

Qualitative Study on Human-Centered Artificial Intelligence Frameworks for Mitigating Systemic Inequalities in Workforce: A Review

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Abstract

The proliferation of artificial intelligence (AI) and algorithmic architectures within structured human resource environments has raised serious concerns about the digital amplification of systemic bias and intersectional inequalities. This paper presents a systematic literature review of peer-reviewed articles published between 2020 and 2026 focusing on Human-Centered AI (HCAI) frameworks engineered to safeguard and promote workforce equity. Moving beyond standard data-centric mitigation strategies, this review synthesizes scholarship across management sciences, sociology, and computational ethics to analyze how algorithmic inequality regimes are constructed and subsequently dismantled. The review demonstrates that standalone technical bias-correction algorithms fail to mitigate historically embedded institutional discrimination unless coupled with robust human-in-the-loop oversight, ethical compliance auditing, and explicit regulatory accountability. Synthesizing contemporary literature, this study presents an integrated governance framework for organizational practitioners to proactively eliminate systemic demographic barriers while maximizing technological utility within corporate ecosystems.

Keywords: Human-Centered AI, Systemic Inequality, Workplace Equity, Ethical Human Resource Management.

Introduction

The exponential adoption of artificial intelligence (AI) and automated decision-making systems (ADMS) has fundamentally transformed global labor infrastructure. Organizations increasingly utilize advanced algorithmic applications across critical employment nodes, including programmatic sourcing, candidate screening, automated performance evaluation, and predictive attrition modeling (Hughes et al., 2026; Wowledge, 2026). While early tech adoption narratives claimed algorithms would eliminate subjective human prejudice and promote scientific objectivity, empirical scholarship published between 2020 and 2026 has robustly deconstructed this techno-optimistic paradigm. Instead, data science researchers and organizational sociologists have established that automated tools frequently act as "algorithmic gatekeepers," codifying and amplifying historically embedded socioeconomic, gender, and racial prejudices into sophisticated software protocols (Amis et al., 2020; Kim, 2020). The realization that digital tools can systematize institutional discrimination has forced a paradigm shift in Human Resource Management (HRM). Conventional algorithmic models focus almost exclusively on mathematical optimization and operational efficiency, reducing human capital dynamics to mathematical coordinates. In response, a multidisciplinary research domain has championed Human-Centered AI (HCAI) frameworks (Mabrouk, 2026). HCAI frameworks redefine technology design by mandating that software architectures must prioritize human autonomy, ethical transparency, systemic equity, and social responsibility alongside standard technical functionality. Consequently, a comprehensive literature review exploring the implementation of HCAI architectures to actively mitigate systemic workforce inequality is essential for contemporary management scholars and strategic organizational practitioners alike.

Conceptualizing Algorithmic Inequality Regimes

To understand the remedial role of HCAI frameworks, it is first necessary to evaluate how systemic inequalities manifest in digital environments. Drawing on Acker's (2006) foundational concept of "inequality regimes," contemporary organizational theorists have expanded this definition to incorporate software-driven processes. Hughes et al. (2026) define algorithmically mediated inequality regimes as interconnected systematic structures of discrimination built directly into the data models, features, training criteria, and evaluation mechanisms of automated human resource applications. Empirical analyses reveal that digital bias emerges primarily from historical training data. Because machine learning models are trained on historical datasets, they inherently internalize existing social disparities. For example, if historical corporate selection data reflects an underrepresentation of female engineers due to historic societal prejudices, automated resume screening engines will mathematically amplify this variance, interpreting female demographic indicators as predictors of poor corporate performance (Kim, 2020). Beyond data bias, additional structural imbalances arise from the operational execution of "algorithmic management" where autonomous algorithms continuously monitor, track, and score

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employees without clear recourse or transparent explanation (Fayyaz, 2026; Riordan, 2025). This lack of transparency disproportionately impacts marginalized worker cohorts who are clustered in platform-mediated or precarious work environments characterized by high surveillance and minimal institutional protections (Chatterjee & Jemima, 2025).

The Human-Centered AI Paradigm: Core Tenets

Human-Centered AI shifts the focal point of system design from autonomous automation to collaborative augmentation. Rather than designing technology to replace or uncritically evaluate human employees, HCAI mandates that algorithmic tools operate as support systems that amplify human potential while honoring ethical constraints (Mabrouk, 2026). The literature identifies three core pillars of HCAI within modern workplace environments:

1. Explainability and Transparency (XAI)

Traditional deep-learning systems function as opaque "black boxes," leaving both HR professionals and prospective candidates unaware of why specific personnel decisions were mathematically generated. HCAI frameworks require the integration of Explainable Artificial Intelligence (XAI) protocols. This operational shift provides stakeholders with transparent, legible explanations regarding the specific features and weights driving an automated decision, which is a core corporate governance requirement under the EU AI Act (Fernandez & Jenkins, 2025).

