

ORIGINAL ARTICLE

The legal governance of ai upskilling and reskilling: towards a new employer duty

La gobernanza jurídica de la mejora y la reconversión de las competencias en IA hacia un nuevo deber del empleador

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Abstract This article examines whether the rapid adoption of artificial intelligence (AI) justifies a broader interpretation of employer responsibilities regarding continuous upskilling and reskilling. An interdisciplinary qualitative methodology was employed, combining doctrinal-comparative legal analysis with a systematic literature review conducted according to the PRISMA 2020 guidelines. Scientific evidence was collected from Scopus, Web of Science, ScienceDirect and SpringerLink, complemented by reports from the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (WEF). The findings indicate that AI-driven workforce transformation extends beyond technological innovation and significantly affects employability, requiring organisations to anticipate skills disruption through strategic workforce development. The study identifies a conceptual gap between labour law, strategic human resource management and corporate governance concerning employer responsibility for workforce capability development. To address this gap, it proposes the AI Employability Governance Framework (AEGF), an original model integrating strategic workforce foresight, continuous upskilling, reskilling pathways, shared employer responsibility, labour rights protection and sustainable employability. The framework contributes to the emerging debate on responsible AI governance by providing a conceptual foundation for more inclusive, resilient and legally informed models of workforce transformation.

Keywords artificial intelligence, upskilling, reskilling, labour law, human resource management.

Resumen El presente artículo analiza si la rápida adopción de la inteligencia artificial (IA) justifica una interpretación más amplia de las responsabilidades del empleador en materia de upskilling y reskilling continuos. Se empleó una metodología cualitativa interdisciplinaria que combinó el análisis jurídico doctrinal-comparado con una revisión sistemática de la literatura realizada conforme a las directrices PRISMA 2020. La evidencia científica se obtuvo de Scopus, Web of Science, ScienceDirect y SpringerLink, complementada con informes de la Organización Internacional del Trabajo (OIT), la Organización para la Cooperación y el Desarrollo Económicos (OCDE) y el Foro Económico Mundial (WEF). Los resultados muestran que la transformación del trabajo impulsada por la IA trasciende la innovación tecnológica y afecta directamente la empleabilidad, exigiendo que las organizaciones anticipen la obsolescencia de competencias mediante una planificación estratégica del talento. Asimismo, se identifica una brecha conceptual entre el Derecho del Trabajo, la gestión estratégica de recursos humanos y la gobernanza corporativa respecto de la responsabilidad empresarial en el desarrollo de capacidades laborales. Como principal aporte, se propone el AI Employability Governance Framework (AEGF), un modelo que integra previsión estratégica, desarrollo continuo de competencias, protección de derechos laborales y empleabilidad sostenible para orientar una gobernanza responsable de la transformación del trabajo.

Palabras clave inteligencia artificial, upskilling, reskilling, derecho del trabajo, gestión de recursos humanos.

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Introduction

Artificial intelligence (AI) is rapidly redefining the relationship between technological innovation, organisational competitiveness and workforce development. While early applications of AI in human resource management (HRM) primarily focused on automating recruitment, employee selection and administrative processes, recent advances in generative AI and intelligent decision-support systems have fundamentally transformed the competencies required to participate effectively in the labour market. Rather than replacing isolated tasks, AI is reshaping entire occupational profiles, accelerating skills obsolescence and compelling organisations to reconsider how employability can be sustained in an environment characterised by continuous technological disruption. This transition has shifted scholarly attention from the adoption of AI technologies to the broader challenge of ensuring that workers possess the capabilities necessary to adapt to increasingly dynamic forms of work (OECD, 2023; ILO, 2025; Kulkov et al., 2024).

Recent evidence indicates that AI-related technological change is generating unprecedented demand for advanced digital, analytical and socio-cognitive skills while simultaneously reducing the relevance of routine competencies. According to the World Economic Forum, nearly half of employees worldwide will require significant reskilling or upskilling before the end of the decade as AI increasingly complements or transforms existing job functions. Similarly, the Organisation for Economic Co-operation and Development argues that technological progress alone cannot guarantee inclusive economic growth unless organisations invest systematically in lifelong learning and workforce capability development. These findings suggest that the sustainability of AI-driven transformation depends not only on technological adoption but also on the institutional capacity to maintain workers' employability throughout their careers (Barbosa & Real de Oliveira, 2026; Chhibber et al., 2025; Pasi et al., 2026).

The emerging literature has consequently recognised upskilling and reskilling as strategic mechanisms through which organisations enhance innovation capacity, organisational resilience and long-term competitiveness. Within strategic HRM, continuous learning is no longer regarded merely as a developmental activity but as a central organisational capability that enables firms to respond effectively to technological uncertainty and rapidly changing business environments. Recent empirical studies demonstrate that organisations investing in structured AI-related learning programmes experience greater workforce adaptability (Nawaz et al., 2024), stronger innovation performance and higher levels of organisational resilience than firms adopting technology without equivalent investments in human capability development (Minbaeva, 2023). Consequently, human capi-

tal development is increasingly interpreted as a strategic investment rather than an operational cost. (Pasi et al., 2026)

Despite this growing consensus, the legal dimension of AI-induced workforce transformation remains comparatively underdeveloped. Existing scholarship has predominantly examined AI governance through the lenses of algorithmic accountability, automated decision-making, data protection and ethical principles. Although these contributions have substantially advanced understanding of responsible AI deployment, considerably less attention has been devoted to a more fundamental question: does the widespread adoption of AI generate a legal responsibility for employers to preserve workers' employability through continuous upskilling and reskilling? This question becomes particularly relevant because the risks associated with AI are no longer confined to discriminatory automated decisions; they increasingly concern the possibility that workers become structurally excluded from labour markets owing to insufficient opportunities for capability development.

