional groups, participants welcomed digital tools and AI for assistive functions that reduce administrative burdens, improve access to information, and facilitate procedural navigation. At the same time, they resisted predictive algorithms that could influence adjudicative outcomes, particularly in labour law disputes where factual context, discretion, and power asymmetries are central. This resistance should not be read as technophobia but as a principled defence of qualitative reasoning, contestability, judicial independence, and substantive equality. Participants also noted a gap between EU ambitions and national-level realities, as many labour law courts struggle with fragmented systems, inconsistent digital practices, and insufficient technical support. In these settings, AI-enhanced justice remains a distant prospect. Even in advanced digital systems (e.g. Estonia), respondents did not observe automatic improvements in speed or outcomes, suggesting that technology alone is not a cure for deeper structural issues.

The article's main contribution is to show that human oversight is, in practice, a matter of capacity. Oversight feels meaningless when legal professionals lack training, time, institutional support, and a sufficient understanding of how AI systems operate. When responsibility is left to individual initiative, access to justice becomes uneven: digitally confident professionals and parties can use innovation strategically, while others may be disadvantaged,

disempowered, or mistrustful. For policymakers, the implication is clear: AI implementation in justice should be paired with integrated infrastructure, role-specific training, transparent governance, and mechanisms that ensure human professionals retain effective control over system outputs. For court administrations, investment in technology must be matched by investment in people, procedures, and accountability. For scholarship, the article shows the value of connecting doctrinal analysis with empirical inquiry into everyday judicial practice. In this sense, the fourth wave of access to justice cannot be realised through technology alone. It requires sustained institutional commitment to ensure that digital and AI-enabled justice remains accessible, contestable, transparent, and firmly under meaningful human control.

9. FUNDING ACKNOWLEDGEMENT

This paper has been partially produced with the financial support of the European Union, JUST-2023-JACC-EJUSTICE Programme (under grant agreement no. 101160528, IDEA Project). Views and opinions expressed are, however, those of the authors only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them.

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