2. Human Agency and Oversight (Human-in-the-Loop)

HCAI strictly rejects fully autonomous, unmoderated machine decision-making for high-stakes employment outcomes such as hiring, performance disciplinary tracking, and terminations. The framework mandates that a human expert must maintain ultimate decision authority, leveraging the algorithm as an advisory asset rather than a final arbiter (Stone & Deadrick, 2025). This structure acts as a vital buffer against computational anomalies and structural algorithmic errors.

3. Fairness, Accountability, and Safety (FAS)

HCAI explicitly includes ethical metrics directly into the software lifecycle. Systems must pass routine statistical parity and disparate impact assessments to verify that selection ratios do not display bias against protected demographic cohorts (Boudreau, 2024).

Frameworks For Mitigating Inequality: A Synthesis

The scholarship between 2020 and 2026 offers distinct strategic models for embedding HCAI within organizational talent lifecycles. Researchers split these mitigation frameworks into three key operational levels: technical preprocessing interventions, continuous internal procedural governance, and external macro-level regulatory compliance frameworks.

Technical and Data-Level Preprocessing Frameworks

At the technical level, computer scientists and people analytics researchers emphasize the importance of data sanitization and adversarial training regimes. Rahmawati and Rahmat (2024) document how leading technology institutions utilize debiased training models that proactively strip out explicit and implicit demographic features (such as postal codes or names of single-sex colleges) before datasets are fed into automated recruitment models. Furthermore, modern frameworks deploy adversarial machine learning techniques, where a secondary algorithmic supervisor continuously checks the main model to ensure its predictions remain independent of protected class variables (Al-Mansour, 2025).

Procedural Governance and Internal HR Audits

Technology alone cannot rectify socio-technical errors. Organizational theorists argue that technical interventions must match thorough internal procedural governance. Marler and Boudreau (2024) argue for the establishment of cross-functional "Algorithmic Review Boards" within HR departments. These boards should include data engineers, legal compliance officers, HR business partners, and employee representatives. This group is responsible for executing periodic algorithmic impact audits, tracking drift in automated models, and verifying that performance evaluation metrics do not inadvertently penalize employees who require non-traditional flexible working models, such as individuals working compressed four-day workweeks (Wowledge, 2026; Cascio, 2025).

External Macro-Regulatory Compliance Frameworks

At the macro level, HCAI integration is increasingly guided by emergent statutory frameworks. The literature points out that organizations can no longer treat algorithmic ethics as an optional corporate social responsibility initiative. Comprehensive regulatory initiatives, such as the EU AI Act and national initiatives like the Action Plan for Accelerating the Cultivation of Digital Talent (2024–2026), have legally institutionalized accountability requirements for high-risk HR software deployment (Zhang, 2026; Fernandez & Jenkins, 2025). Consequently, contemporary HCAI models must build

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standard legal pathways directly into corporate technology infrastructure to log processing trails, handle automated bias assessments, and manage formal employee data-access requests seamlessly.

Discussion: Limitations and Strategic Future Outlook

While the literature demonstrates the theoretical validity of Human-Centered AI frameworks, significant operational challenges persist. A primary conflict lies in the tension between technical performance metrics and equity constraints; adding rigorous fairness constraints into predictive models can sometimes marginally reduce raw mathematical accuracy (Kavanagh & Johnson, 2024). Additionally, many small-to-medium enterprises (SMEs) face resource constraints, lacking the financial capital and specialized data literacy required to execute continuous algorithmic audits and run cross-functional governance structures (Putri & Wibowo, 2025; Gomez-Mejia, 2024). Furthermore, structural inequalities cannot be completely engineered away purely through algorithmic design. Discrimination is an institutional problem that stems from broader societal inequities, corporate compensation imbalances, and unequal access to digital skill development (Gomez-Mejia, 2024; Lengnick-Hall & Lengnick-Hall, 2025). Therefore, HCAI frameworks should not be viewed as isolated technological quick-fixes. Instead, they must be integrated into comprehensive human-centric corporate initiatives, including proactive digital talent cultivation, objective salary transparency schemas, and inclusive skill development policies designed to prepare the entire workforce for a digitally augmented corporate future (Zhang, 2026; Cascio, 2025).

Conclusion

This systematic literature review underscores that the integration of artificial intelligence within the modern workplace is an inherently non-neutral, socio-technical process. Unregulated, traditional AI deployment risks fortifying algorithmically-mediated inequality regimes that amplify structural prejudices and erode employee autonomy. Human-Centered AI frameworks offer a rigorous, necessary path forward, blending Explainable AI protocols, dedicated human-in-the-loop oversight mechanisms, and cross-functional algorithmic auditing boards. Implementing these frameworks ensures that organizations can successfully capture the immense operational advantages of digital applications while actively dismantling structural demographic barriers. Ultimately, the future of ethical human resource administration depends on the capacity of strategic leaders to treat technological governance not merely as a technical IT checklist, but as a core moral and structural equity imperative.