This problem is not merely managerial. It raises a deeper legal question concerning the transformation of employer obligations in technologically intensive workplaces. Labour law has historically recognised employer duties related to occupational safety, non-discrimination, vocational training, information, consultation and protection against arbitrary dismissal. Yet the acceleration of AI adoption challenges the adequacy of these traditional categories. If technological restructuring makes existing skills obsolete, and if employers are the primary institutional actors deciding when, how and where AI systems are introduced, the preservation of workers' employability can no longer be treated as an exclusively individual responsibility. It becomes part of the normative architecture through which labour law responds to asymmetries of power, information and opportunity within the employment relationship.

International policy debates increasingly point in this direction. The Organisation for Economic Co-operation and Development (OECD) highlights that AI governance cannot be separated from labour market adaptation mechanisms. The OECD Employment Outlook 2023 devotes specific attention to artificial intelligence, skills policies, ethical challenges and the role of social dialogue in supporting the AI transition (OECD, 2023). Similarly, the International Labour Organization (ILO) has emphasised that AI and digitalisation are reshaping working conditions and occupational exposure, including through generative AI, making skills development and protection against exclusion central to fair technological transitions (ILO, 2025). These findings are consistent with the analysis of Pronello & Fedeli (2025), who argue that technological transformation requires continuous workforce adaptation. Likewise, the World Economic Forum identifies

technological change, artificial intelligence and digital transformation as major drivers of skills disruption, reinforcing the need for systematic upskilling and reskilling strategies rather than episodic training interventions (World Economic Forum, 2025).

However, these policy documents tend to frame upskilling and reskilling as instruments of competitiveness, adaptability or labour-market policy, rather than as potential legal obligations within the employment relationship. This reveals a significant research gap. The current literature on AI and work has advanced sophisticated debates on automation risks, algorithmic management, data protection, platform labour and digital surveillance, but it has not sufficiently conceptualised training for AI-enabled workplaces as a juridical duty connected to sustainable employability. In HRM research, skills development is usually analysed as a strategic practice; in labour law, training is commonly treated as a right, policy objective or collective bargaining issue; in corporate governance, human capital is increasingly linked to ESG and sustainability reporting. What remains underdeveloped is an integrated theory explaining when and why AI-related upskilling and reskilling should become part of the employer's duty of responsible workforce transformation.

This article addresses that gap by proposing the concept of AI Employability Governance, understood as the integrated legal, organisational and strategic system through which employers anticipate AI-induced skills disruption and ensure fair, continuous and inclusive access to upskilling and reskilling opportunities. The central argument is that, in AI-enabled organisations, employability should not be reduced to an individual attribute or a market outcome. Rather, it should be understood as a shared institutional responsibility shaped by employer power, technological decision-making, access to training, social dialogue and corporate accountability. This approach allows the article to move beyond the conventional distinction between voluntary HR development and mandatory labour protection, offering instead a governance framework in which workforce capability development becomes a condition of lawful and legitimate AI adoption.

The objective of the article is therefore to examine whether AI-induced skills disruption justifies the recognition of a new employer duty to support sustainable employability through continuous upskilling and reskilling. To achieve this objective, the article combines doctrinal-comparative legal analysis with a systematic review of recent literature on AI, HRM, labour law, skills governance and sustainable employment. Its original contribution lies in the development of the AI Employability Governance Framework (AEGF), a theoretical and operational model that connects strategic workforce foresight, continuous AI upskilling, reskilling pathways, labour rights protection, shared employer responsibility and sustainable employability outcomes.

The article proceeds as follows. First, it explains the methodological approach and the selection of academic and institutional sources. Second, it analyses AI-induced skills disruption as a legal and organisational problem. Third, it examines the evolution of employer duties in light of technological transformation and workforce vulnerability. Fourth, it develops the AI Employability Governance Framework as an original contribution to HRM and labour law scholarship. Finally, it discusses the implications of the proposed framework for organisations, regulators, social partners and future research, with particular attention to emerging economies in Latin America.

Methodology

This study adopts an interdisciplinary qualitative research design combining doctrinal-comparative legal analysis with a systematic literature review (SLR) conducted in accordance with the PRISMA 2020 Statement. This methodological integration was selected because the research objective extends beyond describing existing knowledge to developing an original theoretical framework explaining how employer responsibilities evolve in response to AI-driven workforce transformation. The combination of legal analysis and evidence synthesis enables a comprehensive examination of the intersection between labour law, human resource management (HRM), corporate governance and artificial intelligence (AI), thereby supporting the development of a novel governance perspective.

The doctrinal component examined the evolution of employer obligations regarding vocational training, employability protection, lifelong learning and workforce adaptation within contemporary labour law. Particular attention was given to the legal implications of technological transformation, the redistribution of responsibilities between employers and employees, and the emergence of international regulatory approaches promoting responsible AI adoption. The comparative dimension considered supranational regulatory developments, international policy instruments and emerging governance principles applicable to AI-enabled workplaces.

The systematic literature review followed the reporting recommendations established by the PRISMA 2020 Statement (Page et al., 2021). Searches were performed in four major scientific databases—Scopus, Web of Science Core Collection, ScienceDirect and SpringerLink—because of their extensive coverage of high-impact research in HRM, labour law, organisational studies and digital governance. Additional institutional publications were retrieved from the websites of the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the European Commission and the World Economic Forum (WEF) to incorporate recent policy and regulatory developments relevant to AI, employment and workfor-

ce skills.

The search strategy combined controlled vocabulary and free-text keywords using Boolean operators. The principal search string included the following terms:

("artificial intelligence" OR "generative AI") AND ("upskilling" OR "reskilling" OR "lifelong learning") AND ("human resource management" OR "human capital") AND ("labour law" OR "employment law") AND ("employability" OR "future skills" OR "workforce transformation").

To ensure the relevance and contemporaneity of the evidence, the review was limited to publications released between January 2022 and March 2026, although seminal works were retained where necessary to support foundational theoretical concepts. Eligible sources included peer-reviewed journal articles, international reports, regulatory documents and official policy papers published in English. Editorials, conference abstracts, opinion pieces, duplicated records and non-peer-reviewed documents were excluded unless issued by internationally recognised organisations such as the ILO or OECD.

Following duplicate removal, titles and abstracts were independently screened according to predefined inclusion criteria. Full-text assessment was subsequently undertaken to determine conceptual relevance, methodological quality and direct alignment with the research objective. Particular emphasis was placed on studies addressing AI-enabled workforce transformation, digital skills, strategic HRM, employability, organisational capability development, labour regulation and corporate governance. Rather than conducting a quantitative meta-analysis, the review employed a thematic synthesis, allowing the identification of recurrent concepts, theoretical convergences, normative divergences and unresolved research gaps across disciplines.

The analytical process comprised four sequential stages. First, the selected studies were classified according to disciplinary orientation, including HRM, labour law, organisational governance, AI regulation and public policy. Second, recurring themes associated with employer responsibilities, workforce capability development and sustainable employability were identified through iterative coding. Third, these findings were interpreted comparatively in light of contemporary labour law principles and international governance initiatives. Finally, the resulting evidence informed the development of the AI Employability Governance Framework (AEGF), which constitutes the principal theoretical contribution of this article.

Although the study relies exclusively on publicly available academic and institutional sources and therefore did not require approval from a research ethics committee, the research adhered to recognised standards of academic integrity, transparency and methodological rigour. All sources were critically evaluated according to their scientific quality,

institutional credibility and relevance to the research objective. Nevertheless, some limitations should be acknowledged. The review was restricted to English-language publications indexed in major international databases, which may have excluded valuable regional scholarship published in other languages. Furthermore, because the proposed framework is conceptual, future empirical research will be required to validate its applicability across different legal systems, industrial sectors and organisational contexts.

Results and discussion

The rapid diffusion of artificial intelligence (AI), particularly generative AI, is transforming not only how organisations perform work but also the competencies required to remain employable. Unlike previous waves of technological innovation, which primarily automated repetitive or routine tasks, contemporary AI systems increasingly complement or substitute complex cognitive activities, altering occupational structures across both high- and low-skilled professions. Consequently, workforce transformation can no longer be understood merely as a process of technological adaptation; it represents a structural reconfiguration of human capital requirements that affects organisational competitiveness, labour market participation and long-term employability.

Recent international evidence confirms that AI is accelerating the pace of skills disruption. The Future of Jobs Report 2025 estimates that approximately 39% of workers' core skills will change by 2030, largely because of technological progress, generative AI and digital transformation. The report also identifies analytical thinking, AI literacy, technological proficiency, resilience and continuous learning as among the fastest-growing competencies required by employers worldwide (World Economic Forum, 2025). Rather than eliminating work altogether, AI is redefining the composition of jobs, increasing demand for adaptable workers capable of integrating technological knowledge with cognitive, interpersonal and ethical capabilities.

A similar conclusion emerges from the OECD Employment Outlook 2023, which argues that AI should not be analysed exclusively in terms of job displacement. Instead, its principal impact lies in the transformation of task composition, requiring continuous capability renewal throughout employees' careers. The OECD further notes that the benefits of AI depend significantly on complementary investments in education, vocational training and lifelong learning policies. Organisations that fail to develop workforce capabilities risk creating productivity gaps, reduced innovation capacity and growing inequalities between highly skilled and less adaptable workers (OECD, 2023).

From the perspective of strategic human resource management (SHRM), these developments reinforce the argument that organisational competitiveness increasingly depends on

dynamic human capabilities rather than static knowledge assets. Recent HRM scholarship suggests that firms derive sustainable competitive advantage when they systematically anticipate future competency requirements and align learning strategies with technological change (Minbaeva, 2023). Accordingly, upskilling and reskilling should not be viewed as isolated training initiatives but as strategic investments that strengthen organisational resilience, innovation capacity and long-term workforce sustainability.

Nevertheless, the literature reveals a significant imbalance. Most empirical studies evaluate the effectiveness of AI-related training programmes by examining productivity gains, digital readiness or employee performance. Comparatively little attention has been devoted to the legal implications arising when organisations introduce AI technologies without providing workers with realistic opportunities to acquire the competencies required for new forms of work. This omission is particularly significant because technological transformation is generally initiated by organisational decisions rather than by employees themselves. Consequently, responsibility for managing the risks associated with skills obsolescence cannot reasonably rest solely with individual workers.

The distinction between technological adoption and workforce capability transformation therefore becomes critical. Organisations frequently invest substantial financial resources in AI infrastructure while allocating comparatively fewer resources to systematic capability development. This asymmetry creates what may be described as a capability transition gap, whereby technological implementation progresses more rapidly than workforce adaptation. The result is not only reduced organisational performance but also increased vulnerability for employees whose existing competencies gradually lose economic value despite continued contractual commitment.

This capability transition gap has important implications for labour law. Traditionally, employability has been considered largely an individual responsibility influenced by education, experience and labour market conditions. However, in AI-enabled workplaces, employability increasingly depends on strategic organisational decisions regarding technology adoption, work redesign and access to learning opportunities. When employers determine the pace and direction of technological transformation, they simultaneously influence workers' capacity to remain professionally relevant. Under these circumstances, employability evolves from a purely personal characteristic into a shared organisational responsibility with legal, managerial and ethical dimensions.

The evidence reviewed therefore suggests that AI-induced workforce transformation should be interpreted not simply as a technological challenge but as a governance challenge. Sustainable AI adoption requires organisations to balance innovation with continuous human capability development.

Failure to do so risks producing structural inequalities in access to future employment, undermining organisational resilience and weakening the legitimacy of AI-driven business transformation. These findings provide the conceptual foundation for reconsidering whether employer-sponsored upskilling and reskilling should remain discretionary HR practices or gradually evolve into components of a broader duty of responsible workforce governance.

Labour law has traditionally recognised vocational training as an important instrument for promoting productivity, professional development and labour market integration. However, the legal foundations of employer-sponsored training have historically been conceived within industrial production systems characterised by relatively stable occupational structures and gradual technological change. Under these conditions, workforce training was generally understood as a complementary organisational practice designed to improve efficiency rather than as a mechanism for protecting workers against technological exclusion.