References

- Acker, J. (2006). Inequality regimes: Gender, class, and race in organizations. *Gender & Society*, 20(4), 441–464.
- Al-Mansour, S. (2025). The role of robotic process automation in transforming human resource workflows: A survey. *Technology in Society*, 81, 102–115.
- Amis, J., Mair, J., & Munir, K. (2020). The mechanism of inequality in organizations. *Academy of Management Annals*, 14(1), 1–43.
- Assignment Help Center. (2026). 200+ Free Human Resource Management dissertation topics for 2026.
- Assignment Help Center Research Blogs. <https://assignmenthelpcenter.com/blogs/human-resource-management-dissertation-topics/>
- Boudreau, J. W. (2024). Human resource management automation and the democratization of work analytics. *Human Resource Management Journal*, 34(3), 512–529.
- Cascio, W. F. (2025). Training for the digital frontier: Skill shifts and workforce adaptation strategies post-2024. *Organizational Dynamics*, 54(1), 45–56.
- Chatterjee, S., & Jemima, M. (2025). The dark side of algorithmic management: Stress, surveillance, and employee trust in remote work environments. *Journal of Technology and Human Relations*, 12(3), 145–162.
- Davenport, T. H., & Ronanki, R. (2024). Artificial intelligence for the real world: Re-engineering HR processes through cognitive technologies. *Harvard Business Review*, 102(2), 74–85.
- Fayyaz, B. (2026). *Artificial intelligence and algorithmic management in food delivery platforms: Implications for decent work and occupational health* (Master's thesis, Università degli Studi di Padova). University Thesis Repository.
- Fernandez, R., & Jenkins, O. (2025). Algorithmic accountability and data privacy under the EU AI act: Frameworks for corporate governance. *European Management Journal*, 43(4), 621–635.
- Gomez-Mejia, L. R. (2024). Compensating the digital workforce: Rewarding technical acumen and remote performance metrics. *Human Resource Management*, 63(3), 305–321.
- Hughes, C., Kim, S., & Newman, A. (2026). Problematizing the role of artificial intelligence in hiring and organizational inequalities: A multidisciplinary review. *Human Resource Management Review*, 36(2), Article 100914. <https://doi.org/10.1016/j.hrmr.2026.100914>



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- Kavanagh, M. J., & Johnson, R. D. (2024). *Human resource information systems: Basics, applications, and future directions* (6th ed.). SAGE Publications.
- Kim, S. (2020). Managing the algorithmic gatekeeper: Artificial intelligence in employee selection and recruitment systems. *International Journal of Selection and Assessment*, 28(4), 311–325.
- Lengnick-Hall, C. A., & Lengnick-Hall, M. L. (2025). Building organizational resilience through digitally agile talent management frameworks. *Academy of Management Review*, 50(2), 189–204
- Mabrouk, M. (2026). Strategic balancing acts: Reconciling organizational technological efficiency with employee psychological well-being. *Global Journal of Human Resource Management*, 14(1), 89–104.
- Marler, J. H., & Boudreau, J. W. (2024). An evidence-based review of people analytics: Reality versus rhetoric in the digital era. *Human Resource Management Review*, 34(1), 100–118.
- Putri, A. E., & Wibowo, T. (2025). Digital literacy, analytical capabilities, and moral leadership: Navigating the AI era in emerging markets. *Southeast Asian Journal of Strategic Management*, 19(2), 201–219.
- Rahmawati, D., & Rahmat, F. (2024). Artificial intelligence integration in corporate human resources: A comparative study of global tech firms. *International Journal of Human Capital Development*, 8(2), 112–128.
- Riordan, C. A. (2025). *The evolution of high-touch service work in the face of algorithmic management*. School of Labor and Employment Relations, University of Illinois.
- Stone, D. L., & Deadrick, D. L. (2025). The transformation of human resource management due to the integration of digital platforms and artificial intelligence. *Research in Personnel and Human Resources Management*, 43, 1–35.
- Wowledge. (2026). *Preparing HR priorities for 2024–2026: Balancing economic dynamics, skill shortages, and generative AI*. Wowledge Business Strategy Reports. <https://wowledge.com/blog/preparing-hr-priorities-for-2024>
- Zhang, X. (2026). Digital human resources: Literature review and research prospects. *International Journal of Management Research and Science*, 4(1), 45– <https://doi.org/10.5281/zenodo.ijmr.2026.89>