The acceleration of artificial intelligence (AI) fundamentally challenges these assumptions. Unlike previous technological transitions, AI continuously reshapes job content, competency requirements and occupational trajectories, reducing the useful life of existing knowledge while simultaneously creating demand for new technical, analytical and socio-cognitive capabilities. As a result, employability can no longer be viewed solely as the consequence of individual educational attainment or professional experience; rather, it increasingly depends on organisational decisions concerning technology adoption, work redesign and access to continuous learning opportunities.

This transformation has significant legal implications. The employment relationship has long been characterised by an inherent imbalance of economic and managerial power, which justifies the existence of protective labour legislation. Employers determine organisational structures, production processes, technological investments and strategic priorities, whereas employees generally exercise limited influence over these decisions. Consequently, when organisations introduce AI systems that substantially modify skill requirements, workers face risks that they neither initiate nor control. From this perspective, the erosion of employability resulting from technological transformation cannot reasonably be attributed exclusively to individual responsibility.

Contemporary international legal and policy instruments increasingly acknowledge the importance of lifelong learning as an essential component of decent work and sustainable economic development. The ILO has consistently emphasised that technological innovation should contribute to inclusive labour markets by expanding access to skills development throughout working life rather than reinforcing existing inequalities (ILO, 2025). Similarly, the OECD ar-

gues that governments, employers and workers share responsibility for ensuring that technological progress translates into inclusive labour market outcomes through continuous investment in workforce capabilities (OECD, 2023). These developments indicate an emerging international consensus that employability constitutes a collective governance objective rather than a purely individual concern.

Nevertheless, a careful examination of the legal literature reveals that the concept of employer responsibility has not evolved at the same pace as technological transformation. Existing doctrinal analyses predominantly address employer obligations in relation to occupational health and safety, equality, non-discrimination, consultation rights and data protection. Although these areas remain indispensable, they do not adequately address the consequences of AI-induced skills obsolescence. In most jurisdictions, legal obligations concerning employee training remain fragmented, sector-specific or linked to contractual provisions, leaving significant uncertainty regarding whether employers bear responsibility for maintaining workforce employability in rapidly changing technological environments.

A parallel trend can be observed within strategic human resource management research. Studies on upskilling and reskilling generally demonstrate positive associations with organisational performance, innovation capability, employee adaptability and competitive advantage. However, these practices are typically framed as voluntary strategic investments motivated by business objectives rather than as responsibilities derived from the governance of technological change. Consequently, HRM scholarship and labour law scholarship have developed largely in parallel, with limited conceptual integration between organisational strategy and legal accountability.

This separation generates an important theoretical gap. If organisations decide to deploy AI technologies that substantially alter the competencies required for continued employment, should they also assume responsibility for facilitating workers' adaptation to those changes? Current scholarship offers no coherent framework capable of answering this question. Existing approaches either treat training as a managerial choice or analyse labour rights without incorporating the strategic realities of AI-driven organisational transformation. As a result, the relationship between technological innovation, workforce capability development and employer responsibility remains conceptually fragmented.

The present study argues that this fragmentation limits both legal analysis and organisational practice. AI does not merely introduce new technologies into existing workplaces; it transforms the conditions under which employability is created, maintained and potentially lost. Therefore, employer responsibilities should not be confined to preventing unlawful dismissal or ensuring equal treatment after techno-

logical change has occurred. A more proactive approach is required—one that recognises workforce capability development as an integral component of responsible organisational governance. This perspective shifts attention from reactive legal protection to anticipatory institutional responsibility, emphasising that sustainable technological transformation depends on preserving employees' capacity to participate meaningfully in evolving labour markets.

Accordingly, the traditional concept of employer-sponsored training requires reinterpretation. Rather than being viewed as an optional human resource practice or a discretionary investment in productivity, continuous upskilling and reskilling should be understood as governance mechanisms that enable organisations to reconcile technological innovation with social sustainability. This reconceptualisation provides the theoretical foundation for the development of the AI Employability Governance Framework, introduced in the following section as a model that integrates labour law, strategic HRM and corporate governance into a coherent approach to responsible workforce transformation.

The preceding analysis demonstrates that existing scholarship has generated substantial knowledge regarding artificial intelligence (AI), workforce transformation and strategic human resource management. Nevertheless, these contributions remain conceptually fragmented. Labour law primarily addresses workers' protection once adverse consequences materialise, whereas HRM literature focuses on organisational capability development as a source of competitive advantage. Corporate governance research, meanwhile, increasingly emphasises human capital disclosure and sustainability but rarely establishes explicit links between technological transformation and employer obligations. Consequently, no comprehensive framework currently explains how organisations should govern workforce capability development when AI fundamentally reshapes the conditions of employability.

To address this gap, this article proposes the AI Employability Governance Framework (AEGF). The framework is grounded in the premise that employability in AI-enabled organisations is not solely an individual asset or an organisational resource; rather, it constitutes a shared governance responsibility arising from the interaction between technological innovation, managerial decision-making and labour protection. Under this perspective, employers do not merely manage human resources; they also shape the institutional conditions that determine whether workers can adapt to technological change without experiencing unnecessary exclusion from employment.

Unlike traditional training models, which typically evaluate learning interventions according to productivity or performance outcomes, the AEGF conceptualises upskilling and reskilling as governance mechanisms that reconcile organisational innovation with social sustainability. The fra-

mework therefore extends beyond competency development by incorporating legal accountability, organisational foresight and strategic workforce planning into a unified analytical structure.

The first dimension, Strategic Workforce Foresight, requires organisations to anticipate future competency needs before implementing AI technologies. Rather than reacting to technological disruption after it occurs, employers should conduct systematic assessments of how AI will modify occupational profiles, identify competencies at risk of obsolescence and forecast emerging skill requirements. This anticipatory approach reduces organisational uncertainty while enabling more effective workforce planning.

The second dimension, Continuous AI Upskilling, recognises that incremental technological change requires continuous updating of existing competencies. Employees performing evolving job functions should receive structured learning opportunities allowing them to integrate AI into daily work practices while maintaining professional relevance. Upskilling therefore becomes an ongoing organisational process rather than an occasional response to technological innovation.

The third dimension, AI Reskilling Pathways, addresses situations in which technological transformation fundamentally alters occupational structures. In these circumstances, incremental learning may no longer be sufficient, requiring employees to acquire entirely new competencies for alternative functions within or beyond the organisation. Effective reskilling pathways reduce the social costs associated with technological restructuring while preserving organisational knowledge and workforce continuity.

The fourth dimension, Shared Employer Responsibility, represents the principal legal innovation of the framework. Traditional conceptions frequently portray employability as an individual responsibility shaped by workers' educational choices and career decisions. However, where employers initiate AI-driven organisational transformation, they simultaneously influence the relevance of existing workforce capabilities. Consequently, responsibility for preserving employability should be distributed more equitably between employers, employees and public institutions. This does not imply an unlimited legal obligation on employers but recognises that technological governance entails corresponding responsibilities regarding workforce adaptation. (Taheri Hosseinkhani, 2025)

The fifth dimension, Labour Rights Protection, integrates established labour law principles into AI-related workforce governance. Continuous capability development should be implemented consistently with equality, non-discrimination, transparency, access to training opportunities and fair treatment throughout employment. Particular attention should be

paid to vulnerable groups that may experience disproportionate barriers to technological adaptation, including older workers, employees with lower digital literacy and workers in sectors undergoing rapid automation. Embedding these safeguards within workforce development strategies reinforces both legal compliance and organisational legitimacy.

Finally, the sixth dimension, Sustainable Employability Outcomes, shifts evaluation beyond short-term productivity indicators. The effectiveness of organisational upskilling and reskilling initiatives should be assessed according to broader outcomes, including employees' capacity to remain employable over time, internal career mobility, adaptability to technological change, organisational resilience and the sustainability of workforce transformation. These outcomes align organisational performance with broader social objectives and support the integration of workforce capability development into corporate sustainability strategies.

Taken together, these six dimensions form an integrated governance system rather than a sequence of isolated HR practices. Strategic foresight identifies future competency requirements; upskilling and reskilling provide mechanisms for capability renewal; shared responsibility establishes the normative allocation of obligations; labour rights ensure fairness throughout implementation; and sustainable employability outcomes evaluate the long-term effectiveness of organisational transformation. The framework therefore bridges the traditional divide between legal protection and strategic HRM by demonstrating that workforce capability development constitutes both a governance function and a mechanism for responsible technological transition.

From a theoretical perspective, the AEGF contributes to the emerging literature on AI and employment in three principal ways. First, it reconceptualises employability as a governance construct rather than merely an individual labour-market attribute. Second, it integrates labour law, strategic HRM and corporate governance within a single analytical framework, overcoming disciplinary fragmentation. Third, it advances the argument that continuous upskilling and reskilling should be interpreted as institutional responses to AI-induced workforce transformation rather than as discretionary organisational practices. These contributions provide a foundation for future empirical research examining how organisations operationalise responsible workforce governance across different legal systems and economic contexts.

The AI Employability Governance Framework (AEGF) extends current scholarship by positioning employability as a governance issue situated at the intersection of strategic human resource management (SHRM), labour law and corporate governance. While previous studies have acknowledged the importance of upskilling and reskilling in technologically dynamic environments, these practices have generally been

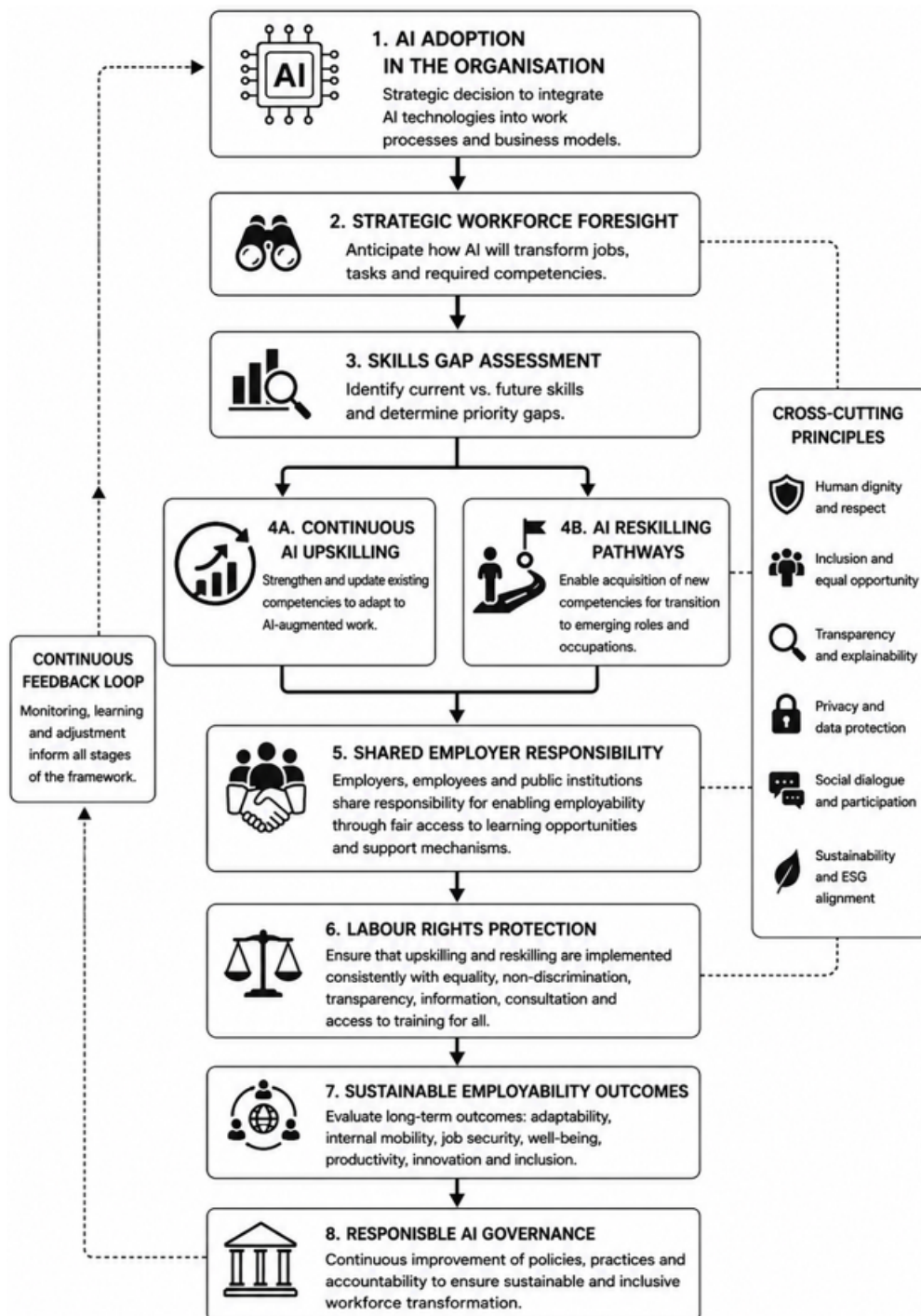


Figure 1. Employability Governance Framework (AEGF): An integrated Model for Responsible Workforce Transformation

examined from disciplinary perspectives that remain largely disconnected. HRM research has primarily focused on their contribution to organisational performance and competitive advantage, whereas labour law has traditionally addressed training as one among several mechanisms for promoting workers' professional development. Corporate governance, in turn, has increasingly recognised human capital as a strategic

asset, yet has devoted comparatively limited attention to the institutional responsibilities associated with workforce capability transformation in AI-enabled organisations.

The proposed framework contributes to overcoming this fragmentation by arguing that workforce capability development should be understood simultaneously as a strategic, legal and governance responsibility. This interpretation

is consistent with recent developments in strategic HRM, which emphasise that organisational resilience depends on the ability to continuously renew human capital in response to environmental change (Minbaeva, 2023). However, the AEGF advances this perspective by suggesting that capability renewal should not be justified exclusively by productivity or innovation objectives. Rather, it should also be evaluated according to its contribution to preserving equitable access to employment opportunities and supporting socially sustainable technological transitions.

From an HRM perspective, the framework encourages organisations to move beyond reactive training models. Conventional approaches frequently design learning programmes after technological implementation has already altered job requirements, creating delays between capability needs and organisational responses. Such reactive practices increase adaptation costs, reduce employee confidence and may generate avoidable workforce displacement. By contrast, the AEGF advocates a proactive model in which workforce capability planning precedes technological deployment. Integrating strategic workforce foresight with AI adoption enables organisations to anticipate competency gaps, allocate training resources more efficiently and facilitate smoother organisational transformation.

The framework also has important implications for labour law. Contemporary labour legislation has historically developed around corrective mechanisms that operate once adverse employment consequences have materialised, including dismissal protection, compensation, anti-discrimination guarantees and occupational health measures. Although these safeguards remain essential, they are insufficient to address the preventive challenges associated with AI-induced skills obsolescence. The AEGF therefore proposes a complementary perspective based on anticipatory protection. Under this approach, the objective is not merely to remedy exclusion after it occurs but to reduce the likelihood of exclusion by ensuring that workers have meaningful opportunities to adapt to technological change throughout the employment relationship.

This preventive orientation aligns with broader international discussions concerning lifelong learning and sustainable labour markets. Nevertheless, it does not imply the creation of an unlimited employer obligation. Workforce capability development should instead be interpreted according to principles of proportionality, organisational capacity, sectoral characteristics and social dialogue. The precise scope of employer responsibilities will inevitably vary across legal systems, enterprise size and industrial contexts. Consequently, the framework should be understood as a normative governance model capable of informing future legislative development rather than prescribing uniform legal obligations applicable in every jurisdiction.

Corporate governance constitutes a third area in which the framework generates significant implications. Human capital has become an increasingly important component of corporate sustainability and environmental, social and governance (ESG) reporting. Investors, regulators and stakeholders now expect organisations to disclose not only workforce composition but also talent development, learning investment and long-term capability strategies. Within this context, AI-related upskilling and reskilling represent more than operational HR activities; they become indicators of responsible governance, organisational resilience and sustainable value creation. Organisations that systematically invest in workforce capability development are therefore likely to strengthen both stakeholder trust and long-term corporate legitimacy.

The framework further highlights the strategic relationship between AI governance and organisational justice. Employees are more likely to perceive technological transformation as legitimate when they are provided with transparent information regarding organisational change, equitable access to learning opportunities and realistic pathways for professional adaptation. Conversely, introducing AI systems without corresponding investments in workforce capability development may generate perceptions of procedural unfairness, reduced organisational commitment and resistance to technological innovation. Consequently, capability development functions not only as a mechanism for improving productivity but also as an instrument for strengthening trust between employers and employees during periods of technological transition.

An additional contribution of the AEGF concerns emerging economies, where technological transformation often occurs under conditions of institutional asymmetry and unequal access to digital skills. In many Latin American countries, AI adoption is advancing more rapidly than labour market adaptation, creating significant disparities between highly qualified workers and those employed in traditional occupations. Under these circumstances, continuous upskilling and reskilling acquire particular relevance as mechanisms for reducing technological inequalities and supporting inclusive economic development. Rather than replicating regulatory approaches developed in high-income economies, policymakers may utilise governance frameworks such as the AEGF to design context-sensitive strategies that integrate economic competitiveness with social protection.

Despite these contributions, the framework should be interpreted with appropriate caution. As a conceptual model, it requires empirical validation across different legal systems, sectors and organisational contexts. Future research should examine how organisations operationalise strategic workforce foresight, the effectiveness of different upskilling and reskilling strategies, employee perceptions of shared employer responsibility and the relationship between workforce capa-

bility development and organisational performance. Comparative legal studies could also investigate whether existing labour legislation already contains implicit foundations capable of supporting a broader duty to preserve employability in AI-enabled workplaces.

Overall, the discussion indicates that AI Employability Governance represents more than a new conceptual label. It offers an interdisciplinary lens through which technological innovation, workforce capability development and employer responsibility can be analysed as mutually reinforcing elements of responsible organisational transformation. By integrating insights from HRM, labour law and corporate governance, the framework contributes to a more coherent understanding of how organisations can pursue AI-driven innovation while preserving employability, organisational legitimacy and long-term social sustainability.

The transition towards AI-enabled workplaces is no longer solely an organisational phenomenon; it has become a public policy challenge with significant implications for labour market resilience, economic competitiveness and social inclusion. While organisations remain the primary actors responsible for introducing AI technologies into production systems, the broader institutional environment—including governments, educational institutions, social partners and international organisations—plays a decisive role in shaping the conditions under which workforce transformation occurs. Consequently, effective AI Employability Governance requires coordinated action extending beyond individual organisational initiatives.

One of the principal implications of the proposed framework concerns the evolution of labour regulation. Existing labour legislation in many jurisdictions continues to regulate training through fragmented provisions, collective agreements or sector-specific obligations. Such approaches were developed for labour markets characterised by relatively gradual technological change and are increasingly inadequate in environments where AI can rapidly alter occupational structures and competency requirements.

Rather than imposing rigid statutory obligations applicable to all employers, policymakers should consider adopting regulatory models based on shared responsibility, proportionality and preventive governance. Such approaches would encourage organisations to anticipate workforce capability needs while preserving sufficient flexibility to accommodate differences in enterprise size, industrial sector and technological maturity. In this context, governments could promote voluntary or mandatory workforce transition plans for organisations implementing AI at scale, integrating skills assessment, training commitments and mechanisms for social dialogue.

Public policy should also strengthen incentives for lifelong

learning through tax benefits, co-financed training programmes, public-private partnerships and national AI skills strategies. These measures would reduce disparities in access to professional development while supporting labour market adaptability and long-term economic productivity. Importantly, regulatory interventions should prioritise vulnerable groups that face greater barriers to digital inclusion, thereby ensuring that technological transformation does not reinforce pre-existing social inequalities.

For HR professionals, the AI Employability Governance Framework suggests a fundamental shift from operational training management to strategic capability governance. HR departments should no longer view learning initiatives as isolated responses to emerging technological needs but as integral components of organisational strategy.

Strategic workforce planning should therefore incorporate continuous monitoring of technological trends, systematic identification of future competency requirements and early assessment of occupations most susceptible to AI-driven transformation. Integrating these processes into workforce planning enables organisations to reduce capability gaps before they become operational constraints.

Furthermore, HR functions should develop transparent criteria governing access to AI-related learning opportunities. Equitable participation in upskilling and reskilling programmes is essential to avoid reinforcing existing inequalities associated with age, gender, educational background or occupational status. Fair allocation of training resources contributes not only to organisational effectiveness but also to employees' perceptions of procedural justice and institutional trust.

The framework also encourages organisations to redefine learning metrics. Traditional indicators such as training hours or participation rates provide only limited insight into organisational capability development. More comprehensive evaluation systems should measure competency acquisition, adaptability, internal mobility, innovation capacity and long-term employability outcomes, thereby aligning learning investments with broader organisational objectives. (Badie & Rostomyan, 2025).

Corporate governance has increasingly recognised human capital as a strategic determinant of sustainable organisational performance. Nevertheless, disclosure regarding workforce capability development frequently remains descriptive rather than strategic. The AEGF suggests that organisations should integrate AI-related upskilling and reskilling into corporate governance structures, assigning explicit oversight responsibilities to boards or dedicated sustainability committees.

This approach is consistent with the growing emphasis on the social dimension of ESG, where investors and stakehol-

ders increasingly evaluate organisations according to their capacity to develop, retain and support human capital. Continuous investment in workforce capabilities demonstrates commitment to responsible technological innovation, enhances organisational legitimacy and contributes to long-term value creation.

In addition, organisations should incorporate AI employability indicators into sustainability reporting frameworks. Potential metrics include investment in AI-related training, participation rates in reskilling programmes, internal mobility following technological restructuring, digital competency development and employee perceptions of learning accessibility. Such indicators would complement existing human capital disclosures while improving transparency regarding organisational preparedness for technological change.

Universities, vocational institutions and professional education providers occupy a central position within the AI Employability Governance ecosystem. Traditional educational models based on one-time qualification are increasingly insufficient in labour markets characterised by continuous technological disruption. Higher education institutions should therefore strengthen collaboration with employers to design flexible curricula capable of responding to rapidly evolving competency requirements.

Micro-credentials, modular learning pathways, stackable qualifications and industry-certified AI competencies represent promising mechanisms for supporting lifelong employability. Collaboration between universities and organisations may also facilitate more accurate forecasting of future workforce needs while reducing mismatches between educational provision and labour market demand.

Beyond technical competencies, educational programmes should place greater emphasis on interdisciplinary capabilities, including critical thinking, ethical reasoning, digital literacy, problem-solving and collaborative skills. These competencies are less susceptible to technological substitution and enhance workers' capacity to adapt to future occupational transitions.

The framework also reinforces the importance of social dialogue in governing AI-enabled workforce transformation. Employers, trade unions and employee representatives should participate actively in discussions concerning technological implementation, workforce capability requirements and access to training opportunities. Such participation contributes to greater transparency, strengthens organisational trust and facilitates the design of workforce transition strategies that balance productivity objectives with labour protection.

Collective bargaining may play an increasingly important role in formalising commitments regarding AI-related training, reskilling pathways and support for employees affected

by technological restructuring. Rather than focusing exclusively on the consequences of automation, social dialogue can become an anticipatory governance mechanism that enables organisations and workers to jointly manage technological change (Doellgast et al., 2025; Porcheddu & Prosdoci, 2025)

Ultimately, the AI Employability Governance Framework demonstrates that sustainable workforce transformation cannot be achieved through isolated interventions. Organisational development, labour regulation, corporate governance, educational systems and public policy constitute interdependent components of a broader governance ecosystem. Effective responses to AI-driven skills disruption therefore require coordination across institutional levels, ensuring that technological innovation is accompanied by equitable access to learning, responsible organisational practices and regulatory frameworks capable of supporting long-term employability.

From this perspective, employability should no longer be understood solely as an individual characteristic or a market outcome. Instead, it emerges as a collective governance objective requiring shared commitment from employers, workers, governments and educational institutions. Recognising this broader institutional dimension provides the foundation for more inclusive and sustainable models of technological transformation, particularly in economies where digitalisation is progressing more rapidly than workforce capability development

Conclusions

The rapid integration of artificial intelligence into organisational processes has fundamentally altered the relationship between technological innovation, workforce capability development and employer responsibility. Although previous scholarship has generated valuable insights into AI adoption, strategic human resource management and lifelong learning, the intersection between these fields has remained conceptually fragmented. This article sought to address that limitation by examining whether AI-induced workforce transformation justifies a broader interpretation of employer responsibilities regarding continuous upskilling and reskilling.

The findings indicate that technological transformation should not be understood solely as a question of productivity enhancement or digital innovation. Rather, AI increasingly determines the conditions under which employability is created, maintained and, in some cases, eroded. Because organisations decide when and how AI technologies are introduced, they also influence the relevance of employees' existing competencies and their capacity to adapt to changing occupational demands. Consequently, workforce capability development cannot be regarded exclusively as an individual responsibility but should be recognised as a shared

governance objective involving employers, employees and public institutions.

The principal theoretical contribution of this study is the development of the AI Employability Governance Framework (AEGF). Unlike existing approaches that analyse upskilling, reskilling or labour regulation independently, the proposed framework integrates strategic human resource management, labour law and corporate governance within a single conceptual model. By combining strategic workforce foresight, continuous capability development, shared employer responsibility, labour rights protection and sustainable employability outcomes, the framework offers a more comprehensive understanding of how organisations can govern workforce transformation in AI-enabled environments.

From a labour law perspective, the article contributes to ongoing debates regarding the evolution of employer obligations in technologically intensive workplaces. Rather than advocating the immediate creation of a universal statutory duty to provide AI-related training, the study argues that existing legal principles concerning decent work, equality, vocational development and social protection provide a foundation for reinterpreting employer responsibilities in light of contemporary technological realities. This perspective encourages a preventive rather than exclusively corrective approach to labour regulation, emphasising capability development as a mechanism for reducing the risks of technological exclusion before adverse employment outcomes occur.

For human resource management, the findings reinforce the importance of moving beyond reactive training models towards anticipatory capability governance. Organisations that integrate workforce foresight into strategic planning are better positioned to anticipate emerging competency requirements, reduce skills obsolescence and enhance organisational resilience. Continuous upskilling and reskilling should therefore be considered strategic investments that contribute not only to innovation and competitiveness but also to workforce sustainability and institutional legitimacy.

The framework also offers important implications for corporate governance and sustainability. As stakeholders increasingly evaluate organisations according to their management of human capital, workforce capability development should become an integral component of responsible AI governance and the social dimension of ESG strategies. Transparent investment in learning, equitable access to development opportunities and measurable employability outcomes can strengthen organisational accountability while supporting long-term value creation.

Despite these contributions, several limitations should be acknowledged. The proposed framework is conceptual and has not yet been empirically validated across different legal systems or organisational settings. Furthermore, the

study primarily draws upon English-language literature and international policy documents, which may not fully capture regional legal traditions or institutional differences. Consequently, the transferability of the framework should be examined with caution, particularly in jurisdictions characterised by distinct labour market structures or regulatory environments.

Future research should therefore focus on empirically testing the AI Employability Governance Framework in organisations operating across different sectors and countries. Comparative legal studies could explore how existing labour legislation accommodates employer responsibilities relating to technological capability development, while quantitative research may assess the relationship between AI-related investment in workforce development, employee adaptability and organisational performance. Longitudinal studies would also contribute to understanding how continuous upskilling and reskilling influence sustainable employability over time. Finally, further investigation is needed to determine how governments, educational institutions and social partners can cooperate in developing governance models that promote inclusive technological transitions in both advanced and emerging economies.

In conclusion, this article argues that the future of work should not be framed solely as a debate about artificial intelligence but as a discussion concerning the governance of human capabilities in technologically evolving societies. AI will undoubtedly continue to reshape employment, yet the long-term sustainability of this transformation will depend not only on the sophistication of technological systems but also on the institutional capacity to ensure that workers remain capable of participating meaningfully in changing labour markets. In this context, AI Employability Governance provides a promising conceptual foundation for rethinking employer responsibility and advancing more inclusive, resilient and sustainable models of workforce transformation.

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Conflicts of interest

The authors declare that they have no conflicts of interest..

Author contributions

Joel Menezes-Barreto Júnior: Conceptualization, methodology, supervision, project administration, writing – review & editing. Duliet Hong: Investigation, data curation, formal analysis, validation, writing – review & editing. Jaime E. Pérez-Fernández: Conceptualization, formal analysis, methodology, visualization, writing – original draft, writing – review & editing. António Ramos-Congo: Investigation, literature review, data curation, validation, writing – review & editing. Natalia A. Domingas-Chivango: Investigation, visualization, formal analysis, validation, writing – review & editing. All authors have read and approved the final version of the manuscript.

Data availability statement

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Statement on the use of AI

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